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Editorial

In Economic and Monetary Union (EMU), fiscal policy has become an integral part of a balanced economic policy which is geared towards keeping inflation in check and sustaining economic growth. Consequently, the European stance on fiscal issues has been gaining importance although fiscal policy remains a national responsibility. In the light of the stepped-up financial market integration accompanying EMU, the Member States need to stay committed to and even intensify fiscal policy coordination. Coordination is aimed at preventing negative spillover effects from one country's deficit spending on the other euro area countries and at preserving the credibility of the common European monetary policy. The Maastricht Treaty spells out the criteria of sound public finances; compliance with them served as the precondition for entry into EMU. Furthermore, the Stability and Growth Pact obliges the euro area countries to attain budgetary positions close to balance or in surplus in the medium term.

This focus issue revolves around fiscal policy concerns EU Member States are faced with today.

Peter Mooslechner explores the changing role of fiscal policy within the framework of European economic policy. While Musgrave's theory on public finance, which breaks down government functions into allocative, stabilization and distributive tasks, is a highly useful analytical tool, it lacks theoretical guidance as to the tradeoff between functions. Over the course of Europe's integration process, greater weight has been placed on the allocative functions of fiscal policy. The author discusses possible consequences of this shift.

The fiscal policy coordination mechanisms which took effect in the 1990s in the EU left their mark on the EU Member States' budget policies. *Leopold Diebalek, Walpurga Köhler-Töglhofer, Herbert Nekvasil* and *Doris Prammer* analyze the different budget consolidation strategies the EU Member States employed to meet the fiscal criteria established by the Treaty of Maastricht and the requirements set forth by the Stability and Growth Pact.

The budget consolidation efforts of many EU countries in recent years seem to be associated with a diminishing role of the redistributive function of fiscal policy. *Bruno Rossmann* of the Austrian Chamber of Labor investigates distributive aspects of the European integration process from the employees' viewpoint.

Walpurga Köhler-Töglhofer deals with the requirement of coordinating the taxation of cross-border capital income. The liberalization of short-term capital transactions, the establishment of a common financial market in Europe and the progress made in information and communications technologies imply that national tax policies have spillover effects on other countries, which stresses the need for coordination to contain welfare losses. The study first provides an overview of pertinent aspects of finance and tax theories, before detailing the topical debate about the coordination/harmonization of capital income and corporate taxation in Europe.

Eva Hauth of the office of the Federal Debt Committee at the OeNB and *Paul Kocher* of the Austrian Federal Financing Agency shed light on a fiscal policy aspect which often goes unnoticed in economic policy discussions in Austria. Public debt management, which refers to all measures impacting

the composition of public debt, is faced with great challenges in the euro area given governments' substantial debt positions and dynamic developments on the financial markets. This study outlines the different international approaches to structural public debt management, highlighting in particular macroeconomic issues. In addition, the authors describe the guidelines underpinning Austria's debt management today; in the run-up to EMU, these guidelines were adjusted to the new financial market conditions.

Last but not least, *Thomas Url* of the Austrian Institute of Economic Research presents a method for calculating the cyclical component of cyclically dependent budget items. Academics – and economic policymakers – have developed a keen interest in methodical approaches to estimating structural deficits, especially ever since the Stability and Growth Pact and its medium-term objective of budget positions close to balance or in surplus took effect. The OeNB will base its computations of cyclically adjusted budget deficits on the procedure described by the author.

Coordinator of fiscal policy focus studies
Walpurga Köhler-Töglhofer

REPORTS

Calendar of Monetary and Economic Highlights

Austria

August 2001

7 *Federal Law Gazette Part I No. 97/2001 Federal Act: Financial Market Supervision Act*

The Financial Market Supervision Act provides for the reorganization of the prudential supervision of banks, insurance companies, securities investment firms and pension funds by merging the existing supervisory bodies into a single authority. This new authority, known as the Financial Market Supervisory Authority, has been designed as a one-stop authority and vested with a high degree of independence.

30 Following the monetary policy decisions taken by the *Governing Council of the ECB* on August 30 (to cut the interest rate for the deposit facility by 0.25 percentage point to 3.25% and the interest rate for the *marginal refinancing facility* by 0.25 percentage point to 5.25% with effect from August 31) and an interest rate cut of the same extent agreed earlier on May 10, the following adjustments take effect in Austria on August 31, 2001, as required by the first euro-related amendment to civil legislation (Federal Law Gazette Part I No. 125/1998) and as specified in the corresponding regulation (Federal Law Gazette Part II No. 27/1999): The *base rate* is reduced to 3.75% and the *reference rate* to 5.50%, which constitutes a reduction by 0.5 percentage point in both cases.

European Union

May 2001

2 The *ECB* presents its Annual Report 2000, which contains a positive résumé of the first two years of monetary union. According to the report, a sustained low rate of inflation would be best to strengthen public faith in the euro.

There is "good reason for realistic optimism" regarding the prospects of the euro area economy. Its healthy economic development, the gradual solution of its unemployment problem, the further improvement of economic structures and a currency of stable internal value make the euro area a "source of stability" in world economy.

7 The twelve finance ministers of the *Eurogroup* maintain an optimistic (and realistic) view of the euro area's economic conditions and prospects.

The ministers discuss the issue of labor supply and the reform of tax and benefit systems with special regard to the situation in Ireland and Spain. The Eurogroup requests the Commission and the Economic and Financial Committee to further consider these issues (e. g. low-income taxation) in their preparations for the Barcelona European Council in spring 2002. To counter fears that prices might rise in the run-up to the euro cash changeover, the Eurogroup states that competition will prevent prices from going

up, pointing out that roundings will be carried out in compliance with the rules and, in the public sector, will even favor tax payers. As to the cash changeover, Commissioner Solbes calls upon the participating Member States to find adequate solutions for making it easier to frontload euro cash to retailers.

The *Ecofin Council* discusses the Commission's draft for this year's Broad Economic Guidelines. Basically, their assessment is positive. Talks about the Lamfalussy Report on securities markets regulation mainly concentrate on the extent to which the European Parliament as an institution is to be involved in the supervising process.

Furthermore, the Ecofin Council discusses occupational pension schemes and the abolition of tax barriers for cross-border occupational pension transfers.

8 The *European Commission* passes a draft budget for 2002, providing for expenditures of around EUR 97.7 billion (up 4.8% on 2001). The amount earmarked for agricultural spending posts the highest increase (+5%), which means that agriculture will continue to account for the lion's share in the EU budget (46%) in 2002.

10 The *Governing Council of the ECB* reduces the minimum bid rate on the Eurosystem's main refinancing operations by 25 basis points to 4.5% with effect of May 15, 2001. The marginal lending rate and the rate for deposit facilities are reduced by 0.25 percentage point to 5.50% and 3.50%, respectively, with effect of May 11, 2001. The major cause for these interest rate cuts is that both pillars of the ECB's monetary policy strategy indicate lower risks for medium-term price stability.

The *Bank of England* reduces its key interest rate by 25 basis points to 5.25%.

Danmarks Nationalbank, the National Bank of Denmark, reduces its key interest rate by 30 percentage points to 5%.

30 The *ECB* announces that it overestimated M3 growth in the past few months owing to distortions caused by the fact that M3 also contains negotiable financial instruments held by non-euro area residents. There is evidence that distortions in the field of money market fund shares caused an overestimation by 0.5 percentage point. Further information suggests a distortion in the field of money market papers and debt securities with an initial maturity of up to two years, which led to an overestimation by ½ percentage point in April. In addition, the ECB collects precise statistical data with the intention of publishing a completely revised M3 time series toward the end of 2001.

May 31/ June 1 The *Oesterreichische Nationalbank* (OeNB) holds its 29th Economics Conference on "The Single Financial Market – Two Years into EMU" in Vienna. In his opening speech, Governor Klaus Liebscher highlights the positive effects of monetary union on the development of the European financial system and briefly reviews structural changes in the capital markets, the banking system and

financial supervision. Numerous high-profile personalities and experts from national central banks, financial institutions and universities – among them Wim Duisenberg, president of the ECB, Ernst Welteke, governor of the Deutsche Bundesbank, and Sir Edward George, governor of the Bank of England, take part in the discussions.

June 2001

4 At their meeting in Luxembourg, the *Eurogroup* members see the current economic situation with confident realism. Even though euro area growth is slower than expected (with the sustained cyclical downturn in the U.S.A. and the development of oil prices dampening growth in the short term), the euro area's growth potential remains high. Some Member States will cut taxes to support economic growth; public spending, however, must be contained within reasonable limits.

In view of the *euro cash changeover,* the members of the Eurogroup pass a joint declaration highlighting, *inter alia,* the importance of dual pricing.

Furthermore, they discuss the international role of the euro.

5 The *Ecofin Council* arrives at a positive assessment of the draft report on the 2001 Broad Economic Guidelines submitted to the European Council by the Council of Economic and Finance Ministers and by the Economic Policy Committee.

Without exception, the partners in the nonmember countries have signaled their willingness to cooperate in harmonizing the taxation of savings and investment income; in a next step, the European Commission will therefore submit an amended version of the directive proposal on the taxation of savings income. However, the Council postpones the decision on whether to grant the Commission a negotiation mandate. Furthermore, a High-Level Working Party on Taxation is established which is to assure the coordination of work and of parallel progress on the elements of the tax package (including the taxation of savings income).

7 In a referendum, the *people of Ireland* reject the Treaty of Nice with a majority of 54% of the votes cast. The turnout of the referendum is 34.7%.

15 At its special meeting during the European Council in Göteborg, Sweden, the *Ecofin Council* adopts the Broad Economic Guidelines for 2001.

Sveriges Riksbank, the National Bank of Sweden, intervenes in the currency market with a view to strengthening the Swedish krona, stating that any further devaluation of the krona would increase the risk of inflation exceeding the bank's inflation target of 2%.

15/16 Discussions at the Göteborg *European Council* focus on enlargement, concluding that the enlargement process is irreversible and that the envisaged road map should make it possible to "complete negotiations by the end of 2002 for those candidate countries that

are ready." The objective is that these countries "should participate in the European Parliament elections of 2004 as members."

July 2001

1 *Belgium* takes over the rotating *Presidency of the EU Council* from Sweden for the second half of 2001. Thus it stands to play a crucial role in finalizing the preparations for the introduction of euro cash and in advancing the EU's enlargement negotiations. The Belgian EU Presidency program identifies as key priorities the consolidation of the European social model and the strengthening of European collaboration on employment policies and old age provision; furthermore, the Laeken European Council scheduled for December 2001 shall bring a deepening of the debate on the future development of the European Union.

6 *Sveriges Riksbank* decides to raise the repo rate that the central bank uses to signal its monetary policy stance by 0.25 percentage point to 4.25%.

9 The *Eurogroup* continues to be realistically optimistic about economic developments in the euro area, expecting real GDP growth of 2.0% to 2.5% for 2001, and an expansion markedly above that range for 2002.

The Eurogroup ministers remain resolved to proceed along the path of fiscal consolidation, i. e. to keep targeting budgetary positions that are close to balance or in surplus. Furthermore, they support the core messages presented by ECB President Duisenberg: The inflation outlook is favorable, the Governing Council of the ECB is acting in accordance with its price stability mandate, and wage moderation continues to be a necessity.

The Eurogroup ministers identify common terms of reference in pushing for structural reform. They agree to review regularly progress made in reforming tax and benefit systems. Moreover, they underline that further work is necessary to develop comparable indicators to benchmark national policies and to improve data availability.

10 The members of the *Ecofin Council* widely support the priorities defined by the Belgian EU Presidency in the Ecofin's sphere of action, particularly the objectives to ensure a smooth introduction of euro cash, intensify economic policy coordination in the field of structural reform to strengthen the growth potential, accelerate efforts to carry through the tax package and advance the integration of financial markets. By contrast, a proposal launched earlier by Belgium, namely to introduce a direct source of funding (EU tax), does not meet with common approval. Other issues to be addressed by the Belgian EU Presidency, as raised in Ecofin discussions, are the financial and budgetary implications of EU enlargement and the external representation of the euro area.

An updated Code of Conduct on the content and format of the stability and convergence programs is approved without discussion.
In the field of tax policy, the ministers discuss, above all, the issue of harmonization/coordination versus tax competition.
Finally, the ministers approve the timetable for the implementation of the tax package. The relevant directives are to be adopted and the planned agreements with non-EU countries are to be reached by December 2002 at the latest.

23 The *Ifo business index,* a major business sentiment index, drops for the fifth consecutive time for West Germany, reaching the lowest level since August 1996.

25 The *European Commission* presents a White Paper on European Governance. To summarize, the Commission calls for greater transparency in EU decision-making processes and a more active involvement in shaping policy of regional and local agents and social partners. The Commission identifies the Council of Ministers as the institution with the highest need for reform. Rather than spelling out detailed rules for implementation, the Council of Ministers should more often adopt framework directives. To speed up the legislative process, the European Council and the European Parliament should attempt to adopt proposals in one rather than two readings. Furthermore, the General Affairs Council should refocus its activity on coordinating all aspects of EU policy. The Commission for its part seeks to play a more independent role in the future.

August 2001

2 The *Bank of England* lowers its key interest rate by 0.25 basis points to 5.0%. As reasons for the cut the Bank cites the continued economic slowdown and the strength of the pound sterling, which are a drag on the export sector.

30 The *Governing Council of the ECB* lowers the minimum bid rate for the Eurosystem's *main refinancing operations* by 0.25 percentage point to 4.25%. The first transactions to be affected by this move are the operations due for settlement on September 5, 2001. The *marginal lending rate* and the *rate for the deposit facility* are reduced by 0.25 percentage point to 5.25% and to 3.25%, respectively, with effect from August 31, 2001. The main reason for the interest rate cut is the easing of inflationary pressures amid the slowing of economic activity.
Danmarks Nationalbank, the National Bank of Denmark, reduces its key interest rate by 0.25 percentage point to 4.25%.
The ECB unveils the new euro banknotes, to be issued from January 1, 2002, to the public.

Economic Outlook for Austria from 2001 to 2003 (Spring 2001)

Gerhard Fenz,
Martin Schneider,
Martin Spitzer

1 Summary

With real GDP growth at 3.2% in 2000, the Austrian economy kept up the robust pace of expansion registered since 1998. Looking ahead, however, a marked deceleration of growth is in store for the years 2001 to 2003. Real GDP is likely to grow by just 2.3% in 2001 and 2.1% in 2002 and should rebound slightly to 2.5% in 2003. With global economic conditions having since weakened significantly, this year's OeNB spring forecast for 2001 and 2002 is approximately half a percentage point lower than the fall 2000 forecast but still favorable in a long-term perspective. The cut-off date for data underlying this forecast of economic developments in Austria, compiled for the Eurosystem's latest projections, was May 17, 2001. Among other things, the forecast is based on the assumption that output growth in the euro area will range between 2.2% and 2.8%. More recent data suggesting an even stronger growth setback in Germany could not be taken into consideration in this forecast.

Although economic activity was, on average, buoyant in Austria in 2000, there were some early indications of a slowdown. While in the first two quarters of 2000, real GDP grew by 4.1%, the rate fell to 2.3% and 2.6% in the third and fourth quarters, respectively. This economic turnaround was mainly brought on by insecurities about external developments – such as the surge in energy prices and incipient signs of an economic setback in the U.S.A. – and measures to reduce the budget deficit. Fortunately, the blow to business confidence dealt by external economic conditions in the second half of 2000 has so far hardly dented export performance; Austrian exports continue to expand at a high pace.

Economic developments in the years ahead will, however, be strongly influenced by the lower growth of domestic demand. The contribution of domestic demand to real GDP growth is expected to drop from 2.7 percentage points in 2000 to 1.8 points in 2001, 1.9 points in 2002 and 2.2 points in 2003. This setback can be attributed mainly to the slackening of both private consumption and – more strongly than expected in the fall forecast – business investment.

Disposable household incomes will be dampened by the fiscal measures taken to achieve a balanced budget in 2002. Despite the imputed reduction of the saving rate of households, private consumption will grow at a markedly weaker rate than in recent years. Not until 2003 will disposable incomes rebound more strongly, thus contributing to a consumption-led real GDP growth spurt toward the end of the forecast horizon.

Business investment is proving to be the more stable component of domestic demand because export demand has continued to be strong. While the year 2001 brought a marked decline in investment growth, this reduction can be attributed to the fact that in 2000 businesses rushed to beat the abolishment of the investment allowance effective from year-end. For the years ahead, the forecast expects investment demand to be revived by a more favorable economic climate: On the one hand rising household incomes and improving export perspectives hold the promise of increased capacity utilization and thus improved profitability of investments, on the

Table 1

OeNB Spring 2001 Forecast for Austria – Key Results

	2000	2001	2002	2003
	Real annual change in %			
Economic activity				
Gross domestic product (GDP)	+3.2	+2.3	+2.1	+2.5
Imports of goods and services	+9.2	+6.5	+5.7	+6.5
Exports of goods and services	+9.8	+7.2	+6.2	+6.7
Private consumption	+2.7	+1.8	+1.8	+2.3
Government consumption	+2.3	+1.7	+1.3	+1.5
Gross fixed capital formation	+2.9	+2.3	+2.6	+2.7
	% of GDP at current prices			
Current account balance	−2.8	−2.6	−2.5	−2.4
	GDP percentage points			
Contribution to real GDP				
Domestic demand (excl. changes in inventories)	+2.7	+1.8	+1.9	+2.2
Net exports	+0.4	+0.4	+0.3	+0.2
Changes in inventories	+0.1	+0.1	−0.1	+0.1
	Annual change in %			
Prices				
Harmonized Index of Consumer Prices	+2.0	+2.0	+1.2	+1.1
Private consumption expenditure (PCE) deflator	+1.8	+1.8	+1.4	+1.2
Unit labor costs (whole economy)	−0.2	+1.1	+0.9	+0.7
Compensation per employee (at current prices)	+2.2	+2.8	+2.6	+2.5
Productivity (whole economy)	+2.3	+1.6	+1.6	+1.8
Compensation per employee (at 1995 prices)	+0.3	+1.0	+1.2	+1.3
Import prices	+5.0	+2.4	+1.5	+1.3
Export prices	+3.3	+2.7	+1.7	+1.4
Terms of trade	−1.7	+0.3	+0.1	+0.1
	%			
Labor market				
Unemployment rate (Eurostat definition)	3.7	3.6	3.5	3.4
	Annual change in %			
Employment rate	+0.9	+0.6	+0.5	+0.6
	% of GDP at current prices			
Budget				
Budget balance	−1.5	−0.6	+0.0	+0.0

Source: OeNB.

other hand the self-financing capacity of businesses is slated to improve as wage settlements should continue to remain moderate.

The contribution of external demand to growth will be positive over the entire forecast horizon, above all because the price competitiveness of Austrian exports picked up perceptibly in 2000, from which businesses will continue to benefit in 2001 and, if to a more moderate extent, in 2002. The contribution of net exports to real GDP growth is expected to total 0.4 percentage point in 2001 – unchanged from 2000 – and to drop to 0.2 percentage point by 2003.

The situation on the labor market is anticipated to keep improving over the entire forecast horizon. The unemployment rate (Eurostat definition) should sink from 3.7% in 2000 to 3.4% in 2003.

The upward trend in consumer prices presumably peaked in the first part of 2001, with price growth as measured by the Harmonized Index of Consumer Prices (HICP) having climbed to an annual high of 2.9% in May

2001, while the CPI, the national reading of inflation, reached 3.4%. From June onward, price growth is expected to ease. The HICP growth rate should flatten perceptibly until the end of 2001 and eventually average 2.0% for the year as a whole. In 2002, it should drop further to 1.2%, which is just barely above the pre-oil price shock level. The year 2003 is unlikely to see this steep decline continue but much rather a smaller drop of HICP inflation to 1.1%.

Even though the spring 2001 forecast is more pessimistic than the fall 2000 forecast, the OeNB still believes that a balanced budget is within reach in the year 2002. The deficit is expected to come to 0.6% of GDP in 2001. The projected economic developments appear to allow for balancing the budget in both 2002 and 2003.

2 Conditioning Assumptions

The OeNB compiled this forecast in cooperation with the European Central Bank (ECB) and the other national central banks of the euro area. To ensure the consistency of the individual forecasts, they are all conditioned on the same underlying assumptions about the global economic developments in the years ahead. Compared with the fall 2000 forecast, these assumptions have been revised downward considerably; in other words, Austrian export markets are expected to be growing at a slower rate.

The assumptions regarding Austria's budget policy are oriented on the budgetary targets given in the latest stability program.

Table 2

Assumptions on Global Economic Developments

(Non euro-area countries)

	2000[1])	2001	2002	2003
	Real annual change in %			
Real GDP growth				
World economy	+ 4.8	+ 3.1	+ 3.6	+ 4.1
U.S.A.	+ 5.0	+ 1.6	+ 2.5	+ 3.4
Japan	+ 1.7	+ 0.9	+ 1.6	+ 2.0
United Kingdom	+ 3.0	+ 2.3	+ 2.3	+ 2.7
Transition countries	+ 5.8	+ 3.9	+ 3.7	+ 3.8
EU accession countries	+ 3.8	+ 3.6	+ 3.8	+ 4.1
Asia excluding Japan	+ 6.9	+ 5.2	+ 6.1	+ 6.5
External trade				
Imports of goods and services				
World economy	+12.5	+ 6.0	+ 6.0	+ 7.4
Non-euro area countries	+13.2	+ 5.5	+ 5.7	+ 7.8
Real growth of import demand on Austria's export markets	+11.0	+ 6.6	+ 6.2	+ 6.8
Rise in competitors' prices on Austria's export markets	+10.0	+ 1.1	+ 1.3	+ 1.2
Rise in international competitors' prices on the Austrian market	+ 7.3	+ 1.5	+ 1.3	+ 1.2
Prices				
Oil price (in U.S. dollar)	28.3	26.5	24.2	22.4
Three-month interest rate (in %)	4.4	4.67	4.65	4.65
Long-term interest rate (in %)	5.55	5.13	5.2	5.24
EUR/USD exchange rate	0.923	0.906	0.9	0.9
Nominal effective exchange rate (index)	85.68	88.18	88.03	88.03

Source: OeNB, ECB.
[1]) *Actual figures.*

2.1 Global Economic Developments

The world economic outlook has deteriorated sharply since the fall 2000 forecast was compiled. While the world economy expanded by 4.8% in 2000, annual growth is expected to decline to 3.1% in 2001 in the wake of an economic setback in the United States. Looking ahead, world economic growth is expected to revive to 3.6% in 2002 and to 4.1% in 2003. World trade expanded at a rate of 12.5% in 2000, the highest rate in the past decade (see table 2). Given the weakening of the global economic conditions, this rate is likely to drop to 6.0% in both 2001 and 2002 but should subsequently rebound to 7.4% in 2003. The slackening of growth notwithstanding, the assumptions for world economic growth continue to be above the long-term average. As the exchange rate of the euro remains low compared with its initial value, export prospects are very favorable for the euro area. While falling short of the record value of 11.0% achieved in 2000, export markets should still grow by 6.6% in 2001.

Economic developments in the United States constitute a significant forecast risk. Following a robust year-on-year expansion of 5¼% in the first half of 2000, growth decelerated to 1% in the fourth quarter of 2000 and to 1.3% in the first quarter of 2001, reflecting rising energy prices, the appreciation of the U.S. dollar, the correction of irrationally high prices at technology stock exchanges, sinking consumer confidence and sharp setbacks in the manufacturing industry. The biggest source of risk is in fact consumer confidence. A slump in spending on private consumption continues to be feasible in the face of negative saving rates combined with possible negative wealth effects from the stock market downturn. The high current account deficit (4.4% of GDP in 2000), at times when the general government is running a surplus, mirrors the borrowing needs of the private sector. Should external capital inflows dry up, private demand might suffer severely. There is of course a chance that growth will be shored up by expansionary fiscal and monetary policies. The U.S. Congress has, indeed, agreed on tax cuts totaling USD 1,035 billion over the next 11 years, and the Federal Reserve has lowered interest rates by 2.5 percentage points since the beginning of the year. At any rate, the U.S. growth scenario on which the spring 2001 forecast is conditioned was revised downward by almost 2 percentage points compared with the fall 2000 forecast, to 1.6% for 2001, 2.5% for 2002 and to 3.4% for 2003.

The Japanese economy continues to be in dire straits. In line with the bleaker global economic outlook, the GDP growth forecast for Japan has been revised downward to 0.9%, 1.6% and 2.0%, respectively, for the 2001 to 2003 period. In 2000, real output growth had rebounded to 1.7%. However, as early as August 2000 industrial output growth weakened anew, only to drop sharply in January 2001. The odds are that Japan will be particularly hard hit by the cloudier global economic outlook; notably the worldwide slackening of demand in the electronics industry constitutes a heightened risk for the Japanese economy. What is more, Japan has hardly any leeway for jumpstarting the economy with economic measures. A budget deficit of 8.2% of GDP and a gross general government debt ratio of 130% rule out virtually any expansionary fiscal policy measure, while

monetary policy cannot be relied upon to generate effective monetary policy impulses because interest rates are already extremely low. Further cause for concern are the weak credit demand and the unsolved problems in the financial sector.

The economies of the EU accession countries, by contrast, reported robust output growth in 2000 (+3.8%). Notwithstanding the worsened international economic conditions, the year 2001 should see growth on the order of 3.6%. The risk of this scenario lies in the high current account deficits that some countries have. As is the case in Poland, high capital imports can lead to an appreciation of the real exchange rate and cause the international competitiveness of companies to deteriorate. Expectations for stable domestic demand will increase this risk. Russia stands out with particularly high GDP growth in 2000 (+8%), benefiting from high oil prices and a favorable development of the exchange rate, which caused the current account surplus to surge. The flip side of Russia's high export ratio is that this constitutes a latent risk in case of abrupt price and exchange rate changes. Given stable exchange rates and crude oil prices, Russia may enjoy favorable economic growth also in the years ahead.

The output of the Asian economies (excluding Japan) grew by 6.9% in real terms in 2000. Except for Indonesia, the economies struck by the crisis of 1998 appear to have rebounded. Those Asian countries that are export-oriented will be harder hit by the grimmer world economic outlook. Three fourths of the output of this region are, however, produced by the two countries with the highest population, China and India, which are both largely independent from external developments by contrast to the smaller ASEAN countries. Notwithstanding the expected growth setback in some of the smaller states, stability will prevail because of the dominating influence of China and India. We assume that the Asian economies will post 5.2% GDP growth in 2001, 6.1% in 2002 and 6.5% in 2003.

Last but not least, growth forecasts for the euro area were also in for a downward revision. While preliminary estimates put real GDP growth in 2000 at 3.4%, the Eurosystem's latest projections are in the range of 2.2% to 2.8% for the year 2001. 2002 and 2003 should see a slight recovery. In the euro area, domestic demand is clearly the mainstay of economic activity. Germany, Austria's major trading partner, faces much slower growth in 2001. France and Italy, by contrast, should beat the euro area average. Net exports, which contributed 1 percentage point to real GDP growth in 2000, are unlikely to add to growth in 2001. Even the expansion of domestic demand should decrease from a year earlier. A similar development appears to be in store for Italy, whereas in France domestic demand should remain stable. In the United Kingdom, finally, the growth setback should not be too big.

2.2 Technical Assumption: Stable Short-Term Interest Rates and Exchange Rates and Sinking Oil Prices

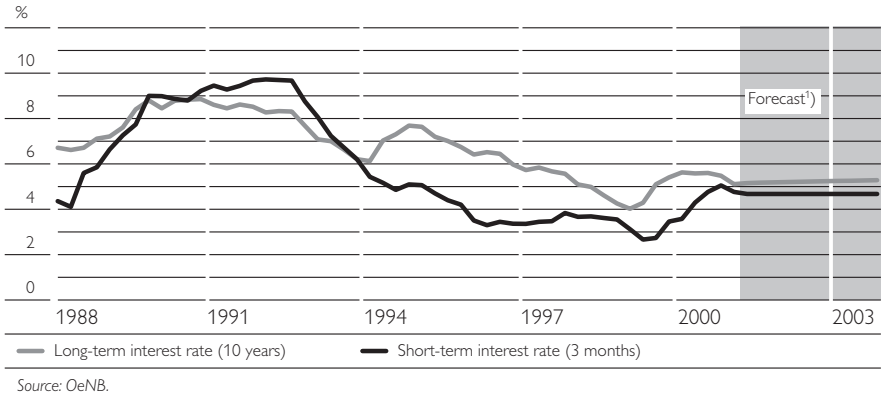
With a view to forecasting economic developments under unchanged monetary policy conditions, a technical assumption is made that both short-term interest rates and exchange rates will remain constant over the entire

forecast horizon. Developments of short-term interest rates over the forecast horizon are gauged by three-month interest rates in the euro area (three-month EURIBOR: 4.65%). On this basis, and taking into consideration actual EURIBOR rates from January to May, the annual average for 2001 is 4.76% (see table 2). Long-term interest rates are oriented on market expectations for long-term government bonds with a maturity of 10 years; they are assumed to stand at 5.13% in 2001, 5.20% in 2002 and 5.24% in 2003. Compared with the fall 2000 forecast, this means a lowering of the interest rate level by 25 to 50 basis points. The assumption adopted for the exchange rate of the euro against the U.S. dollar, finally, is a rate of USD/EUR 0.9. Factoring in actual exchange rate developments to date averages up the rate for 2000 to USD/EUR 0.906, which is slightly below the assumption used in the latest forecast. The nominal effective exchange rate underlying the forecast is somewhat above the figure for 2000 as it mirrors the slight appreciation registered in the initial months of 2001 (see chart 2).

Price growth accelerated in 2000 in most countries, Japan being among the few exceptions. Given the weakening of global activity, the forecast period is expected to see inflation easing. Among other things, the anticipated decrease of energy prices should contribute to this development. Crude oil prices continue to display high volatility. From a price range of USD 30 to USD 35 per barrel in November 2000, prices sank to just above USD 23 USD per barrel in December, only to recover to USD 27 per barrel in March 2001. This forecast of energy prices is based on the development of forward rates for crude oil. At USD 26.5 (2001), USD 24.2 (2002) and USD 22.4 (2003) assumed per barrel, the spring 2001 forecast is based on somewhat lower prices than the fall 2000 forecast.

Chart 1

Long- and Short-Term Interest Rates in Austria



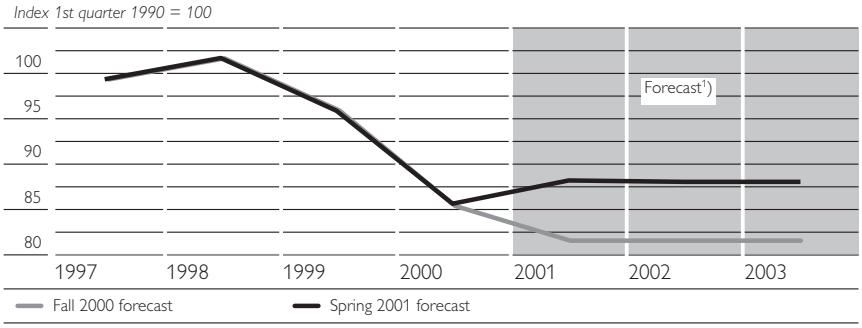
Source: OeNB.

[1]) Technical assumption concerning the development of short- and long-term interest rates during the forecast period.

High crude oil prices combined with exchange rate developments drove up prices 10.0% on Austria's export markets in 2000. With domestic export prices increasing more moderately, Austria managed to improve its price competitiveness in export markets.

Chart 2

Nominal Effective Exchange Rate of the Euro



Source: OeNB.
1) Technical assumption concerning the development of the nominal effective exchange rate of the euro during the forecast period.

3 External Sector

At 9.8% real growth in exports of goods and services and 9.2% in imports, Austria's external trade performance was exceptionally impressive in 2000. Consequently, the current account deficit contracted by 0.2 percentage point to 2.8% of GDP. Both on the export and the import side, the expansion was led by trade with non-euro area countries. A number of factors coincided in spurring export growth. First, Austrian exporters benefited from the low exchange rate of the euro. Second, demand (+11% in real terms) from Austria's export markets was buoyed by healthy global economic conditions, and third, the price competitiveness of Austrian export products improved. While the export deflator, which is typically heavily dependent on the cost pattern of Austria's major trading partners, grew by 3.3%, the prices of competitors in export markets jumped by 10%.

Austrian exports tend to react to changes in relative competition prices with a certain time lag. This would suggest that the gains in price competitiveness registered in 2000 largely on account of sinking unit labor costs should continue to contribute to export growth also in 2001. Counteracting that, the year 2001 has seen a slight deterioration in price competitiveness that is set to taper off over the forecast horizon. On

Chart 3

Exports, Imports and Investment in Austria 1989–2003

Source: OeNB, Statistics Austria.
1) 2001–2003: Forecast.

balance, the benefits from the price competitiveness gains made in 2000 will prevail, enabling Austrian exports to win market share in 2001.

Given the softening of demand from Austrian export markets, at 7.2% in 2001 real growth in exports is expected to come in below the result of 2000. In continuation of this downtrend, at +6.2%, growth in 2002 should fall short of the year-earlier rate, before edging back up to 6.7% in 2003 amid improving global economic conditions. At any rate, the continued dynamic export performance will be one of the mainstays of business investment in Austria. In recent years developments in real exports and imports have become increasingly synchronized (see chart 3). Likely causes of this convergence are the high share of imported intermediate goods in exports and international transit trade. With domestic demand staying moderate, import growth is expected to trail export growth. Toward the end of the forecast horizon, as the economic climate brightens, this gap is expected to narrow. In the bottom line, the more dynamic performance of exports is also going to add to an improvement of the goods and services balance. While having accounted for 1 percentage point of the current account deficit in 2000, the contribution of the export overhang should sink to 0.7 percentage point in 2001, 0.6 percentage point in 2002 and 0.5 percentage point in 2003.

Table 3

Foreign Trade Growth and Export and Import Prices

	2000	2001	2002	2003
	Annual change in %			
Exports				
Real growth of Austrian export markets	+11.1	+6.6	+6.2	+6.8
Euro area countries	+10.8	+6.9	+6.3	+6.5
Non-euro area countries	+11.5	+6.2	+6.1	+7.3
Competitors' prices	+10.1	+1.0	+1.3	+1.2
Euro area countries	+ 4.8	+1.8	+1.6	+1.6
Non-euro area countries	+15.2	+0.2	+1.1	+0.8
Export deflator	+ 3.3	+2.7	+1.7	+1.4
Real growth of Austrian exports of goods and services	+ 9.8	+7.2	+6.2	+6.7
Imports				
Competitors' prices	+ 7.3	+1.5	+1.3	+1.2
Euro area countries	+ 3.7	+1.6	+1.3	+1.4
Non-euro area countries	+14.8	+1.3	+1.3	+0.9
Import deflator	+ 5.0	+2.4	+1.5	+1.3
Real growth of Austrian imports of goods and services	+ 9.2	+6.5	+5.7	+6.5

Source: OeNB, ECB.

The contribution of the balance on the income account is going to be a flat 1.1 percentage points over the forecast horizon while that of the transfer account will vary between 0.8 and 0.9 percentage point. Overall, the current account deficit should gradually shrink from 2.8% of GDP in 2000 to 2.6% (2001), 2.5% (2002) and 2.4% (2003) given the improvement of the balance on goods and services (see table 4). Last but not least this will also be a result of the projected improvement of the terms of trade, which deteriorated sharply in 2000 on the back of rising energy prices and the low exchange rate of the euro.

Table 4

Austrian Exports and Imports According to the Balance of Payments

	2000	2001	2002	2003
	EUR billion			
Exports				
Intra-euro area exports of goods and services	62	67.1	71.6	76.5
	10.8%[1])	8.2%[1])	6.8%[1])	(6.8%)[1])
Extra-euro area exports of goods and services	39.3	43	46.6	50.6
	15.7%[1])	9.5%[1])	8.5%[1])	(8.5%)[1])
Imports				
Intra-euro area imports of goods and services	66	70.4	75.3	80.6
	9.3%[1])	6.6%	7.0%[1])	(7.1%)[1])
Extra-euro area imports of goods and services	37.3	41.3	44.3	47.6
	19.4%[1])	10.6%[1])	7.4%[1])	(7.3%)[1])
Current account				
Goods and services	−2.0	−1.6	−1.3	−1.0
Income	−2.4	−2.3	−2.5	−2.5
Transfers	−1.5	−1.6	−1.7	−1.9
Current account balance	−5.9	−5.6	−5.4	−5.4
Current account in % of GDP	−2.8	−2.6	−2.5	−2.4

Source: OeNB, ECB.
[1]) Growth rates in %.

4 Prices, Wages and Costs

4.1 Prices

Turning to the inflation outlook over the forecast horizon, price growth is expected to decelerate continually until the second quarter of 2002 and to remain at a low level until the end of 2003. HICP inflation is projected to average 2.0% in 2001, 1.2% in 2002 and 1.1% in 2003.

The first half of 2001 saw a sudden inflationary spurt from 1.8% in February to 2.9% in May 2001. The peak observed in May resulted from a confluence of fiscal measures taking effect on June 1, 2000, such as increases in the tobacco tax, the electricity surcharge and a number of other fees, and in the first few months of 2001 (price of highway toll sticker increased, outpatient copayments were introduced). In the case of industrial goods and services, inflation was sparked by a surge in import and export prices in 2000. From mid-2001 energy price inflation should subside visibly. Furthermore, the inflationary effect of the fiscal measures taken in 2000 will have dropped out of the calculation by the end of 2001. Consequently, HICP inflation should decline continually until mid-2002. As the end of the forecast period approaches, rising household incomes and demand will newly cause inflation to inch up quarter by quarter.

Last but not least, the BSE crisis also put some upward pressure on prices in general in recent months. In the future, the BSE-related contribution to inflation should, however, be small.

Compared with the fall 2000 forecast, the erstwhile oil price surge was assumed to have a more lasting effect. Consequently, the HICP forecast has been revised upward by 0.4% to 2.0% for 2001. Looking further ahead to 2002, the new assumptions regarding oil price developments prompted a downward revision of the inflation outlook from 1.4% to 1.2%.

4.2 Wages

The outlook for wages over the forecast horizon is conditioned on a continuation of wage restraint in the Austrian export industries with a view to staying internationally competitive. The 2.8% wage increase projected for 2001 is deemed to be moderate considering the favorable economic conditions prevailing in 2000, which have, of course, influenced wage settlements. Due to considerably lower inflation rates and an easing of productivity growth, wages should increase by 2.6% in 2002 and by 2.5% 2003.

4.3 Economic Deflators

A comparison of price deflators for economic aggregates confirms a convergence of developments: price growth is decelerating from 2002. The private consumption expenditure (PCE) deflator mirrors above all the rise in oil prices. Since import prices rose less sharply than anticipated, the OeNB revised downward its fall 2000 forecast of changes in the PCE deflator by 0.4 percentage point to 1.8% for 2001. In both 2002 and 2003 the upward pressure on prices exerted by import prices is expected to ease. A potential pass-through of oil price increases harbors the risk of moderate upward pressures on export and capital investment goods, as a result of which the GDP deflator is expected to rise to 1.6% in 2001. Private consumption should exert but moderate pressure on prices in 2003.

Table 5

Comparison of Selected Deflators

	2000[1])	2001	2002	2003
	Annual change in %			
Private consumption expenditure (PCE) deflator	+1.8	+1.8	+1.4	+1.2
GDP deflator	+1.2	+1.6	+1.5	+1.2
Investment deflator	+1.5	+1.6	+1.7	+1.2
Import deflator	+5.0	+2.4	+1.5	+1.3
Export deflator	+3.3	+2.7	+1.7	+1.4

Quelle: Statistics Austria, OeNB spring 2001 forecast.
[1]) Actual figures.

5 Domestic Economy

5.1 Overview

Economic growth is likely to decelerate perceptibly in Austria from 2001 to 2003. Compared with lively economic activity generating 3.2% real GDP growth in 2000, the OeNB expects growth rates to weaken to 2.3% in 2001 and 2.1% in 2002. The OeNB is thus much more pessimistic about the economic outlook than in its fall 2000 forecast, when it anticipated growth rates of 2.8% (2001) and 2.7% (2002). The spring forecast for 2003 burns down to a rebounding of output growth to 2.5%.

5.2 Consumption

Private consumption expenditure up to 2003 will be characterized by bigger wage increments, lower job growth and shrinking disposable incomes as a result of fiscal policy measures.

The unexpectedly high inflation rate left real wages virtually unchanged in 2000; measured by the CPI, employees even experienced a real wage loss of 0.2%. This prompted higher wage settlements for 2001 and partly also for 2002 (e. g. in the construction industry).

Table 6

Determinants of the Saving Rate in Austria

(at current prices)

	2000	2001	2002	2003
	Annual change in %			
Compensation of employees	+3.5	+ 3.5	+3.1	+3.3
Net mixed income of the selfemployed and investment income	+7.1	+ 4.7	+3.5	+4.9
Net primary income	+4.2	+ 3.7	+3.2	+3.5
Direct taxes excluding transfers	+3.2	+11.0	+3.6	+1.2
Net disposable income	+4.3	+ 3.3	+3.2	+3.8
PCE deflator	+1.8	+ 1.8	+1.3	+1.2
Net disposable income (real)	+2.4	+ 1.4	+1.8	+2.6
Private consumption (real)	+2.7	+ 1.8	+1.8	+2.3
	% of disposable net income			
Saving rate	7.5	7.2	7.1	7.4

Source: OeNB, Statistics Austria.

The OeNB expects the nominal personal income of wage earners to grow 3.5% in 2001, unchanged from 2000, as higher wage increments should offset lower job growth. With employment growth anticipated to be virtually stagnant and with wage increases expected to be smaller in the years ahead, the growth of nominal personal income is, however, likely to slow down in 2002 and 2003. With net mixed income of the selfemployed and investment income rising more moderately than in 2000 and squeezed by austerity budget measures, households' real disposable incomes will slow from 2.4% growth in 2000 to 1.4% growth in 2001. The austerity budgets stand to reduce households' real disposable income by approximately EUR 1 billion in 2001 and by EUR 360 million in 2002. As the base effect of the austerity measures drops out of the calculation and as the economic outlook for 2003 brightens, real disposable incomes should pick up to 1.8% growth in 2002 and to 2.6% growth in 2003.

Real consumption should grow by 1.8% in both 2001 and 2002 (down from 2.7% in 2000) but bounce back to 2.3% growth in 2003. An ever stronger setback is being cushioned by the decline of the saving rate. In 1995, the saving rate was close to 12%; it has since fallen to a historic low of 7.5% in 2000 and will keep dropping to 7.1% until the end of 2002. Not until 2003 will the saving rate newly inch up to 7.4%, thanks to the close relationship between the propensity to save and income growth. In 2001 and 2002 the disposition of consumers to smooth their consumption behavior should take some sting out of the austerity measures as households temporarily dip into their savings more strongly. Uncertainties surrounding this assumption do, however, increase the forecast risk.

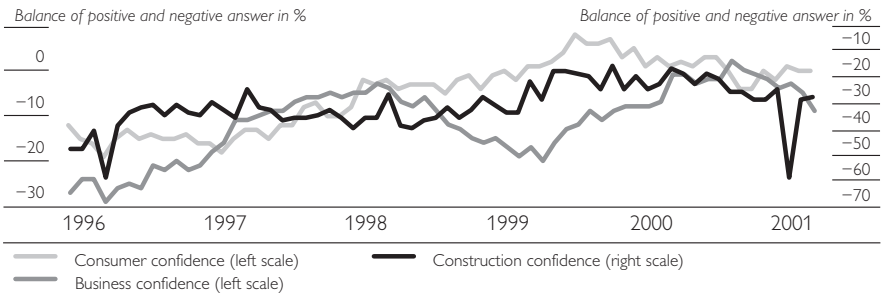
With the general government also retrenching as a result of the budget austerity measures, government consumption stands to grow by 1.7% in 2001, 1.3% in 2002 and 1.5% in 2003.

5.3 Investment

Measured in terms of seasonally adjusted quarterly growth, the investment cycle peaked in the second quarter 2000 at +4.9%. Mirroring general economic developments, business investment has been expanding at a slower rate ever since. Following +2.9% in 2000, the OeNB projects real gross fixed capital formation to grow 2.3% in 2001, 2.6% in 2002 and 2.7% in 2003.

Chart 4

Economic Confidence Indicators for Austria 1996–2001



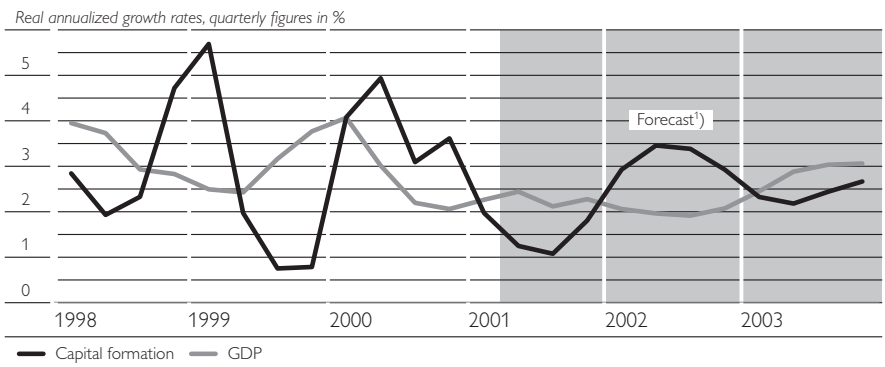
Source: European Commission.

The slight increase in business investment in the fourth quarter of 2000 was triggered by the abolition of the investment allowance as from the beginning of 2001. Business investment was carried by spending in plant and equipment, whereas construction investment growth continued to be subdued – a pattern that should aptly describe the entire forecast period.

WIFO's Investment Survey of November 2000 mirrors the bleaker expectations businesses have for 2001. The main reason for the downward trend in investment growth is weak domestic demand, which is itself a result of real wage losses experienced in 2000. The weakness of retail sales in the second half of 2000 confirms this assessment. The less rosy general perception of economic conditions is also evident from consumer and business sentiment indicators (see chart 4). The balance of positive and

Chart 5

Capital Formation and GDP in Austria



Source: OeNB.
[1]) 2001–2003: Forecast.

negative responses by businesses has been deteriorating steadily from a high of +12 in September 2000 to +5 in March 2001. The same holds true for the much more volatile consumer confidence series.

The investment cycle should bottom out toward the end of 2001. With the effects of budget consolidation dissipating and the global economy likely to be rebounding, business investment growth rates should increase again in the second half of 2002. Over the entire forecast horizon spending in plant and equipment is leading the way, while residential construction spending is unlikely to gain stronger momentum before 2003. The public sector is bound to be particularly hard hit by the austerity measures in 2002, when it will have to reduce spending by 2.8%. The economic pattern shaping up for the period until 2003 is being reinforced by procyclical changes in inventories. Profit margins, i. e. the difference between the GDP deflator at market prices (excluding indirect taxes) and unit labor cost, which developed particularly favorably in 2000, have shrunk since the end of 2000. After having expanded 0.9% in 2000, profit margins are anticipated to grow just 0.5% in 2001 and remain at this level thereafter. Higher wage increments and rising energy prices in 2000 make it harder for businesses to increase their self-financing capacity.

6 Labor Market

Despite the very favorable economic framework conditions in 2000, not a great number of people marginally attached to the labor force became economically active, so that the labor supply grew by just 0.9%. Moreover, the labor supply has been influenced by a number of measures taken to consolidate the budget. The minimum age for early retirement is being raised gradually by 1½ years, and the option of early retirement due to ill health has been abolished altogether. This prompted a rush into early retirement in 2000. Once this wave of early retirement has subsided in 2001, the pool of available workers is projected to start growing in 2002 and 2003.

The abolition of premium-free coverage by the national health plan for nonworking childless spouses constituted a real income loss for the persons affected and will cause some of them to enter the labor market. Since this measure affects above all women, their labor participation rate should rise as a result. Moreover, the introduction of tuition fees at Austrian universities should also increase the labor supply.

Demographic developments and migration, by contrast, will have just a minor impact. On balance, the working age population (people aged 15 to 65 years) will expand by a moderate 0.3% to 0.4% a year during the forecast horizon.

The effects of the introduction of child-rearing benefits are hard to gauge: While the longer entitlement periods stand to reduce the labor supply, the higher amount of earnings allowed without loss of benefits will have the opposite effect. As the child-rearing benefits have been devised as transfer payments rather than employment insurance payments (like the parental leave payments they replace), all recipients of child-rearing benefits

(at present approximately 58,000) will drop out of the labor supply statistics by 2002.

The above measures and developments are expected to increase the supply of potential wage earners by 0.4% in 2001, and by 0.3% in 2002 and 0.5% in 2003 in line with cyclical developments.

Against the background of a very low unemployment rate by EU standards and the looming economic setback, the year 2001 should see a more modest rise of payroll employment (+23,000) than 2000. Furthermore, the somewhat higher growth rate for unit labor cost will also restrain employment growth. For 2001 as a whole, employment is projected to grow by 0.6% (+26,000). Actual developments in the first quarter of 2001 (+0.7%) confirm this forecast. The following years should see similar growth rates: +0.5% (+20,000) and +0.6% (+25,000). Consequently, the unemployment rate (Eurostat definition) should sink from 3.7% in 2000 to 3.4% in 2003. In the national reading of unemployment, 5.6% are anticipated to be without a job in 2001. As wage increments are poised to be somewhat higher in the forecast period, productivity will be rather subdued by comparison with 2000: +1.6% (2001 and 2002) and +1.8% (2003).

7 Forecast Risks and Comparisons, Alternative Scenarios

7.1 Forecast Risks

The risks involved in this forecast are fairly high for a number of reasons. The main external factor shrouded in uncertainty is economic activity in the U.S.A., which is hard to gauge at present. Any slump in U.S. consumer demand, the possibility of which cannot be ruled out, would prompt a major downward revision of growth perspectives. The economic outlook for Austria's major trading partner, Germany, was likewise revised downward perceptibly several times during the past few months. Energy prices, too, continue to be subject to high volatility. A domestic risk factor is the assumption of continued wage moderation. The development of domestic demand, finally, depends a lot on the underlying development of the saving rate. On the one hand, the domestic component of GDP might shrink more strongly than anticipated should households not, as expected, dip into savings to maintain spending in the face of the budget consolidation measures. On the other hand, the rise of the saving rate projected for the end of the forecast period may not materialize should households step up their spending instead.

7.2 Comparison of Forecasts

The OeNB's forecast for real GDP in 2001 ranges between the estimates with which other economic research institutes have come up. The OeNB is rather alone in expecting the growth setback to continue into 2002 and in not reckoning with an economic revival before 2003. The cut-off date for data regarding external assumptions underlying the OeNB's forecast is May 17, 2001. The deviations from the forecasts of other institutions must also be seen against the backdrop of the potential deterioration of the global economy.

Table 7

Key Economic Indicators for Austria

	OeNB May 2001			WIFO March 2001		IHS March 2001		OECD May 2001		IWF May 2001		EU Commission April 2001	
	2001	2002	2003	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
	Annual change in %												
Real GDP	+2.3	+2.1	+2.5	+2.2	+2.1	+2.3	+2.5	+2.3	+2.5	+2.2	+2.6	+2.5	+2.6
Real private consumption	+1.8	+1.8	+2.3	+2.0	+2.0	+1.9	+2.1	+2.0	+2.3	×	×	+2.0	+2.4
Real gross fixed capital formation	+2.3	+2.6	+2.7	+2.1	+2.5	+2.4[1])	+2.4[1])	+2.2	+2.6	×	×	+2.5	+2.7
Real exports of goods and services	+7.2	+6.2	+6.7	+5.4	+4.3	+4.6	+4.9	+6.0	+6.5	×	×	+7.2	+6.8
Real imports of goods and services	+6.5	+5.7	+6.5	+4.7	+4.0	+3.2	+3.6	+5.5	+5.9	×	×	+6.1	+6.2
GDP deflator	+1.8	+1.4	+1.2	+1.6	+1.5	+1.6	+1.2	+1.5	+1.7	+1.4	+1.7	+1.3	+1.1
CPI	×	×	×	+1.7	+1.3	+1.9	+1.4	×	×	+1.7	+1.6	×	×
HICP	×	×	×	×	×	×	×	×	×	×	×	+1.6	+1.4
Unit labor cost (whole economy)	+1.1	+0.9	+0.7	+1.3	+0.5	×	×	×	×	×	×	+0.7	−0.1
	%												
Unemployment rate[2])	3.6	3.5	3.4	3.6	3.6	3.6	3.4	4.6	4.4	3.4	3.3	3.4	3.2
	% of GDP												
Current account balance	−2.6	−2.5	−2.4	−2.9	−2.9	−2.5	−2.0	−2.7	−2.4	−2.8	−2.3	−2.5	−2.5
General government deficit	−0.6	+0.0	+0.0	−0.4	+0.0	−0.7	+0.0	−0.6	+0.0	−0.7	+0.0	−0.7	+0.0

Source: OeNB spring 2001 forecast, WIFO, IHS, EU Commission, IMF, OECD.
[1]) Gross capital formation.
[2]) EU definition; OECD: as defined by the OECD.

7.3 Alternative Scenarios

To account for the major forecast risks, three alternative scenarios were calculated: The first scenario assumed higher oil prices than imputed in the baseline scenario, the second scenario a sharper global economic setback, and the third faster wage growth.

7.3.1 Higher Oil Prices

In the oil price scenario crude oil prices were assumed to stay at the levels of the first quarter of 2001, or 0.0% (2001), 8.5% (2002) or 17.4% (2003) above the assumptions on which the baseline forecast is based.

Higher oil prices imply higher trade prices for other products and a lower global trade turnover, which were calculated through simulations with the NIGEM model and used as conditioning assumptions in this variant of the forecast.

Higher energy prices unleash additional price pressures by driving up import prices, which then pass through to export prices, wages and consumer prices with a time lag. As a result, the real value of imports and exports falls. In the bottom line, output is projected to be 0.22% smaller by 2003 than in the baseline scenario.

7.3.2 Lower Global Economic Growth

This scenario is based on the assumption of a slowing of global economic activity, which in turn crimps external demand for exports to non-euro area countries. Specifically, demand is assumed to drop by a total of approximately 5% until 2003 compared with the baseline scenario. The NIESR global model simulates this by integrating negative shocks into the investment equations for the U.S.A, Japan and the United Kingdom, which

cause global trade to shrink by 5% until the fourth quarter of 2002 and to subsequently stabilize at that level in 2003. Slacker global economic growth also translates into lower price pressures on global exports and imports as well as raw material.

Given the interlocking of Austria's exports and imports, they stand to fall roughly by the same percentage. In other words, net exports would hardly drag down GDP growth over the entire forecast horizon. The strongest negative influence comes from business investment, but consumer expenditure shrinks as well. On balance, GDP is 0.2% lower by the end of 2003.

7.3.3 Higher Wages

The risk to the forecast inherent in domestic wages is captured by higher wage increments. Compared with the baseline scenario, the assumptions for gross wages are put up 1.5 percentage points for 2002. The ensuing rise in disposable incomes adds a scant 0.11% to real GDP growth in 2003. This can be ascribed to private consumption expenditure and – to a somewhat lesser extent – higher business investment, while the development of net exports has the opposite effect. These effects are, however, of a temporary nature; in the medium run they are offset by a rise in the price level and thus by a deterioration of price competitiveness.

Table 8

Key Results for Alternative Scenarios

Alternative Scenario	2001	2002	2003
	Deviation from the baseline scenario in %		
	GDP		
Higher oil prices	−0.0	−0.1	−0.2
Lower world economic growth	−0.0	−0.1	−0.2
Higher wages	+0.0	+0.0	+0.1
	HICP		
Higher oil prices	+0.0	+0.1	+0.2
Lower world economic growth	−0.0	−0.1	−0.1
Higher wages	+0.0	+0.1	+0.2

Source: OeNB Spring 2001 forecast.

8 Annex

Table 9

Demand Components (Real Prices)

at 1995 prices

	2000	2001	2002	2003	2000	2001	2002	2003
	EUR million				*Annual change in %*			
Private consumption	109,405	111,383	113,440	116,065	+2.7	+1.8	+1.8	+2.3
Government consumption	38,148	38,809	39,332	39,925	+2.3	+1.7	+1.3	+1.5
Gross fixed capital formation	45,151	46,211	47,432	48,701	+2.9	+2.3	+2.6	+2.7
Domestic demand (excl. changes in inventories)	192,704	196,403	200,204	204,691	+2.7	+1.9	+1.9	+2.2
Exports of goods and services	95,606	102,530	108,843	116,152	+9.8	+7.2	+6.2	+6.7
Imports of goods and services	94,326	100,420	106,155	113,094	+9.2	+6.5	+5.7	+6.5
Net exports	1,280	2,110	2,688	3,058	×	×	×	×
Gross domestic product	195,147	199,575	203,789	208,858	+3.2	+2.3	+2.1	+2.5

Source: OeNB spring 2001 forecast.

Table 10

Demand Components (Current Prices)

	2000	2001	2002	2003	2000	2001	2002	2003
	EUR million				*Annual change in %*			
Private consumption	116,714	120,946	124,853	129,289	+ 4.6	+ 3.6	+3.2	+3.6
Government consumption	40,687	41,934	43,132	44,647	+ 4.0	+ 3.1	+2.9	+3.5
Gross fixed capital formation	48,735	50,682	52,882	54,934	+ 4.5	+ 4.0	+4.3	+3.9
Domestic demand (excl. changes in inventories)	206,137	213,562	220,868	228,871	+ 4.4	+ 3.6	+3.4	+3.6
Exports of goods and services	100,750	110,945	119,761	129,553	+13.4	+10.1	+7.9	+8.2
Imports of goods and services	102,976	112,243	120,479	129,970	+14.6	+ 9.0	+7.3	+7.9
Net exports	− 2,226	− 1,298	− 717	− 417	×	×	×	×
Gross domestic product	205,944	214,023	221,750	229,917	+ 4.5	+ 3.9	+3.6	+3.7

Source: OeNB spring 2001 forecast.

Table 11

Demand Components (Deflators)

	2000	2001	2002	2003	2000	2001	2002	2003
	1995 = 100				*Annual change in %*			
Private consumption	106.7	108.6	110.1	111.4	+1.8	+1.8	+1.4	+1.2
Government consumption	106.7	108.1	109.7	111.8	+1.7	+1.3	+1.5	+2.0
Gross fixed capital formation	107.9	109.7	111.5	112.8	+1.5	+1.6	+1.7	+1.2
Domestic demand (excl. changes in inventories)	107.0	108.7	110.3	111.8	+1.7	+1.7	+1.5	+1.4
Exports of goods and services	105.4	108.2	110	111.5	+3.3	+2.7	+1.7	+1.4
Imports of goods and services	109.2	111.8	113.5	114.9	+5.0	+2.4	+1.5	+1.3
Terms of trade	96.5	96.8	96.9	97.1	−1.7	+0.3	+0.1	+0.1
Gross domestic product	105.5	107.2	108.8	110.1	+1.2	+1.6	+1.5	+1.2

Source: OeNB spring 2001 forecast.

Table 12

Labor Market

	2000	2001	2002	2003	2000	2001	2002	2003
	Number of employees				*Annual change in %*			
Total employment	4,045,386	4,071,018	4,090,859	4,116,330	+0.9	+0.6	+0.5	+0.6
Private sector employment	3,283,561	3,312,293	3,335,137	3,363,885	+1.3	+0.9	+0.7	+0.9
Paid employment according to the national accounts	3,279,687	3,303,237	3,322,173	3,348,526	+1.3	+0.7	+0.6	+0.8
	%							
Unemployment rate (Eurostat definition)	3.7	3.6	3.5	3.4	×	×	×	×
	1995=100							
Unit labor cost (whole economy)[1])	99.6	100.8	101.7	102.4	−0.2	+1.1	+0.9	+0.7
	1995 prices in EUR 1,000							
Labor productivity (whole economy)	48.2	49	49.8	50.7	+2.3	+1.6	+1.6	+1.8
Real compensation per employee[2])	30.5	30.8	31.1	31.5	+0.3	+1.0	+1.2	+1.3
	Current prices in EUR 1,000							
Gross compensation per employee	32.5	33.4	34.3	35.1	+2.2	+2.8	+2.6	+2.5
	Current prices in EUR million							
Total wage bill	106,632.6	110,377.0	113,822.9	117,550.4	+3.5	+3.5	+3.1	+3.3

Source: OeNB spring 2001 forecast.
[1]) Gross wages divided by GDP.
[2]) Gross wages divided by the GDP deflator.

Table 13

Current Account

	2000	2001	2002	2003	2000	2001	2002	2003
	EUR million				*% of GDP*			
Current account deficit	−5,877.0	−5,561.2	−5,436.8	−5,421.0	−2.8	−2.6	−2.5	−2.4

Source: OeNB spring 2001 forecast.

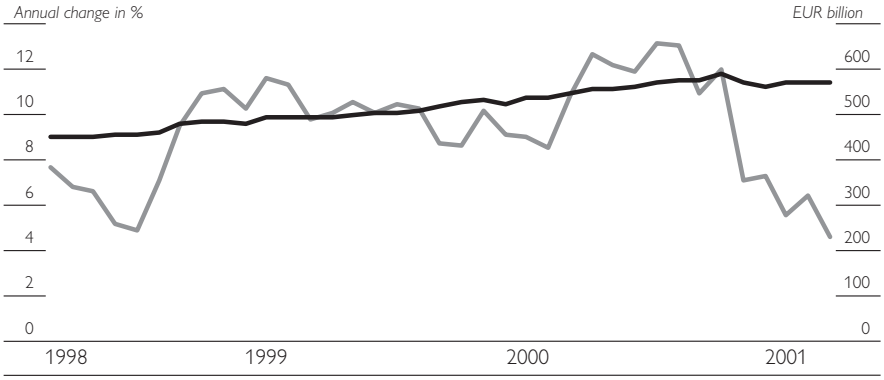
Money and Credit in the First Quarter of 2001

Ralf Dobringer[1])

Total Assets Increased Less Markedly than in 2000

In the first three months of 2001, growth in total assets of credit institutions operating in Austria slowed down compared to the same period last year, shrinking from EUR 22.49 billion or 4.3% in 2000 to EUR 9.69 billion or 1.7%. Although interest rates had been falling since the beginning of 2001, loan demand was less dynamic than in 2000. The main reason for faltering total asset growth can be found in the banks' external business – both on the assets side and the liabilities side – which advanced only half as strongly in the first three months of 2001 year on year. At the same time, deposits, especially savings deposits, picked up on last year.

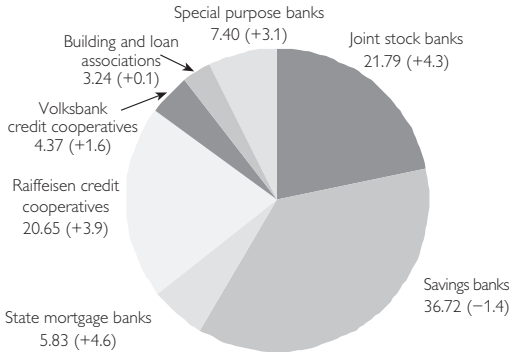
Total Assets of Domestic Banks



Source: OeNB.

Market Share of Banks Operating in Austria

% of total assets and cumulative change since the beginning of 2001 in %



Source: OeNB.

A sectoral breakdown shows that state mortgage banks (+4.6%), joint stock banks (+4.3%), Raiffeisen credit cooperatives (+3.9%) and special purpose banks (+3.1%) posted above-average balance sheet growth rates,

1 With Gudrun Mauerhofer and Walter Waschiczek.

whereas total asset growth was below average at Volksbank credit cooperatives (+1.6%), building and loan associations (+0.1%) and savings banks (–1.4%).

The five largest (independent) banks' market share measured by total assets decreased from 45.9% to 45.7% against December 2000. On March 31, 2001, four banks reported total assets exceeding EUR 30 billion, the total assets of three banks amounted to between EUR 15 billion and EUR 29 billion. Another two institutions posted total assets between EUR 10 billion and EUR 14 billion, twelve banks reported between EUR 5 billion and EUR 9 billion. The remaining 903 credit institutions reported total assets below EUR 5 billion.

Since early 2001, the number of banking offices declined by 7 to 5,472, with the number of head offices increasing by 1 to 924 and the number of branches dropping by 8.

Banking Offices

	Joint stock banks and bankers		Savings banks		State mortgage banks		Raiffeisen credit cooperatives		Volksbank credit cooperatives		Building and loan associations		Special purpose banks		Total		Head offices and branch offices total
	H	B	H	B	H	B	H	B	H	B	H	B	H	B	H	B	
December 31, 2000	61	751	70	1,397	9	155	625	1,741	71	472	5	34	82	7	923	4,556	5,479
March 31, 2001	61	748	70	1,393	9	154	626	1,728	72	470	5	49	81	6	924	4,548	5,472
Change	–	–3	–	–4	–	–	+1	–13	+1	–2	–	+15	–1	–1	+1	–8	–7

Source: OeNB.
H = Head office.
B = Branch offices and bureaux de change.

Modest Growth in Interbank Transactions

In the first quarter of 2001, domestic interbank transactions increased slightly more rapidly (EUR 5.22 billion or +5.1%) than in the same period last year (EUR 5.10 billion or +4.7%). By contrast, the growth rate of interbank assets with foreign banks shrank from +8.7% or EUR 5.79 billion in the first quarter 2000 to +5.1% or EUR 4.04 billion in the same period of 2001. Interbank liabilities also augmented at a slower pace between January and March 2001; growth more than halved from EUR 13.74 billion (+18.1%) to EUR 5.78 billion (+6.9%).

According to a sectoral breakdown, the share of interbank assets – stemming from both domestic and foreign transactions – in total assets was largest at special purpose banks[1]) (59.0%), followed by the multi-tier sectors Raiffeisen credit cooperatives (37.4%), savings banks (36.0%) and Volksbank credit cooperatives (25.7%). Raiffeisen credit cooperatives recorded the largest amount of interbank liabilities as a percentage of total assets (42.5%), followed by savings banks (41.3%) and Volksbank credit cooperatives (32.1%).

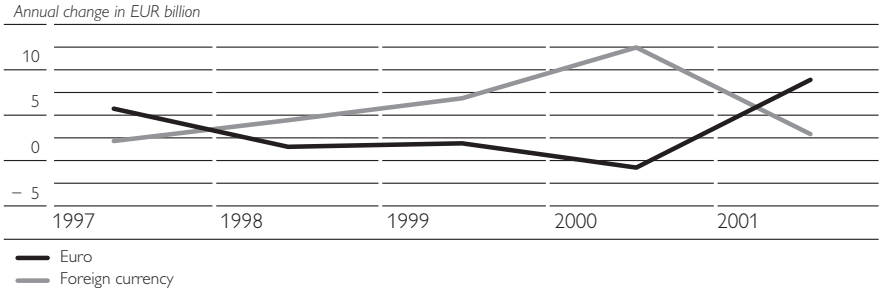
1 Including the Oesterreichische Kontrollbank (OeKB).

Loans Declined

After banks had recorded the highest growth rate in loans since the early 1980s in the first quarter of 2000 (+EUR 1.05 billion or 0.5%), loans contracted by no less than EUR 1.28 billion (–0.6%) in the first three months of 2001. Not counting interest payments on loans credited in the first quarter of 2001 (EUR 1.45 billion), loans decreased further by EUR 2.7 billion on balance in 2001.

This notable decline can be attributed primarily to the small increase of EUR 0.05 billion (+0.1%) in foreign currency loans, down from EUR 3.58 billion (+10.8%) in 2000. Euro loans did not shrink as sharply as last year (2000: –EUR 2.53 billion or –1.4%, 2001: –EUR 1.33 billion or –0.7%). Evidently, demand for foreign currency loans waned and the clear downward trend of euro-denominated loans was somewhat offset by falling lending rates. The share of foreign currency loans in total loans dropped from 21.3% at the end of 2000 to 17.7% in March 2001.

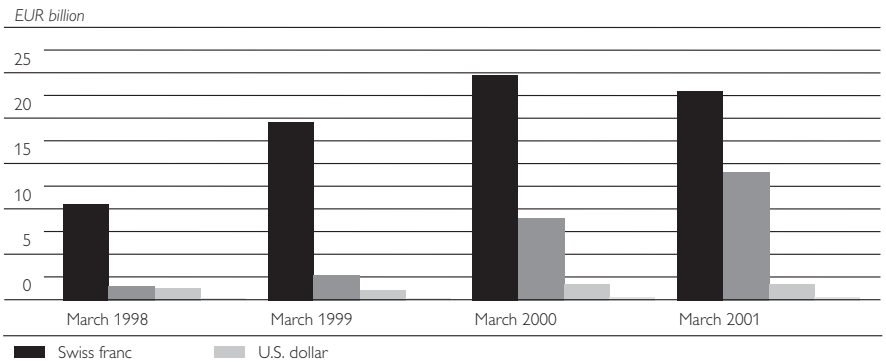
Loans to Domestic Nonbanks



Source: OeNB.

As at March 31, 2001, some 58% of all foreign currency loans were dominated in Swiss francs, 3 percentage points less than at year-end 2000. Between January and March 2001, credit in Swiss francs contracted by EUR 1.0 billion (–4.0%), after having increased by approximately the same amount in the first quarter of 2000. The Swiss franc's exchange rate

Foreign Currency Loans to Domestic Nonbanks



Source: OeNB.

remained relatively stable over this period. Though credit in Japanese yen could no longer match the extraordinarily high growth rates recorded in 2000, it still climbed by EUR 0.9 billion (+6.4%) in the first quarter of 2001. Taking into account that the Japanese yen fell by some 4% in the same period, the actual growth rate may even have been somewhat higher. What is more, short-term lending rates in this currency continued to be relatively low. The share of yen-denominated loans in total foreign currency loans, which came to 36% in March 2001, continues to rise.

Credit in U.S. dollars played a minor role also in the first quarter of 2001. Its share in total foreign currency loans amounted to 4.6%. The increase of U.S. dollar liabilities (+EUR 0.1 billion or 7.8%) can be traced partly to the clear strengthening of the U.S. dollar against the euro (some 5%).

In December 2000,[1]) Austria accounted for 3.2% of all outstanding loans in the euro area. Its share in Swiss franc-denominated loans stood at 32.8%, down from 37.8% in December 1999, while over the same period of time the share in Japanese yen-denominated loans increased from 24.7% to 32.1%.

A sectoral breakdown shows that building and loan associations recorded the biggest increment (+EUR 0.26 billion or +2.0%) in loans. Apparently, building and loan associations, which do not grant foreign currency loans, have increasingly benefited from the countertrend toward euro-denominated loans, enabling them to close the gap between a high volume of deposits and a low level of exposure witnessed since 1998. Special purpose banks and Volksbank credit cooperatives recorded the second largest increase in loans (+EUR 0.21 billion). All other sectors reported declines. Savings banks augmented the volume of foreign currency loans outstanding by EUR 0.07 billion (+0.6%), which marks the sharpest increase in the foreign currency sector. Raiffeisen credit cooperatives recorded the steepest decline in this area (–EUR 0.13 billion or –1.6%).

Loans

	% of total assets
Building and loan associations	73.2
State mortgage banks	59.7
Volksbank credit cooperatives	50.9
Joint stock banks	46.0
Raiffeisen credit cooperatives	39.8
Savings banks	31.4
Special purpose banks (incl. OeKB)	16.6

Source: OeNB.

Owing to their business structure, building and loan associations and state mortgage banks posted the largest proportion of loans to total assets as at March 31, 2001. Special purpose banks and savings banks came in below the average of 39.1%.

Regional differences in demand for foreign currency loans persisted: Their share in total loans was approximately 14% in Austria's eastern states,[2]) whereas it came to some 31% in the western states. In eastern

1 *No data for March 2001 available at editorial close.*

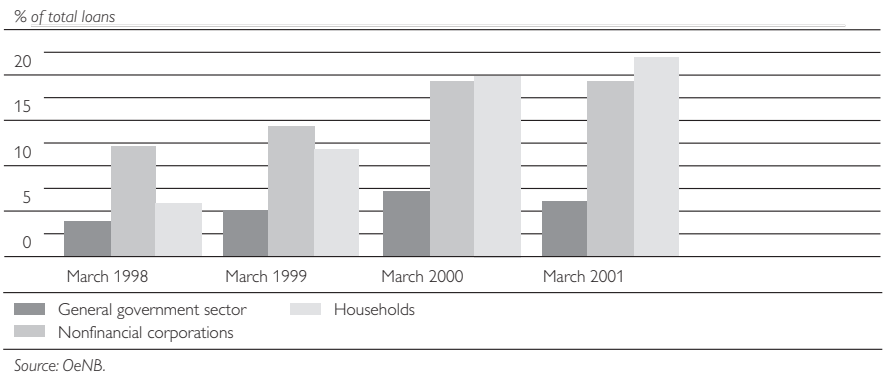
2 *Lower Austria and Burgenland are classified as eastern states. For reasons of transparency, Vienna is not included. Vorarlberg, the Tyrol and Salzburg are classified as western states.*

Austria, new foreign currency loans contracted by 0.5%, whereas they increased by 0.8% in the west of the country in the first quarter of 2001.

The decline in loans (compared to 2000) was triggered primarily by the lower growth of nonrevolving loans, which had increased by EUR 2.10 billion (+2.3%) in 2000, yet decreased by EUR 0.13 billion (–0.1%) in the first three months of 2001. The share of nonrevolving loans in total loans came to 45.3% as at March 31, 2001. Current account credit shrank by EUR 1.45 billion (–2.4%), that is, only slightly more markedly than in the same period last year (–EUR 1.37 billion or –2.5%), equaling 25.9% of total loans at the end of March 2001. Only long-term loans had expanded (+EUR 0.39 billion or +0.6%), so that their share in total loans mounted to 27.2%.

In the first quarter of 2001, the downturn in credit was observed across all economic sectors. Loans outstanding to nonfinancial corporations, which took out more than 50% of all loans, sank by EUR 1.08 billion (–0.9%) in the first quarter of 2001 compared to –EUR 0.43 billion (–0.4%) in the same period last year. Since a range of new tax provisions entered into force in January 2001, businesses may have made investments originally scheduled for 2001 already in 2000. Like in 2000, long-term fixed loans rose by EUR 0.88 billion (+1.1%), whereas companies trimmed their short-term liabilities by more than double this amount (–EUR 1.97 billion or –4.5%). All economic sectors reported such rebalancing, which may be linked to a further flattening of the yield curve. The average interest on commercial loans in euro decreased by 0.23 percentage point to 6.7% between January and March 2001. Interestingly, nonfinancial corporations augmented their foreign currency liabilities by EUR 2.08 billion (+10.3%) in 2000, to reduce them by EUR 0.11 billion (–0.4%) in the first quarter of 2001.

Share of Foreign Currency Loans



Source: OeNB.

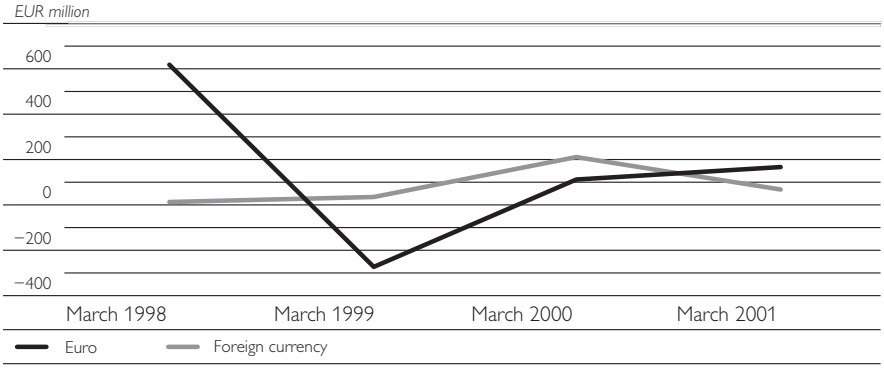
Until 1999, companies reported the largest share of foreign currency loans in relation to their total liabilities, then households took over this position. The latter's share in total liabilities already amounted to 21.5% in the first quarter of 2001.

Overall, euro- and foreign currency-denominated claims on households increased by EUR 0.50 billion (+0.8%) in the first three months of 2001 compared to EUR 1.07 billion (+2.0%) in the same period 2000. Like all

other economic sectors, households increasingly opted for long-term loans. For the first time in years, growth of euro-denominated credit outstripped that of foreign currency credit. While euro-denominated loans taken out by households had been up only +EUR 0.09 billion (+0.2%) and foreign currency loans had increased about tenfold (+EUR 0.99 billion or +10.1%) in the first quarter of 2000, a year on euro-denominated credit picked up by EUR 0.26 billion (+0.5%) and foreign currency loans by no more than EUR 0.24 billion (+1.9%). This trend may be attributed, at least partly, to the average interest rate on euro-denominated personal loans, which dropped by 0.21 percentage point to 7.6% in the first quarter of 2001. Contrary to the first quarter 2000, new home and home improvement loans were also largely euro-denominated (some 62%) in the first three months of 2001. The interest rate on home and home improvement loans stagnated at 6.36%.

Home and Home Improvement Loans

Cumulative change since the beginning of 2001



Source: OeNB.

The public sector was also key to the downturn in credit since the beginning of 2001. Loans extended to the general government grew by EUR 0.67 billion (+2.3%) in 2000 but dropped by approximately the same amount one year later (EUR 0.66 billion or –2.2%). While the central government reduced its exposure by EUR 0.48 billion (–4.0%) and regional authorities by EUR 0.21 billion (–3.7%), municipal authorities expanded their exposure, albeit just slightly, by EUR 0.03 billion or +0.3%). The bulk of new loans were foreign currency-denominated. By the end of March, foreign currency loans accounted for 6.1% of the general government's total liabilities. The average interest rate on public sector loans was 5.2%, against 5.3% at the beginning of 2001.

Contrary to loans, securitized lending increased in the first three months of 2001, though not very markedly (EUR 0.36 billion or +1.5% compared to +EUR 1.13 billion or +4.5% one year earlier). More than 98% of securitized lending was euro-denominated. The downturn in growth in 2001 can be attributed largely to Federal Treasury bills and notes, which had advanced by EUR 1.26 billion (+63.8%) in 2000 but virtually stagnated (+EUR 0.04 billion or +0.2%) in the first quarter of 2001.

Other public sector debt instruments[1]) posted the biggest increase (+EUR 0.27 billion or +1.6%), followed by debt securities and other fixed-income securities, which rose by EUR 0.16 billion (+11.2%). At the same time, banks reduced their portfolio of other variable-yield securities (–EUR 0.1 billion or –5.4%).

Only Volksbank credit cooperatives and joint stock banks reported above-average increases in securitized lending (+26.3% and +4.6%, respectively), all other sectors recorded in part relatively steep declines.

Funds Raised Increase More Markedly than in 2000

At a level of EUR 178.99 billion, deposits continued to be banks' most important source of funding, however, their edge over external liabilities (which stood at EUR 178.91 billion on March 31, 2001) had diminished. In the first three months of 2001, deposits grew by EUR 3.22 billion (+1.8%), more markedly than in the same period last year (+EUR 2.70 billion or +1.6%). As foreign currency deposits played only a minor role, almost all new deposits were euro-denominated (+EUR 3.21 billion).

Deposits

	% of total assets
Building and loan associations	87.9
Volksbank credit cooperatives	43.3
Joint stock banks	38.2
Raiffeisen credit cooperatives	37.1
Savings banks	25.0
State mortgage banks	20.2
Special purpose banks	2.5

Source: OeNB.

State mortgage banks (+7.4%), special purpose banks (+6.1%) and Volksbank credit cooperatives (+4.5%) reported above-average increases in new deposits, contrary to savings banks (–0.6%) and building and loan associations (+0.1%).

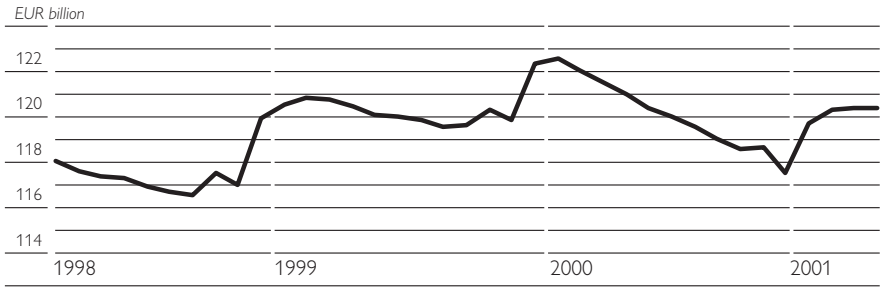
Sight deposits, including personal checking accounts, did not follow the general trend in deposits. While they had risen by EUR 1.06 billion (+3.4%) in the first quarter of 2000, they stagnated between January and March 2001. Somewhat less than 50% of all euro-denominated sight deposits were held by households in March 2001. Households reduced their sight deposits by EUR 0.17 billion (–1.1%), nonbank financial intermediaries even by EUR 0.26 billion (–15.5%), whereas nonfinancial corporations and the general government increased their holdings (+EUR 0.10 billion or +0.7% and +EUR 0.08 billion or +2.6%, respectively). With a 5% share in total sight deposits, foreign currency-denominated sight deposits played only a subordinate role.

Growth in euro-denominated time deposits, primarily unsecured monies with an agreed maturity in the first quarter of 2001 was roughly as strong as in the same period last year. After rising by EUR 2.27 billion (+13.9%) in the first three months of 2000, time deposits advanced by EUR 2.80 billion (+15.3%) in the first quarter of 2001. In March 2001, some 50% of all euro-denominated time deposits were held by nonfinancial corporations. They raised their holdings by EUR 1.42 billion (+15.1%) between January and March 2001 compared to EUR 0.36 billion (+4.1%)

1 *Debt securities not eligible for trading on the stock exchange.*

last year. Both in 2001 and 2000, the gains can be traced largely to short-term fixed time deposits. In the first three months of 2001, the general government sector increased its time deposits by EUR 0.80 billion or 17.8% (2000: +EUR 1.46 billion or +30.6%), households by EUR 0.22 billion or 12.3% (2000: +EUR 0.18 billion or +5.1%). The share of foreign currency-denominated time deposits came to 7% in March 2001.

Savings Deposits of Domestic Nonbanks

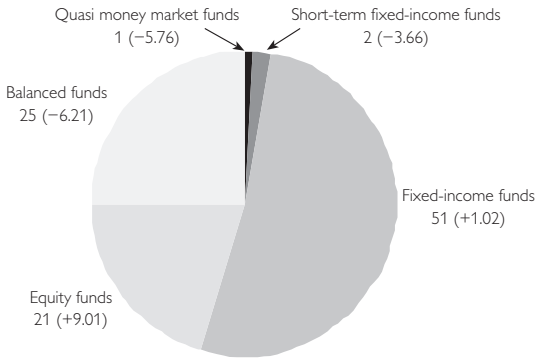


Source: OeNB.

Reversing the 2000 trend, euro-denominated savings deposits augmented by EUR 0.65 billion (+0.5%) in the first quarter of 2001. One year earlier, such deposits had shrunk by EUR 0.81 billion (–0.7%). In this context it is interesting to note that the average rate on deposits up to twelve months fell by 0.21 percentage point to 3.39% in the first quarter of 2001. Evidently – the abolition of anonymous passbooks notwithstanding – many investors opted for forms of investment that involve less risk given the capital market's present high volatility.

Funds' Assets by Category

% and cumulative change since the beginning of 2001



Source: VÖIG.

This may also be the reason why total assets of mutual funds in Austria[1]) increased by no more than EUR 0.6 billion (that is, even more slowly than

1 *Source: VÖIG (Association of Austrian Investment Companies).*

savings deposits) to EUR 85.13 billion in the first three months of 2001. By category, equity funds and fixed-income funds expanded (+9.0% and +1.0%, respectively), while all other types of funds recorded declines.

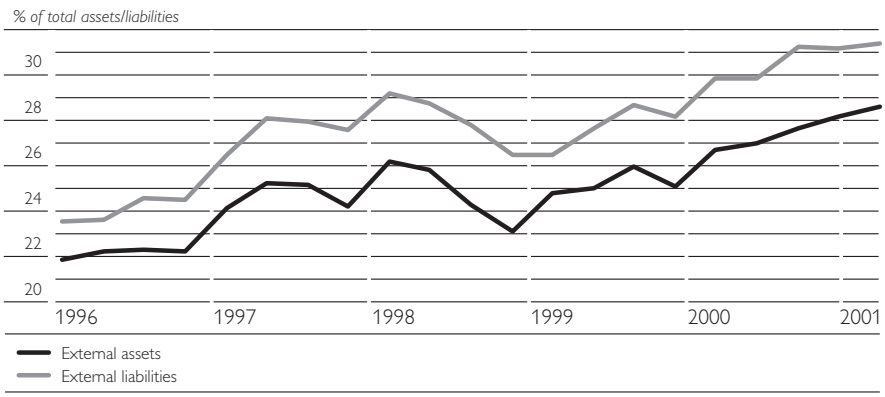
In the first quarter of 2001, assets in Austrian pension funds deteriorated (–EUR 0.07 billion or –1.0% compared to the previous quarter) for the first time since 1993, when the collection of pension fund statistics started. The main causes for this downturn can be found in the recently faltering growth of industry-wide pension funds and in the current situation on capital markets.

Banks operating in Austria continued to rely increasingly on issuing direct paper for refinancing purposes, which already accounted for some 10% of banks' total assets in the first quarter of 2001. 88% of direct issuances were euro-denominated; in the first three months of 2001, they gained EUR 1.02 billion (+2.2%) compared to –EUR 0.03 billion or –0.1% in the same period of 2000. EUR 1.12 billion in new issuances were foreign currency-denominated (2000: EUR 1.35 billion).

External Business Gaining Strength

With the international interlocking of banks increasing, external business has been gaining importance over the past few years. On both the assets and the liabilities side, asset growth was again chiefly carried by banks' foreign business activity. Nevertheless, external assets rose by only half the amount compared to the same period last year (+EUR 5.41 billion or +3.4% against +EUR 14.19 billion or +10.8%). Claims on foreign banks made up three quarters (+EUR 4.04 billion or +5.1%) of external assets. Compared to 2000, this balance sheet item went down by 3.6 percentage points. Business with nonresident customers slumped in particular: Credit to nonresidents had been up EUR 5.31 billion (+12.0%) in 2000 but shrank by EUR 0.91 billion (–1.8%) in the first quarter of 2001. Debt securities and other fixed-income securities issued by nonresidents expanded by a mere EUR 0.97 billion (+5.4%), after +EUR 2.44 billion (+21.3%) in 2000. A similar trend was observed on the liabilities side: Growth in

External Assets/Liabilities of Banks Operating in Austria



Source: OeNB.

interbank transactions decreased from EUR 13.74 billion (+18.1%) to EUR 5.78 billion (+6.9%). Liabilities to nonresident customers diminished by EUR 2.07 billion (–6.8%) in the first three months of 2001, compared to –EUR 0.68 billion (–2.6%) in the corresponding period of 2000. Austrian banks' direct issuances abroad declined by EUR 0.65 billion (–1.2%), after an increase of EUR 2.11 billion (+5.3%) in 2000.

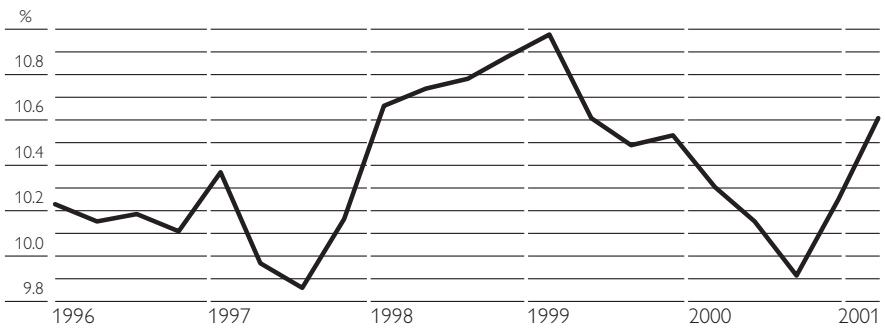
In March 2001, external assets accounted for 28.5% of banks' total assets (December 2000: 28.0%), while external liabilities had a share of 31.3% (December 2000: 30.9%).

Owing to some rebalancing at one major bank, Austrian banks' branches abroad reduced their balance sheet total by EUR 6.88 billion (–16.1%). One year earlier, total assets had increased by EUR 3.88 billion (+9.4%).

Derivatives Transactions

In the first quarter of 2001, the volume of derivatives transactions widened by EUR 80.42 billion (+10.2%), less sharply than in the same period last year (+EUR 96.83 billion or +14.8%). In March 2001, the share of derivatives transactions as a proportion of total assets amounted to 151,5%. The volume of interest rate contracts, which held a 79% share in total derivatives transactions, expanded by EUR 72.99 billion (+11.9%) in the first quarter of 2001 compared to +EUR 67.96 billion (+13.9%) in the corresponding 2000 period.

Core Capital Ratio of Banks Operating in Austria



Source: OeNB.

Capital Ratio Comes to 14.4%

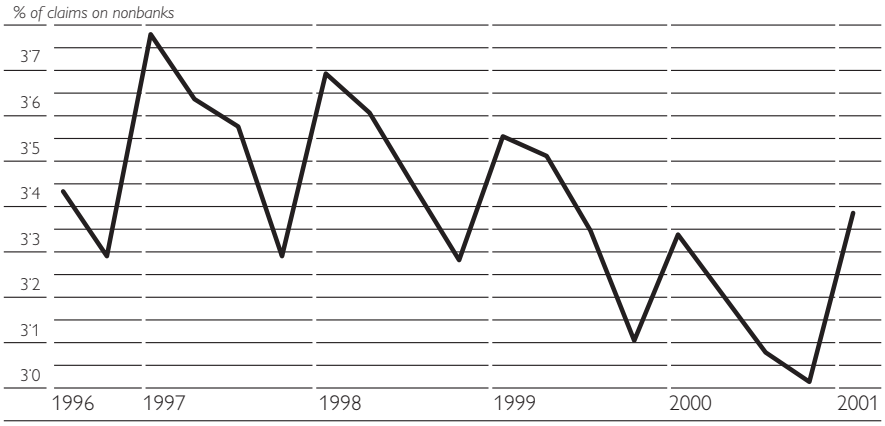
At the end of March 2001, the capital held by banks operating in Austria amounted to EUR 39.46 billion, EUR 2.03 billion (+5.4%) more than at the beginning of the year. Compared to the corresponding period last year, banks' capital rose by only EUR 1.25 billion (+3.5%). The (unconsolidated) capital ratio as a percentage of the assessment base rose by 0.6 percentage point to 14.4% in the first three months of 2001. According to the Austrian Banking Act, the minimum capital requirements are 8%. Core capital, which expanded by EUR 1.59 billion in the first quarter of 2001, accounted

for slightly more than two thirds of own funds (EUR 26.24 billion). Eligible capital[1]) stood at EUR 38.13 billion, EUR 2.27 billion more than at the beginning of 2001. Tier III capital, which principally serves to cover market risks, went down by EUR 0.24 billion to EUR 1.33 billion.

Risk weighted assets[2]) climbed by EUR 6.75 billion or +2.8%, which is a considerably higher percentage than the 1.7% increase in total assets. Hence, risk weighted assets as a percentage of total assets went up by 0.4 percentage point to 43.2% in the first quarter of 2001, even though the long-term trend points downward.

Loss provisions for loans to nonbanks rose from 3.01% to 3.38% in the first three months of 2001. Provisions were higher at Volksbank credit cooperatives, Raiffeisen credit cooperatives and savings banks and lower at the banks of the other sectors.

Value Adjustments



Source: OeNB.

1 *Core capital and supplementary capital less deductible items.*

2 *This item comprises those assets, reduced by value adjustments, which must be weighted according to risk categories in line with Article 22 (3) Austrian Banking Act.*

Balance of Payments in the Year 2000[1])

René Dell'mour,
Patricia Fahrngruber,
Christine Stecyna,
Isabel Winkler,
Robert Zorzi

Internationalization continued to take hold of Austria's economy, as reflected by the pronounced increase in both inward and outward cross-border gross flows.

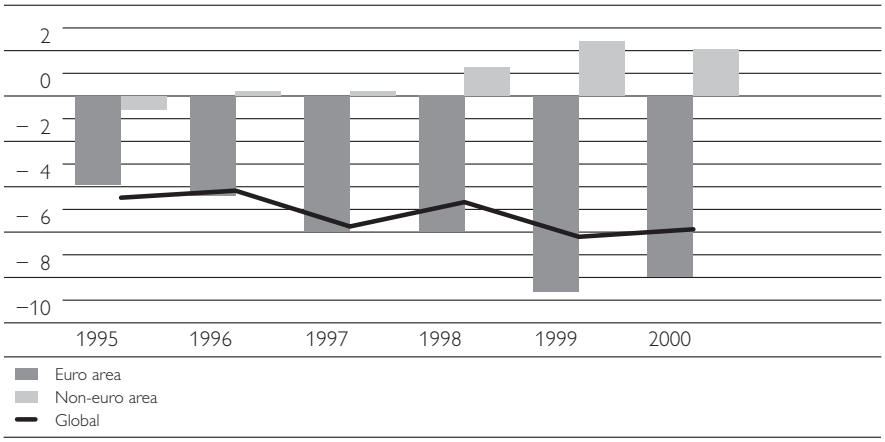
1 Current Account

The shortfall on the Austrian current account shrank to EUR 5,880 million in 2000, down from EUR 6,210 million in 1999 (see table 1). As in the previous three years, the current account deficit amounted to around 3% of GDP. The EUR 330 million improvement in the current account balance derived from a EUR 210 million contraction of the income deficit and the EUR 440 million drop of the current transfers gap. The deficit on goods and services, by contrast, widened by EUR 320 million.

While trade with euro area countries was in deficit of EUR 7,950 million, trade with non-euro area countries produced a surplus. Austria once again made a positive contribution to the current account of the euro area.

Chart 1

Austria's Current Account Balance with Euro Area and Non-Euro Area Countries[1])



Source: OeNB.
[1]) 1995 to 1998 final data, 1999 revised data, 2000 provisional data.

1.1 Goods

Austria's *exports-to-GDP ratio* mounted further in the year under review, from 31% in 1999 to 33%. Goods exports expanded by 15.1% to EUR 69,650 million compared to 1999, thus outperforming the gain in goods imports (+13.5% to EUR 72,530 million). Austrian outlays for energy imports surged by EUR 2 billion or 70%, even though the amount of crude oil imported had declined. The higher energy costs were attributable

1 *Based on transactions. Editorial close: May 9, 2001. As of 1999, the Austrian balance of payments figures published by the OeNB in "Focus on Austria" are presented in euro (irrevocable euro conversion rate EUR 1 = ATS 13.7603). For Austrian balance of payments statistics given in both euro and schilling, refer to the OeNB website at http://www.oenb.at; Focus on Statistics, chapter 7.*

primarily to oil price developments, with the 87% rise in crude oil imports ascribable largely to the oil price (some 80%) and to a lesser degree to the foreign exchange rate (some 20%). The favorable international climate of 2000 – faster economic growth and rising employment – held negative effects similar to those triggered by the oil shocks of the 1970s and 1980s at bay. According to a longer-term *country-specific* analysis of foreign trade,[1]) Austria's merchandise surplus with Central and Eastern European countries, running at EUR 1,630 million in 2000, tripled since the dismantling of the iron curtain in the early 1990s (see table 2). Hungary ties in fourth place with the U.S.A. in a ranking of Austria's most important export destinations, bested only by Germany, Italy and Switzerland.

The structural trade deficit recorded by Austria vis-à-vis EU countries shrank by EUR 240 million to EUR 6,850 million in the reporting year, with imports having gained 11% and exports 9%. The shortfall against the main trading partner Germany, which mounted by another EUR 870 million, was more than offset by gains against other countries.

1.2 Services

In 2000, the services surplus was halved by EUR 810 million to EUR 840 million. The travel surplus likewise contracted by EUR 210 million to EUR 1,520 million, but a number of other services items developed favorably. The balance of the unclassified transactions item,[2]) which is part of the services subaccount, advanced to EUR 3,830 million in 2000.

The unclassified transactions item may refer to both goods and services. The goods and services aggregate as a whole therefore seems more suited to extrapolating trends in Austria's current account balance: Cross-border goods and services transactions progressed by some 13% or around EUR 11,500 million (both imports and exports), thus pushing up the deficit on goods and services slightly to reach EUR 2,040 million.

1.2.1 Travel

In 2000, the number of tourist bednights increased for the third time in a row. The gain, however, amounted to a mere 76,000 nights (+0.1%; see table 5). Given the worldwide expansion of incoming foreign tourist numbers by more than 7%, Austria thus ceded further market share to other countries. Despite the industry's consolidation drive of three years, 82.5 million foreign tourist bednights still trail the 1992 high of 100 million by a wide margin.

Spending by foreign travelers (including international passenger transport) developed more favorably than bednight figures, rising by EUR 560 million or 4.8% in 2000 to reach some EUR 12,340 million (see table 4).

1 *Statistics Austria.*

2 *The unclassified transactions item derives from an imbalance between banks' reported import and export payments for goods and the sum of merchandise import and export payments according to the foreign trade statistics compiled by Statistics Austria, with the former outweighing the latter. In line with international practice, the goods item of the balance of payments is calculated from the foreign trade statistics provided by the national statistical office. The unclassified transactions item thus corresponds to the difference between merchandise payments and foreign trade figures.*

The *receipts per overnight stay* edged up by 4.7% to EUR 150, amid an increase in prices of about 3%. Since the implementation of the b.o.p. methodology outlined in the 5th edition of the IMF Balance of Payments Manual, expenses on international passenger transport (basically air transport) have been shown separately. Passenger transport accounted for EUR 1,610 million (+EUR 190 million), while travel (excluding international passenger transport) recorded EUR 10,730 million (+EUR 380 million).

Both the receipts per tourist bednight and the bednight statistics attest to a continuous trend towards quality. Four-star and five-star hotels advanced by a clearly higher-than-average 5.1% in 2000, while hotels rated lower and private accommodations continued to lose market share (–5.9% each). From a long-term perspective, this trend to quality has had tremendous effects. The top-quality category more than doubled its share from 14% to 29% in the past 20 years, whereas the percentage of total bednights of private rooms diminished from 25% to less than 10% over the same period.

The waxing and waning of overnight stays as analyzed by countries of origin more or less balanced out in the year under review. The greatest decline *in absolute terms* was observed for German tourists (–790,000 or –1.5%). French travelers posted a *relatively* sharp contraction (–15.2% or –260,000), as did Italians (–5.5% or –140,000) and Israelis (–26.1% or –62,000). Vacationing in Austria became more popular with tourists from the Netherlands (+360,000), the U.S.A. (+310,000), the United Kingdom (+280,000) and Switzerland (+110,000).

Travel expenditure expanded by 7.2% in the reporting year and came to EUR 10,040 million. International passenger transport accounted for EUR 830 million (+11.3%), while travel excluding international passenger transport recorded EUR 9,210 million (+EUR 6.8%). Amid travel inflow and outflow developments, the travel surplus edged down slightly to EUR 2,300 million (travel excluding international passenger transport: EUR 1,520 million; international passenger transport: EUR 780 million). In spite of the EUR 100 million contraction of the positive travel balance, the 2000 surplus covers 45% of the trade balance shortfall, which amounted to EUR 5,110 million according to preliminary Statistics Austria data. This contrasts with a low of 25% coverage and a peak of two thirds in the 1980s.

The outcome of a survey polling 12,000 households commissioned by the OeNB showed that spending patterns had shifted perceptibly.[1]) While a statistical artefact could exaggerate these distortions, the basic message nonetheless remains valid. Expenses related to business trips soared particularly in 2000. They more than doubled (+EUR 830 million) to EUR 1,570 million, dwarfing the total gain in travel expenditure (+EUR 670 million). Shopping expenses during trips abroad mounted by a moderate EUR 190 million to EUR 1,730 million. Shopping trips to neighboring countries, as observed after the opening up of Austria's eastern borders and its entry into the European Union, were only of minor importance.

1 *Face-to-face interviews gave way to telephone interviews, which is why the 2000 survey result is no longer 100% comparable to earlier surveys. Distortions based on the polling method should not be ruled out.*

From a regional perspective, *Germany* accounted for the bulk of the gain, benefiting in particular from the increase in the business travel volume: More than one third of Austrians' business trip expenses went to Germany, which does not come as a surprise, since Germany is Austria's most important trading partner. *Italy,* by contrast, features as Austrian travelers' top destination of choice, claiming EUR 1,190 million or close to 20% of total travel expenses. Greece and the Iberian peninsula lost ground in 2000, while Turkey in particular managed to lure a great deal more Austrian tourists. Outflows to Eastern European countries (especially due to sinking shopping expenses) declined along with overseas trips rendered unpopular by the strength of the U.S. dollar.

1.2.2 Other Services

The negative balance on other services widened by EUR 80 million to EUR 680 million, mainly on account of the unclassified transactions item.

By contrast, *other service items* such as transportation (+EUR 180 million), communications (+EUR 150 million) as well as other business services (+EUR 310 million) posted gains (for further details, see table 1).

1.3 Income

The income deficit did not expand compared to 1999, closing 2000 at EUR 2,370 million (1999: EUR 2,580 million). For one thing, as in the years before, *compensation of employees* registered a surplus (EUR 570 million), for another, *investment income* was slightly less in deficit in 2000 (EUR 2,940 million) than in 1999 (EUR 3,140 million).

The fact that, at 11% of the entire current account figures, the gross totals of all asset-side and liabilities-side transactions of this subaccount already outperform those of travel, bears testimony to the significance of the income item.

In 2000, like the year before, the income on *interest-bearing financial assets*[1]) had the greatest impact on the investment income balance. From 1992 to 1998, income on *venture capital-oriented investment*[2]) had dominated this item.

Broken down by major subaggregates, income on direct investment and income on portfolio investment both recorded net deficits (EUR 1,040 million and EUR 2,680 million, respectively), while income on other investment posted a surplus of EUR 780 million (see table 6).

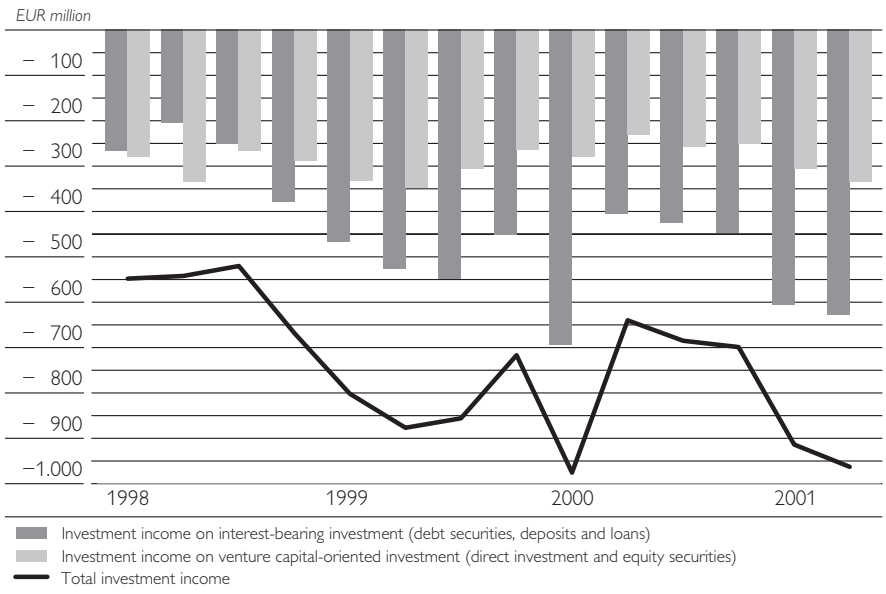
The shortfall of *income on direct investment* is to be regarded as a structural component of the Austrian current account. Austria was a latecomer to establishing subsidiaries abroad or acquiring equity interests in foreign enterprises. By 1981, enterprises had invested no more than ATS 10 billion abroad, which contrasted with inward direct investment of ATS 46 billion. Irrespective of the growing interlinkage of trade, particularly evident since the 1990s, inward FDI stocks at end-1999 still outweighed outward FDI

1 *Income on debt securities (fixed-interest debt instruments, deposits and loans, notwithstanding whether they are included in the categories direct investment, portfolio investment, other investment, or reserve assets).*

2 *All income on investment made in the form of equity capital and equity securities.*

Chart 2

Components of Austria's Investment Income[1])



Source: OeNB.
[1]) 1998 final data, 1999 revised data, 2000 provisional data.

stocks at a ratio of 6 to 5 (ATS 288 billion against ATS 235 billion or EUR 21 billion against EUR 17 billion).

Distributed profit was extraordinarily high in 2000: Profit distribution to Austria jumped from EUR 430 million to EUR 1,170 million, and outflowing profit from EUR 580 million to EUR 1,830 million. The spikes were attributable to a few cases of lump-sum payouts of profits having accumulated over several years. Since total profits of the respective subsidiaries are estimated to have risen by a meagre EUR 360 million (asset side) and EUR 330 million (liabilities side), profit distribution was eating into reinvestments: Austrian direct investors' reinvestments abroad turned even negative (-EUR 20 million), while inward reinvestments declined to EUR 420 million, or to about half the long-time average.

Income on portfolio investment has been driving investment income. While net income on portfolio investment merely inched up by 3% on 1999, gross figures posted higher growth rates (assets: +44%, liabilities: +25%).

In the reporting year, the deficit on portfolio investment income may theoretically have widened, as the stock of Austrian securities held by nonresidents had risen more strongly than the stock of foreign securities held by Austrians. However, the following factors seem to have averted a further increase in the deficit:

– Domestic mutual funds started to pour more capital into foreign securities than into Austrian paper already in 1999 (1999: EUR 18,290 million against EUR 4,830 million), but the profit of this shift in investment was felt fully in 2000.
– The general government retired higher-yielding bonds in 2000, a large portion of which had been held by nonresident creditors, and floated

lower-yielding new issues abroad. Rough estimates show a weighted average interest rate of 5.4% for new issues and increases to existing issues, while the average interest rate on the securities redeemed had amounted to 8%.

– The volume of dividend distribution on foreign stocks expanded perceptibly.

Income on other investment resulted in a surplus of EUR 780 million in 2000, up EUR 240 million. The banking system (including the OeNB) had a prominent role in this development, recording substantially higher proceeds from other investment in the reporting period (EUR 810 million) than in 1999 (EUR 610 million). Nonbanks (general government and other sectors) reduced their net deficit from EUR 70 million to EUR 30 million.

1.4 Current Transfers

Since Austria is a net contributor to the EU, current transfers have been grossly in deficit since 1995. Receipts from the EU drove down Austria's net deficit against the EU to EUR 960 million in 2000 (1999: EUR 1,140 million). The overall current transfer balance improved by EUR 440 million.

2 Capital Account

The capital account closed the reporting year with a gap of EUR 490 million (1999: EUR 250 million). *General government* capital transfers in kind comprise, above all, receipts from the EU that are earmarked for infrastructural measures and are thus not part of current transfers. In both 1999 and 2000, such transfers amounted to approximately EUR 200 million. *Private sector* capital transfers recorded a deficit of EUR 630 million in 2000 compared with EUR 460 million in 1999.

3 Financial Account

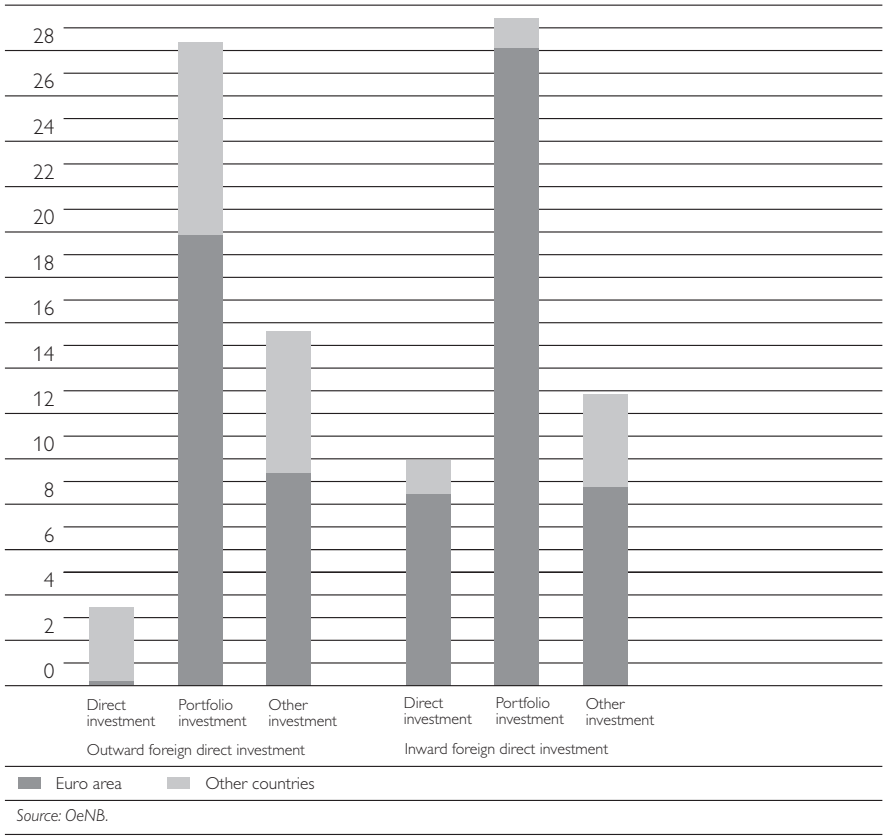
The Austrian financial account registered a capital import of EUR 5,140 million in 2000, with cross-border transactions as measured in gross flows again mounting heftily (see table 7). Austrian investment abroad came to EUR 47,150 million (+39%), foreign investment in Austria amounted to EUR 52,290 million (+30%).

Broken down by regions, the Austrian financial account shows an investment inflow from the euro area of EUR 16,800 million on balance in 2000, which clearly surpasses the comparable 1999 figure (see table 8). Austria's claims on euro area countries soared by 75%, reaching a transaction volume of EUR 30,560 million. Euro area investors' heightened interest in Austria ensued pronouncedly higher investments worth EUR 47,360 million (+137%) in 2000.

Austria saw net capital outflows to the tune of EUR 11,660 million to *non-euro area countries* in 2000 against net inflows in 1999. This is attributable, on the one hand, to stagnating claims on non-euro area countries, the 2000 value of which more or less equaled that of 1999 (EUR 16,590 million). On the other hand, cross-border inflows from non-euro

Chart 3

Austria's Financial Account (Selected Net Subaccounts) – Net New Investment in the Year 2000



Source: OeNB.

area countries shrank considerably, i. e. from EUR 20,270 million in 1999 to EUR 4,940 million in 2000.

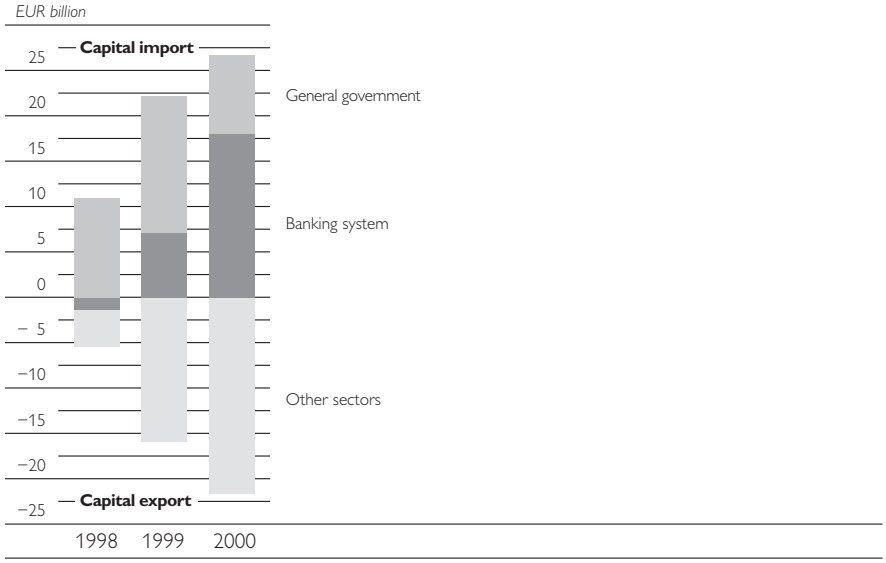
Broken down by *economic sectors,* the analysis of the Austrian financial account shows that in 2000 banks (including the OeNB) recorded inflows of EUR 18,120 million, whereas nonbanks (general government and other sectors) accounted for outflows worth EUR 12,980 million. The banking system raised its external assets by 50% on 1999 to EUR 17,670 million. Inward net new investments almost doubled in this sector, reaching EUR 35,790 million. The Austrian *general government* invested much more heavily abroad in 2000 (EUR 2,470 million) than in the past few years, and at EUR 11,180 million borrowed less from nonresidents than in 1999. The *other sectors*[1]*)* further expanded their external assets markedly in the year under review (EUR 27,010 million).

1 *Including other financial institutions, insurance companies and pension funds as well as enterprises and households.*

Chart 4

Cross-Border Capital Transactions

by Economic Sectors[1])



Source: OeNB.

[1]) 1998 final data, 1999 revised data, 2000 provisional data.

An analysis of Austria's external assets and liabilities (stocks as at December 31, 2000) broken down by *interest-bearing[1])* and *venture capital-oriented[2]) investment* yields the following result: Austrians' interest-bearing investments abroad, closing the reporting year at EUR 196,840 million, claimed the lion's share (74%) of total Austrian external assets, still acting as the major investment category for domestic investors. Nevertheless, risk capital-oriented investment gained considerable ground in the review period. Asset stocks progressed 41% on 1999 figures to reach EUR 68,430 million, thus pushing up their share in total Austrian external assets from 22% to 26% in 2000.

The importance of interest-bearing investments made by foreign investors in Austria increased further in 2000, resulting in external liabilities of EUR 259,130 million (84%) by end-2000. Venture capital-oriented financial investment advanced by 32% to EUR 49,090 million.

3.1 Direct Investment

Austria's net capital export from outward direct investment stood at EUR 3,460 million in 2000, topping the all-time high registered in 1999 by 25%. Net equity capital (including property) of EUR 3,160 million resulted from gross new investment of EUR 4,300 million and gross disinvestment of EUR 1,140 million. Even though the operating performance of Austrian subsidiaries abroad improved considerably in recent years, reinvested

1 *Fixed-income debt instruments, deposits and loans, notwithstanding whether they are included in the categories direct investment, portfolio investment, other investment, or reserve assets.*

2 *Investment in equity capital and equity securities.*

earnings came close to zero due to high profit distribution covering several years' earnings. Austrian investors stepped up their credit claims on affiliated companies by EUR 320 million, thus contributing to the expansion of outward FDI stocks.

Eastern Europe accounted for two thirds, or slightly more than EUR 2,280 million of *outward FDI* in 2000. EUR 610 million were parked in EU countries, while in the rest of Europe (above all Switzerland) disinvestment dominated. The rest of the world accounted for FDI to the tune of EUR 660 million. In contrast to the early 1990s' first investment round in Central and Eastern European countries, activity was well diversified in 2000. FDI flows to six transition countries, i. e. the Czech Republic, the Slovak Republic, Hungary, Poland, Croatia and Romania, scaled unprecedented heights in the year under review. For the first time, the Czech Republic (EUR 890 million) turned out to be Austrian investors' first country of choice, followed by Hungary (EUR 410 million) and Poland (EUR 290 million). Traditional destinations, such as the U.S.A. and Sweden (EUR 280 million and EUR 230 million, respectively) had been displaced to fourth and fifth rank. Next in the ranking are again transition countries, namely Romania (EUR 200 million) and Croatia (EUR 140 million). While Germany, one of the countries Austrian investors would normally set their sights on, attracted quite some investment activity, the bottom line read disinvestment of EUR 20 million following extraordinarily high profit distribution. In all, outward direct investment targeted some 100 countries all over the world.

On the *inward direct investment* front, the 2000 merger of Bank Austria AG (BA) and Bayerische Hypo- und Vereinsbank AG (HVB) was statistically significant. The merger involved a stock swap, but the Austrian ownership structure remained such that no (outward) direct investment in Germany ensued.[1]) The acquisition of HVB shares thus went into the portfolio investment subaccount of the 2000 balance of payments as net acquisition of shares. Inward FDI totaled EUR 9,930 million in 2000, which exceeds the 1997 to 1999 volumes put together. Yet, even without this, also for Europe sizeable transaction of about EUR 6.4 billion, inward direct investment was remarkable.

Inward FDI derived from gross new investment of EUR 10,390 million, disinvestment to the tune of EUR 930 million, reinvested earnings worth EUR 420 million and loans to affiliated companies netting EUR 50 million. Reinvested earnings were relatively low given high profit distribution in the second quarter 2000, with the latter exceeding the period's earnings markedly.

Some 550 Austrian firms saw new or additional investment or disinvestment in 2000.[2]) The foreign partners hailed from more than 60 countries. The merger between BA and HVB mentioned above catapulted Germany's already high share to no less than 83% (EUR 8,250

1 *According to the OECD, a country's (at most affiliated) strategic investors must hold at least 10% of voting shares for a transaction to qualify as direct investment.*

2 *Reinvested earnings were not considered.*

million). Other euro area countries accounted for a modest 2% of inward FDI, as the investments made by Italy (EUR 260 million) and Luxembourg (EUR 230 million) were largely offset by the Netherlands' disinvestment (–EUR 360 million). The second most important investor of 2000 was the United Kingdom (EUR 520 million or 5%), followed by the U.S.A., which channeled EUR 315 million (3.2%) into Austrian investment projects. Switzerland's prominent role (EUR 240 million or 2.4%) is not least due to its hosting of many holding corporations.

3.2 Portfolio Investment

In 2000, cross-border portfolio transactions resulted in a net capital import to the amount of EUR 1,060 million. The corresponding gross values indicate that both Austrian investment in foreign securities and nonresidents' investment in Austrian securities mounted further on 1999, prolonging the uptrend in investment since 1998.

An *analysis* of portfolio investment *by region* reveals a shift in Austrian's foreign portfolio investment toward paper issued by non-euro area countries. Investment in non-euro area countries advanced from 25% in 1999 to 31% in 2000. Euro area investors continued to be the main nonresident buyers of Austrian securities, gaining in importance (96%) compared to 1999 (62%).

3.2.1 Portfolio Investment in Foreign Securities

In 2000, Austrian investors acquired foreign securities to the tune of EUR 28,460 million, up 5% on 1999 and 181% on 1998.

A *sectoral analysis* of portfolio investment abroad shows that investment focused largely (some 45%) on foreign mutual funds and insurance companies. Business enterprises accounted for 25%, and, at about 6%, general government for the first time contributed a noticeable share.

Compared to the years before, Austrians allocated more funds (EUR 16,620 million) to foreign equities in 2000 than to foreign bonds and notes (EUR 10,990 million). The relatively smallest contribution (EUR 850 million) to this subaccount stemmed from purchases of foreign money market paper.

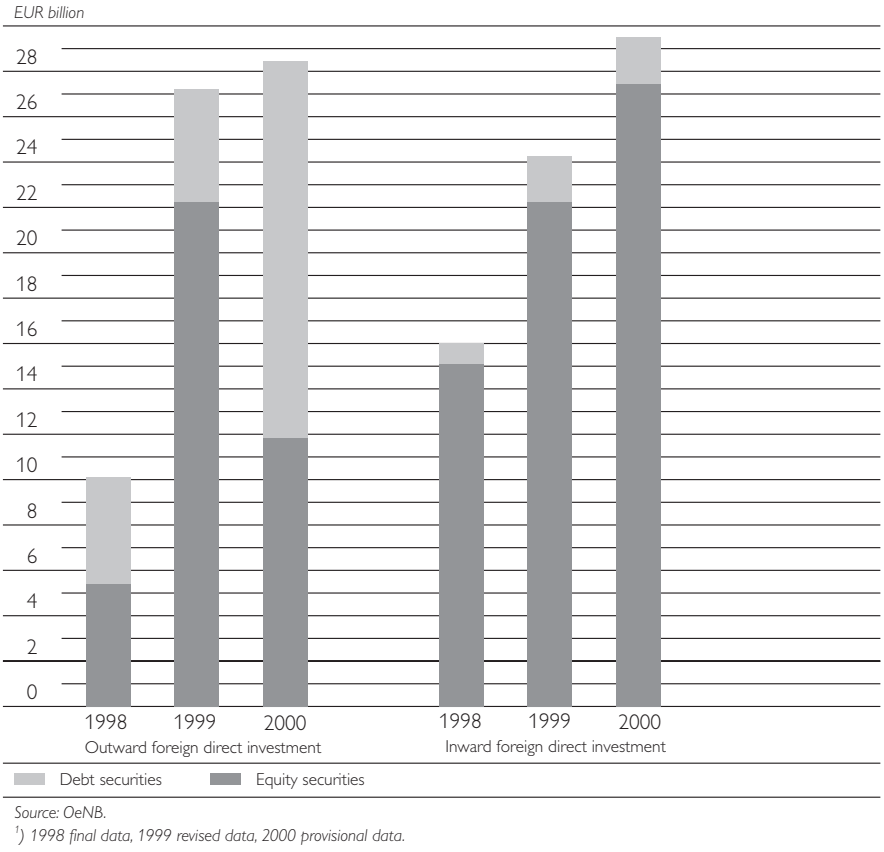
Austrian investors purchased *foreign shares* worth EUR 10,660 million in the year under review, a large portion of which was attributable to the stock swap ensuing the BA/HVB merger. Even when this transaction is factored out, share acquisition picked up on 1999. Domestic investors preferred in particular quoted shares of the industry and technology sectors. Geographically speaking, the majority of shares acquired was issued by enterprises based in the euro area (72%), above all Germany, the U.S.A (15%) and the United Kingdom (5%). Austrian investors also made substantial investments in *foreign mutual fund shares* (EUR 5,930 million). Domestic mutual funds, which constitute the largest group among investors in this area, preferred foreign balanced funds and equity funds. A regional analysis pinpointed Luxembourg mutual fund shares (60%) as a key investment vehicle for Austrians, followed by German (19%) and Irish (11%) paper.

Compared to 1999, investment in foreign bonds and notes slumped, whereas investment in short-term foreign debt securities soared in 2000. Austrian investors spent EUR 10,990 million on *bonds and notes,* or only half the amount recorded for the full year of 1999. Regionally speaking, domestic investors continued to favor long-term debt securities issued in the euro area (59%), albeit to a somwhat lesser degree than in 1999 (74%). Italian, Dutch, Belgian, Spanish and French issues were of particular interest to Austrians. Outside the euro area, domestic investors concentrated mainly on the United Kingdom, Cayman Islands and the U.S.A. Broken down by currency, 83% of the bonds and notes snapped up by Austrians were denominated in euro, while 9% were U.S. dollar and 5% pound sterling issues. Domestic investment in *money market instruments* (largely commercial paper and certificates of deposit) shot up to EUR 850 million – many times the amount recorded in the same period in 1999, a large part of which came from the general government. More than half of the money market paper Austrian investors acquired were U.S. issues, with Ireland, the Netherlands and the Czech Republic also drawing interest.

Chart 5

Cross-Border Security Transactions –

Net New Investment by Financial Instruments[1])



Source: OeNB.

[1]) 1998 final data, 1999 revised data, 2000 provisional data.

3.2.2 Portfolio Investment in Domestic Securities

In 2000, foreign investors acquired Austrian securities to the amount of EUR 29,520 million, up 22% from 1999 and 84% from 1998.

A *sectoral analysis* of portfolio investment in Austrian securities produced the following outcome: Foreign investors opted predominantly for domestic issues by banks (59%), followed by the general government (37%) and the other sectors (4%). Banks had last taken center stage in 1997; in 1998 and 1999, the general government had attracted most investment from abroad.

Bonds and notes remained the top sellers for nonresidents. Just slightly fewer funds were allocated to domestic shares than to Austrian money market instruments; shares gained 1% and money market paper shrank by 44%.

EUR 830 million of domestic equities purchased by foreigners totaling EUR 2,030 million were accounted for by *domestic shares,* roughly half of which were issued by banks and Austrian businesses. Investors went for shares by international telecommunications companies in particular, while divesting shares of old-line Austrian enterprises. Nonresidents bought EUR 1,190 million worth of *domestic mutual fund shares* of equity funds and balanced funds in 2000.

Foreign investors' interest in *Austrian bonds and notes* continued to rise in the year 2000; the amount of long-term debt securities sold increased by 36% on 1999 and by 72% on 1998. Euro-denominated issues accounted for the bulk (92%) of total sales in bonds and notes of EUR 25,520 million. Breaking down bonds and notes by sectors shows that 54% were attributable to banks and 46% to the general government. In 1999, the proportion of government bonds had come to 73%. Foreigners invested EUR 13,950 million in new issues or reopenings launched by the Republic of Austria in 2000.

Government Bond Syndication and Tender Offers in 2000[1])

		ISIN	External transactions
			EUR million
5.5%	Federal government bond 1999–2010/4	AT0000384938	3,928
5.5%	Federal government bond 2000–2007/144A	AT0000384953	3,924
3.4%	Federal government bond 1999–2004/3	AT0000384862	542
5.875%	Federal government bond 1996–2006/7	AT0000383518	2,614
6.25%	Federal government bond 1997–2027/6	AT0000383864	1,083
3.9%	Federal government bond 1998–2005/3	AT0000384524	1,857
Total			13,948

Source: OeNB.

[1]) *Transaction values: + = sale abroad.*

At EUR 1,970 million, nonresidents cut their investment in *domestic money market instruments* by half compared to 1999, buying primarily commercial paper and certificates of deposit, while shedding holdings on the short end (general government and other sectors).

3.3 Other Investment

The other investment item of the Austrian financial account registered a net capital export of EUR 2,810 million in 2000, which contrasts with a net capital import of EUR 7,940 million in 1999.

This was ascribable to cross-border shifts in deposits and loans influenced particularly by banks. Austrian net new investment abroad tripled on 1999 to EUR 15,680 million. The gain was attributable predominantly to lending abroad (EUR 10,080 million) and the increase in deposits abroad (EUR 4,650 million). About a third of loans went to Central and Eastern European countries.

Nonresident investment in Austria, which totaled EUR 12,860 million, almost exclusively focused on domestic banks. Two thirds of deposits and loans, which surged from EUR 3,410 million to EUR 8,760 million in the period under review, were ascribable to the euro area. Non-euro area countries, by contrast, invested a reduced EUR 4,100 million (1999: EUR 9,790 million) in Austria in the year 2000.

According to the *sectoral analysis* of the other investment item, banks (including the OeNB) for the first time in five years again exported capital, namely EUR 940 million, in the reporting period. Nonbanks (general government and other sectors) likewise exported EUR 1,870 million net in 2000.

3.4 Financial Derivatives

The financial derivatives position basically includes options, futures contracts and swaps, which are either based on capital products (e. g. foreign exchange assets, securities) or on interest rate products. On the one hand, transaction values refer to the buying and selling of securities-based financial derivatives and, on the other, to transactions resulting from option payments (including premiums) in the course of OTC deals and/or from variation margin payments for futures contracts and swap payments.

The financial derivatives item closed 2000 with a capital export of EUR 410 million, with securitized and nonsecuritized derivatives more or less in balance. The government's derivatives transactions produced capital inflows, while banks' and the other sectors' like transactions resulted in outflows. In 2000, interest rate derivatives made up some 30% of financial derivatives.

3.5 Reserve Assets

Reserve assets shrank by EUR 840 million through transactions. This contraction notwithstanding, the end-2000 stock remained almost unchanged at EUR 18.9 billion compared to 1999 due to a revaluation effect.

Annex

Table 1

Balance of Payments Summary

	1999[1])	2000[2])	Annual change
	EUR million		
Current Account	−6,209	−5,877	+ 332
Goods, services and income	−4,307	−4,413	− 106
Goods and services	−1,725	−2,044	− 319
Goods	−3,377	−2,887	+ 490
Services	+1,652	+ 843	− 809
Travel	+1,730	+1,520	− 210
Other business services	− 79	− 677	− 598
Transportation	+1,302	+1,481	+ 179
thereof international passenger transport	*+ 674*	*+ 779*	*+ 105*
Construction services	+ 146	+ 269	+ 123
Financial services	+ 93	+ 170	+ 77
Royalties and license fees	− 470	− 412	+ 58
Other business services	+1,267	+1,578	+ 311
thereof merchanting	*+1,056*	*+1,301*	*+ 245*
Other services	+ 5	+ 71	+ 66
Unclassified transactions	−2,422	−3,834	− 1,412
Income	−2,582	−2,368	+ 214
Compensation of employees	+ 560	+ 574	+ 14
Investment income	−3,141	−2,943	+ 198
Current transfers	−1,902	−1,464	+ 438
General government	*−1,411*	*−1,148*	*+ 263*
Private sector	*− 492*	*− 316*	*+ 176*
Capital and financial account	+6,242	+4,654	− 1,588
Capital account	− 248	− 486	− 238
General government	+ 186	+ 154	− 32
Private sector	− 459	− 628	− 169
Acquisition/disposal of nonproduced, nonfinancial assets	+ 25	− 12	− 37
Financial account	+6,489	+5,140	− 1,349
Direct investment	− 49	+6,469	+ 6,518
Portfolio investment	−2,944	+1,056	+ 4,000
Other investment	+7,936	−2,812	−10,748
Financial derivatives	− 418	− 413	+ 5
Reserve assets[3])	+1,963	+ 839	− 1,124
Errors and omissions	− 33	+1,223	+ 1,256

Source: OeNB.

[1]) Revised data.

[2]) Provisional data.

[3]) OeNB: Gold and foreign exchange, reserve position in the Fund, SDRs, etc.; increase: − / decrease: +.

Table 2

Merchandise Exports and Imports

as Recorded in the Foreign Trade Statistics

Goods by geographic area[1])

	2000					
	Exports		Imports		Balance	
	Annual change	Share of total exports	Annual change	Share of total imports		Annual change
	%				*EUR million*	
EU	+11.4	60.9	+ 9.1	66.0	−6,854	+237
Euro area	+11.2	54.2	+ 9.0	60.9	−7,717	+ 37
thereof:						
Germany	*+ 9.0*	*33.2*	*+10.1*	*40.6*	*−7,195*	*−870*
Italy	*+18.4*	*8.7*	*+ 6.9*	*7.1*	*+ 696*	*+590*
France	*+14.7*	*4.4*	*− 0.4*	*4.4*	*− 215*	*+405*
Non-euro area countries	+19.3	45.8	+21.9	39.1	+2,604	−100
thereof:						
Switzerland and Liechtenstein	*+21.8*	*6.8*	*+ 2.6*	*3.2*	*+2,360*	*+787*
Eastern Europe[2])	*+19.1*	*16.6*	*+30.2*	*13.2*	*+1,628*	*−444*
U.S.A.	*+26.7*	*5.0*	*+16.8*	*5.5*	*− 594*	*+145*
Japan	*+24.7*	*1.3*	*+21.8*	*2.7*	*−1,080*	*−177*
Total	+14.8	100.0	+13.7	100.0	−5,113	− 63

Source: Statistics Austria.

[1]) Country groups as defined by WIFO.

[2]) Albania, Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovak Republic, Ukraine, countries of the former Yugoslavia.

Table 3

Merchandise Exports and Imports

as Recorded in the Foreign Trade Statistics

Goods by commodity category

	Exports			Imports			Balance	
	2000	Annual change		2000	Annual change		2000	Annual change
	EUR million		%	*EUR million*		%	*EUR million*	
Foodstuffs	3,174	+ 283	+ 9.8	3,695	+ 40	+ 1.1	− 521	+ 243
Raw materials	3,220	+ 461	+16.7	7,721	+2,435	+46.1	−4,501	−1,974
thereof: energy (SITC 3)	*875*	*+ 218*	*+33.3*	*4,836*	*+1,955*	*+67.8*	*−3,961*	*−1,736*
Semimanufactured goods	10,045	+1,837	+22.4	9,419	+1,544	+19.6	+ 625	+ 293
Manufactured goods	52,661	+6,281	+13.5	53,334	+4,856	+10.0	− 673	+1,425
Capital goods	18,687	+2,565	+15.9	18,957	+2,457	+14.9	− 270	+ 108
Consumer goods	33,974	+3,716	+12.3	34,377	+2,398	+ 7.5	− 403	+1,318
Miscellaneous manufactured goods	57	×	×	101	×	×	− 44	×
Total	69,157	+8,891	+14.8	74,270	+8,955	+13.7	−5,113	− 63

Source: Statistics Austria.

Table 4

Travel and International Passenger Transport

	1999[1])	2000[2])	Annual change	
	EUR million			%
Travel				
Receipts	10,354	10,729	+375	+ 3.6
Expenses	8,623	9,209	+586	+ 6.8
Balance	1,730	1,520	−210	−12.1
International passenger transport				
Receipts	1,417	1,606	+189	+13.3
Expenses	743	827	+ 84	+11.3
Balance	674	779	+105	+15.6
	1,000			%
Foreign tourist bednights	*82,424*	*82,499*	*+ 76*	*+ 0.1*

Source: Statistics Austria, OeNB.
[1]) Revised data.
[2]) Provisional data.

Table 5

Foreign Tourist Bednights by Country of Origin

	2000			
	Overnight stays	Annual change		Share
	1,000		%	
Germany	52,302	−789	− 1.5	63.4
Netherlands	7,374	+362	+ 5.2	8.9
United Kingdom	3,066	+283	+10.2	3.7
Belgium, Luxembourg	2,216	− 55	− 2.4	2.7
Switzerland, Liechtenstein	2,892	+110	+ 3.9	3.5
Denmark	879	+ 7	+ 0.8	1.1
Italy	2,534	−142	− 5.3	3.1
France	1,461	−262	−15.2	1.8
Sweden	678	+ 42	+ 6.5	0.8
Spain	452	− 11	− 2.4	0.5
Poland	755	− 40	− 5.1	0.9
Hungary	729	+ 37	+ 5.4	0.9
Czech Republic	685	− 6	− 0.9	0.8
Croatia	248	+ 15	+ 6.5	0.3
Commonwealth of Independent States (CIS)	382	+ 49	+14.7	0.5
Slovenia	201	− 2	− 0.9	0.2
Slovak Republic	151	+ 12	+ 8.5	0.2
U.S.A.	1,876	+310	+19.8	2.3
Japan	584	+ 10	+ 1.7	0.7
Other countries	3,034	+149	+ 5.2	3.7
Total	82,499	+ 76	+ 0.1	100.0
Memorandum item: Austrian tourists	*31,147*	*+837*	*+ 2.8*	*x*

Source: Statistics Austria.

Table 6

Investment Income

	1999[1])	2000[2])	Annual change
	EUR million		
Net investment income[3])	– 3,141	– 2,943	+ 198
Investment income receipts	10,623	11,746	+1,123
Investment income payments	13,765	14,689	+ 924
Net direct investment income[3])	– 1,078	– 1,045	+ 33
Income on outward foreign direct investment	849	1,212	+ 363
Income on inward foreign direct investment	1,927	2,257	+ 330
Net income on portfolio investment[3])	– 2,598	– 2,679	– 81
Income on foreign equity securities	267	427	+ 160
Income on domestic equity securities	255	248	– 7
Income on foreign bonds and notes	2,857	4,119	+1,262
Income on domestic bonds and notes	5,404	6,774	+1,370
Income on foreign money market instruments	104	105	+ 1
Income on domestic money market instruments	167	309	+ 142
Net other investment income[3])	534	781	+ 247
Income on other investment, assets[4])	6,546	5,883	– 663
Income on other investment, liabilities	6,012	5,102	– 910
Income on foreign interest-bearing investment[5])	9,589	10,171	+ 582
Income on domestic interest-bearing investment[6])	11,585	12,187	+ 602
Income on foreign venture capital-oriented investment[7])	1,035	1,575	+ 540
Income on domestic venture capital-oriented investment[7])	2,179	2,502	+ 323
Memorandum item:			
Net interest rate financial derivatives[8])	*269*	*– 132*	*– 401*

Source: OeNB.

[1]) Revised data.

[2]) Provisional data.

[3]) Income on outward foreign investment less income on inward foreign investment.

[4]) Income on deposits, loans and reserve assets.

[5]) Income on debt securities, deposits, loans and reserve assets.

[6]) Income on debt securities, deposits and loans.

[7]) Income on direct investment and equity securities.

[8]) Part of the financial account, financial derivatives.

Table 7

Financial Account

	1998[1])	1999[2])	2000[3])
	EUR million, net		
Financial Account	+ 5,531	+ 6,489	+ 5,140
Assets	−16,049	−33,795	−47,152
Liabilities	+21,580	+40,285	+52,292
Direct investment	+ 1,609	− 49	+ 6,469
Direct investment abroad	− 2,469	− 2,773	− 3,462
Equity capital	− 2,098	− 2,591	− 3,158
Reinvested earnings	− 347	− 340	+ 19
Other capital	− 24	+ 159	− 323
Direct investment in Austria	+ 4,078	+ 2,724	+ 9,932
Equity capital	+ 3,191	+ 1,329	+ 9,454
Reinvested earnings	+ 879	+ 1,344	+ 424
Other capital	+ 7	+ 51	+ 53
Portfolio investment	+ 5,902	− 2,944	+ 1,056
Portfolio investment in foreign securities	−10,116	−27,214	−28,462
Equity securities	− 4,672	− 4,942	−16,620
Bonds and notes	− 5,775	−22,114	−10,991
Money market instruments	+ 331	− 158	− 851
Portfolio investment in domestic securities	+16,018	+24,270	+29,518
Equity securities	+ 908	+ 2,002	+ 2,031
Bonds and notes	+14,806	+18,736	+25,519
Money market instruments	+ 304	+ 3,532	+ 1,968
Other investment	+ 742	+ 7,936	− 2,812
Assets	− 825	− 5,262	−15,677
Trade credits	+ 641	− 639	− 998
Loans	− 3,836	−11,417	−10,084
Currency and deposits	+ 2,401	+ 6,863	− 4,647
Other assets	− 30	− 69	+ 51
Liabilities	+ 1,566	+13,198	+12,865
Trade credits	− 266	+ 1,181	+ 231
Loans	+ 59	+ 1,848	+ 2,573
Currency and deposits	+ 1,465	+ 9,652	+ 9,904
Other liabilities	+ 308	+ 517	+ 157
Financial derivatives	+ 193	− 418	− 413
Reserve assets[4])	− 2,914	+ 1,963	+ 839
Memorandum item:			
Interest-bearing investment	*+ 8,022*	*+ 9,323*	*+12,891*
Assets	*− 8,579*	*−26,289*	*−27,492*
Liabilities	*+16,601*	*+35,612*	*+40,383*
Sectoral breakdown			
Banks (including the OeNB)	− 1,371	+ 7,239	+18,123
Assets	− 6,485	−11,686	−17,670
Liabilities	+ 5,113	+18,924	+35,793
General government	+10,986	+15,086	+ 8,710
Assets	− 397	+ 439	− 2,475
Liabilities	+11,384	+14,647	+11,184
Other sectors	− 4,084	−15,835	−21,692
Assets	− 9,167	−22,549	−27,008
Liabilities	+ 5,083	+ 6,714	+ 5,315

Source: OeNB.

[1]) Final data.

[2]) Revised data.

[3]) Provisional data.

[4]) OeNB: Gold and foreign exchange, reserve position in the Fund, SDRs, etc.; increase: − / decrease: +.

Table 8

Financial Account by Region[1])

	Investment in/ from the euro area		Investment in/ from non-euro area countries	
	1999[2])	2000[3])	1999[2])	2000[3])
	EUR million, net			
Financial account	+ 2,596	+16,796	+ 3,893	−11,656
Assets	−17,420	−30,560	−16,375	−16,592
Liabilities	+20,016	+47,356	+20,269	+ 4,936
Direct investment	+ 1,285	+ 8,232	− 1,334	− 1,763
Abroad	− 396	− 221	− 2,377	− 3,241
In Austria	+ 1,681	+ 8,454	+ 1,043	+ 1,478
Portfolio investment	− 5,961	+ 8,250	+ 3,017	− 7,194
Foreign securities	−20,996	−19,944	− 6,218	− 8,518
Domestic securities	+15,034	+28,195	+ 9,236	+ 1,323
Other investment	+ 7,237	− 641	+ 699	− 2,171
Assets	+ 3,827	− 9,405	− 9,089	− 6,272
Liabilities	+ 3,410	+ 8,764	+ 9,788	+ 4,101
Financial derivatives	− 120	+ 955	− 298	− 1,368
Reserve assets[4])	×	×	+ 1,963	+ 839

Source: OeNB.

[1]) While for foreign direct investment in Austria and other inward investment it is possible to establish the identity of the foreign investors, in the case of portfolio investment one can only determine the country via which the transaction has been effected. This means that it is not possible to provide a current and/or completely reliable classification of creditors. Ongoing studies, however, show that the largest volume of Austrian securities sold to the euro area are government bonds sold to foreign banks in the course of tender or syndication offers. Since, in this case, the secondary market generated only a relatively small volume of cross-border transactions, the regional structure of the basic data derived from the reporting system on foreign exchange statistics can be regarded as sufficiently conclusive.

[2]) Revised data.

[3]) Provisional data.

[4]) OeNB: Gold and foreign exchange, reserve position in the Fund, SDRs, etc.; increase: − / decrease: +.

The New Framework for Fiscal Policy

Fiscal Policy Design in the EU

Peter Mooslechner

1 Introduction

With the transition to Stage Three of Economic and Monetary Union (EMU) at the beginning of 1999, the economic policy framework in Europe underwent fundamental changes. Along with the transformation of the institutional basis of monetary policy,[1]) the role and function of the other macro policies of the euro area countries were redefined as well. Thus the importance the transition to EMU has for economic policymaking cannot be understood from a monetary viewpoint alone. Much rather, it is the new policy mix that must be taken into consideration.[2]) This new framework presents primarily a challenge for fiscal policy, which, together with monetary policy, bears the brunt of macropolitical responsibility.

Even in the runup to EMU, economic policy debates in the potential member states regarding the fulfillment of the convergence criteria, unsurprisingly, concentrated on government fiscal positions. While national governments have formally retained full autonomy of fiscal policies in EMU, "European positions" have become increasingly important. The coordination of European fiscal policies even plays a decisive role for the EU Member States which do not participate in EMU as yet.

For an analysis of the economic policy currently pursued within EMU, it is, therefore, indispensable to look at the lines along which fiscal policies have developed. Although short-term aspects tend to loom large, the long-term (historical) orientation is far more important for understanding the conceptual framework. Only with such an approach is it possible to analyze if and to which extent the fiscal side of European economic policy has undergone long-term changes.

The present study seeks to cover the debate over fiscal policy under EMU from a long-range, policy-oriented perspective. This is a daunting task because the theory of fiscal policy does not offer an unambiguous basis for such an analysis, so that its interpretation involves a high degree of subjectivity.

The analysis of the international challenge (EU and EMU) as well as of the long-term orientation of fiscal policy will be developed from the following points of departure: Section 2 will generalize a few important observations to provide a basis for the analysis. Section 3 will present significant historical approaches to fiscal policy. Section 4 will analyze the extent to which Musgrave's categorization of governmental functions can still be used as a fundamental conceptual framework in the analysis of fiscal policies. Section 5 will then seek to provide a brief macroeconomic interpretation of the most recent history of fiscal policy coordination in Europe, from the Maastricht criteria to the sustainability and quality of public finances. This contribution, which is also intended to provide a framework for the subsequent studies on more specific aspects of fiscal policy in a European context, will end with a short summary and some conclusions related to economic policy.

1 *For an analysis from this point of view and a comprehensive bibliography, see Hahn and Mooslechner (1999).*

2 *See contributions in Hughes-Hallett, Mooslechner and Schürz (2001).*

2 Points of Departure – "Unended Quest"[1])

Every analysis of economic policy is based on a (limited) number of observations characteristic of a given situation as seen from the angle of the author. The choice of questions to be dealt with will considerably narrow the scope of possible assessments and conclusions. The point of departure for the "unended quest" is the vast amount of relevant literature forcing any author to concentrate on a small selection of issues he/she considers specially pertinent to economic policy matters.

In the context of the fiscal policy debate in EMU four questions seem primarily worth looking into:

1) What is the cause for the current predominance of fiscal issues in the European economic policy debate?
2) To which extent do substantial differences in the theoretical approaches and starting points of individual European states make it more difficult to agree on a uniform European fiscal policy?
3) To which extent must (can) fiscal policy as a comprehensive macropolitical instrument involving highly specific measures deal with multiple objectives subject to national idiosyncrasies? How can these multiple objectives be cast into fiscal hierarchies and priorities at a European level?
4) In view of its function as a macropolitical instrument, fiscal policy must generally be seen in the overall economic context, which reveals conflicts of interests and thus shows the necessity to prioritize targets. In the European context, the question arises to which extent this macropolitical role of fiscal policy can continue to exist at a national level.

Since the fundamental redesign of the monetary policy framework in Europe, at any rate since its reorganization through the Treaty of Maastricht, economic policy in Europe has been primarily seen from the perspective of monetary policy. Concurrently, it has always been stressed that, due to the transition to a common monetary policy for the euro area, the policies that remain under the responsibility of national governments play a central role in complementing common monetary policy – in particular with regard to economic policy responses to asymmetrical shocks.

Immediately after the adoption and ratification of the Treaty of Maastricht both the economic policy debate and economic literature began to focus on fiscal policy issues, a development that continues virtually unabated even though the central viewpoints have shifted from time to time. Whereas the discussion about the design of European monetary policy has largely been limited to the community of experts, the issue of fiscal policy design has been in the center of a broad socio-economic debate.

Apart from the fact that the quantitative bias of the fiscal criteria warranted an economic debate, the predominance of fiscal issues can

1 *The heading refers to the German and English titles of Sir Karl Popper's autobiography ("Ausgangspunkte" – which literally translates as "points of departure" – and "Unended Quest"). The difference between the two versions reflects an interesting tension between a static and a dynamic approach, which also appears to aptly characterize fiscal policy issues.*

evidently be explained with the economic downturn following the exchange rate turbulences of 1992/93 and 1995, which was not on the horizon when the Treaty of Maastricht was drawn up but that turned the fiscal criteria into a significant hurdle for EMU participation. At 5.3% for the EU as a whole (or 5.2% as a weighted average for the countries which would later become EMU members) in 1995, the general government deficit had reached a rate which would, on credible application of the membership criteria, have limited initial eligibility for EMU membership to a very small number of countries.[1]) In retrospect, no more than four countries actually fulfilled the 3% requirement in 1996. Even in the anchor or core state Germany, the budget deficit, at roughly 3.5%, was markedly higher in 1995 and 1996.

This unfavorable setting subsequently prompted European economic policymakers to compete for EMU membership, with the focus being on fiscal policy. The reduction of key fiscal ratios and ensuing convergence was indeed impressive and eventually made it possible to launch EMU at the beginning of 1999.

This story behind the start of EMU explains why fiscal issues dominated the European economic policy debate in the 1990s: Initially, European economic policymaking was shaped by the discussion about the fiscal criteria for EMU membership. In addition, the fiscal policy experiences of 1995/96 rapidly led to a call for complementing the static fiscal criteria for participation in EMU by a long-term element once EMU had been launched. The outcome of this discussion was the Stability and Growth Pact. Thus, the Treaty of Maastricht and the Stability and Growth Pact resulted in a marked increase in the degree of European coordination in a field of economic policy which had originally been designed as a matter of national responsibility.

As the architecture of EMU evolved, national fiscal policy targets thus started to converge across the EU. Both, the Treaty of Maastricht and the Stability and Growth Pact contain outlines of a European approach to fiscal policy. In parallel discussions in the relevant economic policymaking bodies at EU level, a consensus on fiscal policy matters has been reached in many details and matters of interpretation; this (informal) consensus goes far beyond the formal framework of the Treaty and continues to evolve.

This is probably reflected most clearly in the evaluation of the stability programs of the individual Member States. These are subject to discussions in the pertinent bodies on a regular basis and, being comprehensive presentations of the budgetary developments and intentions of a state, they include not only macrofiscal ratios but also an analysis and assessment of individual fiscal measures.

To avoid clashing measures and negative cross-border spillover effects, a European consensus on fundamental fiscal targets is desirable and definitely required to a certain extent. However, the underlying problems must not be disregarded. For example, in economic theory there is no agreement about the appropriate theoretical framework. Moreover, the fiscal policy designs vary from country to country and in terms of timing. Differences range

1 The national debt ratios were 70.5% and 74.7%, respectively.

from the variety of country-specific fiscal preferences to fiscal response requirements in case of exogenic shocks.[1])

The alignment of fiscal policies in Europe is also rendered difficult by the multiplicity of objectives countries seek to attain by means of specific fiscal measures. Fiscal policy (possibly) differs from other economic policies[2]) in that it cannot, by definition, be restricted to one macropolitical level and/or individual economic policy objectives. On the one hand, specific fiscal measures impact a number of macropolitical objectives (such as inflation, employment, growth, distribution of income etc.), i. e. specific fiscal policies affect the degree to which such objectives are attained. On the other hand, fiscal policy frequently involves measures of structural and microeconomic relevance whose macroeconomic impact is hard to pin down in each individual case. This implies a multiplicity of potentially conflicting objectives and effects that need to be balanced by concrete fiscal policy action. Hence fiscal policy, and especially budgetary policy, typically involves the (explicit or implicit) management of strategies and the prioritization of objectives and measures. These requirements, however complex they might already be at this point, will not only change over time but will also vary according to individual objectives. An extremely complex interaction between the identification of objectives, selection of appropriate measures, meaningful prioritization and correct weighting of sideline requirements will eventually determine whether fiscal policies succeed or fail.

These considerations clearly express the problems involved in coordinating fiscal policy at a European level. Given the different economic and historical preconditions as well as different preferences underlying fiscal policy at a national level, coordination concerning the multiple objectives of fiscal policy, their weighting and the details of appropriate measures will necessarily play a subordinate role. For this economic reason – and not only because of the political delicacy of the issue – the allocation of responsibilities for fiscal policies to national governments was not seriously called into question in the transition to EMU.

Primarily, European fiscal policy coordination has to focus on two aspects: fiscal macroperformance, measured by means of a few general indicators, and the identification and enforcement of European fiscal priorities in those sectors where such prioritization appears necessary in spite of diverging national needs. However, the second aspect will in particular require a consensus about common fiscal perspectives that is difficult to reach, and it is rendered more complex due to differences between countries.

1 *These issues have always played an important role in regional economics under the heading "fiscal federalism" (Anderson, Harsman and Quigley, 1997; Fatas, 1998; Inman and Rubinfeld, 1997).*

2 *The various objectives and mandates of central banks show that this is even a controversial issue in the less complicated context of monetary policy.*

3 "A Brief History of Time"[1]) as Reflected in Fiscal Policies

In view of the significant role which government and fiscal policy have played in the theory of economics and the practice of economic policymaking in the past two decades, there are astonishingly few publications from the period which summarize the fundamental role and transformation of fiscal policies.

At any rate, an issue like the European coordination of fiscal policy will inevitably require to revisit the fundamental characteristics of fiscal policies in economic theory. Even though such a presentation will be limited to selected sources,[2]) these will identify a number of essential criteria which seem important for an understanding of the current fiscal policy debate.

The economic principles of government *and* fiscal policy were classically identified by Adam Smith.[3]) Rereading Smith, even after 225 years, we are struck by his exceptional analysis of the state as a part of and player in the national economy (Rashid, 1998). Nothing that would be comparable was written before, or for many decades after him.[4])

What is it that makes Smith's analysis so exceptional? Basically, there are three aspects to his work which make his point of view stand out among all the comparable works of his day and age, and make them worthwhile reading even today:

– First, there is the comprehensive approach his analysis takes. At a time when the economic role of the government was by no means comparable with the role the government plays in modern national economies in quantitative terms, he devoted one of five books ("Revenue of the Sovereign or Commonwealth") to fiscal issues entirely. The book has 230 pages, which corresponds to more than one quarter of "The Wealth of Nations."[5]) Moreover, three other books deal with aspects of government responsibilities in detail in the respective context.
– Another point is the conclusive approach to the government on which he bases his analysis. He dealt with tasks of the state and public

1 *The title of this section is borrowed from the book of the same title by Stephen Hawking.*

2 *Primarily, the following sources were used for the present study: Atkinson and Stiglitz (1980), Blaug (1978), Gartner (2000), Musgrave (1985), Persson and Tabellini (forthcoming), Phyllis (1989), Quigley and Smolensky (1994), Stiglitz (1998), Spiegel (1983) and Taylor (2000). In many respects the book by Atkinson and Stiglitz seems to be the most recent excellent overview of the topic. Blinder and Solow (1974) continue to be worthwhile reading.*

3 *Of course, given the focus of this study on the economic role of the state and its part in economic policy, mention should be made of the politico-philosophical discourse about the state that existed long before Smith but will not be dealt with here (cf. e. g. Fenske, Mertens, Reinhard and Rosen, 2000). Similarly, this study will not look at the specific function of the state before Smith's day and age, e. g. in physiocratism or mercantilism. In this context Spiegel (1983) pointed out that the term "political economy" dates back to 1615 but was only dealt with in respect of individual specific aspects before Smith. Cf. also the study of economic knowledge predating Adam Smith in van Dooren (1996).*

4 *Blaug (1978) strikes a similar, if not even more extreme note: "300 years of uncoordinated intellectual effort" when writing about the time before Smith, and Musgrave (1985) says, referring to the time after Smith: "what follows over the next two centuries are variations".*

5 *The calculation is taken from the German version by Recktenwald (1978), which is based on the fifth edition (London 1789).*

spending, public revenue and public debt on a par, as an integral whole. In doing so, he presented a three-pronged analytical approach which subsequently became central to scientific work on issues of state and economy.

– Finally, he incorporated issues of government activities in the broader framework of economic analysis at large as a matter of course. Thus, he avoided the problem which has been a common theme running through fiscal policy analyses ever since and continues to characterize the design of fiscal policy, in particular in the German-speaking countries, i. e. the fact that the government is treated as a "special economic topic," something to be thought of separately and apart from the other issues.

If we look at the way in which Smith dealt with the role of government and fiscal policy in his theories from his angle, we will find that his three-pronged analytical approach and the degree to which he integrated the three parts of the analysis are the most characteristic elements. While for Smith the connection between the government's functions and the roles of those functions for the economy as a whole was in the foreground, later analysts tended to single out individual issues, an approach that eventually gave rise to a so-called partial analysis of fiscal policy issues that neglects other angles. Accordingly, the issue of government responsibilities was discussed without tackling at the same time questions of funding, taxation and the structure of public spending. This notwithstanding, and without sufficiently bearing in mind the *partial* character of the analysis, general conclusions concerning fiscal policy were – and still are – drawn.

Depending on the analytical viewpoint of the author, this results in certain basic positions underlying the fiscal policy analysis, which in turn determine the respective general assessment. Essentially, two basic positions can be identified in this highly simplified approach:

Position 1 is fairly close to Smith's position, accepting that there is an economic function for the government to fulfill due to market and coordination failures and due to the fact that higher ("common") tasks exist.

Position 2, by contrast, seems strongly influenced by the partial analysis approach to taxation and is best illustrated by a quote from Ricardo (1817): "the very best of all plans of finance is to spend little, and the best of all taxes is that which is least in amount."

Surprisingly enough, reasoning in favor of government functions and public spending based on Smith's tripartite model for the object of analysis accounts for the smallest strand of literature. Smith simply differentiated between the functions of the "prince" (not to be questioned in depth), "ordinary functions" and "optional functions." In any event the market provided the central mechanism of coordination, which was basically desirable. Every function of the public sector was an exception and required a reason, to be given by analytical means.

As the notion of marginal utility gained increasing importance as a determining economic concept, this view was defined in more precise terms in the sense of an evaluation of private and public goods. On the one hand, Pigou developed this concept of efficiency further in more general terms; on the other hand, he introduced external effects as additional

important reasons. Samuelson then explicitly considered the implications of indivisibilities and joint consumption, positioning the analysis within the comprehensive framework of a neoclassical model of equilibrium.[1])

Traditionally, the problem of taxation is the issue dealt with most widely throughout fiscal policy literature. In general, this analysis is strongly characterized by the exogeneity of government functions and public spending. The focus is on the efficiency and neutrality of the tax system as well as on equality in the sense of theoretical criteria applying to the welfare state. Empirically – and much more ambiguous in terms of results than in theoretical analysis – the issue of tax incidence turns out to be the decisive problem of fiscal policy.

After World War II the role of the state in economic policy was based on the Keynesian paradigm and dominated by the government as a macropolitical agent. This was accompanied by an image of fiscal policy that had been transformed in many ways. While output level and employment were previously considered exogenic to fiscal policy, they shifted to the center of macropolitics in the Keynesian framework of analysis; the national budget took on a new and much bigger strategic role in the framework of economic policy at large. The extent to which economic policy is discretionary or to be ensured by means of automatic stabilizers continues to be one of the crucial points of the fiscal policy debate. However, one has to add a caveat here: This analytical approach also remained partial in that it considered the taxation side of the issue or the determining parameters of government tasks in a limited way only. The question for the extent of public sector involvement was likewise neglected by this school of economic thought.[2])

4 "Musgrave" as a Conceptual Framework?

Which theoretical grid is best suited for a classification of the lines along which fiscal policies have developed at a European level, given the historical and conceptual background of the role of the government and fiscal policy as briefly summarized above? There is no clear and generally valid answer. However, there is one theory which, in my opinion, seems to be relatively better suited than others, and thus worthwhile of being analyzed in greater detail.

Even though it emerged in the specific historical context of the IS-LM model inspired by Keynes, Musgrave's theory of public finance (1959) seems comprehensive, flexible and relatively unbiased in analytical terms. Based on empirical findings, it distinguishes between three functions of government – *allocation, distribution and stabilization* – without attributing any special weighting to them. The model seems to be sufficiently comprehensive to equally reflect different approaches to and conceptions of the government's role in the economy; therefore, it is suited for a general,

1 *Further approaches can be found in game theory or public choice theory. Compare e. g. presentations in Blankart (2001) or Mueller (1989, 1997).*

2 *Conversely, Bayer (1998) and Raschauer (2001) use the Austrian example to show how important this issue is in the practice of (fiscal) policy.*

systematical classification of the relevant issues and policy recommendations.

Fundamental issues within this theoretical grid address basic aspects, such as: How much of the *allocation function* does a developed market economy need? This simple question includes complicated issues such as the relative significance of market failure vis-à-vis the risk of state failure, the scope of distortionary effects due to government activities, as well as the type and organizational form of government activity and its efficiency. While the existence of the allocation function, if not even its extent, is largely undisputed in the literature, it is considerably more difficult to arrive at an assessment in respect of the *distribution function*. Here, opinions might go so far as to call the necessity of this function into question altogether because fiscal interventions into the distribution of income are considered to be more harmful than beneficial as they provide the wrong incentives. In the European context, the *stabilization function* is most important. What is the (transformed) economic policy role that fiscal policy can and will play in the new European conditions and how do all the national fiscal policies fit into the policy mix of EMU?

Of course, we cannot give any immediate answers to all these questions – which need to be looked at from a long-term perspective – by choosing a certain analytical grid. However, it is important to structure the problems and unresolved issues in an appropriate way to make them more "accessible" and to help identify new perspectives and potential answers. In particular this seems required for all the issues connected with the long-term development of public sector functions. There is a wide range for alternative visions of the state running the gamut from a minimal or "nightwatchman" state to extensive state involvement in a leviathan state or a welfare state.

There are no straightforward theoretical answers to questions as to whether certain of these concepts "fit" specific historical and overall economic environments, or whether the "right" tasks of the state are functionally conditioned. However, history has seen shifts in weight among the functions of the modern state: While the focus used to be on basic governmental functions such as security and the financing of wars – i. e. on the allocation function –, the past century saw the provision of infrastructure, responsibility for basic social security and economic crisis management – i. e. distribution and stabilization functions – added to the list of important governmental tasks.

In practice, it is hard to form a judgment due to the interaction of the three functions which came about through the historical expansion of state functions. Fiscal measures aiming at stability will e. g. always also have (side)effects in distribution and allocation – and vice versa – which do not necessarily conform with the objectives set for these fields. To ensure consistency among policies, any decision in favor of a certain fiscal measure directed at a certain objective will therefore require policymakers to consider and assess its impact on other objectives. Within fiscal policy, this tension arises between the polarities of macroeconomic consequences on the one hand, and structural or microeconomic side effects on the other. At

the same time, these conflicts also arise between specific structural objectives, e. g. when family support measures or educational policy measures have inevitable consequences for the labor market.

What is at stake at the macro level is the position of fiscal policy within the policy mix and its interaction with other (macro)policies. The primary potential for conflict at this level lies in the fact that fiscal policy, if adapted to other policies macroeconomically, does not necessarily conform with its structural and micropolitical objectives, and vice versa.

Even if this study – based on Musgrave's categorization of governmental functions – can only provide a highly simplified outline of the backdrop for the current quandary of fiscal policy, a number of topical core questions can be identified as examples. In spite of all the historical changes in the backdrop and institutions, these core questions mainly relate to appropriate criteria for the functions and tasks of the public sector. This ties in directly with the question for a meaningful extent of state involvement, measured e. g. by simple quantitative ratios such as public spending as a share of GDP or the general government tax-to-GDP ratio, whatever the definitions may be.

The function-based structure helps to phrase these questions more precisely and split them into a macropolitical component (aiming at stability) and a structural component (pertaining to the allocation function): Which macropolitical role should and can fiscal policy play meaningfully today, and what are the structural objectives we consider to be central responsibilities of the public sector today? The assignment of certain functions will also come with an analysis of the problem of efficiency in the fulfillment of tasks of or by the public sector. In spite of the abundance of literature available on these topics the general impression is that economic theory has little to offer to help decide these fundamental issues. This is primarily a reflection of the fact that issues of the public sector, especially its size and the scope of its responsibilities as well as the fiscal measures derived from these, are not only economic but also socio-political issues (Engel and Schweizer, 2001). This opinion also refers back to Adam Smith, who founded economics as an academic discipline in his works but was actually a moral philosopher.

5 The Macroeconomic Classification of Fiscal Policy Approaches in the EU and in EMU

With this in mind, I will use four topical examples to try to illustrate, by way of conclusion, some elements in the development of fiscal policies at a European level while also assessing them in terms of content. The examples are: (1) the fiscal criteria enshrined in the Treaty of Maastricht, (2) the Stability and Growth Pact, (3) the discussion about the sustainability of public finances, and (4) the current issue of the quality of public finances.

1) The fiscal criteria enshrined in the Treaty of Maastricht are characterized by a predominantly macropolitical perspective. They are dominated by the notion of the state as a macroeconomic agent, thus conforming with the traditional role of fiscal policy in the postwar era.

Combined with the inflation-related experiences of the 1970s and 1980s, (excessive) public deficits and national debts are primarily considered risks in the economic policy mix.[1]) Under an "end justifies the means" approach (European Commission, 1999) the focus is on aggregates and balances. Notwithstanding the clearly macrofiscal construction of the Maastricht criteria, there are indications for their immanent further development: On the one hand, there is a connection with the discussion about the sustainability of public budgets[2]) which only emerged much later in explicit terms, with the implicit reference to long-term debt dynamics contained in the quantitative element of the two fiscal criteria (3% and 60%), and on the other hand, the quality of public finances is hinted at in the fact that the extent of state investment (in relation to the total deficit) is included.

2) In principle, the Stability and Growth Pact perpetuates the macrofiscal design of the Maastricht criteria.[3]) However, it extends, interprets and specifies these in greater details, thus implicitly outlining the course of further development. In contrast to the criteria formulated in the Treaty of Maastricht, the Pact is more specific about the fiscal requirements, primarily by covering the following four items: (i) by anchoring the criteria at a European level in the long run while at the same time shifting the focus to a structural (noncyclical) core of national budgets; (ii) by formulating a "dynamic" (forward-looking) perspective taking concrete shape in the budgetary policies and medium-term budget planning of the Member States, which are thus moved into the center of the fiscal policy debate; (iii) by establishing a process of permanent European surveillance of national fiscal policies (European Commission, 1999) through discussions and evaluations of national stability programs in the relevant bodies; and finally (iv) by setting the objective of general fiscal discipline, to be ensured by a mechanism of prevention, dissuasion and political commitment to avoid sanctions which would otherwise become inevitable at some point. Implicitly, the Pact also includes further development of the relevant criteria by interpretation (e. g. structural deficit or "close to balance").

3) A current debate on the European coordination of fiscal policy, which resulted from the Maastricht criteria and the Stability and Growth Pact, focuses on the sustainability of public finances (Banca d'Italia, 2000). Even though there is broad consensus that "the term fiscal sustainability does not have an exact meaning" (Chalk and Hemming, 2000), the discussion surrounding it is increasingly shaping the further development of ideas for long-term fiscal measures. The discussion was actually triggered by the notion of an aging society and its fiscal repercussions but developments can now be seen to take two directions: a macro-

1 For the theoretical background, see e. g. Buiter (1999), Fujiki (2001) and Roldan (1996).

2 Using the argument of the future costs of an aging population, the objective of a balanced budget in the Stability and Growth Pact was extended by "or in surplus" on the insistence of one Member State.

3 For two examples from the vast range of literature about the Stability and Growth Pact see Artis and Buti (2000) as well as ECB (1999).

political part aiming at a stabilization or reduction of the debt ratio in accordance with the debt dynamics approach (Blanchard, 1990); and, and more interestingly, a structural part using structural deficits as the point of departure, applying various criteria to create and eventually monitor minimal benchmarks or margins for foreseeable long-term fiscal developments – such as aging – at a European level. Perotti, Strauch and von Hagen (1998) added controllability, the capability of a state and its institutions to cope more or less well with fiscal shocks, to this concept.

4) The most recent strand of the debate about European designs of fiscal policy deals with the quality of public finances. As this debate has only just begun, it can hardly be assessed for its consequences as yet; however, the implementation of its major elements would be a quantum leap in European fiscal policy. The reason for this is the comprehensive nature of the approach, the intentions of which are best reflected in the following quote: "quality of public finances is multidimensional, and covers both sides of the budget" (European Commission, 2000). One concrete example is the list of four criteria for tax reforms (Ecofin Council, 2000) which were formulated last year but have only been applied informally so far. In general the discussion about the quality of public finances aims at interlacing fiscal measures with general economic objectives – mostly structural in nature – such as those expressed in the concept of "enhancing growth and employment" (European Council, 2001; ECB, 2001). In terms of institutions and economic policy decisions, the concept of quality blazes a trail for large-scale fiscal coordination in the EU, potentially including budget deficits, debt ratios, medium- and long-term fiscal developments as well as revenue and expenditure structures. Even if fiscal policy matters in the EU remained subject to the principle of subsidiarity in the long run, European coordination of the fiscal policy field would reach a very high level that way.

Of course, this interpretation of developments requires a few caveats. Nevertheless, it seems striking that all approaches to fiscal coordination at a European level are characterized by a focus on budgetary policy. If we consider the close connection between budgetary policy and other policies, programs and processes (such as the National Action Plans for Employment, to give only one example), this orientation could soon prove too narrow in scope and lead to economic inconsistencies – especially at a structural level.

This ties in directly with a call for a wider perspective in fiscal coordination which recognizes the functions of government as significant in their totality, and this is also closely connected with considering various ways in which tasks are fulfilled, from functions visible in the budget to providing a regulatory framework for societal activities. In this respect, too, it becomes clear that the fulfillment of public responsibilities goes beyond the realm of fiscal policy. In a nutshell: Even though in practice there is still a considerable gap between the theoretical requirements that come with the developments described above and their actual implementation, and even though these developments still need real testing, the coordination

processes are already effective without any doubt, and they greatly determine the design of fiscal policies in the EU Member States.

6 Summary and Some Conclusions

While the primary focus of the Treaty of Maastricht was on creating a new institutional framework for EMU, economic policymaking in Europe and discussions about the conceptual framework have since been heavily influenced by the fiscal side of economic policy. The deficits of 1995 and 1996, unexpectedly high in most Members States, the competition to fulfill the convergence criteria and the prolonged discussion about the necessity and design of a Stability and Growth Pact have decisively contributed to this development.

In terms of content, the issues of fiscal policy underlying these discussions seem to have remained unchanged over the past 200 years. The questions as to whether there is a role for the state to play in fiscal policy, which functions it ought to perform and how it should fulfill its tasks, are controversial in developed market economies, too, not only politically but also theoretically, and they can definitely not be answered from an economic point of view alone. However, the persistent continued existence of individual fiscal policies in all states points to what are obviously convincing historical, theoretical and pragmatic reasons for the role of the state and fiscal policy.

With its translation to a European level in an ever more integrated Europe this discussion has acquired a new dimension. Contrary to monetary policy, fiscal policy has remained a matter of national responsibility in EMU but it came as no surprise that the required interaction among economic policies – at a European level and between states alike – also necessitated more economic coordination. A system of fiscal policy coordination in the EU emerged with the Maastricht criteria and has since been refined by the Stability and Growth Pact as well as the notions of sustainability and quality of public finance. Initially and primarily, it was a global macropolitical framework focusing on a few key ratios such as the general government debt and deficit ratios.

From the Stability and Growth Pact onward this system was not only subject to dynamic development; coordination also came to include ever wider and more detailed areas of fiscal policy. Seen against the backdrop of Musgrave's theory of government functions, the conceptual framework of fiscal policy in the EU is thus more oriented to a view of the state as primarily fulfilling allocation functions where the leeway for fiscal policy as an instrument of stabilization is restricted – e. g. in the shape of automatic stabilizers, unless there is a pronounced cyclical crisis. The consequence for concrete national fiscal policies is that their leeway is now limited by the coordination requirements defined at a European level. However, to date it is not sufficiently clear if this coordination system is flexible enough to ensure the ability to respond to asymmetrical shocks, which is important within EMU, and to use fiscal measures satisfactorily to react to regional differences in preference, or to market failure and impacts from outside.

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Measures and Strategies for Budget Consolidation in EU Member States[1])

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1 Introduction

Solid public finances are a permanent prerequisite for stability in Economic and Monetary Union (EMU). As a consequence, the Member States of the European Union (EU) have undertaken to avoid unsustainable government budgetary positions and ensure a smooth macroeconomic policy mix to promote sustainable growth and employment and promote monetary stability in EMU. In accordance with Article 104 (1) EC Treaty, they are obliged to avoid excessive government deficits.

The excessive deficit procedure standardized in the Maastricht Treaty and the Stability and Growth Pact based on the Treaty form the legal basis for *"enhanced fiscal discipline in EMU to avoid overburdening the single monetary authority and prevent fiscal crises which would have negative consequences for other countries"* (European Commission, 2000, i).

One important function of these provisions is to elaborate criteria for the permissible deficit and debt levels of Member States to keep negative spillovers of national borrowing[2]) from jeopardizing the credibility of the common European monetary policy[3]). *"The requirement of achieving a sound budgetary position in order to join the single currency and maintaining budgetary prudence once in EMU are at the core of the Maastricht Treaty"* (Buti et al., 1997, page 2). As it is expected that in EMU and hence in an integrated capital market debt incentives will increase from the standpoint of the individual

1 *This study is an abridged version of a study completed at the OeNB in August 2000.*

2 *If the credibility of the single currency were to be impaired by increased aggregated debt financing in EMU, this could lead to an EMU-wide risk premium on all debt issues and hence higher costs even for those countries not pursuing an expansive fiscal strategy. As the higher interest cost would have to be financed by tax increases, there would be additional efficiency losses that would not have to be borne by the country responsible for the expansive fiscal strategy either. If an increase in government borrowing led to higher interest rates throughout EMU, which, in turn, had strong real economic effects (especially unemployment) on all of the countries in EMU, this could create pressure to accommodate monetary policy in order to make the real adjustment less severe.*

3 *The fiscal criteria aim to keep a government from going bankrupt, i. e. when an EMU country displays an unsustainable deficit trend, the criteria should create a situation that could require monetizing government debt. Provided they are efficient, capital markets should actually be able to identify the default risk of a country in a monetary union with very high public debt and sanction such countries with an appropriate risk premium or credit rationing. Thus, if a country shows unsustainable public debt levels, disciplining it through the capital markets should have the appropriate effect, i. e. endogenization of external effects. According to Part (1997), capital markets are consequently flanked to a certain extent by the no bail-out clause and the ban on monetary financing by the ECB and the Stability and Growth Pact. The no bail-out clause (Article 103, but also Article 21 of the Statute of the European System of Central Banks) is intended to keep other Member States from feeling obliged to assume the debts of a bankrupt country to avoid a financial crisis (see Gnan, 1999). If the costs of assuming the debt of a government declaring bankruptcy were relatively low compared to the costs incurred in the aftermath of a European financial crisis, this would certainly be an incentive for other countries to offer their help. But precisely this would establish the conditions for time-inconsistent economic policy. Eichengreen and von Hagen (1996) specifically refer to the time inconsistency problem as an argument in favor of the centralized monitoring of national deficits. When the Maastricht Treaty was formulated, as well, the debate on market pressure versus peer pressure played an important role. Ultimately European legislators opted for a double-edged strategy in the Maastricht Treaty: On the one hand they wanted to strengthen market discipline via Articles 101 to 103 (prohibition on extending central bank credit to governments, ban on preferential access, no bail-out clause), but parallel to that – as it were to safeguard and enhance the credibility of these provisions – they introduced set rules in the form of targets and procedural regulations guaranteeing mutual group control of national fiscal policy.*

participating states[1]), monetary stability is to be underpinned in EMU by disciplining government borrowers. Maintaining budgetary discipline is thus an essential constraint of an efficient common monetary policy.

The institutionalized common European monetary policy now in place thus implies the necessity for greater and, more important still, binding coordination of fiscal policy, which has generally remained a national responsibility. By signing the Stability and Growth Pact (as a *"concrete manifestation of the shared need for fiscal discipline,"* European Commission, 2000, i) the member states of EMU committed themselves to keeping their government budget positions close to balance or in surplus in the medium term. Although the objective of sound public finances was already incorporated in the Maastricht Treaty, no procedures had been established for monitoring and sanctions.

The Stability and Growth Pact specifies the contractual provisions of the Maastricht Treaty in regard to government budget policy. Introducing an early warning system with hard and fast rules, reaction patterns and deadlines will ensure that medium-term budget targets are met. This reinforces both the system for early recognition of the danger of excessive deficits in Member States as well as the correction and sanction instrument used for deficits which are already excessive.

Fiscal policy is designed to maintain a balanced, noninflationary economic policy aimed at sustained growth. As far as the trend in the overall budget balance is concerned, however, the contractual provisions and the Stability and Growth Pact put tight constraints on the national budget policies of EU countries because there is little leeway for planning deficits in the third phase of EMU.[2]) Attaching greater importance to the quality of fiscal policy measures increasingly places the stress on the growth and structural policy agendas of fiscal policy. The ongoing debate on fiscal policy measures is focusing increasingly on the extent and structure of budget spending and revenues with the goal of ensuring the sustainability of consolidation, countering the financial consequences of the aging population and ensuring the impact of budgets on growth, employment and inflation.

Europe's single monetary policy means forgoing national monetary policy to combat asymmetrical shocks, which automatically increases the importance of those instruments which remain a national responsibility, such as fiscal policy. The increasing weight of the stabilization function of fiscal policy in EMU has generally compelled participating countries to

1 *Whether as the consequence of a decline in the cost of debt resulting from lower interest cost due to the shrinking risk premium for heavily indebted countries or due to the expanded capital market or as a result of the expectation of higher growth rates in less economically advanced countries or regions, which would also lead to a greater propensity to accumulate debt (Bovenberg and de Jong, 1997).*

2 *"Thus, it is often claimed that EU governments opted to 'tie their own hands' within a European Union framework to overcome their deeply-rooted bias towards running excessive deficits and so to justify to their public opinion the need to implement unpopular measures". (European Commission, 1998, page 52) According to McKinnon, 1997, the fiscal criteria were designed by the individual member states as an external device to impose necessary fiscal corrections that were independent of the creation of EMU. From the standpoint of Germany and France, which had quite solid public finances at the beginning of the 1990s, the fiscal criteria were a screening device to ensure that only those countries with sufficient fiscal discipline could become members of the future EMU.*

reorient their national fiscal policies. In many countries fiscal policy was characterized for decades by high structural deficits coupled with low nominal growth rates and high nominal interest rates, resulting in uncontrolled growth of public debt. The sharp rise in interest expenditure[1]) often forced governments to act procyclically, which had more of a destabilizing than a stabilizing effect.[2]) *"Instead of reducing government deficits and debt ratios when economic growth was favourable, governments have tended to undertake a discretionary loosening of the budgetary stance"* (EMU, 2000, ii) linked to the need for restrictive fiscal policy in phases of economic downturn.[3]) In order to be able to respond to asymmetrical shocks, the individual participating countries in EMU should establish the necessary conditions to allow automatic stabilizers to work without jeopardizing the deficit cap.

This study attempts to portray the budgetary trends which have established themselves in European countries as a result of the Maastricht Treaty and Stability and Growth Pact. The following section provides a summary and evaluation of the consolidation strategies applied by EU countries before and after 1997. This is followed by a country-by-country description of the major consolidation measures implemented in the last ten years.

2 Implementation of Fiscal Policy Measures Enforced by the Provisions of the Maastricht Treaty and the Stability and Growth Pact

2.1 Budget Consolidation before 1997

At the outset, the economic prerequisites for meeting the fiscal criteria laid down in Maastricht were not the best. While *"the majority of past and present Member States had satisfied at least the deficit criterion by the end of 1991,"*[4]) when the Treaty was ratified two years later only Ireland, Luxembourg, Denmark and the Netherlands had deficit ratios that complied with the provisions of the Treaty. Owing primarily to deterioration of the economic climate, the growing interest burden and special factors, the deficit and debt ratios of most countries had risen significantly. In a number of EU countries that had previously had relatively high inflation rates, the fact that the prevailing disinflation in the run-up to EMU had ruled out the possibility of relying on inflation to "grow out of debt" also contributed greatly to the sharp rise in government indebtedness as a percentage of GDP. Aside from the automatic stabilizers, which were very effective in some countries (Sweden, Finland),

1 *High interest expenditure also means a reduction in the maneuvering room that budget policy has, as interest payments supersede government spending and public investments in human and capital goods, besides which interest payments have little or no effect on underpinning the economy or increasing unemployment.*

2 *This contradicts the neoclassical theory of optimal tax smoothing, which assumes that to minimize the additional costs associated with taxation and changes in taxation the tax rates should remain constant throughout the economic cycle.*

3 *In the last few decades there were discussions about the stabilizing function of fiscal policy, i. e. the effects of a discretionary fiscal policy. In the course of the consolidation periods in the 1990s, the non-Keynesian growth effects of consolidation policy reinforced the reservations about discretionary fiscal policy, especially where efforts were made to reduce unsustainable debt developments.*

4 *Only in Belgium, Portugal, Greece, Spain and Italy was the deficit above the 3% mark.*

this was also attributed to active employment policy measures (e. g. Spain and Sweden). In Germany the costs of reunification took their toll on the budget, and in Sweden and Finland it was the impact of the banking crisis. In Finland the recession was exacerbated by the sharp drop in foreign trade with its neighbors to the east. And despite budget consolidation, growth objectives (in Germany) and structural reforms (in France, for example) remained important goals for the time being. In countries such as Greece, on the other hand, the government recognized that improving economic performance was a necessary prerequisite for effective budget consolidation. And in countries like Portugal and France, the necessary periodical political legitimation also meant heeding distribution policy objectives.

Above all in large European countries (France, Germany, Spain, Italy), budget consolidation was apparently competing with other economic objectives in the first phase.[1]) Only in a few countries (Finland for one) was there complete political agreement from the very start over reducing the deficit and debt ratios.

A look at the cyclically adjusted budget balances shows that in Greece, Spain, France, the United Kingdom a well as in then EU applicant countries Austria, Finland and Sweden the structural deficits continued to grow from 1991 to 1993. However, an analysis of the trend in structural primary balances reveals that the increase in structural deficits had its origin mainly in the rising interest expenditure. In the case of Greece, Spain and Finland, on the other hand, the improving structural primary balances were a sign that governments had intensified their consolidation efforts in the first phase.

After 1993 and the commencement of the second stage of creating the single currency union, most of the countries intensified their consolidation efforts in order to satisfy the membership criteria for EMU in 1997. Apparently, however, it was no easy task politically to convey the significance of the fiscal convergence criteria as an important constraint for a single currency policy. Although all EU Member States except for Greece fulfilled the EMU criteria in 1997, only six countries (Ireland, Luxembourg, the Netherlands, Finland, Denmark and Sweden) were below or close to the 3% deficit cap in 1996. And only nine countries achieved a debt ratio of 60% of GDP or at least a downward trend.

In the years leading up to 1997 France, Greece, Ireland, Italy and Portugal pursued a consolidation strategy that was either completely or predominantly revenue-based, while in Denmark, Finland, Sweden and the United Kingdom consolidation measures were focused primarily on expenditure retrenchment. Aside from Luxembourg, which easily fulfilled all of the fiscal criteria and did not have to take any consolidation measures, the rest of the countries pursued a "switching strategy,"[2]) since the focus

1 *As unemployment rates were high anyway, consolidation endeavors gave rise in some cases to hefty political resistance. This was particularly apparent in the major strike movements in France.*

2 *See European Commission (2000), page 9.*

was on revenue-based retrenchment in the first phase, associated with noticeably higher tax ratios.[1]) In the second phase consolidation fairly quickly switched to expenditure-based measures.

Looking at the progress made toward consolidation in terms of cyclically adjusted balances shows that between 1993 and 1997, with the exception of Denmark, which never had problems with the 3% limit, all Member States reported improvements ranging from 1.3 percentage points (Ireland) to 8.7 percentage points (Greece). The decline in interest expenditure played a big role particularly in Greece, Belgium, Italy, Ireland and Portugal, but also in Denmark.

Only Germany, France and Portugal registered a rise in the structural expenditure ratio between 1993 and 1997. The structural primary expenditure ratio remained constant in Germany and Greece, while France, Austria and Portugal reported a small increase and Ireland a relatively strong one, which ultimately did not imply any problems thanks to the favorable trend in Irish revenues.

The consolidation measures implemented by most European countries, however, were aimed at the purely quantitative fulfillment of the Maastricht criteria so that they could participate in EMU. For this purpose, governments stepped up privatization efforts and revenue-raising one-off measures,[2]) which accounted for more than 0.5% of GDP in Finland, France, Italy, Austria and the United Kingdom in 1997.[3]) In the case of France and Italy, it was only with the aid of these measures that they managed to reach or move below the 3% deficit cap.[4]) Quality and the medium to long-term impact of consolidation took a back seat during the phase leading up to 1997. *"The combination of basically unchanged consumption growth, one-off measures, privatization and public investment reduction suggests that much of the fiscal adjustment to Maastricht was illusory. Moreover, the high implicit pension debt clearly shows that the constraint on gross government debt was addressing only part of the euro countries' future fiscal problems."* (Easterly, 1999, page 74).

2.2 Budget Consolidation after 1997

Whereas in 1997 only Ireland, Luxembourg and Denmark showed surpluses, by 2000 nine countries (Belgium, Germany, Ireland, Luxembourg, the Netherlands, Finland, Denmark, Sweden and the United Kingdom) had achieved this goal (although in Germany's case this was only

1 *Von Hagen and Strauch (2000) speak of the Maastricht effect.*

2 *One disadvantage of such purely quantitative criteria as those in the Maastricht Treaty is that they create an incentive to resort to one-off measures and creative bookkeeping to fulfill them, which reduces information content and the credibility of just how serious the commitment is to exercise fiscal discipline. The possibilities for creative accounting practices were limited, however, by gearing the Maastricht Treaty to the accounting rules laid down in ESA 95, which also improved the comparability of budget trends between the countries and the transparency of the consolidation measures taken.*

3 *See the Convergence Report by the European Monetary Institute (1998).*

4 *Among them are the EU tax in Italy and the assumption of France Telecom's pension obligations by the French government in return for a one-time payment of about 0.5% of France's GDP. In Austria the suspension of tax recognition of loss carryovers for 1996 and 1997 constituted a similar one-off measure.*

accomplished by including the receipts from auctioning off the UMTS licenses). Of the remaining Member States, only Spain, Austria and Portugal had deficit ratios higher than 1% of GDP.

After 1997 the situation changed in the sense that the expenditure ratios of all remaining EU countries with the exception of Greece (constant) and Portugal (increased) declined. If we look solely at the development of primary expenditure, however, we see that the downward trend in spending was underpinned in a number of countries by the substantial decline in interest expenditure.

The revenue ratio only increased during this period in Belgium, Greece, Spain, Portugal, Sweden and the United Kingdom. In the other countries the ratio either fell (Denmark, Germany, Ireland, Luxembourg, Italy, Austria and Finland) or remained almost unchanged (the Netherlands and France). Nevertheless, the changes in the structural primary balance ratios for the periods from 1993 to 1997 and 1997 to 2000 show that the consolidation efforts have been less intense since 1997. Only in Ireland, Finland and Denmark did the structural primary surplus show further improvement.

By strict interpretation of the Stability and Growth Pact (i. e. only permitting structural deficit ratios of up to 0.5% of GDP[1])), Belgium, Ireland, Luxembourg, the Netherlands, Finland, Denmark, Sweden and the United Kingdom were all "close to balance or in surplus."

2.3 Consolidation – A Fiscal Policy Objective Per Se?

The need to meet the Maastricht criteria and ensure sustainable public finances has brought about a change in fiscal policy reaction functions in the countries participating in EMU. The need for consolidation was – at least temporarily – defined as the prime policy objective, one which was to be achieved independently of output trends and monetary policy developments. Von Hagen and Strauch, 2000, speak in this connection of the so-called Maastricht effect on fiscal policy. The costs related to Europe-wide consolidation during this period, however, appear to have been lower than for consolidation in earlier phases. This can be seen as an indication that, in addition to the anticipated short-term output-reducing Keynesian effects, there were also so-called non-Keynesian effects in play.[2])

A crucial factor in assessing the sustainability of the consolidation process will probably be how deficit reduction is divided up into revenue-based and expenditure-based measures. In the economics literature[3])

1 *This means provided a cyclically adjusted balanced budget is assumed as a quantitative interpretation of "close to balance or in surplus" and a margin of error of 0.5% of GDP is considered admissible.*

2 *Non-Keynesian expansive budget consolidation was first ascertained by Giavazzi and Pagano (1990) in assessing the consolidation done in Ireland and Denmark. Non-Keynesian growth-stimulating consolidation effects appear to have occurred above all in those countries that have reported extremely high and hence unsustainable debt ratios. High debt ratios are linked to the expectation of a high future tax load, which have a negative impact on the propensity to invest and the labor supply. Nevertheless, the growth-stimulating effects of consolidation are not uncontested. See Kamps (2001).*

3 *See Alesina and Perotti (1995, 1997), European Commission (1998, editors Buti and Sapir), Buti, Franco and Ongena (1997), Perotti (1996, 1998).*

priority is increasingly given to expenditure-based budget consolidation, as economists deem such measures to be more successful in terms of simple quantitative criteria[1]).

In a summary and update of the results arrived at by Perotti (1998), von Hagen and Strauch (2000) back up related results appearing in earlier studies. Von Hagen et al. (2001) also assert that the most sustainable consolidations were those carried out in phases in which both the national and international economic climates were weak and the fiscal policy was restrictive in the OECD as a whole. In such phases governments resorted mainly to expenditure-based retrenchment measures, such as cutting politically sensitive transfer and subsidy payments or public sector salaries, whereas in prosperous phases the focus was more on revenue-based strategies. Successful consolidation campaigns involved little or no reduction in public investment.

Thus, judging from the academic debate, expenditure-based consolidation is currently the most widely recommended approach in economic policy (e. g. in the Broad Economic Policy Guidelines). One argument against revenue-based measures (above all tax hikes) is the very high tax rates applied in some countries, especially the sharp rise in the tax burden on the labor side in the last few decades. Nor are taxes, which have a steering function – as in the case of environmental taxes, which serve to internalize social costs – an appropriate primary consolidation instrument.

This notwithstanding, the arguments used to assess the success or failure of consolidation efforts are subject to debate. Is it justified to use strictly defined quantitative variables and their relatively short-term trends to measure the success of consolidations or – just as fiscal policy can have multidimensional effects – should a more comprehensive approach be taken to assessing success? The determination that a consolidation plan has a strong probability of success if politically sensitive transfer and subsidy payments are cut conceals an incentive not only to cut back the welfare state too drastically, but also to neglect those structural reforms which only bring savings in the medium to long term, such as reforms in the field of organization and administration at the national level. Evaluating the success of consolidation strategies based on only a few quantitative fiscal criteria also increases the danger that the consolidation will evolve in the long run into an economic policy objective per se.

2.4 Fiscal Policy – A Stabilization Instrument for EMU?

The Stability and Growth Pact strives to achieve sustainable sound public finances to keep the members from giving free rein to growing structural

1 *See Alesina and Perotti (1995, 1997). According to their work, consolidation is a success if within one year the ratio of the primary deficit to GDP declines by at least 1.5 percentage points and this reduction is persistent in the sense that either the structural primary balance ratio is at least two percentage points below the level of the initial year for the three years after consolidation or that after three years the ratio of debt to GDP is at least five percentage points below the level of the first year of consolidation.*

deficits whether out of political economy or strategic considerations[1]) or owing to changed national economic policy preferences.

In a single currency union, aside from wage policy it is fiscal policy that has the task of serving as a shock absorber in the event of asymmetrical shocks. But the question prompted by the Maastricht Treaty and the Stability and Growth Pact is what stabilization function actually remains for fiscal policy when you consider that, provided the members continue to feel obligated to uphold the targets of the Stability and Growth Pact, successful consolidations have been initiated primarily in phases of weak growth. *"An implication is that successful consolidations are a significant element of the procyclical behaviour of fiscal policy observed in the EU member states."* (European Commission, 2000). *"If this turns out to be true, it also means that fiscal policy would not do much for macroeconomic stabilisation. … Furthermore, it suggests that fiscal policy would not do much to counteract negative asymmetric shocks to individual EMU economies"* (von Hagen et al., 2001). It should also be taken into account that *"there is evidence that strict numerical rules reduce the responsiveness of government budgets to the cycle and therefore limit the extent to which budgetary policies may contribute to the stabilisation of cyclical fluctuations in economic activity. Under stringent balanced budget restrictions, budgetary policies may even become procyclical and thus increase the cyclical volatility of the economy. In addition, governments may reduce the cyclical sensitivity of the budget."* (Bayoumi and Eichengreen, 1995). Thus, these empirical findings stand in contrast to the function of absorbing asymmetrical shocks which was assigned to fiscal policy in a single currency union. On the other hand, one can also argue that this procyclical effect of quantitative fiscal rules only applies in phases of budget consolidation. Once the objective of a government budget being structurally balanced or in surplus is achieved, fiscal policy once again has the leeway to absorb recessions with the aid of automatic stabilizers.

3 Consolidation Strategies of the Individual EU Countries in Detail

3.1 Austria

Along with Germany and France, Austria was generally among the countries that traditionally posted low deficit ratios. This notwithstanding, in the first half of the 1990s the deficit ratios in these countries were also distinctly above the 3% limit, so they, too, had to make a considerable effort to fulfill the fiscal criteria of the Maastricht Treaty.

In the latter half of the 1980s and early 1990s Austria always posted deficit ratios which were well below the European average and never exceeded the 3% limit due to a great extent to the stabilization measures introduced beginning in 1987. Even the debt ratio (as a percentage of GDP) was still under the 60% mark until 1992 (56.9%). As a combined result of the recession that took hold in 1993 (growth slumped by 2.1 percentage

1 *According to the theory of political economic cycles (Nordhaus, 1975), for instance, governments have an incentive to ease fiscal policy prior to an election, the result being that they reduce the scope of action of future governments in the process.*

points in real terms over 1992 and by 0.8 percentage point from 1993 to 1994), the automatic stabilizers taking effect, the fiscal effects of introducing additional social benefits (nursing allowance, extension of maternity leave benefits to two years) and joining the EU, however, the deficit ratio climbed to 5.1% in 1995, thus requiring considerable consolidation measures in order to fulfill the convergence criteria.

While Austria managed to lower its deficit ratio for the nation as a whole from 5.1% to 1.9% between 1995 and 1997 by applying a mixture of revenue and expenditure-based measures,[1]) in the two years that followed no more progress was made toward consolidation.[2]) Despite the good economic climate in 1998, the deficit ratio rose temporarily to 2.5% of GDP; in 1999 it was brought back down to 2.0% of GDP. Compared with other countries in Europe, this meant that Austria, along with Portugal, reported the highest deficit ratio. In 2000 the deficit ratio was reduced by 0.9 percentage point to 1.1% despite increased spending. Aside from the favorable economic situation, it was above all the receipts from selling UMTS licenses and property that brought the figure down. The impact of the income tax reform that went into effect in 2000 (reduction of the marginal tax rate, etc.) and the so-called family package was partially offset by the subsequent increases in indirect taxes (fees, tobacco tax, electricity charge, automotive insurance tax).

In 1995 and 1996 Austria engaged mainly in revenue-based consolidation, whereas most consolidation efforts in 1997 involved expenditure-based retrenchment. Between 1995 and 1997 the structural revenue ratio rose 0.6 percentage point in the wake of the measures dictated by the Structural Improvement Act, which provided for a reduction in special expenses, suspension of the practice of carrying forward tax losses, a 5% increase in the advance income tax payments and an increase in capital income tax from 22% to 25%. The revenue trend did not receive any support from the economic setting, however. Even taking into account the cyclical effects, the revenue ratio remained virtually at the same level as in 1995. Between 1997 and 2000 the structural revenue ratio fell 2.1 percentage points; this had its origin not only in the increase in indirect taxes, which was smaller than the growth in GDP, and the income tax reform in 2000, but also in the effects of privatization and reclassification. The revenue ratio declined by 3.3 percentage points between 1995 and 1997.[3]) From 1997 to 2000 it fell another 2.1 percentage points.

1 *To get under the 3% limit for the deficit ratio in 1997, the budget had to be consolidated by some EUR 9.1 billion (ATS 125 billion) in 1996 and 1997, two-thirds of which was supposed to come from expenditures. The comparatively weak growth in these two years posed a particular problem. See Lehner (1997) and the Federal Ministry of Finance (1997).*

2 *In order to fulfill the criteria for joining EMU, in addition to implementing the measures set forth in the Structural Adjustment Act, Austria reversed the trend in the debt ratio in 1997, above all by removing fee budgets and reclassifying ASFINAG (although it was removed from the administrative budget back in 1997 ASFINAG remained part of the public sector up until this year under ESA provisions).*

3 *Wage restraint in public service made a particularly big contribution to consolidation. But there were also cuts in transfers, e. g. maternity leave benefits, unemployment insurance benefits. Reclassifications also helped reduce the expenditure ratio.*

The trend in the structural revenue and expenditure aggregates shows that the structural decline in a number of revenue components observed since the mid-1990s impeded successful consolidation. Although this did show that Austria was among the countries that had managed to reduce the structural expenditure ratio, since the structural revenue ratio was also declining, the decline in the structural deficit ratio turned out to be more modest than in other European countries.[1]) Whereas on the revenue side the tax receipts of businesses and households rose (cyclically adjusted) in the second half of the 1990s, both the value added tax ratio and the social security contribution ratio fell, as did the "other revenues" component as a percentage of GDP, which above all reflects the budgetary impact of reorganization and privatization.

The budgetary impact of the 1997 pension reform (reduction of the state government's contribution to pension insurance) is very small for the time being,[2]) which implies that additional reform measures either were or are necessary. The pension reform passed in October 2000 is seen as another step toward achieving sustainable public finances, and as the next step toward taking precautions against long-term budgetary burdens as a consequence of the demographic development. In the last few years, however, reform has been aimed at easing the short-term budgetary burden by making changes in the area of the early retirement pension and the widowed spouses' pension.

The impact of the falling interest rates in the 1990s on the deficit trend was comparatively minor due to the large share of fixed-income medium and long-term bonds.

After Austria joined EMU, the debt ratio remained close to the 1997 level. It was not until 2000 that the ratio fell by 1.5 percentage points to 62.9% of GDP owing to the favorable economic growth and high primary surplus.[3]) The government does not expect to see a marked reduction in the debt ratio until sometime in the next few years.

3.2 Belgium

In Belgium consolidation was both expenditure and revenue-based in the 1990s, although the main focus was on expenditure-based retrenchment. In the first phase (1992–1993) the consolidation process concentrated on revenues despite the poor economic climate, and then in the years that followed the focus was switched to expenditure-oriented measures. As the

1 *The analytical division of consolidation measures into revenue-based and expenditure-based measures is distorted, however, by the fact that ESA 95 provides for proceeds from real estate sales and the sale of UMTS licenses to be reported as negative expenditures.*

2 *Until 2010 no noticeable reductions are anticipated in the spending trends of pension insurance companies and the federal contribution. By 2005 pension spending for pension insurance will decline by only 0.2% of GDP, by 2010 by about 0.4% of GDP. It will not be until 2020 that we can expect to see savings in pension spending (just under 1.1% of GDP). The maximum savings amount will be 1.5% of GDP in 2030. The savings in the federal contribution will be of a similar scope. In addition, the government passed a pension reform for civil servants, but here as well, in light of the long transitional procedures and capping provisions, only minor budget effects are anticipated for the time being.*

3 *Compared to 1999, the primary surplus rose 0.9 percentage point to 2.4% of GDP. Of this increase, 0.3% came from the proceeds from selling the UMTS licenses.*

primary surplus only improved by 0.5% in the period from 1997 to 2000, the success of consolidation in the last four years can be seen mainly in the lower interest expenditure. The interest expenditure was reduced by 1.1 percentage points of GDP from 1997 to 2000.

Compared with most other countries, the need for consolidation was particularly great in Belgium. At the beginning of the 1990s Belgium's budget deficit was about 7% of GDP. Government debt was just under 130% of GDP, so consolidation was aimed at reducing the high level of government debt. In mid-1992 Belgium planned within the scope of the first convergence program to lower the budget deficit to 3% of GDP and significantly reduce government debt by 1996, the strategy being to keep the tax revenue ratio constant and reduce the expenditure ratio (growth only in line with inflation). A nominal limit was agreed on for government transfers to social security.

But in 1993 government debt reached its peak at 136% of GDP; the deficit ratio rose to 7.2% of GDP as a result of economic slowdown. Between 1990 and 1993 total spending showed a continual upward trend, particularly expenditures for the civil service and interest expenditure. In an environment of high, increasing unemployment, it was above all the ongoing transfer payments to private households and government consumption that rose.

In 1994 consolidation measures were implemented more systematically than in the past, underpinned by the global plan to boost employment and improve competitiveness and social security. The employers' contributions to the social security system were lowered to make Belgium more competitive, while the contributions paid by wage earners and the self-employed were raised as a financing measure. In addition, it was agreed to limit health spending to a real annual increase of 1.5%. In the years that followed, more efforts were made to restrict the growth in spending in the health sector, such as limiting the reimbursement of medical costs and the cost of hospital stays. In unemployment insurance the claim requirements for young jobless persons to receive benefits were tightened. The automatic indexing system – which generally serves as the basis for calculating social benefits and consequently also increases in the cash benefits extended to the jobless – was modified to the extent that tobacco, alcohol and fuel were dropped from the price index relevant for the calculation. The revenue-based measures in 1996 included increases in the value added tax (to 21%) and the taxes on fuel and alcohol.

Although Belgium did not achieve the projected budget target in 1996 at 3.8% of GDP, a marked reversal was seen in the government budget trend. Government debt fell to 130.5% of GDP. In the ensuing convergence program, the government announced the target of achieving a primary surplus of 6%. In the event that this figure should fall below 5.3%, discretionary measures would be taken to ensure fulfillment of the fiscal criteria of the Maastricht Treaty.[1])

1 The December 1998 stability program basically confirmed these rules.

In 1997 Belgium managed to reduce its budget deficit to 1.9% of GDP and government debt to 125% of GDP. This progress was deemed sufficient for membership in EMU. By 2000 Belgium had more consolidation success to its credit: The budget deficit was reduced to 0.5% of GDP and government debt to 110.1% of GDP. From 1993 to 2000 Belgium succeeded in reducing its budget deficit by a total of 7.2 percentage points of GDP and government debt by 28 percentage points of GDP. In the last few years, however, the bulk of consolidation has been focused on the declining interest expenditure, which was responsible for two-thirds of the reduction in structural spending between 1995 and 2000. The increase in the structural revenue ratio was relatively small.

3.3 Denmark

The fact that Denmark's deficit ratio has always been below the 3% reference figure for the last ten years gives Denmark a special status. As a consequence, consolidation efforts concentrated mainly on reducing the debt ratio, which exhibited a strong upward trend in the first half of the last decade. The Danish government felt that the budget balance should show a surplus on average for an economic cycle. Since 1998 the government has deemed it necessary to have a budget surplus of 3% of GDP as a precautionary measure to meet future pension needs.

In Denmark, as well, the consolidation process has essentially involved a so-called switching strategy (European Commission, 2000), i. e. has undergone two consolidation periods: the first a revenue-based consolidation period from 1992 to 1993 followed by expenditure-based retrenchment from 1994 to 1998. And a great deal of importance continues to be placed on reducing primary expenditure.

The improvement in the structural balance came to 1.0 percentage point in the first period (1992–1993) and 2.6 percentage points in the second period (up until 1998). The paradigm shift from revenue-based to expenditure-based consolidation can be clearly seen in the development of the cyclically adjusted expenditure ratio, which had experienced a massive increase prior to 1994 and then in the second period up until 1998 was brought back down to the level recorded at the beginning of the 1990s. From 1998 to 2000 it was reduced by another 3.6 percentage points of GDP.

Denmark responded to the economic slump in the late 1980s with expansive discretionary measures. The first consolidation in 1992 was consequently moderate and above all short-lived. As Denmark reverted to an expansive fiscal policy in 1993, the effects of the previously introduced consolidation were canceled out. Because the first consolidation was built exclusively on revenue-based measures, it fell apart when tax receipts fell and social security taxes stagnated.

The comprehensive tax reform passed in 1994 and gradually put into force from 1994 to 1998 was aimed above all at easing the tax burden and reducing the tax system's efficiency losses, which are associated with high marginal tax rates.[1])

The second consolidation period was initiated once Denmark overcame the 1994–1995 recession. After that Denmark succeeded in reducing its primary expenditure ratio substantially. The tax reform coupled with the reform of the very generous transfer system by European standards were to bring about a balanced budget by 1998. Reforms in the labor market were aimed at curbing the growth in spending as well as cutting social security expenditures. But in some cases the latter generated additional expenditures in other areas.[2]) Early retirement was reformed out in 1995. Furthermore, coordination was improved between the central government and other public entities. The plan to counter overheating of the economy by constantly reducing government spending did not always receive the support of subordinate authorities (administrative districts and municipalities).

A second tax reform,[3]) which was passed in 1998 and began to have an impact in 1999, pursued mainly distribution and allocation policy objectives. The impact of the reform caused a slight year-on-year decline in the budget surplus as per the end of 2000.

The economy and the reduced interest burden had thoroughly positive effects, thereby turning the 2.3% deficit in 1995 into a surplus of 2.4% in 2000.

Although Denmark's financial balance at the outset of the 1990s was always below the 3% deficit ratio, by 1993 the debt ratio had climbed to 78% of GDP due mainly to the clash between a high positive interest and growth spread (snowball effect) and a high positive debt deficit adjustment. The fiscal policy strategy pursued by Denmark combined with the reduced interest burden and the favorable economic trends resulted in a reduction in the debt ratio to 46.3% in 2000.

3.4 Greece

At the beginning of the 1990s Greece exhibited the highest deficit ratio among the European countries, recording a ratio of 15.9% of GDP in 1990. The debt ratio was also above the European average at 89.0% of GDP. Greece was the only country in the EU that had not yet fulfilled the convergence criteria required to join EMU in 1997. It was not until 1998

1 *Along with the tax reform, proportional social security contributions were introduced on gross income (excluding capital and pension income to ease the progression) equal to 8% of gross salary, which reduced taxable income. At the same time the marginal tax rate was raised for top incomes. As the social benefits in Denmark are still generally financed by the tax system, financing it calls for above-average progression by European standards.*

2 *Spending cuts in the area of active labor market policy led to higher expenditures for the jobless.*

3 *The most important measures: lowering the marginal tax rates for low income earners; raising energy taxes; reducing preferential tax treatment for saving through insurance companies; reinforcing tax privileges for pension saving schemes, albeit tied to the goal that the tax system should not have any distorting effects on the decision to choose one savings form over another.*

that its deficit ratio fell below the 3% mark and that the debt ratio subsequently embarked on a downward trend.

Greece attempted to achieve fiscal convergence via reforms passed in 1992 (income tax reform, measures to reduce tax evasion, increases in a number of excise taxes and measures in preparation for the planned EU-wide harmonization of value added tax). But as these measures were insufficient, Greece announced that it would be giving priority to improving general economic performance by implementing growth-promoting measures and then use that as its foundation – in a second step – for reducing the high level of debt.[1]) The tax-related efforts were also aimed at increasing the revenues generated by the public sector.

As the trend in the cyclically adjusted revenues shows, the consolidation measures taken were predominantly revenue-based up until 1998. The cyclically adjusted revenue ratio climbed more than 10 percentage points from 1992 to 2000. In addition to new measures designed to increase the receipts from income taxes and corporate taxes and to reduce the incidence of tax evasion, the tax rates for alcohol, tobacco and energy were raised and various tax exemptions for value added tax and other types of excise tax were abolished. Nonetheless, taxes were also lowered beginning in 1998–1999, e. g. energy taxes and value added tax on cars and oil products. And yet these measures did not bring about a reduction in the tax ratio. Quite the contrary, the ratio rose by 0.5 percentage point from 1999 to 2000. A big part of the accompanying improvement in the primary balance was due, however, to the robust economic growth in 2000. The cyclically adjusted primary balance rose by only 0.3 percentage point.

The decline in spending in the second half of the 1990s is explained for the most part by the falling interest expenditure (since 1993 interest expenditure as a percentage of GDP has been lowered by just over 5 percentage points). The primary expenditure ratio stagnated. From 1993 to 1995 a modest contribution was made to consolidation simply by implementing measures to curb government consumption. The savings resulting from pension reform were offset in the first half of the 1990s by massive increases in various transfer payments, a development that became even stronger from 1996. Spending for public service as a share of GDP has also been on the rise again since then, as both the wages of public servants and the number of public servants have increased substantially. As of 1994 budget consolidation has also been rendered more difficult by the general economic conditions.

Greece's debt ratio climbed from 89% of GDP in 1990 to a high of 111.3% in 1996. High interest payments and a very positive debt-deficit adjustment (and up to 1993 primary deficits as well) neutralized the ratio-lowering effect of high nominal growth rates. In the last few years the decline in the debt ratio to 103.9% of GDP has been incurred primarily by the growing primary surpluses and the lower interest payments.

1 Nevertheless, growth policy objectives had already played a major role in the income tax reform of 1992.

3.5 Germany

With a deficit ratio of 2% and a debt ratio of around 40% of GDP, Germany's budget policy was in fairly good shape as it headed into the 1990s. Nonetheless, reunification and the ensuing additional fiscal burdens put Germany in a special situation. Due to the large transfer payments to the new German states and the deteriorating economic trends, the budget deficit swelled in the first half of the 1990s, reaching 3.4% of GDP in 1996.

If we take as our point of reference 1991, the first year of German reunification, we can see that Germany's consolidation efforts were heavily revenue-based. The structural revenue ratio increased significantly between then and 2000 (1991: 41.7%; 2000: 47.3%), even though the second stage of Germany's tax reform did have a curbing effect in 2000. The revenue-based measures focused mainly on increases in indirect taxes and social security contributions to finance old-age pensions in the new states. In both the first and the second half of the 1990s Germany's overall tax ratio rose by about 1.5 percentage points of GDP.

The convergence and stability programs always imposed restrictions on spending, particularly on wage expenditures in the public sector, but on public investments as well. Nevertheless, from 1991 to 1996 all components of the expenditure ratio except for net capital spending augmented. By 2000 Germany had managed to reduce spending as a percentage of GDP almost to the level recorded in 1990. However, the proceeds from the sale of UMTS licenses last year, amounting to 2.5% of GDP, were reported as a negative expenditure in conformity with ESA 95, which accounts for most of the 3% reduction in the expenditure ratio over 1999. In the period from 1996 to 1999, however, spending was only reduced by 1.7 percentage points.

The net deficit ratio had improved distinctly, particularly in the last two years, with income tax receipts showing stronger growth than anticipated. The spending trend was also relatively favorable. Thanks to the unexpectedly high proceeds from the sale of UMTS licenses, Germany boasted a budget surplus of 1.5% of GDP in 2000. Without this one-off revenue, however, the budget balance for 2000 would only have improved by 0.4 percentage point of GDP year on year and the budget deficit would still have been 1% of GDP (1995: –3.5%). As the cyclically adjusted deficit remained almost unchanged in 2000, surely this does not qualify as a continuation of budget consolidation.

The economic trends certainly did not help budget consolidation at all. The cyclical components had a negative impact on the revenue side of the budget balance, particularly in the second half of the 1990s. Interest expenditure has declined only marginally since 1996 and consequently hardly had any influence on the trend in net indebtedness.

Whereas the first convergence programs implemented by the German federal government were dominated by the costs of reunification and the needed consolidation, later on stimulating economic growth and easing the tax burden also gained importance. In the last two years the government introduced not only income tax reform aimed at lowering the tax rates, especially for low income earners, but also corporation tax reform designed

to enhance Germany's appeal as a business location. Furthermore, ecology-motivated measures were implemented beginning in 1999 (e. g. tax increases in the energy sector), which is helping to lower nonwage costs.[1])

Germany's debt ratio rose rapidly after reunification. This was due mainly to the obligations of the reunification fund, which is part of government debt as a whole, the ERP fund, the Treuhand Fund and the Redemption Fund for Inherited Liabilities, which all together increased the debt ratio by some 20 percentage points. The Treuhand Agency alone, which is used to privatize companies in former East Germany, generated debt amounting to 6% of GDP. The bulk of these debts resulted from costs relating to privatization per se. From 1994 to 1995 privatization procedures increased the debt ratio by 7.7 percentage points. In 1997 the debt ratio exceeded the 60% reference figure for the first time. As a result of using part of the proceeds from selling the UMTS licenses to repay debt, in 2000 the figure was brought back down to close to the 60% mark (60.2%).

3.6 Spain

At the beginning of the 1990s Spain's budget was in good shape, with the debt ratio around 45%. The deficit ratio was 4% in 1992. Spain is another country that has opted for a switching strategy in its consolidation endeavors. Whereas the focus was on revenue-based consolidation measures in the early 1990s (the cyclically adjusted revenues expressed as a percentage of GDP rose from 37.8% in 1991 to 41.5% in 1993), the consolidation strategy switched mid-decade to expenditure-based retrenchment (cyclically adjusted spending rose from 43.6% in 1991 to 47.6% in 1993 and then shrank to 40% of GDP by 2000).

According to the first convergence program, a well-balanced policy mix and structural reform in the labor market and services sector were to help lower the deficit ratio to 1% of GDP by 1996. But Spain failed to achieve these targets due to the poor general economic conditions, which led to unexpectedly low indirect tax receipts, and the lower revenues occasioned by the tax reform passed in 1991. While in 1992 the government was still determined to promote consolidation using measures involving transfers, increases in direct and indirect taxes and in the area of employers' social security contributions, as of 1993 budget consolidation had to take a backseat to stimulating the economy with fiscal measures, which resulted in deficit ratios of over 6% of GDP from 1993 to 1996.

Spain did manage to reduce the deficit ratio to 0.3% between 1995 and 2000 thanks to expenditure-based budget consolidation initiated in 1994 that involved cuts in current expenditures. And Spain was able to stabilize and increase the percentage of GDP claimed by public investments to improve the economic convergence with other European countries. While the cyclically adjusted revenues as a percentage of GDP declined up until 1995, they remained constant in the years that followed. The expenditure-based consolidation strategy led to a reduction in the structural expenditure

1 *The revenue generated by the ecology tax reform is being used to lower the contribution rate for pension insurance.*

ratio of almost 6 percentage points between 1995 and 2000. A series of structural reforms was carried out in the areas of transfers, social security,[1]) taxes and administration, such as restricting benefits by increasing the qualifying period and shortening the period of entitlement in unemployment insurance; measures to improve tax levies, reduce tax evasion and diminish the abuse of social security benefits; and reforms to increase efficiency in public administration[2]) and the budget process. In addition, the central government reached an agreement with the local government to keep the ratio of health spending as a percentage of GDP constant.

Spain succeeded in lowering its primary expenditure ratio by about two percentage points in the last five years as a result of expenditure-based consolidation measures. Since the share of interest expenditure in GDP also fell by 1.9 percentage points, the total relief came to 5.1 percentage points.

On the revenue side, in the second half of the 1990s policy focused not so much on supporting budget consolidation as on stimulating growth and improving the country's appeal as a business location with the help of expansive tax measures. Above all, this was accomplished with a comprehensive reform of direct income and corporation taxes in 1999 and a reform of social security taxes.

As the trend and composition of the cyclically adjusted balance in the last five years shows, the significant decrease in the deficit ratio (1995 to 2000: +6.3 percentage points) is due above all to measures affecting primary expenditures (decline in cyclically adjusted primary expenditures: 3.4 percentage points) and the trend in interest expenditure (–1.7 percentage points of GDP). The improvement in revenues was almost completely cyclically induced.

In parallel to the expansive fiscal policy, the debt ratio jumped 11.6 percentage points to 58.7% of GDP in 1993. The rise was reinforced by the heavy servicing of debt and the unusually high positive debt-deficit adjustment. It was not until 1997 that the primary surplus was big enough to reverse the debt trend with the help of a negative debt-deficit adjustment. With primary balances continuing to show strong increases, Spain succeeded in lowering the debt ratio to just over 60% in 2000 despite the debt-deficit adjustment turning positive again, an occurrence that is obviously related to the creation of the new pension reserve fund.

3.7 France

With a deficit ratio of 1.5% of GDP and a debt ratio of 36.3% of GDP, France's fiscal position was very good at the beginning of the 1990s in terms

1 *In the 1997 reform it was determined that upgrading of benefits would be guided by the trend in the CPI, the estimation period for calculating pensions was extended from 8 to 15 years and a cut in pensions was approved for those contributing for less that 25 years.*

2 *The central government, trade unions and local authorities agreed to moderate wage increases for the different areas of public service. The agreement between the central government and the local authorities was particularly significant not only because in the years prior to that, the transfers to the local authorities had shown unexpectedly strong growth and had constituted a constant source of budget overrun, but also since the local governments were granting their public servants comparatively high annual wage increases and making comparatively large increases in the number of employees.*

of the fiscal criteria laid down in the Maastricht Treaty. Due to the economic slump, however, the budget balance deteriorated to –5.6% in 1994, while government indebtedness rose to 49.6% of GDP.

France relied chiefly on revenue-based measures to fulfill the Maastricht criteria by 1997. Consequently, the cyclically adjusted revenue ratio rose continuously from 1990 to 1997, but the cyclically adjusted expenditure ratio also showed a continuous rise until 1996. Since then it has been on a downward trend.

As part of the first convergence program back in 1993, it was the government's intention, without resorting to tax hikes, to reduce the deficit ratio to below 2.5% of GDP by 1997, stabilize government debt and make leeway for financing future pension obligations. In addition, France passed structural reforms aimed at improving social security practices (by introducing spending caps for hospitals and outpatient clinics and copayments for health services, increasing the minimum insurance qualifying period from 37.5 to 40 years and extending the period of calculation from 10 to the 25 best-paid years in employment, tightening of conditions for qualifying for and receiving unemployment benefits) and at promoting employment and growth. In 1994 and 1995 both subsidies to businesses and transfers to households were increased. This means that both expenditure-lowering and expenditure-raising measures were implemented. In 1992 a reform of corporation tax and value added tax (reducing the corporation tax and the highest value added tax rate) was conducted. In the next few years the government approved a series of preferential tax treatment possibilities for small and medium-sized enterprises and an easing of personal income taxes. In a countermove in 1995, the value added taxes, the excise taxes (2 percentage points) and the duties on gasoline were all raised, as were the employers' social security contributions. Wage increases in public service were very moderate in subsequent years and accompanied by a reduction in the number of public servants. Although achieving a general reduction in the growth in government spending was already targeted back in 1994, the efforts were not very successful owing to the numerous expansive measures taken at that time.

Beginning in 1997, structural reforms were stepped up, e. g. the reform of the labor market (raising expenditure),[1]) the social security system (reducing expenditure) and further easing of the tax burden to foster employment. An expenditure ceiling was imposed on central government spending that restricted annual growth to less than 1%.

While France's stabilization strategy did not have any significant deficit-reducing impact in 1995 (the deficit ratio persisted at its 1993 level), it was able to fulfill the Maastricht criteria by 1997 with the aid of revenue-based measures. The structural revenue ratio rose 2.6 percentage points, while the structural expenditure ratio only fell by 0.3% of GDP.

1 *Most importantly, active labor market policy measures were reinforced to integrate the long-term unemployed in the labor market, in addition to which the period of entitlement and the general entitlement criteria for unemployment insurance benefits for older jobless persons were extended.*

In order to satisfy the entrance criteria for EMU, the corporation tax on large companies was raised temporarily in 1997 and then lowered again in 1998. Permanent increases were made in taxes on capital income, possibilities for avoiding taxes were restricted and a social security surcharge was imposed on all income. Assuming the future pension obligations of France Telecom when it immediately took over the company's pension reserves eased the load by another 0.5% of GDP.

In the last few years the economic trends have facilitated consolidation progress. Despite tax cuts, by 2000 France had managed to reduce the budget deficit to 1.3% of GDP due to the improving economic trends (structural: –1.3%). With the exception of the health sector, the expenditure ceiling was maintained up until 2000, at least in real terms.

Thus in the period from 1997 to 2000 there was a partial turnaround compared to the period leading up to 1996. The structural revenue ratio fell 0.7 percentage point, whereas the share of structural expenditures in GDP improved the structural budget balance by 1.6 percentage points. The reduction in interest expenditure of 0.4 percentage point also contributed to the decline in the expenditure ratio. The debt ratio rose from 36.3% in 1990 to 59.7% in 1998 and then fell to only 58% at the end of 2000 due to the relatively low primary surpluses.

3.8 Ireland

In the course of the 1980s, Ireland carried out consolidation measures designed to reduce the deficit ratio, which averaged 10% in the first half of the decade, and the government debt ratio, which was 100% of GDP. In the 1990s the Irish budgetary policy benefited most of all from the high average economic growth; particularly in the second half of the 1990s Ireland's real growth rates were far above the growth trend.

In the course of the 1990s the deficit ratio was always below 3% of GDP and in the second half of the decade the country posted a marked surplus. Ireland also succeeded in pushing the government debt ratio below 60%.

So when Ireland joined in the Maastricht convergence process, it was already in the advantageous position of having high primary surpluses. The main reason why Ireland needed to take fiscal policy steps was that it had to reduce its high government debt ratio. In spite of these fiscal policy requirements, the highest priority was always to achieve the strongest possible employment growth based on appropriate reforms of the labor market to increase the supply and demand of labor. The years following 1997 as well were marked by efforts to reduce the debt ratio, and hence by fiscal discipline (the goal here was to bring the ratio down below 60% by 2000),[1]) and by the objective of improving growth prospects with the help of tax reforms.

The first phase of Ireland's consolidation was based on reforming both the tax system and social security taxes and was primarily revenue-based. In 1988 the taxation of businesses was reformed, which had the effect of

1 *Already in 1998 the deficit ratio had been lowered to 55% – an improvement of 10 percentage points over 1997 thanks to the high primary surplus and the favorable interest growth ratio.*

lowering the marginal tax rate and extending the basis of assessment for taxation; in 1994 a reform of personal income tax was aimed in the same direction. In 1993 value added tax was reformed and consequently increased. The ensuing tax and social security reforms were also driven primarily by the endeavor to improve employment incentives.

In the period from 1992 to 2000, the primary expenditure ratio also fell consistently, although this decline was due primarily to the trend in public service wage payments and the reduction in transfers,[1]) while public investments rose slightly. Similarly, interest payable was reduced from the very high level of 7.4% of GDP in 1990 to 2.1% in 2000.

On the revenue side the picture was not as consistent throughout the 1990s. While the revenue ratio showed a marked decline from 1994 to 1995, in the years that followed it rose substantially and has since been hovering around 38% of GDP. The structural revenue ratio rose until 1995 (real growth was comparatively low from 1991 to 1994) and has since been on a downward trend. The impact of the tax reforms was only partially offset by the effects of robust growth, which is demonstrated by the fact that the current yield of taxes and other fiscal charges also fell – albeit not as sharply. Between 1996 and 2000 current revenue receded by 2.1 percentage points, about half of which was attributable to the lower receipts from social security contributions. The reduction in social security contributions was intended to reinforce the incentive to take up employment.

Ireland's consolidation can be considered revenue-based in the sense that the tax reforms predominately aimed at expanding the tax base for the direct taxes of households and businesses (elimination of exceptions, tax relief, abolition of tax allowances accompanied by a reduction in the standard tax rate used in corporation tax). Although tax laws were basically reformed for the sake of consolidation, it should be pointed out that in the last decade tax policy in Ireland was always used also to pursue income policy, i. e. to push through moderate wage settlements despite unusually high growth in order to maintain price competitiveness.

The fact that real economic growth has outstripped the growth trend since 1995 has helped the country achieve a budget surplus since 1997; the surplus came to 4.5% of GDP in 2000. As a combined result of these big surpluses and the high annual nominal growth rates, Ireland succeeded in reducing the government debt ratio to 39.1% of GDP in 2000.

3.9 Italy

At the beginning of the 1990s government debt was around 100% of GDP and the budget deficit was over 10% of GDP, thus necessitating comprehensive budget consolidation. Based on a multiyear economic program previously published by the government, the first convergence program aimed at reducing the budget deficit to 4.5% of GDP by 1994 – primarily by cutting back spending with the help of reforms in public service,

1 *Social transfers were expanded in selected areas, e. g. long-term unemployment, and family benefits such as child allowances were increased. But in order to avoid a negative impact on the labor supply, hardly any measures were directed at improving unemployment benefits.*

pensions and privatization. In the first half of the 1990s, however, both revenue-based and expenditure-based consolidation measures were implemented. Between 1990 and 1995 the expenditure ratio[1]) was reduced by the targeted 0.5 percentage point, while the revenue ratio rose by 3 percentage points of GDP during the same period owing to a series of short-term tax measures such as advance payments on capital taxation, an increase in the withholding tax on capital income, an increase in social security contributions and indirect taxes, as well as in the area of income tax on enterprises and households.[2])

Despite the poor economic growth in the first half of the 1990s and the rise in the unemployment rate to 12%, these consolidation efforts succeeded in reducing the budget deficit by more than one fourth. But as the budget situation was still very poor, government debt continued to rise, reaching 123.3% of GDP in 1995.

In the second half of the 1990s Italy intensified its consolidation efforts to fulfill the fiscal criteria laid down in the Maastricht Treaty; consolidation focused predominantly on revenue-based measures. This is clearly reflected by the development of the expenditure ratio, which was reduced by 7 percentage points from 1995 to 2000, while the revenue ratio hardly showed any increase. This is also confirmed by the cyclically adjusted ratios.

In 1997 the government also carried out a series of extraordinary, revenue-based measures to move below the 3% deficit limit: An additional progressive "Europe tax" was levied on incomes, measures were taken to contain tax dodging, the basis of assessment for income tax was extended, indirect taxes were increased and the efficiency of tax collection was improved. Furthermore, the early retirement age was raised, the pension adjustment for high pensions was suspended and the harmonization of public and private pensions was stepped up. Thanks to these efforts, marked progress was made in consolidation, thereby allowing Italy to join EMU. The deficit ratio was lowered from 7.1% of GDP in 1996 to 2.7% in 1997, and government debt was reduced by 2.3 percentage points of GDP.

The government agreed to continue reducing the budget deficit further in the subsequent years. Overall, the consolidation that followed was to be primarily expenditure-based, although tax reforms would generally to be used to improve the revenue elasticity of the tax system. Furthermore, the government approved structural reforms in the social system, a restructuring of public administration and an extension of the tax base, in addition to which it plugged additional tax gaps. In 1997 and 1998 came a large-scale tax reform. The most important changes were the introduction of a regional tax on production and the restructuring of excise tax, net worth tax, contributions to health insurance schemes and income tax, which raised the

1 *In particular by exercising spending restraint in transfers to local governments, public entities and in the area of public remuneration, through occasional hiring freezes in public service, through reforms in healthcare, a reduction in public sector pensions as well as in the private sector (measures to curb the increase in early retirement pensions, abandoning the inflation adjustment of pensions).*

2 *The orientation of fiscal policy changed drastically in 1994, however, when the government began dispensing with short-term, revenue-increasing measures in favor of efficiency and growth considerations.*

lowest tax rate considerably and reduced the top tax rate from 51% to 46%. The stability program unveiled at the end of 1998 confirmed the expenditure-based budget consolidation. In the program, the government continued pursuing its restrictive policy for social transfers, healthcare spending and transfers to regional and local governments. In 1999 another tax reform was introduced which was designed to be revenue-neutral.[1])

From 1990 to 2000 the public deficit was reduced by a total of 10.7 percentage points of GDP. The government also succeeded in reducing the structural budget deficit largely as a result of lowering structural spending. In 2000 the budget deficit was 0.3% of GDP (excluding UMTS proceeds 1.5% of GDP). On the other hand, the decline in government debt by 13.8 percentage points to 110.2% of GDP between 1994 (the year Italy's government debt reached its peak at 123.9% of GDP) and 2000 was comparatively small.

3.10 The Netherlands

The Netherlands is another country that adopted a switching strategy for its consolidation efforts. At the outset of the 1990s, the initial decline in the public deficit as a percentage of GDP was caused by revenue-based measures and the favorable economic climate (until 1992), whereas the consolidation process later in the decade was dominated by expenditure-based retrenchment. In the last few years both the windfall revenue generated by the economic trends and the decline in interest expenditure contributed significantly to consolidation.

In order to lower the deficit ratio, the Netherlands ceased to offset the effects of fiscal drag, stepped up the collection of corporation taxes and raised social security contributions. But after growth declined sharply in 1993, taxes and social security contributions were lowered in 1994 as an anticyclical fiscal measure and to reduce the tax burden on labor.[2]) The deficit ratio consequently rose to 4.2% in 1995.

However, in 1994 structural measures were announced in the wake of the announcement of the new convergence program. Relying on the multidimensional target definition of fiscal policy, it was however stressed that fiscal policy should be oriented in principle toward the objective of employment, i. e. reducing unemployment. This notwithstanding, expenditure ceilings[3]) were to be used to keep the development of real government

1 *But as the tax ratio for 2000 was down over 1999, this would lead one to conclude that the measures to enhance the efficiency of tax collection did not take effect to the extent expected.*

2 *Direct taxes were lowered significantly. The direct tax ratio fell from 9.1% of GDP in 1995 to 7.6% of GDP in 1998. The decline was somewhat weaker in receipts from social security contributions, which were also lowered. These reforms were financed by increasing environmental taxes and indirect taxes, so that the total tax ratio remained almost unchanged. The tax reform that went into force at the beginning of 2001 was based primarily on an increase in environmental taxes and an increase in the standard value added tax rate from 17.5% to 19% and a reduction in the income tax load of households, especially low income earners, to increase the difference in the net income to be earned upon being hired to the transfer income in the event of unemployment. A reform of net worth taxes was also implemented.*

3 *The real expenditures of the central government and social security (including healthcare and labor market policy) were to be reduced by an annual average of 0.7% in real terms.*

spending in check with the twofold purpose of fulfilling the Maastricht criteria and reducing the tax burden in the course of the 1990s.

Between 1992 and 1995 a series of mostly short-term measures was implemented to reduce the deficit ratio, which was growing from year to year as a result of the poor economic trends and unexpected rise in costs. Cuts were made in almost all spending items, particularly in the areas of housing construction subsidies, development aid spending and the defense budget. The government also resorted to one-off measures like the sale of government assets and expanded structural reforms with long-term impact like those in the healthcare sector that had already been initiated in the late 1980s and aimed at improving financing possibilities and increasing competitiveness and efficiency.

Like other countries, in the second half of the 1990s the Netherlands tightened the requirements to qualify for unemployment benefits; welfare was completely reformed with the goal of better integrating the provinces and more efficiently incorporating welfare recipients in the labor market. As part of the active labor market policy, in 1996 and 1997 employers were given a possibility of being granted lower social security taxes when they hired additional staff.

After that the tax burden was reduced for the lowest income bracket (reduction of first-bracket tax rate for income tax and increase in the tax allowance) to make it more attractive to take up employment. These measures were financed by increasing the employee contributions to social security and indirect taxes (among them environmental taxes).

It was mainly by reducing transfers to households that the Netherlands achieved the reduction in the overall tax ratio. While the revenue ratio remained relatively constant in the second half of the 1990s, the expenditure ratio fell by 6.2 percentage points of GDP from 1995 to 2000 with the decreasing interest expenditure accounting for 1.9 percentage points. In addition, beginning in 1998 the decline in spending was reinforced by the good economic situation. The proceeds from the sale of UMTS licenses in 2000 must be seen as a special factor. In accordance with the rules set forth in ESA 95, this revenue was reported as a negative expenditure and accounted for 0.7% of GDP. The cyclically adjusted expenditure ratio was reduced by almost 4 percentage points from 1995 to 2000. Thus, the expenditure-ceiling strategy has been quite successful in the past few years. In 1999 excess spending in healthcare for medicine and medical aids was offset by cuts in hospital construction. In FY 2000, when the focus was on infrastructure, education and the active labor market policy, spending fell short of the allocated figure due to lower expenditures for the unemployed.

The 1998 coalition agreement contained both a formula for distributing the growth dividends[1]) and a tax reform, which went into effect in 2001. The reform aims to reduce the income tax on households, lower social security contributions, reform net worth tax, and again increase value added taxes and environmental taxes. This continues the shift in tax revenue from direct to indirect taxes, as in the last few years windfall revenue has been generated above all by indirect taxes – especially environmental taxes – and by corporation taxes thanks to the good earnings trends. The value added tax rates for labor-intensive services, on the other hand, were lowered.

Because total revenue as a percentage of GDP remained just about constant (1995: 47.3%; 2000: 47.2%), the structurally induced decline was absorbed by the cyclically generated windfall revenue. Since the early 1990s the Netherlands has managed to successively decrease the share of GDP claimed by structural primary expenditure. The declining interest expenditures have also made it easier to reduce the budget deficits in the last few years. Whereas the general economic conditions impeded expenditure-based budget consolidation from 1993 to 1997, they were a big help as of 1998.

The debt ratio, which ranged from 77.6% to 75.6% of GDP between 1990 and 1995, has been on a marked downward trend since 1996. In 1999 the ratio fell below the 60% mark and in 2000 hit 56.1% of GDP. This trend is the result of declining interest expenditures, large or increasing primary surpluses and high growth rates. In 1997 the relatively high negative debt-deficit adjustment also helped reduce the debt ratio.

3.11 Portugal

Because of excessive deficit ratios, Portugal, too, felt compelled to take consolidation measures at the beginning of the 1990s. The consolidation process that was initiated in 1992 in the form of spending restrictions and reforms in the area of direct and indirect taxes and in the pension system was seriously impaired by the general economic conditions. As a result, hardly any progress was made toward consolidation. Moreover, Portuguese economic policy was aimed primarily at curbing inflation and achieving macroeconomic convergence.

In view of the fact that it wanted to join EMU from the very beginning, Portugal engaged in more sustained consolidation in the second half of the 1990s. During this time consolidation was predominantly revenue-based,[2])

1 *In the event of an economic upturn, three fourths of the resulting additional revenue are to be spent on improving the budget balance and one fourth on reducing the tax burden (taxes and social security contributions). If the deficit ratio falls below 0.75% of GDP the ratio changes to 50:50. In the event of an economic downturn, on the other hand, the agreement foresees – while observing the Maastricht criteria – that three fourths of the revenue shortfall is absorbed by the budget and one fourth is to be cushioned by eliminating some tax privileges. Here as well the ratio changes to 50:50 if the deficit ratio rises above 1.75% of GDP. (One disadvantage of this rule is that it diminishes the impact of the automatic stabilizers.)*

2 *Receipts from corporation tax, in particular, rose sharply in the wake of a favorable corporate earnings trend. Tax receipts were also bolstered by tax reforms that broadened the basis of assessment and by closing tax loopholes. The value added tax was reformed several times, although this had varying effects depending on the revenue trend.*

while spending policy was oriented toward other goals. Although spending restrictions, restraint in public sector wages and privatization did contribute to consolidation, expenditure-based measures were also used to pursue distribution and stability objectives. The expenditure ratio rose until 1996 and has since been stagnant at a relatively high level (around 44% to 45% of GDP). The revenue ratio rose by more than 5 percentage points between 1995 and 1999. Together with the decline in interest expenditure of almost 3%, this compensated for the sizeable rise in current primary expenditure. However, the consolidation process has stagnated in the last few years.

In 1990 Portugal's budget deficit was 5% of GDP and government debt was 64.2% of GDP. According to the first convergence program (1991), the deficit ratio was to be reduced to less than 3% of GDP between 1993 and 1995. But since the actual economic trends did not conform with expectations, the government fell far short of its deficit target.

At 12.2% Portugal had the second-highest inflation rate in the EU after Greece, so achieving price stability was initially a higher priority than budget consolidation. The projected primary expenditures were pegged to the inflation target. Putting a lid on spending proved a success; in particular, the government managed to slow down wage increases in public service.[1])

The second convergence program envisaged an average deficit ratio of 3.25% of GDP for the years 1995 to 1997. Budget consolidation was defined for the first time as a separate economic policy objective which would be achieved mainly through tax increases, particularly of value added, automotive and income taxes. Expenditure-based measures such as wage restraint and reduced transfers were only of secondary importance. Later on, the revenue-based consolidation efforts paid off despite the continued rise in current spending (+3.0 percentage points). By 2000 the deficit ratio (including UMTS proceeds) had been reduced to 1.5% of GDP. Excluding the license proceeds puts the figure at 1.85% of GDP.

As of 1995 the sharp decline in the interest load began having a positive impact. This was underpinned by revenue generated by privatization, which was used to reduce government debt. Whereas in 1990 interest expenditure still represented 7.9% of GDP, by 2000 it had been lowered to 3.2% of GDP.

The deficit ratio declined by 1.3 percentage points to 2.7% with most of the reduction occurring in 1996 and 1997. During these two years, however, significant cuts were made in government spending: The benefits of a variety of funds were cut, expenditure ceilings were imposed on various categories of spending, e. g. healthcare, and a hiring freeze was imposed on public servants.

Since 1997 the consolidation process has been slowing down again, but has since been characterized by revenue-based measures. In 1999 and 2000 reforms were aimed at expanding the basis of assessment for income tax and improving the efficiency of the tax system.[2]) The trend in the expenditure

1 *As wage increases in the public sector appear to signal wage increases in the private sector in Portugal, the government also managed to curb inflation markedly.*

2 *The fiscal measures also included a reduction in the marginal tax rates for low income earners.*

ratio, which was headed downward in 1997 and 1998, is reversing; last year the rapidly climbing current expenditures (above all transfers to households) were counterbalanced by a temporary decline in investments and capital transfers.[1]) According to an update on the stability program released in February 2000, Portugal has implemented a series of measures designed to control spending and improve public administration.

Government debt has been on the decline since 1997 and came to 57.0% of GDP in 2000. But in 1999 and 2000 the decline slowed down; this is, however, due mainly to the positive debt-deficit adjustment and the interest ratio, which stopped declining.

3.12 Finland

In Finland the beginning of the 1990s was marked by a massive drop in growth in the wake of the bank crisis and the loss of its most important trade partners after the fall of the Iron Curtain. In particular, the period between 1990 and 1993 was hit by a heavy recession, which had a major impact on budget trends[2]) owing to the high cyclical sensitivity of the Finnish budget balance. The balance went from a surplus of 5.3% of GDP in 1990 to a deficit of 1.5% the following year and had risen to 7.9% of GDP by 1993. The extent of the crisis and the accompanying fiscal burden appear to have made it easier for the Finish public to agree to the extremely stringent consolidation measures.

From 1993 to 2000 Finland was successful in its consolidation efforts, which were exclusively expenditure-based.[3]) During this period Finland reduced its structural budget balance by 7.5 percentage points (3.9 percentage points thereof in 2000), its structural revenue ratio by 2.8 percentage points and the structural primary expenditure ratio by a total of 11.9 percentage points. The interest ratio fell to 1.7 percentage points of GDP in the same timeframe.

In October 1992 Finland's government stepped up its budget austerity program, which included reducing expenditures via expenditure ceilings[4]) to contain the exploding government spending in the medium term (1990: 14.5% of GDP; 1994: 58.8% of GDP). Despite selective tax hikes,

1 *This had to do mainly with the EU's new transfer system (Community Support Framework). Portugal's problems are definitely only temporary though. For the next few years a sizeable increase in capital spending is predicted once again (see European Commission, 2001, page 140.)*

2 *According to the European Commission, Finland is among those countries whose budget balances are the most cyclically sensitive to changes in GDP. A decline in growth of 1% relative to the trend growth lowers the budget balance by about 0.65 percentage point of GDP (only the Netherlands exhibits greater sensitivity at 0.75 percentage point). As Finland also exhibits considerable volatility of output, rapid improvement and deterioration of the budget balance is much more probable here than in, say, Austria.*

3 *See also the European Commission (2000 and 2001).*

4 *These were aimed mainly at cutting down on intergovernmental transfers, social transfers to households, e. g. unemployment insurance expenditures, and also subsidies. A pension reform sought to taper off the growth in pension expenditures by increasing the qualifying period, making it more difficult to claim an early old-age pension or invalidity pension and change the indexing of pensions. The fiscal policy was geared toward promoting growth and employment.*

revenues were not expected to contribute to consolidation due to the reduction in capital income tax[1]) and the tax refunds granted.

In order to first satisfy and then maintain the Maastricht criteria in the years that followed, the 1995 convergence program ushered in another cut in the expenditure ratio of just under 4% of GDP. Through structural reforms in the labor market and cuts in the withholding tax on wages and salaries and social security taxes, unemployment was to be reduced to about 9% by 1999. Special tax benefits and favorable tax treatment were approved for low to medium income earners, startup entrepreneurs, research, technology and training. Increases in capital income tax rate (3 percentage points), environmental taxes and indirect taxes were implemented to change the structure of the tax system while maintaining a constant tax ratio.

Thanks to the advantageous economic trends, which led to a marked improvement in the budget deficit in 1994 (–1.2 percentage points), Finland had already achieved the most important objectives of its consolidation program by 1997. Finland has reported a budget surplus since 1998; by 2000 it had grown to 6.7% of GDP. The rapid increase (+5 percentage points) in the budget surplus from 1999 to 2000 was attributed chiefly to the rise in income tax and net worth tax that the government enjoyed due to the robust economic growth and high corporate earnings. Furthermore, spending for 2000 was capped at the 1999 level.[2])

The cyclically adjusted expenditure ratio has dropped so sharply since 1995 that the structural budget balance improved by 5.5% of GDP despite a decline in the cyclically adjusted revenue ratio.

After hitting a high in 1994 of 58.8% of GDP, the deficit ratio registered a continual decline to 44.0% in 2000. The reason for the continued decline was the higher than average primary balance and the proceeds from privatization, which, however, were countered by a positive debt-deficit adjustment,[3]) which is why the government debt ratio only declined by 3 percentage points.

3.13 Sweden

At the beginning of the 1990s Sweden was hit by the biggest recession since the 1930s. Between 1991 and 1993 Sweden's GDP shrank by about 5 percentage points. At the same time the budget balance deteriorated by approximately 16 percentage points (1990: +4% of GDP; 1993: –11.9% of GDP). The structural balance, however, also deteriorated by about 10 percentage points, caused primarily by the explosive rise in structural expenditures. The main causes of this development both cyclically and structurally were the rise in social transfers triggered by the extremely

1 *This was raised again in 1997 from 25% to 28%, however. Excise taxes were also raised and value added tax was adapted to the EU provisions. These measures financed the easing of the tax burden on the factor labor.*

2 *According to the government declaration, real public spending should generally be kept at the 1999 level between 1999 and 2003. This plan was relaxed a bit in mid-1999, however, when the government declared that in the period up until 2003 an increase of 0.5% in real terms over 1999 was permitted.*

3 *As a result of the effects of exchange rate changes on foreign-denominated debt and of the modified portfolio structuring of the pension funds.*

sharp (sixfold) increase in the jobless rate, the aid extended to banks in the midst of the banking crisis and the automatic adjustment of transfer payments. The decline in revenue, on the other hand, was caused above all by the economic situation during this period.

In addition, the revaluation of government debt, which is denominated in foreign currency, after the substantial devaluation of the Swedish krona in 1991 and 1992 also brought about a sizeable increase in public debt. Debt rose from 42.1% of GDP in 1990 by 33 percentage points to 75.1% in 1993. The high of 77.7% was achieved the following year.

Despite taking many different consolidation measures (lowering civil servant pensions, introducing a deductible in health insurance, increasing fuel taxes, reducing tax write-off possibilities, lowering the replacement rate in unemployment benefits) Sweden's budget deficit had reached 11.9% of GDP by 1993.

In 1995 Sweden joined the EU. The convergence program was unveiled that same year and implemented with success. The budget deficit fell from 10.8% in 1994 to 3.4% in 1996, mainly as a result of expenditure cuts.[1]) The cuts in practically all transfer categories (restriction of indexing social transfers, lower tax credits for children, reform of family benefits, pension cutbacks, etc.) reduced transfers by just under 3 percentage points of GDP. Defense spending and government consumption were also cut. In terms of revenue, increases were made in the taxes on net worth, (capital) income and corporations, in employers' social security contributions, in a number of excise taxes and in the value added tax rates for specific goods. Thus about 60% of consolidation was to be accomplished using expenditure retrenchment and the rest would come from revenues. This method is reflected in both the trend in the structural expenditure ratio (between 1993 and 1996 a decline of about 4 percentage points of GDP) and the structural revenue ratio with an increase of 2.4% of GDP. The trend in government receipts, which declined rapidly in the first half of the 1990s as a result of the recessionary development, made a distinct contribution to the improvement in public finances in the second half of the 1990s.

From 1996 to 1998 the budget balance was improved by another 5 percentage points of GDP, and in 1998 Sweden was able to claim a budget surplus once again (1.9% of GDP). In both of these years the budget consolidation was also predominantly expenditure-based. Social security benefits were noticeably reduced (by about 5 percentage points), but at the same time the contributions were increased. The government's personnel expenditures as a percentage of GDP were also lowered. Although spending restrictions remained in place after 1997, a number of public services were expanded further thanks to the distinctly more favorable economic and fiscal situation. Transfer payments to regional and local governments for training, supply services and environmental protection were raised, the wage replacement rate was increased and efforts to reform the pension insurance system were continued.

1 *The comparatively speaking quite rapid consolidation was based mainly on a reform of the budget process and on maintaining strict expenditure ceilings for central government spending.*

Although Sweden opted out of EMU, it carried on with its consolidation efforts. In 2000 Sweden reported a budget surplus of 4.0% of GDP, which was generated mainly by the higher than expected tax receipts and the further reduction in the expenditure ratio. Government debt fell 9.6 percentage points in 2000 to 55.6% of GDP. This enormous reduction was attributed mainly to the sizeable primary surplus (8.3% of GDP) and a bond buyback which was financed with the proceeds of the Telia[1]) stock issue.

Even the latest update of the convergence program sets its sights on maintaining a budget surplus – the average budget surplus in the economic cycle is to be 2% of GDP – by applying expenditure ceilings fixed three years in advance. Despite these fiscal targets, fighting unemployment and improving the Swedish training system are high priorities.

3.14 United Kingdom

At the outset of the 1990s the United Kingdom, too, experienced rapid deterioration of its national budget in the aftermath of a recession. The deficit ratio rose from 0.9% of GDP in 1990 to 6.1% of GDP in 1992 and 7.8% in 1993. The debt ratio was only 35% in 1990 and climbed to over 50% of GDP in the course of the next five years. However, the deterioration of the budget balance was caused not only by the economic trends – it also had structural causes such as the expansion of family benefits (child-rearing benefits), the reduction in employers' social security contributions and the reduction in municipal taxes. The tax burden on enterprises was also eased. In contrast to this, revenue-increasing measures were also implemented, such as increasing value added tax from 15% to 17.5%. Even though the United Kingdom fulfilled the criteria for joining EMU, it has thus far decided to forgo membership.

As part of the first convergence program the United Kingdom had already laid down a balanced budget rule, which was replaced by the golden rule in 1997. In 1998 the Code for Fiscal Stability integrating both the golden rule and the sustainable investment rule was approved as the government's fiscal policy guideline.

The improvement in the United Kingdom's budget balance was achieved mainly with the help of expenditure-based measures in the period from 1993 to 2000. In the first half of the 1990s, however, hardly any progress was made toward consolidation. The only contribution to consolidation was made by the lower personnel expenditures, which declined by 3.5 percentage points of GDP from 1992 to 1995, mainly as a result of privatization (e. g. British Rail and British Coal). The resulting cost savings were annihilated, however, by growing expenditures in other areas, such as the interest on government debt and intermediary consumption.

The budget consolidation carried out in 1994 succeeded in reversing the budget trend. In the medium term binding limits should be placed on government spending. The only exclusions from this expenditure ceiling were cyclically determined social spending and the interest expenditure on government debt. The growth in government spending was set in real

1 *Telia = the Swedish telecommunications group Telia AB.*

terms at 0.1% in FY 1995–1996, 1.1% in FY 1996–1997 and 0.7% in FY 1997–1998. Government consumption declined and the defense budget, in particular, was cut. Expenditure-lowering reforms were also carried out in the area of social transfers in both healthcare and unemployment insurance. Furthermore, indirect taxes (fuel tax) and excise taxes were hiked.

The convergence program for 1997, which laid down the fiscal policy strategy up to FY 2001–2002, assumed a budget that was close to balance in 1998–1999, a goal which was achieved and then exceeded. It was thanks to an additional reduction in the expenditure ratio and an increase in the revenue ratio that these efforts were successful. Despite the generally restrictive targets, measures motivated by distributional,[1]) structural and environmental policy were also taken in healthcare and education and for single parents as well as measures designed to create jobs. The resulting expenditures were financed by a one-off tax on the excess profits of privatized utilities. Furthermore, the normal tax rate for enterprises was lowered from 33% to 31%,[2]) the tax rate for small enterprises from 23% to 21% and the value added tax rate for a few goods from 8% to 5%. In the area of income tax, tax increases came as a result of changes made to the basis of assessment. In 1997 and 1998 the budgetary trend was also buoyed by the earnings of privatized, formerly state-owned companies. In 1999, as part of another income tax reform, the government introduced a working family income tax credit to reduce the problem posed by the poverty trap for low income earners; a new, lower first-bracket tax rate of 10%; and a reduction in the former first-bracket tax rate from 23% to 22%. The taxes on gasoline and diesel were raised.

In 2000 the budget showed a surplus of 4.3% of GDP and government debt was down to 42.9% of GDP. Interest expenditures on the debt did not make any significant contribution to consolidation in the United Kingdom. As in other EU countries, the progress made was underpinned by the proceeds from the sale of UMTS licenses (2.4% of GDP) and relatively strong economic growth. Excluding the license proceeds puts the figure at 1.9% of GDP (1999: +1.3% of GDP).

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1 *Programs such as Welfare to Work and Make Work Pay. These fiscal and transfer-based measures had two objectives: to increase incentives to take up employment and to reduce the problem of unemployment.*

2 *In 1999 the corporation tax rate was lowered to 30% and the advance payment of corporation tax was abolished.*

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Distributive Aspects of Economic Policy in EMU – An Analysis from an Employee Perspective

Bruno Rossmann[1])

1 Introduction

Distributive justice has always been low on the economic policy agenda. Typically, the European Union (EU) did not single out this issue when defining its economic policy goals, making only a rather general reference in Article 2 EC Treaty: *"to promote throughout the Community a harmonious, balanced and sustainable development of economic activities, a high level of employment and of social protection, equality between men and women, sustainable and non-inflationary growth, a high degree of competitiveness and convergence of economic performance, a high level of protection and improvement of the quality of the environment, the raising of the standard of living and quality of life, and economic and social cohesion and solidarity among Member States."* These goals are to be reached with the help of the Internal Market, Economic and Monetary Union (EMU) and Community policies.

The institutional framework of economic policy is highly complex, because it hinges on different levels of political decision-making. Pursuant to Article 5 EC Treaty, *"the Community acts within the limits of the powers conferred upon it by this Treaty and of the objectives assigned to it therein."* This means that all political decisions not expressly assigned to the Community remain in the national sphere. Key areas of economic policy such as monetary and exchange rate policy have been made the exclusive competence of the Community. Thus, the European Central Bank (ECB) and the Eurosystem are in charge of the common monetary policy of the euro area, whereas fiscal (budgetary) policy remains the responsibility of the national governments. Unlike the U.S.A., the EMU's economic policy is hence based on an asymmetric policy framework (Breuss, 1999). The fact that fiscal policy remains in the national domain also means that distributive policy goals are still a central task of the individual Member State. Thus fighting poverty, ensuring income equality and covering social risks continue to represent challenges for the individual state. Under the provisions of Article 99 paragraph 1 EC Treaty, however, economic policy and hence fiscal policy is "a matter of common concern" and is to be coordinated within the Council, due to the asymmetric economic policy conditions. To this end, the Council has passed Broad Economic Policy Guidelines (BEPG), based on a recommendation from the Commission, each year since the beginning of the second stage of EMU. Of particular importance to fiscal policy are, moreover, the provisions of the Stability and Growth Pact and, more specifically, the interpretation of the term "close to balance or in surplus in the medium term" in the stability programs. Furthermore, interest has recently focused on the question of the future financial burden on public finances, as it considerably restricts the national budgetary leeway (and thus the possibilities of a national distributive policy). In fact, wage policy is the only instrument to remain in the hands of the Member States, more precisely labor and industry.

1 *Bruno Rossmann – Chamber of Labor. Owing to the special role of wage policy and its interaction with fiscal policy within the framework of EMU, the author has been invited by the Oesterreichische Nationalbank to provide an analysis from the employee perspective.*

This study explores distributive policy from a broad angle. Since economic development is marked by continual conflicts over the distribution of the goods produced, over the income resulting therefrom and over the ensuing possibility of society to get a share of the benefits, economic policy is always, at the same time, distributive policy. As inequality tends to increase in the EU, this study seeks, on the one hand, to find an answer to the question of whether the economic policy approach taken primarily in the Broad Economic Policy Guidelines is suited to overcome such tendencies. On the other hand, this study aims to shed light on the distributive leeway of national budgetary policies against the background of new fiscal policy conditions.

2 Manifest Problems and Challenges in the EU Member States

Although the general standard of living has risen in all EU countries and the poorer countries (Spain, Portugal, Ireland, but not Greece) have caught up with the EU average in terms of per-capita income, the income gap is ever widening. In the past 25 years, income distribution was marked by a shift toward investment income to the detriment of wage income, with the wage share of GDP decreasing in virtually all EU states. This development went hand in hand with moderate GDP growth and an even smaller expansion of employment (Memo-Forum, 2001). As a result, effective demand contracted and unemployment rates soared in the 1990s. Inflation, by contrast, has subsided continuously since the second half of the 1970s, buttressed by a restrictive monetary policy. It was not until the resurgence of oil prices and the weakening of the euro that inflation rates started to go up again in 2000. The price to pay for an economic policy strategy that focuses on combating inflation is to put up with rising unemployment along with social exclusion and increased poverty or poverty risks.

Even though unemployment has shown a downward trend in the past two years, it should be borne in mind that the European average is four times higher today than in the 1960s and twice as high as in the 1970s, and that the share of long-term unemployed is on the rise throughout the EU. Most severely affected by long-term unemployment are the crisis regions in the eastern parts of Finland and Germany, and in parts of Spain, Portugal and southern Italy. In these regions, about one third of all adolescents and young adults remain unemployed (Kunz, 2000). Moreover, the risk of being made redundant continues to be high, which applies also to Austria, where the quantitative level of unemployment is relatively favorable. In 2001, more than 737,000 persons stand to lose their job at least once in Austria (Tálos, 2001). In this context, there has been an increase in so-called atypical employment relationships, i. e. contract types that differ in various ways from standardized, full-time, continuous employment forms covered by labor and social regulations (part-time work, "marginal" employment, temporary employment, hiring-out of labor, on-call work, telework and so-called sham freelancers). The growing importance of these employment types, which traditionally have not been subject to social regulations,

aggravate the risks of poverty and social exclusion for part of the persons concerned.

In the 1980s and 1990s, the EU was characterized – to a varying degree – by deepening social polarization, both in regional terms and with respect to its distributive effect. Based on the distributive criterion for poverty (EU at large: 60% of the median and per-capita income), 20.5% or somewhat more than one fifth of the total EU population lived in poverty in 1994. Poverty ratios differ widely in the various countries. Wherever the poverty line is drawn, Denmark and the Netherlands generally posted the lowest poverty ratios, whereas Greece, Spain and Portugal always registered the highest values. Big countries such as Germany or France record a relatively stable medium-level poverty rate (Eurostat, 1998). In 1997, 17.7% of the Austrian population were below the poverty risk threshold as defined by the EU.[1]) Taking account of social indicators, the most recent Austrian social report considered 11% of the population (i. e. 900,000 persons) poverty-prone (Report on the Social Situation, 2001). Unemployment, poor education and insufficient pension systems entail the biggest poverty risk, as do certain family structures that will need to be covered by new types of social security systems as single-parent families become more frequent (Huster, 1999).

While per-capita incomes have converged between both Member States and regions (albeit to an insufficient extent), employment and joblessness have not. The regional disparities of job figures and unemployment rates are still pronounced and even seem to have slightly widened in most countries. The completion of the Internal Market and EU (economic) policy coordination facilitate the restructuring of multinational enterprises (transnational corporations) at the European level, which entails negative employment effects for many regions due to shifts in location and enhanced concentration of enterprises moving from poorer regions to more affluent areas.[2])

Another perspective of inequality is gender-related. Although a slight reduction of gender inequality was noticeable between 1994 and 1999 and the female employment rate in the EU edged up from 51.2% in 1998 to 52.6% in 1999, the pace of change is relatively slow, as the rate for men in comparable full-time jobs is still 26 percentage points higher than for women. This disparity applies in particular to persons with lower qualifications and to women with children. Another aspect to be taken into consideration is the existing wage differential. 1995 data on the earnings structure show that – on an EU average – hourly wages for women in the private sector came to only 73% of those for men. Differences in the various countries are very marked. Single mothers are particularly bad off, because they are more likely to face several risks at the same time, such as the risk of unemployment, the risk of lower wages and, consequently, the

1 *In 1997, the threshold was set at ATS 120,000 p. a. for a single-person household.*

2 *A new dimension of inequality is added through the envisaged enlargement of the EU, as disparities between East and West have worsened in the past few years. Growth of production and services in Eastern Europe has fallen markedly behind growth in the EU.*

poverty risk. The situation remains unsatisfactory although the guidelines of the 1999 National Action Plans call for a policy of gender mainstreaming and demand that the gender gap with respect to wages and salaries be addressed politically within the framework of the employment strategy.

The aspects of inequality touched upon above – unemployment, deteriorating working conditions, regional inequalities, high poverty risk, gender inequality – and the tendencies towards growing disparity constitute serious problems and will be a major challenge for the EU. The question arises as to whether European economic policy-makers are able to contribute to the reduction of inequality.[1])

3 Economic Policy Strategy of the Broad Economic Policy Guidelines

In the conclusions of the European Council summit in Lisbon in March 2000, attaining full employment by 2010 and achieving greater social cohesion were cited as political goals. Consequently, for the first time since their introduction, the 2000 Broad Economic Policy Guidelines for the Member States and the European Union regard the return to full employment as one of the key objectives of economic and social policy. Other objectives formulated at the Lisbon summit and listed in the BEPG include fostering a knowledge-based New Economy, preparing for population aging and the transformation of the welfare state into an "activating welfare state."

In the face of persistent and high unemployment, this return to the goal of full employment constitutes a step in the right direction. It must be said, however, that no definition of full employment is offered in the BEPG. Given the structural changes that have occurred in various areas (economy, family, work organization, gender), operational needs would have made it necessary to provide a content for the concept, though. While the Broad Guidelines contain a new strategic goal, the instruments and the economic policy approach for attaining this goal remained the same[2]) – the same economic philosophy that has constituted the core principle of economic policy since the Maastricht Treaty and was anchored as Stability and Growth Pact in the Amsterdam Treaty. The fact that the economic strategy pursued in the past ten years has not – contrary to many forecasts – improved the growth momentum and the social situation of the population has not, so far, led to an adequately critical evaluation but rather to a confirmation of this course. The failure of the economic strategy hitherto pursued and the lack of noticeable successes is traced in the BEPG to the *"severity of the macroeconomic imbalances and structural rigidities prevalent at the start of the previous decade"* and to *"the late start to economic reforms in many Member States."*

1 *The disbursements of the Structural Funds and their effect on personal income distribution and on the reduction of regional inequalities are not taken into account here.*

2 *This also applies to the Recommendation of the Commission for the 2001 Broad Economic Policy Guidelines (European Commission, 2001).*

Crucial instruments to attain economic growth – the cardinal principle underlying this strategy – are a supportive macroeconomic policy and appropriate structural policies, with macroeconomic policy resting on three pillars: monetary policy, fiscal policy and wage policy.

According to the BEPG, monetary policy is committed to maintaining price stability in line with the EC Treaty. Hence, monetary and exchange rate policy is considered an external factor and does not represent an economic policy instrument that requires harmonization with other instruments with a view to attaining the full employment goal. Monetary policy is not adequately responsible for employment objectives because price stability takes priority. The theoretical concept underlying the common European monetary policy assumes an expansion of employment to be tantamount to a rise in inflation, which calls for a tightening of the monetary reins by the ECB.

Fiscal sovereignty rests with the Member States, but is subordinated to the budget consolidation goal in order to reach, as soon as possible, a budgetary position of close to balance or in surplus, to maintain this position in the medium term and to lower the debt ratio. The BEPG urge the Member States to use the cyclical upswing for a faster consolidation of public finances. The fact that the acceleration of the budget consolidation process has been anchored in the BEPG – as a rule, a budgetary position of close to balance or in surplus is to be achieved by 2001 – means that fiscal consolidation is now recommended as a short-term goal, whereas the Stability and Growth Pact provides for a budgetary position of close to balance or in surplus in the medium term. From the economic viewpoint, it does not make much sense to make a balanced budget an economic policy goal per se. Although economic theory does not provide any yardstick for the determination of a specific budget balance, it is certainly helpful in defining budget policy guidelines. Marterbauer (2000) suggests three guidelines:

– To facilitate an anticyclical budget policy in times of recession, the necessary budgetary leeway should be created while economic conditions are favorable.
– Current expenditure (personnel expenses, transfer payments, etc.) should be financed out of taxes and charges, whereas investment, particularly in infrastructure, may be carried out in the medium term on the basis of deficit financing.
– Budget structure policy is responsible for formulating revenue and expenditure structures in a way that promotes growth and employment.

Public finances should therefore play a functional role in attaining the self-proclaimed goals rather than abide by ever more stringent rules and thus renounce responsibility for employment policy.

Under the BEPG, wage policy as the third pillar of macroeconomic policy is ultimately the decisive element of employment policy. The contribution of macroeconomic policy consists primarily in ensuring wage developments that are consistent with price stability and job creation.[1]) This

1 *Item (iii) of the Policy Recommendations of the BEPG.*

goes hand in hand with the recommendation to maintain and – where necessary – to strengthen the profitability of capacity-enhancing and employment-creating investment, which implies that wage increases should remain largely below productivity growth. Such recommendations encroach implicitly on the autonomous wage bargaining power of the social partners; moreover, their implementation would involve a further income redistribution in favor of investment income. In fact, a negative correlation between wages and employment is assumed, which may be refuted as theoretically and empirically unjustified (Memo-Forum, 2001).

The recommendations on structural policy deal in particular with the deregulation and liberalization of product and services markets as well as capital and labor markets. Criticism focuses on the slow pace of reforms in the labor market and the social security system. Moreover, regret is expressed at the fact that reforms of the benefit system and of the rigid job protection regulations were carried out only in few Member States. The recommendations endorse a reform of the tax and benefit systems *"to ensure effective incentives and rewards for participation in an active working life."* Moreover, Member States should *"assess passive income support and compliance with eligibility criteria in benefit systems and reform where appropriate."* These somewhat vague goals are treated in more detail in the country-specific guidelines, which primarily call for a review of the benefit systems with the aim of creating appropriate incentives to take up new job offers.[1]) Job protection regulations and social benefits are not necessarily seen as social advances but rather as obstacles preventing people from taking up new offers or creating jobs – impediments that should at least be partly removed. The full employment concept assumed in the Guidelines will therefore very likely imply a development tending toward lower wage increases, greater insecurity and risks, increased pressure on unemployed to accept a job offer, and a relaxation of social protection. Although the "activating welfare state" has also beneficial features (creation of more and better employment opportunities), it must be taken into account that the curtailing of social benefits tends to give rise to social pressure for those population groups that show inadequate skills, insufficient adaptability and low flexibility. This type of "activating welfare state" has not too much in common with the traditional full employment concept characterized by adequate wages and a high degree of social security as well as freedom. A more differentiated approach is undoubtedly taken by the "Guidelines for Member States' Employment Policies for the Year 2001." The inclusion of the social partners, the emphasis on lifelong learning, and the focus on the gender perspective constitute a major progress, although even these guidelines convey the impression that they focus on quantitative aspects – i. e. the expansion of employment – rather than on the qualitative side – i. e. welfare increase and the creation of workplaces with emphasis on the social impact. It should be noted, however, that the Employment Guidelines, by contrast to the Stability and Growth Pact, have the status of nonbinding

1 *"Appropriate" should be interpreted in a restrictive way, as the term also pertains to countries with a low unemployment rate such as the Netherlands and Luxembourg.*

recommendations, which do not provide for sanctions applying to Member States in case of noncompliance.

Generally, the full employment goal laid down in the BEPG represents an important novelty. Nevertheless, the economic policy recommendations are still based on a supply-oriented approach that is medium- or long-term oriented and aims at boosting economic growth, which so far, however, has proven unable to resolve problems such as persistent and high unemployment, income and regional disparities, poverty and social exclusion, deterioration of working conditions, and increased risk on the EU labor markets. Maintaining this economic policy strategy also means that many of these distributive policy problems are not adequately covered by economic policy. The distribution of income, which, on the one hand, is a fundamental determinant of human condition and, on the other hand, constitutes a basic factor of economic growth and development, is not addressed in the BPEG.

4 National Fiscal Policies in the Face of a Gradual Tightening of Fiscal Discipline

First Step: The Convergence Criteria of the Maastricht Treaty

The Maastricht Treaty imposes strict fiscal discipline on states participating in EMU. To this end, two fiscal convergence criteria were laid down, i. e. thresholds for the government deficit at 3% of GDP and for government debt at 60% of GDP.[1])

The rationale behind the convergence criteria was the idea that "excessive" deficits of one Member State may impact negatively on other countries. Excessive deficit or debt ratios, it was feared, could lead to the financial collapse of a country, which in turn would force other countries to organize a "bail-out." At any rate, an excessive deficit strategy would trigger negative spillover effects on other countries, if – in a common capital market – interest rates rise not only in the debtor country itself but also for debtors in other countries, which would increase interest payments on debt in all countries concerned. The first threat was taken into account by the no-bailout clause in Article 103 EC Treaty. The spillover mechanism claimed in this context – i. e. the transmission of interest rate increases to other countries – is not well-founded empirically. More than two years after the establishment of EMU, e. g., EMU-government bonds still carry different interest rates. These interest differentials stem primarily from liquidity differences and varying credit risks. Political and psychological factors may also have an impact (BEIGEWUM, 2000).

There has been much dispute among experts over the meaningfulness of the fiscal criteria. Criticism focused on the fact that

– they have no bearing on EMU, because the question as to whether a country may pursue a public debt policy without eventually running the risk of financial collapse arises regardless of the monetary and exchange rate regime (Van der Bellen, 1996);

1 *See Article 104 EC Treaty as well as the Protocol on the excessive deficit procedure.*

– the criteria are arbitrary (Bini-Smaghi et al., 1994) and consistent only for a specific growth rate of nominal GDP, namely 5%[1]) (Buiter et al., 1993, De Grauwe, 1994), and
– they do not pay attention – in the years prior to the implementation of EMU – to the economic situation (Buiter et al., 1993, De Grauwe, 1994)[2]) and ignore the resultant social repercussions.

Criticism was also leveled at the fact that, in accepting compliance with strict fiscal rules, Member States were giving up their autonomous fiscal policy instruments, after having already transferred monetary and exchange rate policy powers in the third stage of EMU: *"vigorously applying the excessive deficit procedures of the treaty to the national budgets of the member states would leave post-Maastricht Europe with significantly less automatic stabilization than the U.S. economic and monetary union."* (Eichengreen and von Hagen, 1996): De Grauwe (1996) put forward similar arguments. Krugman (1994) went so far as to denounce the fiscal criteria as "sheer nonsense." Many critics had a problem bringing the fiscal criteria in line with the optimal currency area theory. De Grauwe (1996), e. g., pointed out: *"according to the traditional OCA[3]) theory, the Maastricht convergence requirements not only are unnecessary and insufficient. They are dangerous for the smooth functioning of a future monetary union in Europe."* This conclusion is primarily based on the assumption that the two convergence criteria limit the flexibility of the national fiscal policies, which therefore cannot react adequately to asymmetric shocks. While the U.S.A. pursue a centralized monetary and fiscal policy and rely on an interstate transfer mechanism designed to absorb asymmetric shocks, the economic policy in EMU has an asymmetric orientation.

The Convergence Reports of the European Commission, by contrast, do not see the fiscal criteria as a restriction of economic policy, but rather as a mechanism that is to help avoid the developments of the recent past when steadily rising deficits eroded countries' credibility. This led to higher risk premia and hence threatened the long-term noninflationary growth of the economy.

Second Step: The Stability and Growth Pact

The Stability and Growth Pact[4]), which was established at the instigation of the former German finance minister Theo Waigel for the third stage of

1 *In accordance with the Domar formula, an annual deficit of 3% of GDP can only lead to a long-term stabilization of the debt ratio at 60% if nominal GDP growth comes to 5%.*

2 *There was the fear that dogmatic compliance with these criteria might aggravate recession in the EU.*

3 *Optimal Currency Area.*

4 *The Stability and Growth Pact is based on two Council Regulations and two European Council Resolutions: Council Regulation (EC) No 1466/1997 of July 7, 1997 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies; Council Regulation (EC) No 1467/1997 of July 7, 1997 on speeding up and clarifying the implementation of the excessive deficit procedure; Resolution of the European Council on the Stability and Growth Pact, Amsterdam, June 17, 1997 (OJ C 236, 2. 8. 1997); Resolution of the European Council on growth and employment, Amsterdam, June 16, 1997 (OJ C 236/3, 2. 8. 997).*

EMU and became effective at the beginning of 1999, leads to a tightening of fiscal policy rules. The theoretical justification for this tightening is the same as in the case of the Maastricht criteria. The Resolution of the European Council on the Stability and Growth Pact is as follows: *"In stage three of EMU, Member States shall avoid excessive general government deficits: this is a clear treaty obligation. The European Council underlines the importance of safeguarding sound government finances as a means to strengthen the conditions for price stability and for strong sustainable growth conducive to employment creation. It is also necessary to ensure that national budgetary policies support stability oriented monetary policies. Adherence to the objective of sound budgetary positions close to balance or in surplus will allow all Member States to deal with normal cyclical fluctuations while keeping the government deficit within the reference value of 3% of GDP."*[1])

Key components of the Stability and Growth Pact are the early warning system, instruments for taking deterring and corrective action, and the sanction mechanism.[2]) The early warning system aims at preventing Member States from incurring excessive deficits in the first place. In their stability or convergence programs, Member States specify medium-term objectives for the budgetary position of close to balance or in surplus. The Stability and Growth Pact has clarified and speeded up the excessive deficit procedure in order to exert a deterrent effect on the Member States and to force the country concerned to take appropriate corrective action even before an excessive deficit occurs. The deadlines for correcting an excessive deficit under the Stability and Growth Pact are extremely short. Violations entail financial sanctions, which are specified in a complex procedure.

Surveillance of the budgetary development is effected by the Council of Economics and Finance Ministers, which issues recommendations for the Member State concerned in case of noncompliance with the stipulated budget course. Publication of these recommendations puts strong "peer pressure" on the Member States concerned.

As far as the determination of the medium-term objectives is concerned, the European Commission has listed the assessment criteria in a Code of Conduct, which was largely endorsed by the Ecofin Council (Part, 2000, Arbeitsgruppe "Wirtschaftspolitik" zur Vorbereitung der 3. Stufe der WWU, 2001). According to the minimum benchmark, public finances in a normal business cycle must have a sufficient safety margin vis-à-vis the admissible threshold of 3% of GDP. Hence, the assessment is implicitly geared to cyclically adjusted budget balances. According to the Commission, Austria needs a safety margin of about 2% of GDP, i. e. a cyclically adjusted budget deficit of 1% of GDP in order to remain, in

1 *OJ C 236 of August 2, 1997, item I.*

2 *For a detailed analysis, see Part (1998).*

periods of a normal cyclical downswing, below the deficit threshold.[1]) In addition to this minimum requirement, a leeway of 0.5% to 1% of GDP should be taken into account for unforeseen developments. Moreover, EU Member States are to create further leeway for financial burdens resulting from the expected process of population aging. Additional safety margins are also urged for countries with high public debt. The general assumption therefore is that EU countries are to post budgets in balance or must aim at budget surpluses, taking into consideration demographic developments and the impact of high public debt. The ever more stringent interpretation of the Stability and Growth Pact by the European Commission and the Ecofin Council, which is a result of the assessment criteria being developed further, goes virtually unnoticed in the public, at least in Austria. Intensifying regulation and the accompanying reduced leeway for fiscal policy are indicative of a paradigm change with respect to the role of the state, namely a move toward "more market, less government," priority of individual rights and emphasis on private pension systems and individual responsibility. In many countries, the gradually tightened implementation of the Stability and Growth Pact has brought about a cut in social services and a watering-down of labor and social legislation.

Like the convergence criteria before, the Stability and Growth Pact sparked a heated debate among the scientific community on the costs and benefits of the Pact. Opinions in the run-up to its taking effect were predominantly negative (e. g. Buti, Franco and Ongena, 1997; Kramer, 1997; Url, 1997; Eichengreen and Wyplosz, 1998). Eichengreen and Wyplosz renewed their criticism. Although they assumed that there would be no full implementation of the Stability and Growth Pact – in order to avoid political tensions – they see *"a real danger that preoccupation with fiscal consolidation is hindering labor market reform, and hindering more general reforms to enhance economic flexibility and boost productivity growth."* In their view, the most effective strategy to eliminate deficits will be by "outgrowing" them, i. e. by providing a more buoyant macroeconomic environment. Breuss (1999) is not surprised at this criticism, considering the long period of high budget deficits and growing public debt since the mid-1970s, which was partly traceable to the fiscal (Keynesian) response to the recessions triggered by the two major oil price crises.

Recent criticism has focused on the theoretical foundations of the Stability and Growth Pact, which relies on New Monetarism concepts (Arestis et al., 2001; Memo-Forum, 2001). "Old Monetarism," which believed in controlling inflation through money supply and espoused the concept of a natural rate of unemployment, was replaced by New Monetarism – one of the cornerstones of EU economic policy. Under this

1 *Calculations by Url, T. (1997), by contrast, show a lower budget sensitivity to cyclical developments for Austria. Accordingly, the March 2000 Stability Program provided for a medium-term budget objective of 1.5% for 2001 and 1.3% for 2003, which was heavily criticized, however, by the Commission and the European Council. Moreover, of particular interest in this context seems the fact that the Austrian Stability Program of November 5, 1998, providing for a 2002 budget objective of 1.4% of GDP, was considered compatible with the Stability and Growth Pact. Recent calculations on budget sensitivity may be found in Url's study "Cyclically Adjusted Budgetary Balances for Austria" appearing in this issue.*

new concept, inflation is regarded as a monetary phenomenon that can be controlled by monetary policy. Unemployment fluctuates around a supply-side-determined equilibrium unemployment rate (NAIRU[1])). It is moreover assumed that – under a given institutional framework (labor market) – inflation accelerates when unemployment falls below NAIRU. Should fighting inflation be given priority, monetary policy is responsible for bringing employment to the level of NAIRU. If the NAIRU level of unemployment is considered too high, a restructuring of the labor markets with a view to heightening flexibility (e. g. curtailing of rights, wage reductions, cuts in unemployment benefits) would be a suitable means of lowering this level, rather than an expansionary labor policy. There are at least two questionable aspects about this concept: First, inflation is seen as a result of high wages rather than as a consequence of insufficient capacities; second, the theory neglects the important role – from the Keynesian standpoint – of effective demand as a precondition of employment. The empirical underpinning of this approach is extremely weak in the case of Austria, so that economic policy recommendations derived therefrom are counterproductive.

Third Step: Quality and Sustainability of Public Finances

As many EU countries have meanwhile attained budgets in balance or budget surpluses,[2]) the thrust of the fiscal policy debate has shifted to the question of the quality and sustainability of public finances. The discussion was launched by the Lisbon European Council on March 23 and 24, 2000. In the report of the European Commission (2000), the qualitative improvement of public finances aims primarily at enhancing their growth and employment impact. Public finance may boost the growth and employment potential in three ways, namely by

– contributing to the formation of human capital and capital in kind;
– providing suitable incentives through the tax and benefits systems, and by
– ensuring a stable macroeconomic framework.

The first item involves examining the uses of government expenditure, with a shift from "unproductive" social expenses to productive uses obviously being advocated. The main factors contributing directly to growth and employment are investment in capital in kind, human capital and knowledge capital (infrastructure, education and training, R&D, innovation). Social expenditure plays only a minor role, "in particular by supporting investment in human capital" (European Commission, 2000). Government expenditure financed by means of higher taxes or deficits lead to a "crowding out" of private investment.

The second item not only spells out the growth and employment-inducing distributive function of social protection, but also points to the negative effects on labor supply and demand. Generous unemployment

1 *Non-Accelerating Inflation Rate of Unemployment.*

2 *According to the spring forecast of the European Commission, as many as ten states by 2001.*

benefits and early retirement plans are the main targets of criticism, whereas the "right" incentives are not specified.

The third item assumes that ensuring a growth and employment-creating macroeconomic framework has strict fiscal discipline as a prerequisite. Public finances should be more or less in balance throughout the business cycle and public debt should decrease constantly. For the EU as a whole, a debt ratio of significantly less than 60% shall be attained.

The aforementioned report of the European Commission provides long-term projections designed to illustrate that population aging leads to considerable pressure toward increasing expenditure for the pension and health care systems. According to the report, the financial burden resulting from demographic developments is considerable, consequently the long-term sustainability of public finance must be ensured – beyond the reforms already carried out – by means of a comprehensive strategy (continued reform of the pension and health care systems, disincentives for early retirement, labor market reforms to boost employment, reforms of the product and capital markets, etc.).

The recommendations derived from the discussion of quality and sustainability of public finance erode national fiscal policy even more. Besides, the list of other potential restrictions may be extended ad libitum, because arguments in favor of budgetary provisions are always close at hand. Such recommendations entail interference in the national fiscal sovereignty, for which there is no economic policy justification. While the convergence criteria and the Stability and Growth Pact were still justifiable on the grounds of the cross-border effects of "excessive" national deficits or debt ratios, requirements relating to the budget structure can no longer be justified (BEIGEWUM, 2000). They are apt to facilitate the establishment of a leaner (welfare) state.

Generally, these three steps limit considerably the autonomy of Member States' budget policy and hence distributive policy. The argument that sufficient leeway remains for distributive policy at the national level can be rejected by pointing to the fact that even in times of greater leeway than nowadays – under EMU conditions – distributive policy in favor of lower income groups was difficult or was not pursued to the extent desirable.

5 Structure of Budget Consolidation and its Role in Distributive Policy

For the assessment of the sustainability of budgetary policy, the European Commission underlined the importance of the structure of budget consolidation already in earlier documents (Convergence Report, 1998), which make use of approaches developed, inter alia, by Alesina and Perotti (1995), Alesina, Perotti and Tavares (1998) and Alesina and Ardagna (1998). Thus, budget consolidation may have a growth-promoting effect and is sustainable only if carried out primarily via the expenditure side – in particular by cutting social expenses, employment and wages – rather than through (direct) tax hikes. A critical review of this theory has demonstrated (Rossmann, 1999) that the decisive question as to the channels through

which expenditure cuts generate an output expansion remains unanswered.[1]) Alesina et al.'s empirical results on the structure of consolidation are not suited for budget policy recommendations, because there is a strong case that economic growth has an advantageous effect on public finance rather than the other way round.

Nevertheless, the neoclassical idea that only expenditure-side consolidation can be sustainable has gained entrance into "pragmatic" economic policy. From the distributive policy viewpoint, this has proved especially fatal for those EU countries in which strong distributive effects come in particular from the expenditure side of public finance. Austria is one of the countries that have abided by this recommendation and where public expenditure plays a particularly pronounced distributive role.[2])

6 Conclusion

Distributive policy does not rank among the key economic policy objectives of the European Union. Although the full employment goal figures more prominently in the 2000 BEPG, European economic policy still relies on a supply-side-oriented economic model, which over the past two decades was not able to resolve the distributive policy problems (high unemployment, uneven income distribution, precarious jobs, poverty, gender inequality). From the employee perspective, this was primarily due to asymmetric economic policy conditions, the monetary policy focus put on price stability by an autonomous central bank, and the growing emphasis on fiscal discipline. The gradual restriction of the fiscal policy leeway (convergence criteria, Stability and Growth Pact, budget structure requirements) has greatly reduced the room for manoeuvre with respect to national distributive policy. The new fiscal policy stance can be seen as a paradigm change with regard to the role of the state. The step-by-step reduction of the fiscal policy leeway facilitates the establishment of a leaner (welfare) state and the continuous erosion of labor and social regulations, thus contributing to the de-democratization of economic policy.

In view of the unsolved – even aggravating – distributive policy problems, a reformulation of economic policy is called for, which will put more emphasis on distributive policy goals. One of the main elements, from the employee viewpoint, would be a macroeconomic policy that is more strongly geared toward employment, provides the basis for a more cooperative monetary policy and a more expansionary fiscal policy, combats effectively unemployment, and gives priority to man and the social perspective. The latter, in particular, involves the creation of a Social Union alongside EMU – in other words, a harmonized European Social Area. The Action Plans to combat poverty, which are currently drawn up by the

1 *In several countries cited as prime examples (Ireland, Denmark), budget consolidation was considerably boosted by depreciations, above all when accompanied by a moderate wage policy.*

2 *The accelerated consolidation effected in 2000 – aiming at a "zero deficit" by 2002 – relies much more strongly on revenue-side measures despite the political announcements made, which was criticized by the European Commission and the IMF in their reports on the most recent stability program.*

Member States and unfortunately disregard social standards, constitute a first – albeit hesitant – step in this direction.

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Problems Relating to the Taxation of Cross-Border Capital Income[1])

Walpurga Köhler-Töglhofer

1 Introduction

Under Economic and Monetary Union (EMU), fiscal policy has basically remained a national competence; however, fiscal policymakers are faced with the need to coordinate policy approaches. At the same time, the (revenue-side) discretionary power of national budget policymaking is limited owing to the free movement of production factors. The liberalization of short-term capital transactions, progress in information and communications technology, and the single currency for the current twelve EU participants have helped considerably reduce transaction costs, above all of cross-border capital flows aimed at short-term yield maximization, and have hence enhanced the mobility of capital. This changed environment limits the latitude and autonomy of the individual EU Member States in national tax policy issues.

The basic traits of the current tax systems evolved during an era that was characterized by closely regulated external relationships and relatively closed economies. Controls on the movement of capital prevented cross-border flows of capital from becoming a national tax policy issue, while at the same time international movements of production factors and goods were subject to regulatory controls. Hence, the cross-border spillover effects and national fiscal externalities remained negligible. In this environment, the debate focused on basic income taxation issues, the fundamental principles governing this fiscal domain as well as redistribution and stability functions. In policy discussions on income taxation, redistribution aspects commanded equal, if not higher attention than efficiency issues. During the 1980s, the growth effects of capital taxation increasingly moved into the limelight as the intertemporal optimal tax theory started to gain ground – even though this theory still focused on closed economies.

Up to the beginning of the 1980s, the guiding principle of economic policy in line with the Keynesian concept of economic strategy focused on the redistribution and stabilization functions of the public sector. The major tax reforms of the 1980s reflected the industrialized countries' concern with the conditions for investment and growth in the individual countries. Lower tax rates on capital income were intended to increase people's propensity to save and to invest, and hence to improve the environment for growth. Strategic economic policy has always aimed at maximizing the welfare of the individual nations, but in the past its possible (negative) spillover effects to other countries were not viewed as an issue concerning tax policy, but rather as a domain of trade and exchange rate policy.

Along with a reorientation that gained ground at the beginning of the 1980s, economic theory began to focus on the supply side of the economy, which also gave rise to the call for deregulation and liberalization. The large OECD countries had already liberalized capital transactions or would take this step in the course of the 1980s. Most other European states followed suit at the beginning of the 1990s.

1 The term capital income relates to income from monetary or portfolio capital in the form of interest or dividend income. The tax treatment of corporations is discussed in a separate section.

The liberalization of capital transactions coupled with the progressive integration of the world economy created scope for exploiting welfare gains generated by the efficient global allocation of capital. The liberalization of trade in goods and services removed frictions and distortions. But as long as other distortions such as differential national tax regimes continue to exist, the beneficial effects of liberalization on the general welfare may be lessened. Tax-induced investment decisions may result in an inefficient allocation of capital at the international level, and thus give rise to welfare costs at the global level.

Liberalization means that the external effects of domestic taxation policy measures can no longer be ignored because liberalization enables investors to effect cross-border transactions and to pursue their utility maximization strategies aimed at leveraging differences between domestic and foreign net rates of return without being subject to any government control.

In the field of capital taxation, competitive aspects increasingly come to the fore in this changed environment (taxes as a locational argument as competition policy within the EU becomes more stringent, taxes as a profit allocation determinant for transnational and multinational corporations). Thus, during the 1990s almost all OECD countries lowered capital income and corporate tax rates, which may be seen as an indication that increasing mobility had forced the governments to lessen the tax burden on these mobile factors in order to prevent tax-induced capital exports, relocations and profit shifting.

However, the changed environment has an impact not only in terms of creating scope for offensive measures in global location competition, but more generally, in all areas in which the tax base exhibits a high degree of international mobility. Different tax structures in individual countries limit the latitude of national tax policy – even if such tax structures are not the result of a policy intentionally adopted to spur aggressive competition.

The issue of levying tax on the mobile factor capital hinges on the problem of capital flight (positive externality) or tax-induced capital imports (negative externality). The latter implies the strategic use of tax policy measures designed to attract financial capital (by offering foreign investors favorable tax treatment of capital income) or real investments (by promoting investment through tax incentives and/or a low effective tax burden). The strategic deployment of tax policy measures boils down to a classical case of a prisoner's dilemma: Maximizing the welfare of a single state produces a less than optimal result at the global level.

High mobility of capital coupled with tax competition makes it more difficult to maintain the public sector's redistributive function and certainly lessens the redistributive leverage of capital taxes. Capital mobility creates leeway for free-riding. Mobility enables capital owners to enjoy the benefits and services in their country of residence without contributing to financing them by paying taxes on their capital income.

Moreover, the redistributive function of income taxes in general becomes compromised as the mobility of the factor labor increases – especially if it involves a high share of highly qualified human capital. From

the viewpoint of a small open economy, increased capital mobility implies increased interest elasticity in the supply and demand for capital. Hence, from the vantage point of optimal tax theory, goods and factors with low elasticity – i. e., immobile factors – should be more heavily taxed. Levying taxes on capital income is a controversial issue from an intertemporal perspective, even within the context of closed economy models, with criticism focusing on the effects of taxes on capital allocation and capital accumulation.[1]) However, beside possible taxation-induced long-term growth effects, the removal of capital restrictions has also been giving rise to allocative,[2]) intranational and interjurisdictional,[3]) redistributive and purely fiscal problems.

Many economists have been posing the rather fundamental question of whether the taxation of capital is not generally at variance with liberalized capital transactions. Their research focuses mainly on capital income taxation in small open economies under the assumption of perfect capital mobility. *"Small countries may find it particularly difficult to maintain high tax rates on capital income, and some of them may be tempted to become tax havens for foreign capital, thus making it more difficult for other countries to maintain their tax rates"* (Tanzi, 1995, p. 66). Razin and Sadka (1989) arrive at the conclusion that no capital income tax whatsoever could be efficiently imposed on a small open economy if capital flight to the rest of the world could not be effectively stopped.[4])

The objective of the present paper is to discuss some of the problems of national tax policy arising in the wake of the removal of capital controls. Section 2 focuses on the taxation of the factor capital from the point of view of traditional theory of public finance and optimal tax theory. The subjects dealt with are the welfare cost of capital income taxation in a closed economy as compared to those of an open economy that enjoys liberalized capital transactions. Section 3 deals with the international taxation principles of cross-border capital income and analyzes their advantages and disadvantages in allocative terms. Section 4 is dedicated to a discussion of the reasons why it is impossible to enforce the residence principle of taxation on interest and dividend income and the resulting fiscal effects. Efforts to coordinate interest income taxation in the EU are summarized in section 5. Section 6 deals with the problems of business taxation. Further issues discussed are the potential strategic use of taxes for location policy purposes and the problem of profit shifting. The chapter closes with a

1 *"Taxation of capital might encourage individuals to consume rather than to save. Thus intertemporal distortions would continue to exist even with an optimal allocation of capital, depending on the level of the tax rate – the higher the tax rate, the lower the propensity to save" (Tanzi, 1995).*

2 *"Differences in the effective rate of capital income taxation among countries tend to create distortions in the international allocation of capital, saving, risk and financial intermediation" (Gardner, 1992, p. 52).*

3 *A whole network of double taxation agreements is designed to solve the problem of interjurisdictional fairness. However, tax exports and profit shifting (to tax havens or low-tax countries) as well as simple nondeclaration of foreign capital income still prevent any effective solution of this issue.*

4 *This is an argument that Luxembourg and the United Kingdom continued to raise in the discussion of the proposal to introduce a uniform minimum withholding tax within the EU.*

résumé of the debate on the harmonization of business taxation. The conclusions are summarized in section 7.

2 Taxation of the Factor Capital between Tax Theory and Policy

In the traditional theory of public finance and also fiscal policy reality, conventional wisdom is to tax income in accordance with the ability-to-pay principle, this ability being gauged by the individual's consumption and wealth. Under a comprehensive income tax approach, the income of a period is the increase in wealth plus the consumption of a period. Hence, the term income should include both monetary and nonmonetary income (compensation in kind) as well as extraordinary income and realized and nonrealized capital gains[1]). In a narrower definition, income denotes only a regular flow of money income and compensation in kind, and does not encompass donations or speculative gains. The advocates of a comprehensive income taxation view capital income as an increase in an economic agent's ability to pay, which hence should be taxed like any other type of income. From a redistributive viewpoint, the specific feature of this income category is that people in high-income brackets and the owners of financial assets are the typical beneficiaries of the related increase in the ability to pay. Therefore, in the light of conventional theory of public finance, the question merely is how to formulate and implement such a tax.

Levying capital income tax on domestic capital income within the context of income taxation repeatedly gave rise to problems, and de facto to nontaxation, in the past. Therefore, many European countries, among them Austria, opted for taxing capital income separately and adopted a dual income tax regime[2]), providing for a tax conceived as final tax with a proportional tax rate[3]), which is withheld at source. Thus the debtor of the capital income is responsible for paying the tax.

Beside taxes on interest and dividend income imposed at the personal level, all states also levy a separate corporation tax. However, tax statistics

1 *According to the comprehensive income taxation approach, all capital gains of a period, i. e., realized as well as unrealized gains, should be taxed. The problem is that unrealized gains cannot be ascertained. Therefore, the taxes are generally levied upon the realization (sale) of the assets. Nontaxation of unrealized capital gains, however, results in unequal tax treatment, which is likely to influence individuals' investment decisions, creating a bias toward investments that promise an increase in net worth rather than yielding interest or dividends. Incidentally, in Europe capital gains tax is levied only in a few countries such as Finland and the United Kingdom. By contrast, Germany and Austria levy a tax only on speculative capital gains. This tax-induced allocative distortion is further aggravated especially if gains from the alienation of property are not taxed at all – above all under a progressive income tax regime.*

2 *In Austria, the income category with the highest future growth potential thus for the first time contributed a substantial share of tax revenues; this measure hence increased the revenue elasticity of the Austrian tax regime. But it also gave rise to distributive imperfections, because a socially sensitive income segment was thus excluded from progressive taxation. However, according to Genser (1995), more than 80% of interest income had previously not been reported. A positive aspect of levying this final tax at source is that the previous discrimination in the tax treatment of yields of largely risk-free financial assets and high-risk equity financing has been eliminated (Mooslechner, 1994, p. 43 f.).*

3 *The economic justification for the low proportional rate is based on the argument that only real interest income was to be taxed, but since the tax rate was measured on the nominal interest rate, the effective tax burden on savings was unjustifiably high in periods of high inflation.*

show that the volume of tax collected under corporate tax is relatively low, while compliance cost is considerable. From an economic point of view, this tax primarily fulfills a supplementary function with respect to income tax, because otherwise retained earnings would escape taxation.[1]) Another rationale for separate tax treatment of corporate income are social equity reasons, as it serves as a benefit payment for privileges conferred on the corporation, like limited individual liability, easier access to and a better bargaining position on capital markets. The corporate tax additionally enables tax authorities to skim off rents earned by a company. *"Taxing rents, which are the returns to factors over and above that needed to compensate them for their use, is efficient, since investment and financing decisions of businesses are not distorted"* (Mintz, 1997, p. 150). A further point in favor of corporate tax is potential risk sharing between the companies and the state.[2]) Additionally, countries that are capital importers obtain the opportunity to pass part of the tax load along to the foreign capital owners ("tax exportation"). If the tax paid in a source country is credited against taxes due in a residence country, this in fact reduces the tax revenue in the capital-exporting country, but, what is more important, it corroborates the sustainability of the principle of capital income taxation in general.

In modern tax theory, however, the issue of whether capital income should be taxed or not and which of the two possible variants entails higher welfare cost has become a bone of contention. The proponents of increasing the tax burden on labor income or on consumption – while tax-exempting capital income – generally argue that saving is highly interest-elastic, i. e. in their opinion eliminating capital income tax would entail higher savings[3]) and, in further consequence, higher capital supply because future consumption would no longer be discriminated in favor of current consumption. On the other hand, the removal of these intertemporal distortions, in connection with the need to rely more extensively on alternative tax bases, would result in more pronounced intratemporal distortions between work and leisure time. *"... the sole reliance on a wage tax compared to an income tax could increase the economic loss induced by the tax system. ... as there is no clear argument against capital income taxes, reliance on a capital income tax in conjunction with other taxes cannot be ruled out on allocative grounds. Other issues such as fairness ... in the tax system become more important than allocative impacts in determining the appropriateness of a particular personal tax base"* (Auerbach and Kotlikoff, 1987, quoted from Mintz, 1992, p. 11). However, a tax-induced

1 *Retaining earnings for the purpose of (tax-free) self-financing of investments would result in an increased company value and hence raise the value of the company's shares, but the accrued capital gains would be subject to tax – if at all – only after their realization.*

2 *By offering the option of carrying losses forward or back, the state, in return for profit participation, actually assumes part of the loss risk. However, full offsetting of losses involves serious moral hazard and control problems and encourages structural rigidity, which tends to unnecessarily prolong the life of unprofitable, loss-making enterprises. In fact, there is no tax regime that offers full loss compensation, as this would put the state in the position of a dormant partner. However, all jurisdictions permit partial loss-carryforwards and/or carrybacks over a defined number of years. Most tax regimes allow loss carryforwards either for an undetermined or a defined number of years.*

3 *More sophisticated models based on more than two periods, in which work is rendered not only in the first period, show that the interest elasticity of savings is even higher.*

reduction of savings with negative effects on capital accumulation increases the burden on labor in the long term.[1])

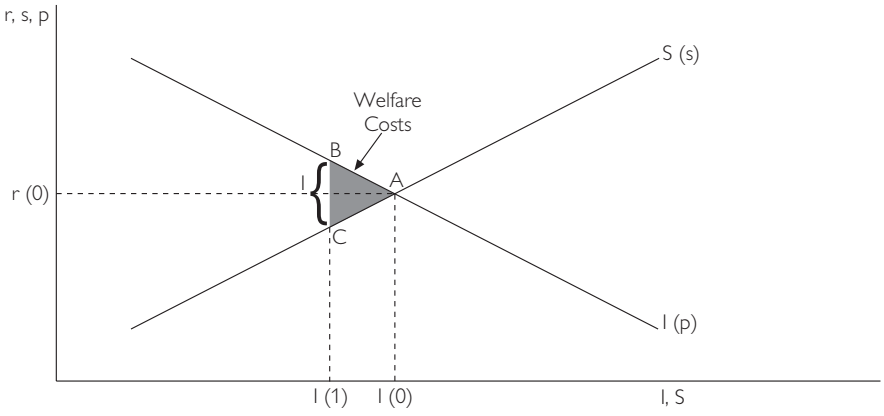
In accordance with the production efficiency theorem[2]) of optimal tax theory, no production or factor taxes should be levied (unless external effects are to be internalized) if no excess profits occur in a perfectly competitive environment and if a government is not subject to restrictions in the taxation of consumption. However, this proposition no longer applies if technical reasons prevent profits from being taxed to the extent of 100% ("third best solution") or if the tax subjects are heterogeneous individuals: *"if 100% taxation of profits cannot be achieved, differential taxation of factors can serve as a substitute for the profits tax"* (Slemrod, 1990, p. 162).

2.1 Welfare Cost of Capital Taxation Under Liberalized Capital Transactions

In principle, the taxation of capital income infringes on the conditions of intertemporal efficiency, as the marginal rate of substitution between current and future consumption of savers follows the rate of return after personal taxes, whereas the marginal rate of transformation in production follows the gross rate of return. This problem occurs independently of whether the situation is analyzed against the backdrop of a closed economy or an economy with liberalized capital transactions.

Chart 1

Illustration of the Overall Tax Wedge[1]) and the Resulting Welfare Cost for a Closed Economy



Source: Bovenberg et al. (1990), p. 288.

[1]) The tax wedge is an indicator of the extent to which business taxation reduces the incentive to invest and to what extent capital income taxation impacts on saving decisions at the individual level. Inflation assumes an important role in the calculation of tax wedges. Given personal income tax on capital income, rising inflation causes the effective tax rate to increase, because the tax is levied on nominal capital income. For corporations, by contrast, real financing cost decreases as inflation increases, because nominal interest on borrowed capital can be offset against taxes. *However, if inventories are valued according to the first-in, first-out principle, or the historical cost principle is applied for depreciation and amortization, rising inflation results in higher real financing costs for the companies.*

1 *However – in the presence of perfect capital mobility – the interdependence between savings and investment is eliminated in a small, open economy context, given the strict application of the residence principle of taxation. In open economies, the expected negative effects of taxes on capital income only apply in the event that savings decrease at the international level or in the presence of insufficient mobility of capital, as otherwise a possible decline of domestic savings would be offset by capital imports.*

2 *See also Diamond and Mirless (1971).*

In the absence of capital market imperfections and taxes, investors' arbitrage behavior results in an approximation of the gross return of a marginal investment to the real market interest rate, which the investor would also achieve with an alternative investment in a risk-free security. Introducing taxes means driving a wedge between the gross return of an investment and the resulting net return for the investor. The overall tax wedge (t = BC) is positive, i. e. the required gross return of the investment is higher than the net return accruing to the investor. Assuming that savings are interest elastic, this entails a decrease of savings[1]) and, in further consequence, investment. The capital market equilibrium shifts from I(0) to I(1); the tax burden increases by the size of triangle ABC.

The volume of welfare cost is determined by both the interest elasticity of savings and of investment demand. The net return (s) represents the opportunity cost of saving. The companies continue to invest until the gross return of an additional investment rises to a level at which it equals the tax plus the necessary compensation paid to the investors. The less interest-elastic saving and investment are, the smaller the additional burden resulting from taxation is.[2])

In a closed economy, it is only the overall tax wedge (p-s) that counts. A given overall tax wedge reduces both aggregates, investments and savings, which by definition must be identical in the end. Such identity is not necessarily the case in open economies, as international capital flows fill the gap between the two variables.

In the presence of *perfect* capital mobility, taxation of capital income has no impact on the companies' capital cost in a small open economy. The rates of net return investors expect to earn from their portfolio investments are determined on the international capital market. Domestic investment and savings decisions have no impact on this international interest rate and hence the yields of the different financing instruments. Levying taxes on capital income at the level of the capital owners has an impact on the volume of domestic savings[3]) and consequently on the volume of capital imports or exports, but not on real investment. This implies that the companies are "price takers" with regard to the attainable yield after corporate tax. *"Similarly, corporate tax provisions reduce investment, increasing (reducing) capital outflows (inflows) without affecting domestic savings decisions that depend on international yields on assets. Given these conclusions, one should disaggregate domestic corporate and personal effective tax rates for a small open economy to determine how investment and savings are affected"* (Mintz, 1997, p. 160).

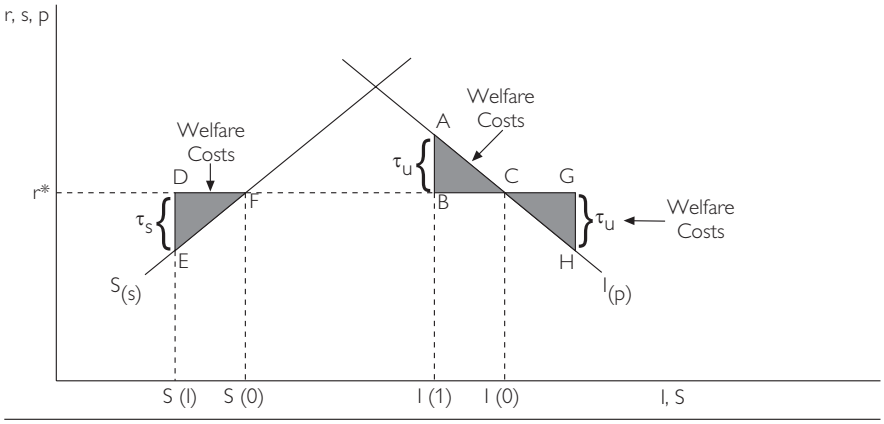
1 *But if the impact of the interest rate on empirical saving functions is low, private-sector fund allocations are unlikely to exhibit volume reactions to tax-induced changes in net rates of return (Mooslechner, 1994).*

2 *Which means that taxation actually becomes an empirical issue.*

3 *Provided the taxation regime is based on the residence principle, and that this principle is enforceable.*

Chart 2

Impacts of Tax Wedges in an Open Economy



Source: Bovenberg et al. (1990), p. 292.

In a scenario without taxes, this creates an identity of p = r = s, i. e. the necessary pretax return achieved with an investment is identical to the net return achieved by the investor. In the presence of corporate income taxation – given perfect capital mobility – the investment tax wedge[1]) has the effect of reducing investments, because the necessary gross return of an investment has to rise above the international interest rate. A tax wedge of the size AB results in a decline of investments from I(0) to I(1).[2]) The capital supply curve is not affected. Since capital supply is infinitely elastic, taxation has more pronounced allocative effects than in a closed economy.

The triangle ABC represents the welfare cost of corporate taxation. *"A given corporate tax wedge imposes larger national welfare losses in an open economy than it does in a closed economy owing to its greater effect on investment"* (Bovenberg et al., 1990, p. 293).

Capital income taxation and hence the savings tax wedge have no effect on real investment. However, as savings decisions are dependent on the interest elasticity of saving, capital income taxation influences savings decisions in favor of current consumption, resulting in a decline of savings and welfare costs in the amount defined by the triangle DEF.

This theoretical exposition makes evident that in small open economies and given perfect capital mobility, the corporate tax wedge only influences investment decisions while the capital income tax wedge has a pull only on savings and consumption decisions. Any increase of the effective tax burden on businesses or investments results in an outflow of capital until the net return of domestic and foreign investments has reached the same level. Any increase of capital income tax results in reduced savings, but has no impact on investment and consequently the real capital stock.

1 *Disaggregating the overall tax wedge is an analytical aid used "in addressing allocative issues among small open economies when international capital movements take the form of portfolio flows – that is, transactions in foreign financial assets normally not involving controlling ownership" (De la Fuente and Gardner, 1992, p. 73).*

2 *Which corresponds to a decrease of the current account deficit or an increase of the current account surplus.*

3 International Taxation Principles for Cross-Border Capital Income

Unless cross-border transactions are tax-induced, the liberalization of capital transactions results in an efficient allocation of capital at the international level. In reality, however, the differences in the effective tax burden between countries affect investment decisions and thus result in distortions in the global allocation of capital. The "real" allocative distortions are contingent on two factors, the international taxation principles and the incidence of taxation.[1])

The two basic taxation principles, the "residence principle" and the "source principle" will be discussed in greater detail below.

Under the *pure residence principle,* residents are taxed on the basis of their global income, i. e. all their domestic and foreign income. Hence, taxation is independent of the place where the income is generated. Profits and income are taxed where they accrue. The tax can thus be levied in the residence country in the form of income tax gauged on the personal situation of the taxpayer. This taxation principle constitutes the logical complement of the ability-to-pay principle.[2])

Taxation according to the residence principle reduces the net return, because it drives a wedge between the international interest rate (r^*) and the net return that accrues for domestic investors $[r = r^*(1 - \tau_r)]$.[3]) By contrast, income from capital accruing to nonresidents is not taxed in the host country. Under this taxation regime, the capital owners are the ones to bear the tax burden. From the point of view of an individual investor, all capital receives the same tax treatment regardless of where it is invested. The tax base for the national capital income tax is therefore the income accruing from savings and financial assets of residents.[4]) Investors' arbitrage behavior results in an international adjustment of gross rates of return, i. e. the pretax interest income accruing on capital employed.[5]) As suppliers of

1 *Real distortions, to the extent that they affect saving and investment or the composition of production and spending, are minimal if taxation follows the source principle and a capital income tax can be shifted onto other factors (labor, given sufficient real wage flexibility) in the short term. However, if a rigid wage structure impedes such a transfer option, while capital is mobile, the outcome is an inefficient allocation of this factor. Investments will be made where they encounter the lowest effective tax burden. "In the long run, differential tax burdens on capital are absorbed by labor in the form of differential labor productivity and real wages" (Gardner, 1992, p. 53). The extent of the shift depends on the relative factor intensity of the sectors producing tradable or nontradable goods. If the sector that produces tradable goods is more capital intensive than the protected sector of the economy, the factor labor bears even more than the original tax burden on capital.*

2 *"The residence principle has always been seen as a natural and necessary component of a personal, global income tax. Its purpose is to ensure that the fruits of economic activity, whether it be working or investing, and whether carried out at home or abroad, are treated uniformly. There seems to be no good reason to drop that basic philosophy of our tax system." (Musgrave, 1992, p. 181 f.).*

3 τ_r, *represents the tax rate in the residence country.*

4 *If income taxation is governed by the residence principle, the income tax base is the national product (all income produced in a national economy by residents at home and abroad within a defined period).*

5 *However, as soon as investors expect exchange rates to fluctuate, the global application of the residence principle will no longer guarantee that international capital allocation is not affected by tax considerations. This would require a correspondence of effective tax rates on real capital income and exchange rate-induced value changes. See also Rosenstock (1988), p. 59 ff.*

capital tend to invest where they think they will achieve the highest after-tax return, the residence principle boils down to being an approximation to a production optimum; however, this does not imply that this optimum is actually achieved.

In the case of small open economies, the domestic interest rate is the same as the international interest rate (r^*).

The arbitrage terms for the domestic investor are:

$$r(1-\tau_r) = s = s^* = r^*(1-\tau_r).$$

If a small open economy decides to increase the tax rate on capital income, which results in reduced domestic capital formation, this, all other things being equal, implies a rise in interest rates and – given full capital mobility – an increase in capital imports, which ultimately will cause the domestic interest rate to readjust to the international interest rate. The tax increase consequently has no impact whatsoever on the attractiveness of the country as an investment location. *In summary, under this taxation principle, national tax autonomy in terms of capital income taxation is in no way affected by tax competition even if the boundaries are open – at least to the extent that relocations of residence are excluded.*

Starting out from the rather realistic assumption that investors do not consider capital investments at home and abroad as perfect substitutes, an increase of domestic interest rates triggered by higher tax rates will not be completely offset by capital imports. Factors that may prevent the full adjustment of interest rates include the differing transaction and information costs of domestic and foreign capital suppliers as well as differing preferences with regard to the risk structure of the portfolios. Should capital from domestic sources and foreign sources prove to be complementary for the purpose of financing domestic investments for reasons of asymmetrical information, for example, because domestic capital assumes a surety function, the supply of foreign capital diminishes in tandem with the decrease of domestic capital.[1])

Under the residence principle of taxation international investors benefit from productivity increases attained by means of public goods in the source states without contributing to their financing.

The pure residence principle embodies capital export neutrality[2]) (CEN), as it results in an approximation or equalization of the marginal efficiency of domestic and foreign capital despite differences in the tax burden on capital income in the international environment. However, achieving a production optimum still does not imply that the optimal allocation of savings will be achieved if effective tax rates at home and

1 *The majority of theoretical studies on this issue start out from the assumption that financial investments at home and abroad are perfect substitutes.*

2 *Capital export neutrality gives rise to the question of where to invest. In a world without taxes, businesses would be likely to invest where production costs are lowest and hence the gross yield per unit of capital employed would be the highest. To prevent a tax regime from affecting corporate investment and location decisions, it is necessary to ensure that companies planning investments ultimately pay the same effective tax rate wherever they choose to invest. This is assured with the strict application of the residence principle.*

abroad differ, as there is a difference in net interest accruing to residents and nonresidents. An optimum allocation of savings, or capital import neutrality (CIN) can only be achieved by applying the source principle of taxation.

The *pure source principle* of taxation implies that only capital income accruing within a jurisdiction is taxed, independently of whether this income accrues to residents or nonresidents.[1]) Under this principle, the personal wealth or economic productive capacity of the individual taxpayers are left out of account and hence the ability-to-pay principle does not come into play in this context.[2])

Under the source principle, national differences in capital income taxation regimes give rise to differences in pretax rates of return and consequently the rate of return of a marginal investment (the marginal efficiency of capital or the marginal productivity of capital) between the countries.[3]) However, an international capital market equilibrium implies that domestic and foreign investors attain the same net return (r^n). If $\tau_s(\tau_s^*)$ is the domestic (foreign) source tax rate and $r(r^*)$ the domestic (foreign) interest rate, the arbitrage terms read

$$r(1-\tau_s) = r^n = r^*(1-\tau_s^*).$$

If the source principle is applied, the tax burden on an investment is therefore independent of who transacts the investment, but not of where it is made.[4])

Whereas, ideally, the residence principle results in a maximization of the common national product (production efficiency) by being conducive to an adjustment of the marginal efficiency of capital at home and abroad, the source principle entails efficient international savings formation (consumption efficiency) by encouraging the equalization of net interest rates.[5])

The only means to achieve production and consumption efficiency would be a full harmonization of capital taxation across borders. As this does not appear to be a realistic goal, priority is given to achieving capital export neutrality, i. e. realizing the residence principle, also because the general assumption is that the interest elasticity of saving (capital supply) is low relative to the interest elasticity of investment (demand for capital). Clearly, the welfare cost caused by this infringement on capital import neutrality is assessed to be lower than that incurred by infringing on capital export neutrality.

1 *In states adopting the source principle of income taxation, the tax base is the net domestic product, i. e., the income produced by residents and nonresidents in the respective country.*

2 *The source principle is applied de facto if income generated abroad is tax-exempted in the residence country, tax paid in the source country cannot be fully offset or foreign-source income is not declared in or repatriated to the home country.*

3 *Source taxation implies production efficiency only if source tax rates are identical in the different countries, because if tax rates differ, the gross interest return must be higher in countries with a higher effective tax burden on capital in order to achieve an equal net rate of return.*

4 *"CEN means that the market of suppliers of capital may be distorted, CIN that firms are confronted with different costs of capital." (Cnossen, 1993, p. 191).*

5 *See also Homburg (1999).*

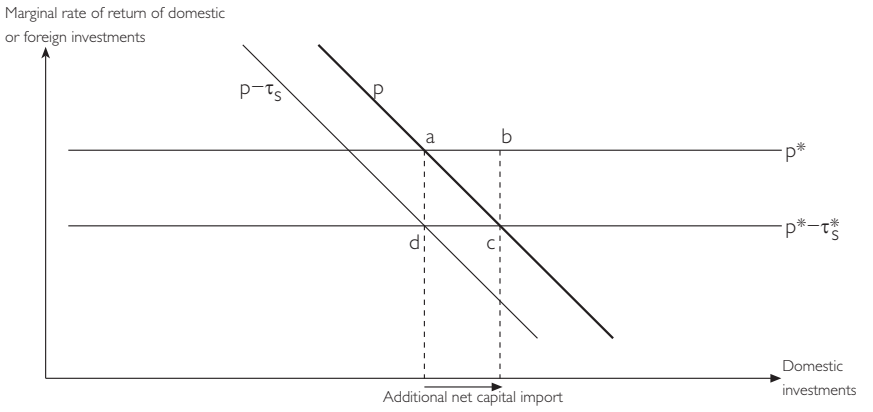
3.1 Source Principle of Taxation – Tax Competition

The source principle, even if operative only on a de facto basis, creates scope for tax competition. If states applying the source principle endeavor to maximize their national target functions – without regard to the resulting spillover effects on other countries – these measures result in welfare losses across the global economy. International capital allocation would only be efficient if the effective tax burden were the same across these countries, because in such a setting an adjustment of net rates of return would imply an equalization of gross rates of return.[1])

Chart 3

Shift in Investment Demand in Response to a Tax Reduction

Under the Source Principle



Source: Dluhosch (1993), p. 43.

In global competition for mobile capital the source tax rate on investments becomes a strategic variable. This can be illustrated by a simple example: Starting out from a state of optimal capital allocation, a state decides to lower its effective tax burden on investments. This means that investments in this country achieve a higher net rate of return. Capital flows into the country as the net rates of return adjust. This is capital that would have generated higher yields abroad. As a consequence, the capital-importing country achieves welfare gains, whereas global welfare decreases.[2])

As illustrated by chart 3, the reduction of the effective tax burden results in a shift to the right of the line representing investment. Prior to the tax cut, investors attained a net rate of return of $(p - \tau_s)$; after the amendment (shown as complete tax exemption) they achieve a net rate of return of p. This measure results in national welfare gains of the size of triangle adc. If the other countries fail to parallel the tax cut, investors there

1 *Prescinding, however, possible "location specific benefits" that allow for differences in statutory tax rates without causing allocative distortions.*

2 *The capital outflow from the high-tax jurisdiction results in a loss of tax revenue while the factor labor suffers real wage losses. An a-priori assessment of whether tax revenues will rise or fall in the country effecting the tax reduction is not possible. What can be said is that the factor labor in the capital-importing country benefits because the capital-labor ratio increases.*

continue to achieve a net yield of merely $(p^* - \tau_s^*)$. For foreign investors it becomes more attractive to invest in the country that effected the tax cut. These additional investments generate a marginal rate of return of p, which exceeds capital cost that has to be paid to foreign investors by $(p^* - \tau_s^*)$. However, invested in the capital-exporting country, this capital would achieve a higher gross return p^* than in the capital-importing country, which means that in global terms there is a welfare loss of the size of triangle abc. For the capital-exporting country, the effects of this beggar-thy-neighbor policy are tax revenue losses and real income reductions for the immobile factors.

Hence, the opportunities of tax and location competition created by applying the source principle of taxation clearly affect the individual countries' tax policy autonomy and imply global welfare losses. However, there are at least two reasons to recommend the application of the source principle of taxation: first, its complementary function to taxing capital income at a personal level, and second, because this type of tax may also be considered a tax obeying the benefit principle of taxation.

3.2 Preventing Double Taxation of International Capital Income

The basic issue boils down to whether the source state, where the income is generated, or the residence state of the capital owner should have the right to tax capital income. The solutions to this problem generally take their bearings from the benefit principle of taxation, which aims at distributing the tax burden in accordance with benefits received and/or costs incurred in the source and residence countries.

In legal terms, most European states[1]) have adopted the residence principle of taxation. However, in practical terms, the countries have reserved the right to levy taxes both on foreign-source income of residents and on defined domestic-source capital income of nonresidents (e. g. dividends, royalties, interest income, consulting fees) in the form of withholding taxes. *Exemption* or *crediting* are options to prevent double taxation. In tax law reality, most countries apply the crediting method in taxing capital income of private individuals, while they adopt the *exemption method under the residence principle* (income generated abroad is tax-exempted in the source country) or the *exemption method under the source principle*[2]) (income generated abroad is tax-exempted in the residence country) in the taxation of companies.

Though crediting[3]) of tax paid in the source country against taxes due in the residence country is best practice from the viewpoint of global welfare,

1 *With the exception of France, where earnings of permanent foreign establishments are not taxed, and the Netherlands, where foreign subsidiaries falling under the "participation exemption" provisions are also tax-exempted.*

2 *The OECD Model Tax Convention provides for the residence state to allow a tax deduction in favor of the source state. Concerning dividend income of the parent company from its foreign subsidiaries, European countries prevalently apply the exemption method under the source principle, i. e. this income is not included in the taxable income of the parent company.*

3 *The crediting method creates problems above all for institutional investors if they have no domestic tax liabilities against which to offset the tax paid in the source state.*

this does not necessarily imply an optimum result from a national welfare standpoint. *"From the standpoint of the national welfare of a capital-exporting country, capital will be best allocated when the after-foreign-tax return on foreign investment and the domestic before-tax rates of return are equalized"* (Caves, 1982, quoted from Gardner, 1992, p. 55). This condition is fulfilled if foreign withholding taxes are deductible from the assessment basis for the domestic tax, but not if these are credited against domestic tax liabilities.

Applying[1]) the residence principle combined with the crediting method, a large capital-exporting country may trust that the capital-importing country will impose a withholding tax at a rate corresponding to that of the capital-exporting country, because a lower rate would fail to attract additional capital anyway. If capital-importing countries imposed lower tax rates, this would be tantamount to renouncing tax revenues without achieving any positive real effects. Hence, theoretically, the credit method qualifies as a backstop for tax-induced capital outflows to other countries.

Problems arise, however, if domestic tax liabilities are lower than the tax paid abroad, as this results in so-called *tax exports,* meaning that the residence country pays the tax to the source country. For this reason, the full crediting system[2]) is a viable option of an efficient tax regime in the presence of tax competition, because it does not create an incentive for capital-importing countries to reduce withholding tax rates to zero.[3]) However, in a tax competition environment this system may be an inducement to raise the statutory rates to a suboptimally high level.[4])

In a number of scenarios, namely in the case a country reserves the right to compute its tax under a so-called "exemption with progression rule," which means that the tax paid in the source country is only credited to the extent of a domestic liability, as well as in the case of a *tax deferral* (the provisions of the residence state become effective only upon repatriation of the income to the home country)[5]) as well as in the event of *tax evasion* on foreign capital income, we de facto encounter source-based taxation.

1 *And assuming that the residence principle of taxation is enforceable.*

2 *From the vantage point of the investor – but not from the residence country's fiscal viewpoint – the full crediting method is equivalent to the residence principle, i. e. the exemption method under the residence principle. Full crediting ensures allocation neutrality, i. e. tax rate differentials have no impact on location decisions in capital allocations.*

3 *Under certain assumptions such as those elaborated by Gordon (1990), this type of crediting regime may have the same effect as tax policy coordination. Gordon shows that in the case of a capital-exporting country that behaves like a Stackelberg leader and provides positive taxes, but at the same time allows full credit for tax already paid abroad against domestic tax liabilities, it becomes possible to enforce capital income taxation even in a competitive scenario.*

4 *Full crediting could thus turn out to be tantamount to the subsidizing of high-tax countries by capital-exporting low-tax countries. This would imply that tax already paid in high-tax jurisdictions could be debited against the lower tax liabilities arising in the low-tax country. See also Roloff et al. (1994). While this opportunity to export tax tends to create an incentive to impose excessively high withholding tax rates in a competitive scenario, the risk of capital flight implies an incentive for suboptimally low tax rates.*

5 *If, for example, foreign investments of a subsidiary are financed with retained earnings, the residence principle does not come to be applied unless the profits are repatriated; hence taxation follows the source principle.*

4 Problems in Enforcing the Residence Principle of Taxation

Investors' portfolio investments are motivated by the aim of maximizing short-term return and spreading risk[1]). As net rates of return of different investments are subject to taxation in the source and the residence country or are tax-exempt in the source country, and as the residence principle is not enforceable, they are affected both by domestic and foreign tax provisions. Portfolio investments in fixed-income securities, such as bonds, are generally more tax-sensitive than equity securities, because dividend yields constitute only part of the achievable income, while price gains are the more important component. As most countries allow tax-free realization of capital gains after a defined holding period, the tax burden on dividend income plays a subordinate role.

The individual European jurisdictions apply a multitude of different methods to collect capital income tax. In Austria (25%), Norway (28%), Finland (28%), Sweden (30%), but also in Belgium (15%) and Ireland (15% or 27%) and in Italy (12.5% or 30%), domestic capital income is subject to withholding tax – which is levied as a final tax.[2]) Greece also levies a capital income tax at the source (15%). In France and in Portugal, taxpayers are given a choice between a final tax or crediting against income tax. Sweden and Denmark use a reporting system for assessing capital income under the income tax regime, but capital income is subject to a proportionate tax rate which is lower than the marginal income tax rate. The United Kingdom (20%), Germany (30%) and Spain (25%) tax capital income at the source while employing the imputation system, which permits crediting against income tax.

Only Denmark and the Netherlands boast a complete, comprehensive reporting system to support the tax assessment of residents' interest income. In some other countries like Spain and France the fiscal authorities dispose of extensive information systems to support tax assessment in addition to taxation at the source. Only Luxembourg and some dependent and associated territories of EU Member States abstain from levying taxes at the source and above and beyond that also have far-reaching banking secrecy laws. The United Kingdom (25%) and Finland (28%) are the only jurisdictions where all capital gains are subject to taxation.

In all European countries, like in the OECD as a whole, tax rates on capital income have been substantially reduced over the past two decades. Countries like Austria, characterized by features like anonymous accounts and banking secrecy, saw a transition to dual income taxation with lower

1 *According to Tobin (1958) and Markowitz (1959), investors' portfolio decisions are determined by the objective of diversifying investments in order to reduce the overall risk of the portfolio. As regards international investments, the diversification principle applies in particular if the rates of return across countries are to a lesser degree correlated than the rates of return on domestic investments.*

2 *Whereas capital income such as dividend and interest payments is subject to a uniform proportional tax rate, other types of income are still taxed under the progressive income tax regime. Unlike in Austria, other jurisdictions also tax rents, leasehold income and royalties at a proportional rate. Shifts from labor to capital income (staff loans and employee stock option plans), and the fact that they generally infringe on the principle of horizontal tax equity are typical problems of dual income tax regimes.*

Table 1

Top Personal Tax Rate on Interest Income

	1985	1999	1985 to 1999
	%		*Change in percentage points*
Denmark	73.2	60	−13.2
Finland	71	28	− 43
Sweden	50	30	− 20
Belgium	25	15	− 10
Netherlands	72	60	− 12
Luxembourg	57	50	− 7
Ireland	60	27	− 33
Portugal	15	20	+ 5
Austria	62	25	− 37
Spain	66	31	− 35
Italy	12.5	12.5	−
France	26	20.9	− 5.1
Germany	54.5	53	− 1.5
Switzerland	45.8	45	− 0.8
U.S.A.	54	39.8	−14.2
Japan	20	20	−

Source: Sorensen (2000), p. 436.

proportional tax rates on capital income as the only way to close existing loopholes in capital income taxation.[1])

As regards foreign capital income, the postulate applies that *"with the full taxation and enforcement of the personal income tax, capital mobility has little impact on the optimal choice of a personal tax rate in a small open economy. However, capital mobility becomes important if residents are able to avoid the personal tax on savings by investing capital in low tax jurisdictions"* (Mintz, 1992, p. 23). In principle, all resident countries claim a right to tax interest income accruing to residents abroad. However, as cooperation among source countries is still inadequate, national fiscal authorities have to rely on their residents' readiness to declare this income, i. e. their tax honesty. Two factors support tax evasion, namely the fact that the majority of double taxation agreements provide for tax exemption or very low withholding tax rates on interest income accruing to nonresidents in the respective source country and the fact that residence states have no access to information in foreign jurisdictions.[2]) Accordingly, a *whole number of EU countries in fact*

1 *Statutory tax rates, however, provide little information as to the effective tax burden on taxable real-term capital income growth. The tax rate is charged against nominal interest income, i. e. the inflation component is taxed as well. The effective marginal tax rate relates to the tax burden on real-term interest income. In Austria, the marginal effective tax burden on savings was extremely high under the synthetic income taxation approach. According to Felderer and Koman (1998) the marginal effective tax rate on savings amounted to 155% at the beginning of the 1980s and in the course of the decade (as a result of the declining inflation rate) dropped to about 100%. Only after the introduction of final taxation in 1993 did this rate drop to about 35%; in 1998 the effective marginal tax rate on savings amounted to 32.8%. The marginal effective tax rates on interest income from fixed-interest bearing securities reached an equally high level. Dividends, by contrast, were taxed at relatively low effective marginal rates (of about 45% at the beginning of the 1980s and declining to about 10% after 1994).*

2 *In Germany, the annual tax loss due to tax evasion by interest earners has been estimated to amount to at least DEM 14 billion. See Handelsblatt of November 30, 1999, p. 8.*

assume the role of tax havens for capital investments from other Member States.[1]) Cross-border dividend yields, by contrast, are generally subject to withholding tax – even though the rate may be very low (up to 25%). Mostly, this withholding tax is credited by the residence country, while no imputation credit is allowed for corporate taxes imposed by the source country on these dividend yields.

Foreign investments in fixed interest-bearing securities and bank deposits thus enjoy preferential tax treatment – though this is statutorily not intended – relative to domestic investments.[2]) As a further consequence, companies intending to raise capital also have a bias for capital markets where no source tax is imposed on interest income.

The current regimes of taxing interest income within the EU involve negative effects on the overall community of EU Member States. None of the EU Member States has realized capital export neutrality so far, because the states are de facto unable to enforce the taxation of foreign interest and dividend income accruing to residents, which results in different tax treatment of investors' portfolio investments at home and abroad. Capital import neutrality has not been implemented either because the tax-exempt status of nonresidents prevents the application of uniform taxation principles to all income accruing within the individual jurisdictions.

Thus developments such as the economic integration of recent years, which would have been expected to enhance the role of the residence principle, have actually liberated forces that reduce its applicability. Still, the problems arising are not restricted to the problem of de facto tax-exemption of foreign interest income due to nondeclaration or the difficulties the fiscal authorities encounter in gathering the required information,[3]) but also involve the issue of corporate earnings

1 *Tax evasion may be one possible explanation for the massive growth of cross-border portfolio investment or, more precisely, the huge increase in income from this type of cross-border transaction. According to IMF statistics, portfolio investment expanded from USD 447 billion in 1988 to USD 768 billion in 1994. Global securities transactions widened from less than 10% relative to total gross domestic product of the major industrial countries in 1980 to more than 100% in 1992. See IMF (1995).*

2 *Deutsche Bundesbank assumes that the strong increase in foreign receivables of domestic private nonbanks in the period 1991 to 1995 (from DEM 279 billion to DEM 425 billion) was to some extent attributable to tax-induced asset shifts, which actually involved a recycling of these assets. This is to say that "fictitious" foreign holdings increased (in the period 1989 through 1994 the volume of bonds held by foreign investors increased by an annual average rate of 30% from DEM 188 billion to DEM 682 billion) because investors leveraged the tax exemption of interest income.*

3 *The OECD Model Tax Convention calls for an exchange of information to counteract to fiscal evasion and tax avoidance. However, any formal agreement on the exchange of information would have to be based on reciprocity especially in terms of the conformity of administrative instruments employed and the equivalence of the information disclosed. But the Convention fails to impose any obligation of implementing administrative processes that deviate from the laws or legal practice of the contracting states or to disclose information that cannot be retrieved under the laws or usual administrative procedures of the individual states. Hence, while not excluding support measures going beyond existing statutory limits, the Convention abstains from making such action a legal obligation. Moreover, banking secrecy regulations also come into play in this context. Wherever a state guarantees more or less strict banking secrecy while another state has less stringent regulations, an exchange of information will necessarily remain limited.*

Table 2

Withholding Tax Rates on Cross-Border Capital Income in the Form of Interest, Dividends and Royalties Within the EU (as of: 1996)

Source country	Target country																	
	Austria			Belgium			Denmark			Germany			Finland			France		
	I	D	R	I	D	R	I	D	R	I	D	R	I	D	R	I	D	R
	%																	
Austria[1])	×	×	×	0	15	10	0	10	10	0	15	0	0	10	10	0	15	0
Belgium	0	15	10	×	×	×	0	15	0	0	15	0	0	10	5	0	15	0
Denmark	0	10	10	0	15	0	×	×	×	0	15	0	0	15	0	0	0	0
Germany	0	15	0	0	15	0	0	15	0	×	×	×	0	15	5	0	15	0
Finland	0	10	10	10	15	5	0	15	0	0	15	5	×	×	×	0	0	0
France	0	15	0	0	15	0	0	0	0	0	15	0	0	15	0	×	×	×
Greece	10	0	10	10	0	5	8	0	5	10	0	0	10	0	10	10	0	5
United Kingdom	0	0	10	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Italy	10	15	10	15	15	5	15	15	5	10	15	5	15	15	5	10	15	5
Luxembourg	0	15	10	0	15	0	0	15	0	0	15	5	0	15	5	0	15	0
Netherlands	0	15	0	0	15	0	0	15	0	0	15	0	0	15	0	0	15	0
Portugal	10	15	10	15	15	5	20	25	15	15	15	10	15	15	10	12	15	5
Sweden	0	10	10	0	15	0	0	15	0	0	15	0	0	15	0	0	15	0
Spain	0	15	5	0	15	5	0	15	6	0	15	5	0	15	5	0	15	6

Source country	Target country																	
	Greece			United Kingdom			Ireland			Italy			Luxembourg			Netherlands		
	I	D	R	I	D	R	I	D	R	I	D	R	I	D	R	I	D	R
	%																	
Austria	0	25	10	0	15	10	0	15	10	0	15	10	0	15	10	0	15	10
Belgium	0	10	5	0	10	0	0	15	0	0	15	5	0	15	0	0	15	0
Denmark	0	18	5	0	15	0	0	15	0	0	15	5	0	15	0	0	15	0
Germany	0	25	0	0	15	0	0	15	0	0	15	5	0	15	5	0	15	0
Finland	10	13	10	0	15	0	0	15	0	15	15	5	0	15	5	0	15	0
France	0	25	5	0	15	0	0	15	0	0	15	5	0	15	0	0	15	0
Greece	×	×	×	0	0	0	40	0	20	10	0	5	8	0	20	10	0	7
United Kingdom	0	0	0	×	×	×	0	0	0	10	0	8	0	0	5	0	0	0
Ireland	26	0	26	0	0	0	×	×	×	0	0	0	0	0	0	0	0	0
Italy	10	15	5	10	15	8	10	15	0	×	×	×	10	15	10	10	15	5
Luxembourg	0	8	7	0	15	5	0	15	0	0	15	10	×	×	×	0	15	0
Netherlands	0	15	0	0	15	0	0	15	0	0	15	0	0	15	0	×	×	×
Portugal	20	25	15	10	15	5	15	15	10	15	15	12	20	25	15	20	25	15
Sweden	0	0	5	0	5	0	0	15	0	0	15	5	0	15	0	0	15	0
Spain	25	25	25	0	15	10	0	15	10	0	15	8	0	15	10	0	15	6

Source country	Target country											
	Portugal			Sweden			Spain			Non-treaty rates[2])		
	I	D	R	I	D	R	I	D	R	I	D	R
	%											
Austria	0	15	10	0	10	10	0	15	5	0	25	20
Belgium	0	15	5	0	15	0	0	15	5	0	25	13
Denmark	0	25	30	0	15	0	0	15	6	0	25	30
Germany	0	15	10	0	15	0	0	15	5	0	27	27
Finland	15	15	10	0	15	0	10	15	5	28	28	28
France	0	15	5	0	15	0	0	15	6	0	25	33
Greece	40	0	20	10	0	5	40	0	20	40	0	20
United Kingdom	10	0	5	0	0	0	12	0	10	20	0	23
Ireland	0	0	10	0	0	0	0	0	10	26	0	26
Italy	15	15	12	15	15	5	12	15	8	32	15	23
Luxembourg	0	25	12	0	15	0	0	15	10	0	25	12
Netherlands	0	25	0	0	15	0	0	15	0	0	25	0
Portugal	×	×	×	20	25	15	15	15	5	20	25	15
Sweden	0	30	28	×	×	×	0	15	10	0	30	28
Spain	0	15	5	0	15	10	×	×	×	25	25	25

Source: Deloitte & Touche (1997).

[1]) The withholding tax rate on royalties is 0% for interests held of less than 50%, for holdings of more than 50% the stated 10% are levied.
I: interest income on balances in banks; D: portfolio dividend yield; R: royalties.

[2]) Withholding taxes on interest income, dividends and royalties levied from capital owners whose state of residence has no double-taxation agreement with the respective source country.

retention[1]) of foreign subsidiaries and the increasing popularity of tax havens.

For countries that do not impose withholding tax on interest income accruing to foreign investors and also refuse to cooperate with foreign fiscal authorities, or countries with strict banking secrecy laws, this creates an opportunity to attract savings from other countries and to establish themselves as a location for financial services companies. Small countries viewed as tax havens and hence attracting financial flows can thus make use of the opportunity to exploit the gaps inherent in the residence principle of taxation. In fact, they have no particular interest to remedy these gaps, as for them this would mean a loss of tax revenues, fees, investments and jobs in the financial sector.

The existence of tax-haven jurisdictions has significant fiscal and distributive effects, as they occasion shifts in the international distribution of taxable income. Wherever portfolio investments tend to concentrate, the accruing volume of interest income increases, while in the residence states of the portfolio investors the tax base narrows, reflecting the extent of the shift in international capital allocation and the extent of tax evasion. From a global or regional viewpoint, overall tax revenues from portfolio investment consequently decrease. The impact in terms of an optimal allocation of investments must, however, be seen in a more differentiated light. Jurisdictions like Luxembourg attract concentrations of financial intermediaries. But through round-tripping via financial intermediaries, financial flows arrive where they are most efficiently invested in real terms all the same.[2])

If the countries – under the pressure of capital flight and location shifts of financial intermediaries or the expanding activities of financial intermediaries established in low-tax jurisdictions – find themselves increasingly compelled to permit tax-exempt forms of domestic investment, the nonenforceability of the residence principle results in tax-influenced risk allocation via tax-induced portfolio decisions.[3]) Institutional investors such as investment funds,[4]) which collect the savings of small investors to invest

1 *This is to say that if the subsidiaries of multinational groups were taxed in accordance with the pure residence principle, i. e. if they were tax-exempt in the source country, retaining earnings of these subsidiaries would result in de facto nontaxation of these profits for an undetermined period.*

2 *The real effects also depend on whether companies have access to offshore financing and to what extent national fiscal measures result in changes in interest rates that result in an increase of the cost of capital for companies that do not have access to offshore markets or the international capital market. For these companies, this implies that the gross yield of their investments needs to be higher, which, in turn, has a dampening effect on real investment demand. Companies that are able to tap international markets for financing are relatively independent of the national financial sector.*

3 *Holdings of (withholding) tax-exempt financial assets, i. e. fixed interest-bearing securities such as government bonds or Eurobonds, increase by comparison to a tax-neutral environment.*

4 *More precisely investment unit trusts and mutual funds, which can both be designed as so-called reinvesting funds; these funds abstain from distributing the accruing interest income and rather capitalize the income attained in the form of value appreciations of their units or shares. The difference between investment trusts and investment unit trusts or mutual funds is that with the latter, contributions result in an increase of the number of units. The only way of investing in an investment trust is to buy existing units. Investment trusts are prohibited in Austria, but Austrian residents can buy shares in foreign investment trusts.*

them in international stocks and bonds with the aim of spreading risk, as well as hedge funds, for which there are no clear rules as to on what, whom and where taxes should be levied, further compound the problem of how to enforce taxation of capital income.

Historical evidence shows that investors attempt to avoid taxation of capital income by shifting financial assets abroad. In 1989 Germany made an attempt to impose a 10% withholding tax on Deutsche mark investments, but this triggered massive capital flight. The increase in interest rates occasioned by these flows compensated investors for the additional source-tax burden. Gross yields of German financial investments had to rise by the rate of the domestic withholding tax before investors no longer showed a preference for foreign investments. Higher interest rates gave rise to higher financing costs for the public sector and lower than expected tax revenues. *"More than half of the tax revenue accruing from withholding tax is probably lost again due to higher interest payments by the public sector"* (Leibfritz, 1989, p. 4). Additionally, the Deutsche mark exchange rate against the average of the currencies of the major trade partners dropped by about 5% in real terms.[1])

In the Netherlands, a compulsory reporting system requiring banks to report interest payments to residents liable to pay tax introduced in 1988 also generated a wave of capital flight. Savings deposits of Dutch banks decreased dramatically in the aftermath.[2]) The U.S. tax reform of 1981, which introduced massive tax benefits for investments, also supplied evidence of the high tax sensitivity of portfolio investments. Investment activity increased drastically and net capital imports – mainly in the form of portfolio investments – exploded.[3]) A survey conducted by Bovenberg et al. (1990) showed that Japanese companies benefited by making portfolio investments in the United States rather than in Japan because the effective tax burden on investments in Japan was much higher in comparison.

The regulation governing U.S. withholding taxes on interest income accruing to nonresidents provides further evidence of tax-induced flows of capital. In the U.S.A., interest paid by American debtors to foreign creditors was subject to a statutory withholding tax of 30% up to 1984. However, there was a double taxation agreement with the Dutch Antilles, under which interest income was exempt from U.S. withholding tax. The Dutch Antilles, on their part, levied only a minor tax on interest income.

1 *But even after the 10% withholding tax had been abolished again, German taxpayers continued to invest their savings primarily in securities they purchased in Luxembourg. However, Luxembourg was only an intermediary, because Luxembourg-based investment funds began to increase their holdings of German stocks and bonds. In a process termed roundtripping of short-term capital, these firms rechanneled this capital to Germany. By buying German stocks and bonds, German investors, in the guise of foreign investors, thus benefited from the stable economic situation in their residence country. The capital income accruing to them in Luxembourg was tax-free. While there were no exchange rate effects because the gross capital flows from and to Germany were almost equal, the fiscal effects were sizeable.*

2 *Following the announcement of the amendment in July 1987, the export of short-term capital increased by 1.4% of GDP in the following period.*

3 *But the tax benefits for investments were only one of several factors that induced this development. However, their significant impact can be deduced from the fact that investment activity boomed despite rising real interest rates.*

Under these conditions, the Dutch Antilles were an ideal intermediate location for U.S. corporations from which to leverage foreign loans or foreign capital without falling subject to source tax. The U.S. companies founded financing companies there, through which the capital was channeled to the United States. When the U.S.A. abolished its source tax in 1984, these financing companies soon lost their importance.

On the one hand, these examples provide evidence that portfolio capital is actually highly mobile – at least as far as some groups of investors are concerned. On the other hand, they illustrate that the residence principle of capital income taxation – even if the residence country allows crediting – is increasingly difficult to enforce. *"If investors indeed paid residence-based taxes on their international interest income, then they should be indifferent (apart from liquidity effects) towards the imposition of source-based capital taxes. Hence a further conclusion from the empirical evidence is that international investors do not, at the margin, pay taxes on interest income in their residence country"* (Haufler, 1998, p. 4).

Against the backdrop of this empirical evidence, source-based taxation of capital income accruing to non-residents appears counterproductive for a small capital-importing country in an environment characterized by high capital mobility: *"in the presence of perfect international capital mobility, any source-based capital tax will be fully reflected in the (gross) interest rate of the taxing country. The rise in interest rates crowds out real investment and reduces the marginal productivity of internationally immobile factors of production. Hence the source tax on capital effectively falls entirely on domestic workers and landowners and it would be more efficient to tax these immobile factors directly. This avoids the distortion in the domestic capital market caused by the fact that the interest rate exceeds the opportunity cost of capital in world markets"* (Gordon, 1986, quoted from Haufler, 1998, p. 5). This, however, does not apply if capital income accruing to foreign investors is exempted.

All states levy taxes on domestic interest income of resident taxpayers. If all investors had the benefit of equal (high) mobility, the resulting tax revenues would be approaching zero. Looking, for example, at tax revenues from capital income in Austria, this is obviously not the case. Mobility, however, is a function of information and transaction costs, and these are relatively high for small investors or low financial asset volumes. Empirical surveys also show that international portfolios generally exhibit a home bias. Hence, from a rational fiscal policy stance it makes sense for the individual states to tax domestic capital income, while exempting interest income accruing to foreign investors.

5 Proposals for the Harmonization of Interest Income Taxation in Europe

Two factors are responsible for the phenomenon of mobile financial assets being able to evade taxation to a large extent: the nonenforceability of the residence principle with regard to the taxation of foreign portfolio income, and the tax exemption of interest income accruing to foreign investors in source countries. Considering that the reallocation of capital abroad is a function of the transaction costs incurred in the process, European Monetary Union inevitably exacerbates the issue of how to enforce taxation

of foreign capital income in the respective residence country, because the elimination of the exchange rate risk reduces the transaction cost of investments in other EMU Member States and thus creates an even more attractive environment for tax evasion.

The debate on the harmonization of interest income taxation in Europe has been going on for a long time. The difficulties that prevent a coordinated approach are due to the differing tax policy preferences of the individual states as well as concerns about possible location disadvantages and the effects of interjurisdictional shifts of tax bases.

As early as in 1988, the European Commission was called upon to elaborate proposals on ways to eliminate or alleviate the problem of tax flight and tax evasion. This directive proposal, which recommended a uniform withholding tax (15%, conceived either as a final tax or creditable against income tax in the residence country), a system of automatic exchange of information and improved access to information, suggested three nonexclusive options for a solution to this problem.[1]) However, its adoption was foiled in December 1989 by the veto of Luxembourg,[2]) supported by the United Kingdom and the Netherlands. The opponents to a minimum withholding tax argued their case with the danger of compensatory interest rate increases – caused by capital flight to third countries or offshore markets or by capitalization in investment unit trusts. The possibility of routine information exchange was discarded because of the high cost involved, but also on account of existing legal regulations, above all, banking secrecy.

In July 1998 the European Commission presented another proposal for a Council directive on safeguarding a minimum of effective taxation of interest income within the EU. This initiative was triggered by concerns that the possibility of evading taxation of cross-border interest income would cause economic distortions and jeopardize the correct functioning of the internal market. Under this coexistence model, each EU Member State should have been free to opt for either the introduction of a 20% minimum withholding tax for nonresidents or the exchange of pertinent information with the residence country. This information was to include both the amount and date of interest payments and the identity of the receiver. The coexistence model was dropped in mid-2000, thwarted mainly by objections raised by the United Kingdom.[3])

1 *This directive proposal comprised a series of exemptions designed to prevent capital flight to third countries outside the EU. The proposal did not cover interest income accruing to investors resident in third countries.*

2 *The special situation of Luxembourg perfectly illustrates the theoretical case of a small open economy that benefits by tax-exempting interest income accruing to foreign investors: "the small country will face the more elastic capital tax base and hence find it optimal to set a lower capital tax than its large neighbor. This will attract a disproportionate share of capital into the small country that will more than compensate the welfare loss induced by the inefficient tax choice" (Haufler, 1998, p. 9).*

3 *The United Kingdom was above all concerned that Eurobonds would be shifted to financial centers outside the EU such as Zurich. "However, exempting payments of interest on Eurobonds to private investors would create remarkable gaps in the Community arrangement" (A note by the Presidency for the Informal ECOFIN in Turku, September 10 to 12, 1999). The United Kingdom insisted on a mutual exchange of information on interest income accruing to individuals treated as nonresidents for tax purposes; Luxembourg and Austria, however, saw their banking secrecy jeopardized by such a provision.*

These two options differed substantially as far as the distribution of tax revenues among the different countries was concerned. While a minimum withholding tax would generate additional tax revenues for the capital-importing country, these revenues would go to the capital-exporting country under a system of automatic information exchange. The minimum withholding tax regulation also provided for the tax paid in the source country to be credited in the residence country. This, however, would still have failed to induce investors to declare foreign interest income in the residence country in jurisdictions with personal tax rates exceeding withholding tax rates – at least without the parallel exchange of information. But the parallel application of the two concepts gave rise to concern that countries which introduced an automatic system of information exchange would be put at a disadvantage – as this would have reduced the attractiveness of their capital markets – and ultimately have to change over to source taxation.

Especially jurisdictions that tax interest income of residents under a synthetic income tax regime (applying marginal income tax rates) feared that they would be compelled to lower their tax on domestic interest income to a minimum in order to contain tax evasion. Most probably, the minimum withholding tax on interest income would have resulted in a dual income tax regime evolving throughout the EU – with the withholding tax rate being applied as the general proportionate tax rate on interest income.

In June 2000, the European Council finally endorsed the UK proposal of introducing a system of comprehensive exchange of information. Under this proposal, a directive requiring the general introduction of an information exchange system as from 2010 is to be adopted within two years. The history of cross-border exchange of information, however, is all but encouraging. Common practice up to now has been characterized by *"a remarkable absence of cooperation among tax authorities in industrialized countries, mirrored by the strategic use of bank secrecy laws to attract foreign tax evaders"* (Giovannini, 1990, p. 16). The exchange of information approach now agreed upon is likely to involve a huge technical and administrative effort, let alone language problems and translation costs, as it requires the exchange of millions of documents and notifications.[1])

1 *The United Kingdom does not share this view: "There is a clear objective: to move to exchange of information and to abolish an unacceptable level of banking secrecy that protects tax evasion. The exchange of information approach is easy and efficient to operate. All that is needed is routine information on the savings income of an investor to be sent to the tax authorities, and the correct amount of tax can then be levied" (Brown, G., quoted from the Wall Street Journal of June 28, 2000).*

The proposal provides for a transitional period during which the coexistence model will be applied.[1]) Luxembourg and Austria[2]) supported the proposal contingent on the condition that an exchange of information would also be agreed on with the United States, Switzerland, Lichtenstein, San Marino, the Channel Islands, the Caribbean, Monaco and Andorra as the principal tax havens for EU tax evaders. It is more than questionable whether these countries will cooperate – on nothing but unilateral terms. The compromise represents a classical prisoner's dilemma situation, which may well end in the status quo being maintained if third countries make the introduction of harmonization measures contingent on the other side starting by credibly taking first steps.[3])

A coordinated taxation of interest income within the EU could – at least in the short term – generate higher tax revenues throughout the EU. However, capital mobility to third countries is likely to increase further in the medium term. Razin and Sadka arrived at the conclusion that in the event tax flight to third countries cannot be prevented, a coordinated regional approach would have to be abandoned again, because *"as long as the EU is unable to exert any substantial (downward) influence on world interest rates, the coordinated withholding tax will be fully shifted into higher interest rates in Europe"* (quoted from Haufler, 1998, p. 10). Still, the risk that interest rates could begin to rise remains limited as long as capital income accruing to investors from third countries remains tax-exempted. But the scope for taxation still remains a function of transaction costs within the EU. As large-scale investors face relatively insignificant transaction costs, tax free investments in third countries always offer a loophole for them. However, *"this not only reduces the effectiveness of the EU withholding tax as a revenue-raising device, but it also implies that the tax will be paid primarily by small savers whereas large and wealthy investors are likely to escape the tax"* (Gordon, 1992). This might imply that tax revenues will not increase significantly, but compliance cost will.

1 *Austria, Belgium and Luxembourg, which levy a withholding tax on interest income of taxpayers resident in other EU Member States during the transition period, declared their readiness to exchange information as soon as circumstances would permit this, at the latest, however, seven years after the directive comes into effect. Moreover, they agreed to transfer 75% of the tax collected to the respective investor's residence country. The withholding tax rate will be 15% for the first three years of the transition period and 20% for the remaining four. The other Member States agreed to transfer information on interest payments to the other states already during this entire period. The proposed directive would cover interest from debt claims of every kind, particularly income from domestic and international bonds, interest accrued that is realized upon the sale, refunding or redemption of the respective debt securities, capitalized interest on zero-coupon bonds and similar investments, income distributed by investment funds and accrued interest capitalized in investment trusts, to the extent that this yield or interest income is attributable to claims, but also comparable income transferred via structures taking the place of collective investment undertakings (property management companies, partnerships, etc.).*

2 *Luxembourg and Austria will be compelled to abolish banking secrecy.*

3 *In the mid-1990s, the U.S.A. and Switzerland discontinued negotiations on interest taxation agreements with the EU, demanding that the EU should first enforce binding regulations in its own territory. An existing cooperation of EU Member States would facilitate negotiations with non-EU countries within the OECD. From the vantage point of countries in which the financial sector contributes an important part of value added, it is of course an understandable attitude that they demand the inclusion of other tax havens in order to prevent losing too much of their competitive edge.*

6 Corporate Income Taxation: Location Decisions – Profit Allocation

Company taxation in Europe is de facto governed by the source principle.[1]) From the viewpoint of the individual countries, this creates an incentive to lower effective tax rates as real capital mobility increases. Capital-importing countries, on the other hand, also have an incentive to increase the effective tax burden, because a widening share of the real capital stock comes to be in foreign hands, which creates opportunities for tax exports.

As yet, real capital mobility in Europe still seems to remain within bounds. As Menil (1999) noted, the European real capital market is still a far cry from the degree of integration observed, for example, in the United States or in Canada.[2]) The degree of integration, however, is likely to increase over the next few years.

The relative differences in the effective tax burden between the countries does have an impact on direct investment decisions,[3]) but the tax burden is only one of several factors determining these decisions. However, company and industry surveys[4]) indicate that taxes are an increasingly important factor for companies to take into account when selecting a location – especially for the financial services industry, but also manufacturing. Taxation is a principal aspect in more than three quarters of all location decisions.[5]) According to Richter et al. (1996), companies take the average effective tax burden on capital as a guideline in making location decisions.[6])

1 *"… somehow countries are reluctant to apply the residence principle to incomes associated with the activities of enterprises, perhaps because there is a perception that the taxes on these incomes reflect some benefit connected with the activities and the spending of the governments where the enterprise is located" (Tanzi, 1995, p. 131).*

2 *In terms of the differences between the real rates of return attained by 1,400 companies, not only in terms of foreign direct investment (FDI). The home bias of security portfolios observed up to now is in line with the findings of the survey.*

3 *One of the basic features of direct investments is that they are only marginally influenced by short-term yield maximization considerations. Key inputs are market- and demand-oriented factors as well as supply-oriented and other location-relevant determinants. The principal motive of direct investments is not the transfer of financial assets, but to gain influence on the operative business of foreign enterprises or a know-how and technology transfer.*

4 *See also Commission of the European Communities (1992). Ruding Report, p. 115.*

5 *This, in turn, confirms the theory that tax competition by way of preferential tax treatment of capital income has an influence above all on the allocation of financial services, or that small open economies, by affording favorable tax treatment of capital income, attempt to attract human capital-intensive businesses with high future potential because these companies exhibit a high degree of tax-elasticity in choosing their location.*

6 *Devereux and Freeman (1995) also come to the conclusion that decisions of whether to invest at home or abroad are not necessarily tax-induced, but tax issues do have an impact on where abroad the investment is made. Devereux and Griffith (1998) confirmed this finding: Effective tax rates are important in deciding on a production location once the decision to invest abroad has been taken. Hines (1996) examined the distribution of foreign direct investment in the U.S.A. dependent on state taxes and arrived at the conclusion that investors whose states allow crediting of state taxes have no incentive to avoid these taxes. But investors were seen to be tax-sensitive in the case of investments financed by retained earnings, for which source country crediting regulations do not apply. Investors from countries applying the crediting method invested more readily in states with higher taxes than investors whose residence countries use the tax-exemption method. Gropp and Kostial (2000) found that outward/inward direct investment depend on the tax regimes of the host and (residence) countries and that they have an impact on the corporate tax base of the individual countries. See also Leibfritz et al. (1997).*

A further important determinant influencing location decisions is public infrastructure. It represents a classical country-specific locational edge that generates rents for the corporate sector. If the tax burden in a state is high, this has to be offset by compensating effects generated by the available public infrastructure or other location-specific factors. Location-specific rents may explain why statutory corporate tax rates declined in the course of the past few decades,[1]) while effective tax rates[2]) have not been showing any clear downward trend (see annexes 1 and 3). *"... there is an efficiency-based argument for the moderate fall in effective tax rates on capital, which derives from the non-competitive environment in which foreign direct investment takes place. It is well known that even small countries are able to tax country-specific rents* (specific resources in a wider sense or agglomeration advantages – Baldwin and Krugman, 2000 – or market size) *accruing to firms that locate in their jurisdiction. Since the potential to tax country-specific rents is not affected by increasing capital mobility, it is then not surprising that aggregate levels of corporate taxation have changed little since the 1980s. Therefore, the conventional argument that small countries should not use source-based capital taxes does not extend to the corporate tax"* (Haufler, 1998, p. 7).

As business taxation is de facto operated on the source principle, the question arises whether there is any empirical evidence for tax competition. It is evident that corporate tax rates have been approximating across countries over the past few decades.

Up to 2000 Germany had the highest statutory rate (lowered to 25% as of 2001). The remaining standard rates are within a bandwidth of 28% to 39%; the median – as established by Felderer and Koman (1998) – at the level of the Danish and Austrian statutory rate of 34%. Ireland boasts a particularly generous special regulation: a reduced rate of 10% for the manufacturing sector and for defined services as well as companies established in specific regions of Ireland, which may well be viewed as empirical evidence of tax competition.

A comprehensive study dedicated to tracing the impact of competitive effects of the different European corporate tax regimes conducted by an expert committee (headed by Ono Ruding) commissioned by the European Commission (Ruding Report 1992) arrived at conclusions that corroborated the results of an earlier OECD study (1991). First, the national taxation regimes of the countries included in the survey were neither financing-neutral nor investment-neutral and none of these countries actually exhibited capital export or capital import neutrality. The report highlighted a series of further tax-induced distortions of competition, generated, among other things, by differences in statutory corporate tax rates and tax bases as well as a number of fundamental differences in European corporation tax regimes. The Ruding Report also pointed out the problem

1 *Lowering corporate tax rates reduces the danger of profit-shifting by means of thin capitalization or transfer pricing.*

2 *In the 1980s, corporate tax rates were lowered while the tax base was expanded; this was primarily an effort to reduce the tax-induced distortions influencing investment and financing decisions and thus to increase efficiency. However, profit shifting of multinational groups could also have played a role in this process, namely the allocation of profits depending on the statutory tax rate.*

of tax benefits for investments employed for the strategic purpose of attracting corporate capital and hence the importance attributable to how countries design their tax bases in business taxation.[1]) As investment decisions are materially influenced by effective marginal rates, both statutory tax rates and the specific design of the tax base (tax benefits for investments, depreciation, etc.) are important factors.

Apart from a number of other proposals, the Ruding Report also dealt with the option of harmonizing business taxation to improve allocative efficiency within the European Union. The proposal was to introduce a uniform minimum corporate tax of 30%[2]) in a first step and to set an upper limit of 40% in a second step. The report also recommended that certain minimum standards should be elaborated to harmonize tax bases.[3]) These, however, have been the last initiatives toward a harmonization of business taxation within the EU up to now.

Generally it may be said that investment location is distorted by unfair tax practices and the nonuniform application of the residence and source principles of taxation. Ireland may serve as an example for unfair tax practices, because domestic businesses are taxed at far higher rates than foreign companies. A particularly detrimental effect of the current system results from the fact that large European corporations are able to shift profits to EU Member States with low tax rates and pay the tax in these jurisdictions.

6.1 Business Tax Harmonization to Improve Allocative Neutrality

Opinions of experts on the issue of corporate tax harmonization contrast insofar as one group gives higher priority to the need to harmonize tax rates (Musgrave, 1987; Slemrod, 1990; Cnossen, 1993), whereas another group considers a harmonization of tax bases more urgent because there is a need to put a lid on a hidden beggar-thy-neighbor policy (Tanzi and Bovenberg, 1990; Sinn, 1990 and 1994).

The harmonization of tax rates would stifle competition for taxable profit (tax base flight). Above all multinational groups reduce their global tax burden by tax planning.

1 *Even if the residence principle of taxation is enforceable, there are still deviations in depreciation for tax purposes against true economic depreciation, and there is no efficient allocation of capital if a regime allows for tax benefits for investments.*

2 *Based on interjurisdictional equity reasons, Musgrave also argues in favor of harmonizing tax rates, as this would eliminate the incentive for tax arbitrage through purely financial transactions. See Musgrave (1987), p. 197 ff., and Slemrod (1990), p. 20. Cnossen also points out the advantages of harmonizing business taxation for efficiency reasons, but raises the question whether this would not be going too far, as it meant renouncing more national autonomy than is actually necessary. However, to prevent profit shifting, he pleads for a harmonization of tax rates or at least the introduction of a minimum corporate tax rate. See Cnossen (1993), p. 193 ff.*

3 *These standards would also be needed because high-tax countries endeavor to attract real capital by granting tax benefits for investments. With low tax rates, by contrast, states aim at attracting profit or taxable income. Tanzi and Bovenberg also call for a harmonization of tax bases in order to prevent nontransparent beggar-thy-neighbor policies. See Tanzi and Bovenberg (1990), p. 182, or Sinn (1990), p. 497 f.*

The proponents of tax base harmonization highlight the need to improve the enforceability of the residence principle, because differences in tax rates would then – in the ideal case – no longer impede the efficient allocation of capital. Still, as already mentioned, the residence principle of taxation also has a number of disadvantages, above all in terms of the opportunities it offers for delaying taxation or even repatriating profits or dividends and as regards crediting of taxes already paid in the source country against cross-border capital income. The possibility to relocate company headquarters creates a further loophole.

The debate about the need for harmonization focuses above all on the elimination of allocative inefficiencies. This is to say that the primary goal of harmonization is to achieve an approximation of the objectives of capital export and capital import neutrality – an ideal the European tax regimes have failed to satisfy up to now. Hence, from a global perspective, the issue is to leverage the potential increase of output inherent in a reallocation of capital. A uniform approach to business taxation – like a harmonization of tax rates – would trigger a huge wave of real capital or capital stock reallocation as well as significant changes in the individual countries' welfare and their national tax revenues. This raises the question of how the attainable efficiency gains should be distributed among the different countries and what form of compensation would be feasible for the countries that would have to suffer welfare losses.[1])

Starting out from the assumption that each state basically endeavors to enhance the welfare of its citizens without paying regard to spillover effects on other countries, harmonization represents a strategy to counteract "tax dumping," i. e. to prevent a free market-type harmonization through tax competition between the states, a process which could result in suboptimally low tax rates. But if corporate tax is viewed as a means of skimming off location specific rents, harmonization becomes a problematic issue. From this viewpoint, a uniform minimum corporation tax within the EU could only be justified if a production location within the EU involved "internal market-specific" production advantages. *"Especially transnational and multinational companies stand to benefit most from the establishment of one internal market. These companies can earn extra rents. It is not only efficient but also equitable that they should pay tax thereon"* (Cnossen, 1993, p. 194).

7 Conclusion

Taxation of cross-border interest and dividend income basically follows the residence principle of taxation. The general application and enforceability of this principle would not only imply an efficient allocation of the factor capital at the global level, but also that the individual states maintain their freedom to design their tax regimes and that the ability-to-pay principle is preserved as a guiding principle of comprehensive income taxation. However, as there are problems in enforcing the residence principle, some mode of cooperation between the states – either in the form of an intensive exchange of information among the countries or cross-border cooperation

1 Moreover, any "coerced harmonization" at variance with citizens' preferences appears to be problematic.

of fiscal authorities or the introduction of a common minimum withholding tax on capital income – will be imperative to prevent an erosion of the tax base of capital income taxation while at the same time maintaining this international taxation principle in an environment characterized by increasing capital mobility.

Business taxation de facto follows the source principle of taxation, which basically encourages strategical tax policy. Tax competition not only curtails the individual countries' tax policy autonomy, it also has far-reaching effects on the distribution of the tax burden across the different income categories within the individual jurisdictions and hence probably even threatens to jeopardize the welfare state.

Unless a coordinated approach is adopted, there is the possibility that *"countries may use the tax system to impose their political views in the economic sphere on others. More conservative governments may force tax and expenditure reductions or less progressive taxation in the EC as a whole"* (Tanzi and Bovenberg, 1990, p. 193).

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Annex 1

Tax Rates on Retained Earnings of Corporations

	1985	1999	1985 to 1999
	%		*Change in percentage points*
Denmark	50	32	−18
Finland	57	28	−29
Sweden	52	28	−24
Belgium	45	40.2	− 4.8
Netherlands	42	35	− 7
Luxembourg	45.5	37.5	− 8
Ireland	50(10)	28(10)	−22
Portugal	50	34	−16
Austria	61.5	34	−27.5
Spain	33	35	+ 2
Italy	47.8	37	−10.8
France	50	40	−10
Germany	61.7	52.3	− 9.4
Switzerland	35	25.1	− 9.9
U.S.A.	49.5	38	−11.5
Japan	55.4	48	− 7.4

Source: Sorensen (2000).

Annex 2

Corporate Tax Systems and Marginal Tax Rates

	Corporate tax rate		Additional municipal or regional fiscal charges		Total tax burden		Imputation rate
	Retained earnings	Distributed earnings	Tax rate	Deductibility	Retained earnings	Distributed earnings	
Belgium	40.17[1])	40.17[1])	×	×	40.17	40.17	×
Denmark	34	34	×	×	34	34	×
Germany	48.375[2])	32.25[2])	13−20.5 [3])	yes	55.9	42.6	30
Finland	28	28	×	×	28	28	28
France	41.66[4])	41.66[4])	×	×	41.66	41.66	33.33
Greece	35 (40)[5])	35 (40)[5])[6])	×	×	35 (40)	35 (40)	×
United Kingdom	31	31	×	×	31	31	20
Ireland	10 (32)[7])	10 (32)[7])	×	×	10 (32)	10 (32)	5.3 (21)[7])
Italy	37	37	4.25 [8])	no	41.25	41.25	36
Luxembourg	31.2[9])	31.2[9])	7.4−10.7[10])	yes	37.45	37.45	×
Netherlands	35	35	×	×	35	35	×
Austria	34	34	×	×	34	34	×
Portugal	36	36	3.6	no	39.6	39.6	×
Sweden	28[11])	28[11])	×	×	28	28	×
Spain	35	35	×	×	35	35	×

Source: KPMG, Ernst & Young, Mennel und Förster, REFACT; quoted from Felderer and Koman (1998).

[1]) 39% plus a temporary surtax of 3%.

[2]) 45% or 30% plus a temporary surtax of 5.5% ("Solidarity surtax").

[3]) The trade tax is between 13% and 20.5%.

[4]) 33.3% plus a temporary surtax raised from 10% to 25% at the beginning of 1998.

[5]) Corporations with bearer shares that are not quoted on the Athens stock exchange and branches of foreign corporations are subject to a tax rate of 40%; all other corporations - including joint ventures - are subject to a rate of 35%.

[6]) Distributed earnings have been subject to corporate tax since 1992, but no other tax beyond that.

[7]) The general rate is 32% (with an imputation rate of 21%). A reduced rate of 10% applies to manufacturing, to general services and to companies in the Shannon Airport zone or the International Financial Service Centre in Dublin.

[8]) The erstwhile municipal tax of 16.2% was replaced by a regional tax of 4.25% in 1998. However, this regional tax has a broader tax base than the corporate tax does.

[9]) 30% plus a 4% unemployment benefit surtax.

[10]) The trade tax amounts to between 7.4% and 10.7%.

[11]) Up to 20% of the annual profit may be allocated to a periodization fund with tax-delaying effect for a period of five years.

Annex 3

Average Effective Tax Rates (Mendoza et al. Methodology)

	Capital (based on net operating surplus)			Capital (based on gross operating surplus)			Labor			Consumption			Labor and Consumption		
	1980 to 1985	1986 to 1990	1991 to 1997	1980 to 1985	1986 to 1990	1991 to 1997	1980 to 1985	1986 to 1990	1991 to 1997	1980 to 1985	1986 to 1990	1991 to 1997	1980 to 1985	1986 to 1990	1991 to 1997
	%														
United States	39.5	39.1	40.9	24.9	25.8	27.3	25.3	25.9	26.7	5.5	5.0	5.2	29.4	29.6	30.6
Japan	38.1	46.2	41.8	24.9	29.6	24.1	24.6	28.0	28.3	4.8	5.3	6.0	28.2	31.8	32.6
Germany	29.6	26.5	25.1	17.1	16.2	15.5	38.6	40.6	41.4	15.1	14.7	15.8	47.9	49.3	50.7
France	28.7	26.3	26.8	17.1	16.8	17.0	42.6	45.9	47.2	20.5	20.2	19.1	54.3	56.8	57.2
Italy	24.3	27.8	33.1	17.9	20.8	24.4	37.7	42.2	47.3	12.0	14.2	15.4	45.2	50.4	55.4
United Kingdom	67.8	61.2	48.2	39.4	38.4	31.9	27.5	25.2	23.7	16.5	16.7	16.7	39.5	37.7	36.5
Austria	**21.4**	**21.9**	**23.4**	**13.7**	**14.0**	**14.7**	**44.1**	**44.7**	**47.3**	**22.2**	**22.1**	**20.9**	**56.6**	**56.9**	**58.3**
Belgium	37.8	35.0	35.7	27.5	26.1	26.3	45.2	48.3	48.2	16.5	16.2	17.0	54.3	56.6	57.0
Denmark	..	54.0	48.3[2])	..	26.5	25.8[2])	..	40.5[3])	43.2	..	35.8[3])	33.3	..	61.8[3])	62.1
Finland	30.3	37.6	39.9	17.4	20.4	20.6	36.4	40.6	47.7	26.1	29.9	27.5	52.9	58.3	62.1
Greece	..	15.0	16.1[4])	..	12.2	13.3	..	35.2	37.9	11.9	18.1	19.3	..	46.9	49.9
Ireland	26.6	23.1	22.6	18.7	17.5	17.5	23.3	27.2	27.3	24.1	24.8	24.1	41.8	45.2	44.8
Luxembourg	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Netherlands	27.7	27.9	29.2	18.9	19.4	20.3	48.5	49.3	50.5	16.4	18.3	18.3	56.9	58.6	59.6
Portugal	..	11.2[5])	16.7[1])	..	10.0[5])	11.4[1])	..	26.2[5])	29.5	12.9	18.7	20.9	..	40.0	44.2
Spain	13.5	19.9	21.5	9.8	14.9	16.0	32.4	35.4	37.8	7.3	12.0	13.1	37.3	43.1	46.0
Sweden	46.6	62.4	52.7	25.4	32.7	29.2	50.9	54.4	52.3	21.3	24.1	22.8	61.3	65.4	63.2
Switzerland	27.8	36.4	35.0	15.5	17.8	16.4	31.8	32.6	35.5	7.6	8.2	8.0	37.0	38.2	40.6
OECD average	32.4	34.9	34.7	20.4	22.1	22.0	33.1	35.4	36.8	14.4	16.1	16.5	43.3	45.7	46.9
EU average	32.2	33.6	32.6	20.3	21.6	21.2	38.8	41.2	42.8	17.1	19.2	19.3	49.8	52.6	53.7
OECD standard deviation	13.4	13.8	10.8	7.4	7.5	6.0	11.7	12.0	12.1	7.9	8.0	7.6	13.1	13.2	12.9
EU standard deviation	14.5	14.9	10.6	8.0	7.8	5.9	8.6	9.0	9.4	5.4	5.0	3.9	7.9	8.2	8.3

Source: Carey and Tchilinguirian. (2000).

[1]) *1993 to 1996.*
[2]) *1991 to 1996.*
[3]) *1988 to 1990.*
[4]) *1991 to 1995.*
[5]) *1989 to 1990.*

Austria's Sovereign Debt-Management Against the Background of Euro Area Financial Markets

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1 Introduction

The following article addresses an aspect of fiscal policies that receives comparatively little attention in discussions of economic policy issues in Austria. However, given the high level of public debt and the extremely dynamic development of the financial markets, public debt management in Austria – as well as in the other EU Member States – faces major challenges. In addition, the environment in which sovereign debt management is conducted has undergone profound changes as a result of the implementation of Economic and Monetary Union (the euro financial market, the Eurosystem's single monetary policy).

"Debt management" is a summary term designating all measures that change the composition of public debt. The choice of the financing instrument determines the government's current and future financial obligations (interest payments and redemption).[3]) At the same time, the government's financial operations, on account of their volume and the government's position in the market as a prime borrower, exert a major influence on a country's bond markets (benchmark).

The definition of the targets of debt management from a fiscal point of view is relatively undisputed in the literature and in actual practice. From the fiscal perspective, efficient debt management is characterized by sustainable cost minimization, which, by keeping interest payments low, contributes to the consolidation of the government budget.[4]) Views differ, however, with regard to the contribution of public debt management to a country's economic policies even though the fact that the government's financial operations have an impact on the national economy is uncontested.[5]) The potential implications that may be at work are manifold (money supply, interest rate and expectations effects as well as allocative effects including portfolio and intertemporal distribution effects) and have both monetary and fiscal policy implications. Macroeconomic goals of debt management policies can be set and evaluated only in light of specific economic and institutional circumstances and are often at odds with the fiscal goal of cost minimization, which focuses on just one single aspect and disregards the interaction between debt management, fiscal policy, and monetary policy.

The aim of this paper is to present the guidelines currently in force in Austria for public debt management and to evaluate these guidelines against the background of international insights. The launch of EMU, which entailed substantial changes in the supply and demand conditions for debt management in Austria, led to a reorientation of the relevant policies.

1 *Eva Hauth – Secretariat of the Federal Debt Committee, OeNB.*

2 *Paul A. Kocher – Austrian Federal Financing Agency.*

3 *In all OECD countries, interest expenditure on public debt is an important expenditure item in the government's budget.*

4 *For studies of the fiscal efficiency of debt management in Austria see Brandner (1996) and Mooslechner (1993).*

5 *In the economic policy environments of real economies, the conditions and conclusions of the Ricardian equivalency theorem appear more than doubtful. See, among others, Missale (1999) and Mooslechner (1993).*

Sections 2 and 3 cover the aims and objectives of debt management as described in the international literature and present the guidelines for public debt management recently formulated by the International Monetary Fund (IMF). Section 4 discusses the current guidelines for debt management activities in Austria in view of the changed financial market conditions in the euro area and the federal government's new role in the domestic financial market. The paper concludes with a brief comparison of international recommendations regarding the economic objectives of debt management with the goals being pursued in Austria.

2 Approaches to Public Debt Management

Most of current international studies on the subject of debt management are directed at specific issues such as debt management and financial crises,[1]) budget surpluses and debt management,[2]) EMU and debt management,[3]) but, while proposing some general principles for effective public debt management, provide hardly any specific guidelines for the practice of debt management. In-depth reports on debt management that look into the trade-off between cost minimization and the macroeconomic dimension of public debt management policies are rare, however.[4])

An interesting introduction to the debate on how debt management should be designed to achieve economic policy goals is provided by two recent articles with widely divergent focus. While the paper authored by the IMF in cooperation with the World Bank (IMF, 2001)[5]) analyzes the fiscal objectives of cost minimization with regard to their sustainability and implications for the financial markets, the second paper (Missale, 1999) explores public debt management from aspects of welfare theory.

According to Missale, debt management should first and foremost seek to smoothen out the cyclical fluctuations of revenues and expenditure in the public budgets. This objective might be reached by structuring the public debt portfolio so that interest payments correlate positively with the business cycle and negatively with budget expenditure. Procyclical interest payments on the public debt would reduce the widening of the gap between government revenues and expenses in the different phases of the economic cycle and would thus mitigate the risk of having to increase taxation during an economic slowdown. Given that all types of taxes, with the exception of lump-sum taxes, are associated with a loss in general social welfare, such a mechanism would be desirable from an allocative perspective. Missale concedes, however, that financial instruments that would be suitable for this

1 *See BIS (2000).*

2 *See Mylonas et al. (2000).*

3 *See Favero et al. (2000).*

4 *The classical contribution in this regard was made by: Tobin (1963). According to Tobin, there is no clear and easy way of separating monetary policy from debt management policy. Both debt management and monetary policy measures have an influence on the supply price of capital and thus on privately held net assets. To stimulate fixed capital investment, the supply price of capital has to be lowered relative to the marginal rate of return of fixed capital.*

5 *See IMF website at http://www.imf.org/external/np/mae/pdebt/2000/eng.*

purpose (output-indexed debt instruments) are not available and probably could not be successfully created.[1])

From a public finance perspective, the approach of using debt management for stabilization as described by Missale (1999) appears quite interesting in view of the development of budget revenues and expenditures, particularly as economic areas become more and more strongly integrated, thus limiting fiscal policy options.

The objectives for public debt management implemented by the OECD countries are consistent with the IMF recommendations for public debt management. Their guidelines are expected to represent the international standard for "stability-driven" debt management.

3 IMF Guidelines

The guidelines, which have recently been drawn up by the IMF in cooperation with the World Bank, are also designed to promote stability-driven debt management, which should prevent adverse consequences for fiscal and monetary policies and promote the efficiency of the domestic financial markets. These guidelines illustrate that a purely microeconomic view of debt management that ignores the wider implications for the financial markets tends to be in conflict with a government's efforts to pursue a sustainable cost-minimizing strategy.

The following sections address topics such as "definition of objectives and coordination," "transparency and credibility," "supporting the financial markets," and "controlling and risk management," focusing on those aspects that are relevant to industrialized countries with developed financial markets.

3.1 Defining the Objectives of Public Debt Management

According to the IMF, *"the main objective of public debt management is to ensure that the government's financing needs and its payment obligations are met at lowest possible cost over the medium to long run, consistent with a prudent degree of risk."*[2]) This definition addresses several essential aspects of debt management. Apart from the principle that the financing strategy should ensure the government's liquidity at any time, the definition highlights the need to consider not only the cost aspect but also the degree of risk associated with the selection of financing instruments and their special features (interest rate, maturity, currency) and to minimize borrowing costs not in the short but in the medium to long run.

1 *One problem in this regard is that real economy indicators are frequently revised at a later date and are thus subject to uncertainties. These uncertainties would have to be factored into the price of such financial products, which would result in significantly higher costs compared with traditional financing vehicles. According to Missale, the defined goal could also be achieved through a combination of traditional financing instruments (money market and capital market instruments and inflation-indexed financial instruments).*

2 *IMF (2001), p. 10.*

A warning is expressed, for several reasons, against cost minimization strategies that fail to take into account market, refinancing, liquidity, credit and operational risks:[1])

- While a debt structure with very short duration[2]) (short-term and floating-rate debt instruments) would, given a rising yield curve, reduce financing costs initially, any rise in market interest rates would drive borrowing costs up, thereby generating an unexpected substantial burden on fiscal policies.
- Foreign currency borrowing in currencies whose interest rates are below the domestic market rate also reduces borrowing costs initially. However, if exchange rates change, the savings in interest expenses that negative interest rate spreads make possible may be lost. This may again place a heavy burden on financial policies as a result of unexpectedly high borrowing costs. Also, servicing of foreign currency debt (interest and redemption payments) leads to an outflow of currency reserves.
- Failure to diversify the debt structure in terms of maturity (redemption dates) and investors increases the state's refinancing risk and, in the case of high transaction volumes, may lead to a disruption of the financial markets (liquidity shortages or unwanted capital imports). Supply or demand shocks in the financial markets also have an impact on interest rates, particularly money market rates, and may trigger a need for action in monetary and currency policies.
- From monetary and currency policy perspectives, a risky public debt portfolio is certainly a source of hazards that may lead to instability in the financial markets, outflows of foreign currency and/or higher public sector deficits.

3.2 Debt Management, Fiscal and Monetary Policies

In view of the interaction mechanisms outlined above, the IMF advocates an ongoing mutual adjustment of public debt management, fiscal policies, and monetary policies. Coordination among policymakers, including the definition of strategic goals and a continuous exchange of information on borrowing needs, interest and redemption payments as well as risk aspects, should help avoid potential imbalances and their adverse consequences for the economy as a whole. The core elements of an effective coordination process have been demonstrated to be a large degree of transparency, clearly defined and legally based objectives and accountabilities in public debt management as well as clearly defined and transparent interfaces with decision-makers in charge of fiscal and monetary policies.

1 *In the OECD countries, the main focus must be on market risk (changes in interest rates and exchange rates), credit risk (default of contracting parties), and operational risk (administrative risks), while liquidity and refinancing risks (market bottlenecks, problems in raising funds) are incurred only in exceptional circumstances.*

2 *A measure for the average duration of capital tie-up.*

The IMF's call for transparency covers both substantive matters as well as institutional considerations, such as

- the formulation of the strategic objectives of debt management,
- the organizational structure of debt management,
- the clarity of roles and responsibilities among economic policymakers and
- the key indicators of debt management activities (scope and type of financial operations, structure and risk profile of indebtedness, performance of the debt portfolio, issuance procedures, dates and conditions of participation).

Transparency, e. g. in the form of reporting requirements, builds market confidence, facilitates smooth cooperation with other policy fields and prevents errors from occurring. At the same time, it enables a reduction of borrowing costs incurred on the public debt. Uncertainties, which, as a rule, generate information procurement costs, are compensated in the financial markets by a risk premium, which increases interest expenditure.

3.3 Public Debt Management and Financial Markets

Without explicitly addressing the issue, the IMF proceeds from the assumption that public sector financial transactions have a macroeconomic impact. This may be attributable to the large financing volumes being handled in public debt management and the special position (prime borrower) that the government enjoys in the financial markets due to the fact that its debt is "government-guaranteed." Both factors influence capital allocation by determining the structure of a country's financial market (how broad and how deep money, bond and derivatives markets are).[1]) 50% of the bonds in circulation in the euro area are government securities. Government bonds are the investment instrument with the least default risk. Their interest rate is an indicator for an economy's credit standing and a benchmark for all other market players. Government bonds are used not only for risk diversification in investment portfolios but also serve as underlying securities in derivatives contracts (transactions carried out to hedge against the risk of changes in market prices) and as collateral (security) for loans.

The IMF recommends that public debt managers pursue a financing strategy that has a positive effect on the absorptive capacity and efficiency of the domestic financial markets. This allows the minimization of funding costs and refinancing risks of the public debt in the longer run and can make countries less susceptible to contagion and financial risk.

From the IMF's point of view, these objectives can be achieved by a transparent and predictable issuing policy based on the principle of equality, which strengthens the markets' confidence in the issuer and, given the

1 *The IMF does not explore the price effects that may be created by public debt management and have a special impact on segmented and illiquid financial markets. With regard to Austria, Handler (1986) concludes that since 1980 there has been no evidence of any financial crowding-out effect attributable to Germany's leading role in setting interest rates. According to Munduch (1993), the federal government's reliance on the domestic financial markets has led to some – albeit relatively minor – rate rises.*

government's special role as a benchmark, in the country as a whole. In addition, a diversification of financial products should be encouraged that enables market participants to spread their investment risk on the domestic market. The IMF expressly warns against debt management policies that exploit the government's dominant position in the domestic financial markets for market manipulation in a quest to save costs (in the short run).

Specifically, the following measures are proposed as a funding strategy in public debt management:

– issuance of standardized financing instruments at prices determined by the market (auctions) at scheduled issuing dates;
– promotion of primary and secondary trading (broad base of investors, trading obligation for primary dealers and transparent pricing mechanism in the primary and secondary markets);
– support for derivatives markets by providing suitable financing products;
– development of safe and low-cost clearing and settlement systems for payments and trades.

3.4 Controlling and Risk Management

In view of the size of national debts, ever-faster changes in the monetary terms for capital procurement and the increasing use of sophisticated instruments in funding the public debt (e. g. swaps, futures contracts, caps, floors, etc.), the IMF advocates a continuous monitoring and evaluation of debt management activities (definition of objectives, organizational structures and accountabilities, risk profile of debt portfolio and development of primary and secondary markets for government securities) and the development of internal and external control mechanisms (external auditors).

While traditional financing instruments greatly limit the amount of changes that can be made to the debt structure, the use of derivatives permits debtors to manage their portfolios flexibly in accordance with their risk preferences and independent of current funding needs. As a rule, more complex financial transactions enable more efficient portfolio management but require the utilization of advanced control instruments as well as measurements of performance and risk. The OECD countries are relying increasingly on methods used by financial intermediaries, including value-at-risk models to assess the risk of interest rate changes to the net present value (market value) of the debt, modified-duration and cost-at-risk models as indicators for the sensitivity of interest costs to changes in the market interest rate, and benchmark portfolios that define the basic structure of the public debt and are used for comparing the performance of the actual debt portfolio.[1]) Overall, however, the general IMF principle applies, according to which total portfolio risk should be kept as low as possible. Therefore, derivatives should be used, as a rule, only for hedging transactions.

1 *For articles on different approaches to debt management in the OECD area, see Sovereign Assets and Liabilities Management (IMF, 2000).*

3.5 Conclusions

The IMF has repeatedly underlined the macroeconomic importance of public debt management and warned against an exclusively microeconomic focus on cost minimization that neglects the macroeconomic risks that may arise for the financial markets and the budget. The IMF's recommendations, which are based largely on debt managers' experience, also demonstrate that public debt management can pursue a sustainable cost minimization strategy only in association with monetary and fiscal policymakers and that efficient financial markets make a decisive contribution to the cost efficiency of public debt management policies. Ideally, macroeconomic shocks and market changes (e. g. liquidity shortages, rising interest rates, changes in exchange rates, higher public sector funding needs) should have hardly any impact on the interest expenditure payable on the debt. Risky debt management practices should be avoided to prevent impulses that may have a destabilizing effect on the financial markets.

The IMF Guidelines do not specifically address the EMU environment, which is characterized by a common monetary policy and national responsibility for fiscal policies. In the context of the EMU it may be assumed that, wherever monetary policy is concerned, the IMF's recommendations should be interpreted as applying to the euro area as a whole rather than on a country-by-country basis. Even with EMU, though, the national financial markets still remain a key competitive factor for each country. Implications of public debt management for the national markets have to be expected at least as long as the euro financial market is segmented by entry barriers to stock exchanges, primary markets for government bonds, and derivatives markets.

4 The Republic of Austria's Debt Management Operations

Where operations are concerned, the discussion about efficient debt management may be conducted at two levels. One important issue that has to be dealt with on an ongoing basis, in light of current conditions in the financial markets and investors' preferences, is how funds are to be raised, i. e. the selection of the appropriate financing instruments. For this purpose, the Austrian Federal Financing Agency (Österreichische Bundesfinanzierungsagentur – ÖBFA), the Austrian government's fund-raising agency, employs four key programs: under English law, the ATB[1]) program for the issuance of short-term Austrian Treasury bills and the EMTN[2]) program for the international issuance of government securities as well as, under Austrian law, the DIP[3]) program for the syndicated (usually) international issuance of standardized government bonds, and the auction program for the placement of government bonds through scheduled auctions. The volume of loans raised from banks and insurance companies is very small.

1 *Austrian Treasury Bills.*
2 *European Medium-Term Note.*
3 *Debt Issuance Program.*

On the other hand, the national debt also represents a portfolio that needs to be managed and structured to conform to a specified risk profile. This is achieved through direct issues as well as the use of derivative instruments for subsequent adjustments of the debt structure. In this context, the strategic principles and valuation methods of advanced portfolio management are employed.

ÖBFA seeks to manage the debt portfolio as cost efficiently as possible. This includes the selection of transaction partners according to criteria of commercial efficiency, without regard to national preferences. Because of its clear focus on its specific responsibilities (portfolio management), any macroeconomic implications – if of any relevance at all in view of Austria's relatively small role in the new monetary union – have to be dealt with by other decision makers or advisory bodies. In Austria, the macroeconomic aspect of debt management is handled by the Federal Debt Committee (Staatsschuldenausschuss).[1]) This body analyzes whether debt management operations are appropriate in the given economic environment and promote the efficiency of the domestic financial markets.

4.1 Institutions and Organizational Procedures

Basically, three types of organization are employed for public debt management worldwide. Public debt management may be:

- the responsibility of an organizational entity in the competent ministry, as in France, in Italy, or in the U.S.A. One objection that is frequently raised against this traditional form of organization is that debt management by a ministerial bureaucracy is not sufficiently flexible, employs an overly cameralistic approach (cash-based accounting rather than accrual accounting) to financing operations and, because of the rigid salary scale for civil servants, is unable to attract suitably trained staff from the financial industry;
- a specific responsibility of the central bank, as in Denmark and Canada. Here, criticism is directed at the potential conflict of interests in interest rate policies and the potential exploitation of insider information that is unavailable to other market participants. In addition, there is a danger that the responsible policymakers are left with only limited authority regarding the management of their portfolios;
- conducted by independent agencies, as in Ireland, Sweden, and New Zealand, which function as separate legal units but on behalf and for the account of the government. The key advantages named are more flexibility, more highly developed management structures and more market-driven employee compensation schemes. This is also the type of organization employed for Austria's public debt management. ÖBFA was set up in 1993 as a limited liability company under Austrian law. It is owned by the Republic of Austria, manages a debt portfolio of approximately EUR 125 billion and raises some EUR 20 billion a year in the national and international financial markets.

1 *Ausschuss für die Verwaltung der Staatsschuld. See www.staatsschuldenausschuss.at and Hauth (1996).*

Its institutional independence from other government bodies provides debt managers with latitude when decisions have to be taken in the event of natural conflicts, e. g. when selecting the desired duration or the length of the planning period, where portfolio managers and budget planners may sometimes pursue diverging objectives.

4.2 From Fund Raiser to Portfolio Manager

With the increasing propagation of the principles of portfolio management, they are progressively invading also debt management guidelines. The traditional notion of the debt manager who "only" has to arrange the timely and efficient procurement of the required financial resources is expanded to comprise the expertise of a portfolio manager who seeks to minimize costs while not exceeding a given risk. As will be explained below, the definition of costs and risks is not a trivial problem. In addition, it has been recognized that it is not feasible to implant an asset manager's portfolio theory into a debt manager's decision tree by just reversing the signs. Debt management is confronted by its own special capital market constraints (such as issuing calendars to generate liquid bonds) or immediate consequences for the budget (e. g. emphasis on the cash flow principle at the expense of a net present value approach).

An advanced valuation approach also considers the high risks to net present value[1]) that are automatically associated with longer duration. Traditional budget accounting methods that state financial positions at nominal values fail to recognize such risks to net present value (when yields decline).[2])

As a supplementary observation, one must add that the implementation of advanced portfolio methods requires not only suitable, if hard-to-come-by, software solutions but also the introduction of new standards in controlling, risk management, and internal reporting.

4.3 Principles and Objectives

Even though the objectives of debt management are not always laid down by law, many public debt managers define their task as minimizing interest costs while adhering to a given risk level. This, however, does not yet constitute a formulation of a strategy, which, for example, may be derived from an optimized portfolio, more or less arbitrary targets for duration and currency composition, or long-term plausible allocation behavior. In the Austrian example, this long-term strategy is represented by a benchmark

1 *The net present value of a position is calculated as the current value of all future cash flows. It also represents the price at which a debt position may be redeemed or bought back in the market at the present time. This may have a bearing on debt management when, in the case of a budget surplus, old debts are redeemed prematurely or when, under swap transactions, a position is converted to the current market interest level or money market terms without a premium or discount. From a fiscal policy perspective, net present value also represents the current value of the payments that taxpayers will have to make in future to service the current stock of debt.*

2 *For example, a decline of the entire yield curve by 50 basis points would currently lead to losses in net present value equivalent to about 2% of the portfolio (about EUR 2.5 billion), which traditional cameralistic (cash-based) accounts do not reflect due to the absence of current cash flows. Note, however, that even private companies are very reluctant to apply the net present value method to their liabilities.*

portfolio, the (virtual) allocation behavior of which has to meet key conditions set by the actual management to satisfy the criterion of trackability.[1]) The limits for market price and credit risks that have to be observed are set by the ÖBFA's supervisory board and are computed and reported by the internal controlling function on a monthly basis.[2])

As a general observation on debt management, it must be pointed out that any portfolio position is subject to price risks and that a risk-free structure is therefore unfortunately not feasible. In this regard, debt management differs from asset management, where bond managers may shift funds into money market paper or suitable hedging contracts in order to eliminate (at least) the price risk and thus their individual risk as fund managers.

As institutional investors prefer liquid issues to keep price risk low, the Republic of Austria has to accept a certain premium[3]) on its public issues because of their relatively low volumes.[4]) To accommodate this need for liquidity and to keep the liquidity premium as low as possible, Austria seeks to expand the size of its government bond issues by adding to existing issues. However, such moves can increase liquidity only to a limited extent as care must be taken to avoid an excessive concentration of principal redemption payments. To compensate this "natural disadvantage" of a small country, ÖBFA deliberately incurs some (limited) risks in an effort to keep its financing costs at the level of its big European neighbors. This is essentially done by mixing currency and interest risks and, partly, by incurring credit risks (particularly with derivative instruments).

4.4 Stating Costs in Debt Management

The debate about the proper cost concept and the adequate measurement of performance has not yet been settled internationally, which is indicative of the relevance of this question. While the accounting system only shows (unaccrued) interest costs in the receipt-expenditure-based accounts and recognizes the portfolio effect arising from exchange rate changes in the debt position, a financially meaningful performance assessment requires a more timely and comprehensive approach.[5]) Performance assessment is a useful tool for the guidance of those who manage bonds as assets. The asset manager's total return consists of (accrued) interest income plus changes in

1 *By tracking a benchmark, the portfolio manager models his or her portfolio on the benchmark, thus avoiding any tracking error.*

2 *External auditors including the BMF (Federal Ministry of Finance), the Court of Accounts, independent auditors as well as consultants perform a critical review of the methods and procedures used.*

3 *Other factors apart from liquidity that have been identified as influencing spreads are creditworthiness, international standing, the ability to deliver on futures contracts, the use in repo transactions, the efficiency in primary and secondary market trading, and the share in bond benchmarks.*

4 *For comparison, the outstanding volumes of current 10-year benchmark bonds issued by EMU Member States are given (in EUR billion): Germany 23.0; France 17.7; Italy 21.2; Belgium 13.6; the Netherlands 10.2, and Austria 7.6.*

5 *This divergence between the measurement of performance for control purposes and balance-sheet-oriented accounting is occasionally also found in the corporate sector.*

the prices of the bonds held. Positive price effects from declining yields result in gains, which can be realized by selling the instruments or the respective hedge contracts.

By reversing the sign, this common total return concept may also be applied for assessing the effectiveness of debt management. Performance, which in the case of debt managers is expressed in terms of costs (total costs), is composed of (accrued) interest payments and price changes. In contrast to the asset manager's performance, price rises caused by declining yields lead to losses for the debt manager as the current value of liabilities increases. Conversely, an issue with a corresponding duration will be reported as a value-reducing gain on a subsequent rise in interest rates. This concept seems to be the most effective tool for a direct assessment of the financial performance of a transaction or for comparison with an alternative strategy.

When employing the total cost concept it may occur, however, that the conclusions drawn with regard to financial performance are contrary to those resulting from a budget (cash-based) analysis. This is illustrated by one example: Assume that two issuance strategies are followed, namely one using money market terms on a three-month basis and a ten-year fixed-rate issue. With a three-month interest rate of 4% and a ten-year rate of 5.5% the question arises whether Manager A with the purely money-market-based debt or Manager B with a purely capital-market-based strategy will do better over the time of one year. Let us assume that the money market rate remains constant at 4% throughout the year. At the end of the year, purely cash-flow-oriented budget analysts will consider Manager A to have been obviously more effective, as his or her strategy has incurred interest expenses of only 4% (i. e., on an issue volume of EUR 1 billion, interest costs of EUR 40 million), while Manager B's long-term bond has incurred interest expenses of 5.5% or EUR 55 million.[1])

A complete, commercially sound analysis requires the interest rate level at the time of the assessment as an additional input. It is assumed that yields at the long end of the yield curve have risen by 150 basis points during the year, so that current long-term yields now lie at 7.0%.[2]) Owing to this yield rise, the value of the bond has fallen by 9.8% by the valuation date. The outstanding issue can thus be redeemed at a market value of EUR 902 million and (also) refinanced, by example, on the money market terms that were used by Manager A.[3]) The positive result is obvious, when the funds for redemption come from a budget surplus, as the amount required for strategy A is EUR 1,040 million (including interest) and EUR 957 million for strategy B. The total cost incurred by Manager B is thus –4.3% (interest expenditure of 5.5% less valuation gains of 9.8%), which, from an overall

1 *For the sake of completeness it should also be pointed out that the entirely different risk profiles were not taken into account in this assessment.*

2 *After the one-year period has elapsed it is now the nine-year yield that is relevant for valuation purposes.*

3 *This gain may even be realized if the buyback is not actually carried out but the position converted to money market terms through an interest rate swap.*

perspective, makes this strategy the clearly more effective one[1]). The hidden reserves or losses that may be generated by such a rate movement may have a much more forceful impact in terms of net present value than the foreign currency effects that sometimes catch the public eye.

4.5 Strategic Options and Risks in Debt Management

In the public debate, the efficiency of debt management is sometimes assessed by measuring the spread of a bond's interest rate to a defined benchmark bond. This is of particular importance for those states whose issuing yields are several percentage points above the benchmark bonds. These countries, which are also the prime addressees of World Bank/IMF recommendations, may of course achieve substantial cost savings by narrowing this interest rate spread significantly. Countries like Austria have to accept only comparatively low interest rate premiums, even though the current spread of approximately 25 basis points on ten-year bonds is regarded as too high. As already mentioned, this differential is due to liquidity considerations and market technicals rather than the investors' transparency requirements. A reduction of this spread would of course reduce the Republic of Austria's bond issuing costs, but would not be the main cost component in the portfolio. More important, however, are factors such as portfolio structure (duration, currency composition). A beneficial cost effect in this regard can be achieved, however, only by accepting a certain price risk up-front.

In designing the portfolio structure through new issues or the subsequent use of derivative instruments, the ÖBFA may basically employ the following strategy parameters: duration, which is controlled through selection of interest rates and maturity, and currency composition. While changes in the interest rate structure have their main impact on interest payments, which are of relevance for the budget, and less effect on the nominal value of the public debt (but, in the case of fixed-interest terms do influence net present value), changes in exchange rates have first and foremost a noticeable impact on the portfolio and comparatively little consequences for the interest payment cash flows.

Beside market price risks, debt management is also confronted with default risks – particularly on investments and derivative transactions – as well as with legal, liquidity, and operational risks.

4.5.1 Foreign Currency Component

Since the big changes in bond prices in 1993, at the latest, the Republic of Austria's foreign currency strategy has been a recurring theme in economic reporting in Austria. Currently, about EUR 8.5 billion to EUR 9 billion or about 7% of the Austrian public debt portfolio are held in Japanese yen, close to EUR 8 billion or 6.25% in Swiss francs. This translates into interest savings of currently EUR 200 million to EUR 350 million a year.

1 *A decline in yields would of course have had the opposite effect in this example and raised total cost to above 5.5%.*

The Republic of Austria has been issuing foreign currency debt for quite some time. Initially, foreign currency markets were used primarily as a way around the limited financial resources available in the Austrian market, to avoid stretching the domestic market excessively by the government's funding needs, and to maintain a steady inflow of currency reserves. In the course of time, these arguments have moved to the background – particularly since the early 1990s and the reorientation of the European financial markets – and given way to increasing (expected) cost arguments.

The management of the foreign currency composition follows a long-term strategy. The expectation of a long-term gain is based on the argument that interest savings are achieved with reasonable regularity year after year and, through the compound interest effect, make a high cumulative contribution overall. As time passes, the corresponding risk of appreciation loses momentum.[1])

The only currencies used by the Republic of Austria in managing its debt are, apart from the euro, the Swiss franc and the Japanese yen (following swaps), as these two currency markets offer substantially lower interest rates. Over time, even some appreciation and the resulting negative price change can be tolerated in the portfolio. However, an accounting system that states only price changes does not provide a valid view of performance as it neglects the critical interest component.[2]) Taking these effects into account, the long-term savings resulting from the use of foreign currency markets currently range between 1.5% and 2% of GDP.[3])

This opportunity to reduce costs, which was exploited successfully at least in the past, of course carries a certain risk. Exchange rate changes may have two types of effects. First, an appreciation of the currency used raises the value of the portfolio. This risk is contained by a limit that restricts the maximum appreciation loss during a year with a probability of 95%. The restriction on the management is thus not imposed by defining a maximum percentage for foreign currency debt but through the inherent loss potential. This potential is determined on a monthly basis, using the so-called value-at-risk (VaR) approach, with the supervisory board defining the limit relative to the GDP. The risk itself is thus determined by the level of foreign currency denominated debt, the volatility of the currencies used, and the correlation between the exchange rates.

1 *This long-term perspective and the high probability of a gain over a longer period is similar to the arguments for equity investments put forward by asset managers pursuing long-term strategies.*

2 *ÖBFA regularly calculates the performance of foreign currency operations across the entire foreign currency portfolio. Positions may be settled even before maturity and not only at the final redemption date. This permanent computation of gains and losses is necessary to maintain a continuous overview of performance. Also, this approach allows the realization of price gains and losses at any time, as is done in asset management. In managing debt portfolios, positions may be realized through premature redemption or by setting up a corresponding counter-position through derivatives contracts (converting the position back into local currency).*

3 *This means that the public debt would be higher by this percentage or approximately EUR 3.5 billion to EUR 4 billion if the debt had been denominated in local currency all the time.*

Second, an appreciation of the Japanese yen and the Swiss franc also raises the cost of the interest payments that have to be made to service foreign-currency denominated debt.[1]) This risk is part of the so-called cash-flow-at-risk (CaR) but is not reported separately (as a foreign currency component) or limited. CaR is a budget-oriented measure of risk that estimates the total amount of interest payments (on euro and foreign currency debt) as well as the potential deviation from a given path.

4.5.2 Interest Component

In assessing the interest rate strategy, the conflict between budget-based accounting and an assessment of financial performance is even more striking than in determining the results of foreign currency operations. While the budget primarily reflects cash flows from interest payments, the financial performance approach focuses on the net present value of terms agreed for the future. The total costs principle combines these two components of performance but does not necessarily resolve the conflict that is implicit in the strategy.

The interest rate strategy is usually expressed in terms of the targeted duration.[2]) Provided all other conditions are unchanged, more reliance on long-term financing at fixed interest rates will increase duration whereas money-market-oriented financing will decrease it. A long duration thus means high value-at-risk, while a low duration is associated with increased CaR.

The key aspects considered in selecting the desired duration are usually the government's attitude toward risk, the absorptive capacity of the financial market, and capital market policy considerations. In the course of a typical interest rate cycle, one should ideally seek to extend duration when interest rates are low, as this allows to lock in the relatively easy capital market terms over a longer period. Conversely, when interest rates are high, short-term financing should be the preferred option to avoid being tied to such a high level for a longer period. All moves are made of course in the face of uncertainty regarding the future development of interest rates, which suggests a step-by-step procedure in taking allocation decisions.

Controlling duration in this manner across the rate cycle may prove difficult if the desired structure is to be achieved by issuing new debt. On the one hand, the volume of financing required under current legislation may be too low to create the desired portfolio effect. On the other hand, the same expectation regarding interest rates may lead to a decline in

1 *While an appreciation of a foreign currency that is followed by a depreciation of the same magnitude is insignificant for a retrospective valuation, as appreciation losses are offset by depreciation gains, such moves are not irrelevant where cash flows are concerned as the payments that need to be made (particularly interest payments) in the appreciation phase have a real impact on the budget.*

2 *Duration basically stands for sensitivity to interest rates and correlates primarily with the length of rate fixation. A pure money market portfolio – with a three-month rate fixation – would have a ("modified") duration of 0.25 years while a portfolio with a ten-year fixed rate structure would have a ("modified") duration of approximately 7.5 years. In other words, the ("modified") duration is an elasticity that shows by how much the present value of a financial instrument changes (with reversed sign) when yields change by a small unit.*

demand among investors, which may have adverse consequences on terms. This matching problem is less acute for minor debtors such as Austria when swaps are used for control purposes rather than direct issues. However, heavier reliance on the derivatives markets may give rise to credit risks unless proper risk management is exercised.[1])

An international comparison shows that debt managers refraining from such an active strategy tend to opt for shorter durations. This may be explained by the fact that the yield curve tends to slope upwards, making the shorter end of the curve appear cheaper. Such a strategy would not only be similarly suboptimal as a permanently long duration in the case of an asset manager but would also lead to noticeably higher risk where interest payments are concerned (CaR).

With the current public debt structure, interest payments amount at present to EUR 6.5 billion to EUR 7 billion.[2]) Provided that the current issuing policy is continued and planned deficits remain relatively low, interest payments should stay at this level for the next few years.[3]) The probability that interest payments will not exceed the expected level by more than EUR 0.5 billion by the end of the current legislative period is 95%. This CaR[4]) defines the direct relevant risk relating to interest payments.

As an alternative to this CaR, one can also look at the risk to net present value, which basically arises from the fixed payment terms that have been laid down for the future and are discounted at current interest rates. This risk is measured using the value-at-risk approach and currently amounts to EUR 5.5 billion to EUR 6 billion for the entire portfolio.[5])

4.6 Debt Management in EMU

The euro is not always the driving force behind current developments in the European financial markets but, in many cases, acts as an important catalyst. Examples to be named here include the growing market for corporate bonds and the number of mergers that are (also) seen in the European financial industry. The Austrian example shows moreover that the tendency of domestic institutional investors to buy the classic Austrian government bonds is increasingly declining, giving way to demand for foreign bonds from a variety of issuers, hybrid products, and equity investments. Thanks to a globally diversified interest among banks in Austrian bond issues sold by way of tender procedures,[6]) the ÖBFA is able to compensate the decline in domestic demand by increased sales to foreign investors.[7])

1 *To control this credit risk, ÖBFA has introduced a limit system with the approval of the supervisory board, which looks at the "potential exposures" of derivatives contracts. In addition, collateral agreements are sought under which security deposits are made.*

2 *Net interest payments under budget chapter 58 excluding so-called other expenses.*

3 *The internal cash-flow perspective and the associated risk paths are currently based on a period of 8 years for appropriate emphasis on the long-term aspect of debt management.*

4 *Maximum deviation of interest payments from a stable path with the given probability.*

5 *Maximum increase in net present value as a result of interest and exchange rate changes with 95% confidence.*

6 *These so-called primary dealers comprise 8 domestic and 18 foreign financial institutions, which cover Europe as well as the U.S.A. and Asia.*

7 *Occasionally, foreign market players take up 90% to 100% of the entire tender volume.*

In this context, it should be noted that the ÖBFA regards the common currency area as its domestic market. Even though the liquidity risk[1]) of euro area debt does not appear significant for a relatively small borrower like Austria with its excellent credit standing, the ÖBFA nonetheless seeks to make sufficient use of overseas markets such as the UK, the U.S.A., and Asia to benefit from the favorable influence of demand from these regions on financing terms.[2])

For a relatively small debtor like Austria, whose currency was relatively unknown prior to EMU, it was difficult to place larger volumes of Austrian schilling-denominated bonds in international markets before 1998. Therefore, Austria was forced to issue bonds in foreign currency units. With the Deutsche mark, the Dutch guilder, and the French franc, the respective currency risks were quite manageable, however. Austria no longer has this problem, and international investors are quite familiar with the new currency. However, the substantial change in the euro's exchange rate since the beginning of EMU represents a pronounced obstacle to sales of euro-denominated bonds on markets outside of Europe.

As a result of the start of EMU, a large number of countries now offer their debt instruments in the same currency. In the past, such a level of competition was unknown, as only few European countries made heavier use of the Deutsche mark, for example, as an issuing currency, and currency denomination thus provided for substantial differentiation. This distinguishing feature has now been eliminated, giving rise to new competition in capital demand, in which marketing activities and the selection of suitable financial institutions for the provision of investor service play a key role.

By expanding the common currency area, EMU has broadened the markets for derivatives and at the same time deepened them through the further development of financial instruments. In addition, advances in information technology and the increased acceptance of derivatives have bred an investor base with more sophisticated expectations. This allows issuers like the Republic of Austria to lower their financing terms further by issuing structured products and accepting, in return, certain model[3]) and credit risks when engaging in swapping transactions with derivatives.[4])

In connection with budget consolidation in Europe, the medium-term consequences for the governments' ability to handle risks must be pointed out. As, in the course of time, government budgets will respond less sensitively to changes in financing terms as a result of debt reduction, this increased ability to tolerate risk will afford them the chance to pursue an active strategy of further reducing borrowing costs in exchange for higher risk. While this is not the road to a fiscal perpetuum mobile and some

1 *Liquidity risk means the risk that a financial instrument cannot be traded at a fair price due to market bottlenecks as well as the risk that an issue cannot be placed on suitable terms owing to investors' unwillingness to provide capital.*

2 *As Austria plays a relatively minor role in the euro area and now defines foreign relations only as sales outside the euro area, the discussion on the significance of Autsria's debt management for currency reserves has lost much of its poignancy.*

3 *The risk of incomplete valuation.*

4 *It is pointed out once again that credit risk is being increasingly reduced through collateral agreements.*

countries may deliberately prefer a more risk-averse strategy (while at the same time accepting higher expected costs), there may, at the very least, emerge a chance for some kind of fiscal suction effect ("virtuous circle"), i. e. a positive synergy effect of disciplined budget policy and cost-effective debt management.

5 Austrian Debt Management in Light of International Experience

The comparison of international approaches to public debt management (see sections 2 and 3) with the explanation about debt management activities in Austria (see section 4) illustrates the broad spectrum of points being discussed with a view to the micro- and macroeconomic objectives of public debt management. It also shows that the international recommendations leave many questions open where concrete policy-setting is concerned. A broad summary of conclusions is provided below:

- The ÖBFA guidelines are in many regards in conformity with the IMF's recommendations.
  They include:
  - a clear allocation of responsibilities among the decision-making bodies;
  - target orientation: fiscal efficiency with due regard to the risks involved;
  - the use of control instruments (limits, reporting, and internal as well as external audits);
  - market-based financing (auctions of securitized debt instruments) and transparency with regard to issuing conditions (auction calendar, auction participants, results).
- Macroeconomic aspects also play a role in debt management operations as efficient liability and risk management aims to keep market, refinancing, liquidity, credit and operational risks low. Whether target orientation is to be guided by market values (net present values) or nominal values of the debt portfolio is still under discussion.
- The potential influence of debt management operations on the overall economy and the interaction between debt management operations, fiscal policy, the financial markets and monetary policy are hardly taken into account in strategic considerations concerning debt management activities in Austria.
- Under EMU conditions, the potential influence of the Austria's sovereign debt management on the domestic markets is reckoned to have decreased but the federal government still exercises its benchmark function. The euro financial market is still segmented by access barriers to stock exchanges, primary markets and derivatives markets as well as different tax treatment. In addition, the interest rate for government bonds, beside the swap rates, remains the reference interest rate that differentiates the countries of the euro area.
- The economic policy dimension of debt management as part of Austria's fiscal policy is highlighted by the fact that, in Austria, the supervisory

authority is exercised by the Federal Minister of Finance, who is assisted in this respect by a separate body (the Federal Debt Committee).
– The Federal Debt Committee is responsible for advising the Federal Minister of Finance on economic matters relating to public debt management policies. The committee ensures not only an ongoing exchange of opinions and information but also balances the interests of economic policymakers and debt managers. The Federal Debt Committee strives to ensure that debt management activities in Austria are conducted with due regard to relevant economic conditions and promote the efficiency of the domestic financial markets. Its objectives concur with those of the IMF.
– A combined assets/liabilities-driven view of public debt management and fiscal policy as described by Missale (1999) (development of budget revenues and expenditure in the course of business cycles) is not reflected in the current orientation of public debt management policies in Austria.

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Cyclically Adjusted Budgetary Balances for Austria

Thomas Url[1])

1 Introduction

Economic and Monetary Union (EMU) further advanced the integration of the European economies. With the freedoms of the single market linking the product and services markets as well as labor and capital markets of the Member States, households and businesses have increasingly been ignoring national borders in taking economic decisions. Given the elimination of exchange rate risk and greater price transparency, EMU has amplified the integration effect of the single market and, in addition, has brought a uniform monetary policy for the euro area. The monetary policy formulated by the European Central Bank (ECB) also has a strong bearing on the countries not participating in EMU.

In the light of these developments, private consumption and business are determined ingreasingly by pan-European market conditions, while the leeway afforded for national economic policymakers has been curbed. Different economic policy objectives, specific national factors and – given different economic structures – diverse transmission mechanisms are juxtaposed by a uniform monetary policy. In line with the Statute of the European System of Central Banks (ESCB)/ECB, monetary policy is geared to maintaining price stability in the entire euro area. The Treaty of Amsterdam introduced an economic policy coordination mechanism between the ECB, the European Commission and the European Council, which spells out a clear restriction on discretionary fiscal policy (Breuss, 2000).

Within the framework of the Stability and Growth Pact, fiscal policy is an economic policy instrument which, like social and regulatory policy measures, remains a national responsibility. The leeway in formulating tax policy and the scope of spending allows countries to respond individually to asymmetric shocks, with the effect the greater, the more anchored automatic stabilizers are in the budget. At the same time, a country's tax regime and expenditure structure impact on its competitiveness as a business location within the single market. Some fear that this interplay of factors might lead to a race to the lowest tax and spending levels, and thus call for greater fiscal policy coordination by, for instance, introducing minimum standards.

The idea of stepped-up revenue sharing to allow for fine-tuning, i. e. greater fiscal coordination, across countries derives from the theory on optimum currency areas, which stresses the consequences of regional asymmetric shocks in a single currency area. In a system of flexible exchange rates, a country may swiftly restore international competitiveness by adjusting its exchange rate, but this instrument is no longer available to euro area countries. Fiscal sharing between euro area regions might cushion a good third of the effects on regional employment and consumption triggered by asymmetric shocks, just like in the United States (Sala-i-Martin and Sachs, 1992). Measures to this end could take the form of a euro area-wide unemployment insurance scheme or transfers between regional

1 *Thomas Url – Austrian Institute of Economic Resarch (WIFO).* *The author thanks Peter Brandner, Gerhard Lehner and Walpurga Köhler-Töglhofer for valuable inputs and discussions as well as Ursula Glauninger and Brigitte Schütz, who assisted in the data processing and analysis.*

authorities. A uniform negative income tax within the euro area would even eliminate the need for fiscal sharing between regional authorities. It would, by extension, translate into very close fiscal coordination, which, however, might not accommodate national governments begging to differ on the degree of taxation-related power and the scope of state action. Moreover, findings on existing large currency areas (Canada, U.S.A.) show that the pure insurance component of fiscal transfer systems is comparatively small. Kletzer and von Hagen (2000) provide an overview of the empirical literature on this topic and show that according to most studies, the insurance component meant to cushion asymmetric shocks merely cancels out some 10% of the relative income loss.

Besides, Kletzer and von Hagen (2000) show that such compensatory mechanisms embedded in a dynamic equilibrium model of two regions in a monetary union could, in fact, generate negative welfare effects. Either private consumption or public expenditure would be destabilized depending on the mode of redistribution, which would result in welfare losses. Furthermore, a model with an asymmetric regional supply side also entails repercussions of fiscal sharing on monetary targets. Substantial transfers between regions act as a disincentive to measures enhancing supply side flexibility (Persson and Tabellini, 1996).

Another approach to analyzing greater fiscal coordination is based on Barro and Gordon's game theory approach to monetary policy (1983). In theory, greater fiscal policy coordination within a currency union is clearly advantageous only if the objectives of the central bank correspond to the goals targeted by the national fiscal policymakers (Dixit and Lambertini, 2001). In this case, monetary and fiscal policy measures complement one another and their orchestrated combined use has a greater impact on stability for a given level of applied resources (Tichy, 1985). If the objectives of the central bank differ from the national fiscal policymakers' goals, e. g. because the former attaches more importance to price stability, this equation no longer holds. Strategic interaction between fiscal policy and the central bank ensues, exerting upward pressure on prices. In a Stackelberg equilibrium, highly orchestrated fiscal policies even succeed in crowding out the central bank further, thus pushing up inflation further as well (see also Beetsma and Bovenberg, 1998). Van Aarle, Engwerda and Plasmans (2001) arrive at similar findings, portraying a dynamic differential game involving two countries and a federal central bank.

A third argument for the coordination of fiscal policies within EMU frequently encountered is based on the negative external effects triggered by the excessive public budget deficit of a Member State. Buiter, Corsetti and Roubini (1993) emphasize that such external effects are primarily of a pecuniary nature. A country running an excessive deficit boosts demand on the capital market and, by extension, raises the refinancing interest rate for all other debtors irrespective of the type of refinancing. Large countries in need of additional capital, no doubt, have a greater influence on the interest rate than small countries. For this reason, small countries have a greater stake in countering high budget deficits in large countries than vice versa. It is, however, inefficient to preclude excessive deficits by means of rule-based

sanctions, because such a system does not account for countries' differing preferences and economic structures. Borrowing from the experience of environmental markets, Casella (2000) proposes a system of tradable deficit permits, which would allow countries to trade rights to deficit creation.

2 Stability and Growth Pact – an Instrument for Coordinating Fiscal Policies

With greater fiscal policy coordination holding both advantages and disadvantages, the EU Member States, during EMU negotiations, managed to agree merely on a toned-down version of rule-based fiscal policy coordination. According to Article 99 of the Treaty of Amsterdam, the Member States shall regard their economic policies as a common concern to be coordinated in such a way that they further well-balanced economic activity within the Community. Drawing on reports by the European Commission, the European Council provides an overall assessment of the national economic policy activities.

The procedure laid down in the Stability and Growth Pact, which was then also incorporated into the Treaty of Amsterdam as well as into the Council Regulations (EC) No 1466/97 and No 1467/97, calls for forward-looking surveillance of the fiscal policies of all Member States and sets ceilings (reference values) for the budget balance of the general government (Article 104). If the budget balance of a Member State does not comply with the reference values or there is a risk of an excessive deficit, the Commission prepares a report. The European Commission forwards this report to the Economic and Financial Committee (EFC)[1]) (Article 114), which draws up an opinion. Only then does the Commission address an opinion to the European Council. The Council, acting by a qualified majority, establishes whether an excessive deficit exists and starts to apply sanctions.

Surveillance of national fiscal policies by the European Commission is driven by the commitment to safeguard that each Member State have a budgetary position close to balance or in surplus in the medium term. This particular wording is meant to ensure that ordinary cyclical fluctuations cannot lead to a violation of the reference value set for the general government budget balance. The Stability and Growth Pact thus enhanced the importance of the cyclical budget component. This component is defined as the change in public revenue and expenditure resulting from fluctuations in economic activity within a given legal framework and economic structure only.

The EFC stated that in surveilling the medium-term budgetary targets and evaluating their compliance with the Stability and Growth Pact, it must pay particular attention to the cyclical position.[2]) The time frame for interpreting the medium term was to be the length of the business cycle.

1 *Up to 1998: Monetary Committee.*

2 *Opinion of the Monetary Committee on the content and format of stability and convergence programs, endorsed by the Council on October 12, 1998.*

In practice, the EFC has to adopt an approximate approach when assessing how actual and expected budgetary developments compare with the requirement of medium-term budgetary positions close to balance or in surplus. For this reason, the committee considers the European Commission's cyclical adjustment method as a useful approach to assessing budgetary developments. To make more firmly based judgements, it will, however, be vital to conduct further analyses, which consider country-specific parameters. During a workshop held in Perugia in November 1998, the ESCB's fiscal experts identified the following additional shortcomings of the existing procedures for computing the cyclical budget component (Banca d'Italia, 1999):

– The intervals at which tax and expenditure elasticities of international estimates (European Commission, IMF, OECD) are re-calculated are too large.
– International estimates do not account for the different effects on the budget resulting from changes in the composition of aggregate demand or national income.
– Estimates drawn up by international organizations are not consistent with Eurosystem or ESCB projections and forecasts.

The following section introduces an approach to computing the cyclical budget component, which takes account of these suggestions[1]) and on which the Oesterreichische Nationalbank (OeNB) will base its calculations of the cyclical budget deficit in the future.

3 Computation of the Cyclical Position

The development of individual budget items is closely linked with changes in GDP, but fluctuations in the macroeconomic indicators underlying various budget items may deviate substantially from those of the entire GDP. VAT-based revenue, for instance, develops less dynamically than GDP during an export-driven upswing, even though the VAT scheme with input tax deduction targets the value added directly. This pattern results from the VAT exemption for exports. Both particular features in the tax code and differing assessment bases may lead to distinct differences between individual budget items and GDP developments. This is why a disaggregate method is used, which links individual budget items separately with their assessment bases or macroeconomic bases. The concept underlying all computations is subsumed by the following basic formula:

$$B_c^j = B^{j*}\varepsilon_{B^j,V^j}\upsilon_{r,c}^j,$$

with B_c^j representing the cyclical component of the *jth* budget item. B^{j*} equals the long-term trend value of the *jth* budget item. In a simplified manner, it is approximated with its current value. ε_{B^j,V^j} is the elasticity of the budget item B^j with respect to its macroeconomic indicator V^j, and $\upsilon_{r,c}^j$ is the cyclical deviation of the real macroeconomic indicator of the

1 *Members of the Working Group on Public Finance elaborated this approach within a project commissioned by the Monetary Policy Committee of the ESCB. See also Bouthevillain et al. (forthcoming).*

jth budget item from its long-term trend value. Fluctuations in the composition of aggregate demand are accounted for by considering the dependency of each budget item on the respective assessment base. In contrast to methods relying merely on cyclical fluctuations in GDP, this procedure generates a more dynamic picture of the cyclical component; there is, however, a tradeoff in terms of informative value. The sensitivity of the budget deficit toward changes in GDP may be computed only by means of complex conversions.

The cyclically adjusted deficit CAB_t is derived via

$$CAB_t = B_t - \sum_j B^j_{c,t}.$$

The sum of the cyclical component calculated as outlined above is deducted from the deficit on an annual basis. The cyclically adjusted deficit is derived from structural factors and discretionary decisions and, thus, forms a good basis for assessing a stability program.

The cyclical component of the budget is calculated via a three-step method. First, the Hodrick-Prescott filter is applied (Hodrick and Prescott, 1981) to compute the cyclical deviation of the macroeconomic indicator from the long-term trend $v^j_{r,c,t}$. While this filter is a highly contentious issue in econometrics (Harvey and Jaeger, 1993; Cogley and Nason, 1995), it is nevertheless a feasible method implemented in most software packages. Second, the estimated elasticities ε_{B^j,V^j} are linked with the fluctuations of the indicator triggered by the business cycle and, finally, also linked with the tax variable. Third, the cyclical components of all budget items are added up and deducted from the given deficit.

3.1 Computation of the Cyclical Fluctuations of a Macroeconomic Indicator

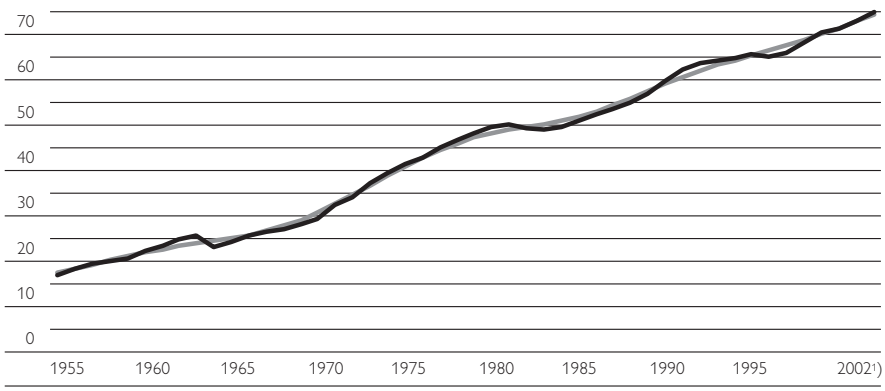
As opposed to a linear trend, a straight-line progressive slope across the time series, the trend component of the Hodrick-Prescott filter has a closer fit to the observations. At any given point in time, the filtered trend is oriented to the previous and subsequent observations, which makes it flexible. A problem of this two-sided method is that at the starting and end points of the time series there is no previous and subsequent observation, respectively, for smoothing. Therefore the assessment of the current budget situation is marked by a certain degree of uncertainty. The uncertainty may be counterbalanced by using forecasts of the *jth* budget item and its macroeconomic basis. In this case the OeNB forecast provides the basis for extrapolating the data.

The Hodrick-Prescott filter produces a smooth snake-shaped trend with a variable slope (see chart 1). The scope of adjustment to the observations is controlled by means of the smoothing parameter λ. In the extreme $\lambda = \infty$ the trend component of the Hodrick-Prescott filter equals a straight line. At $\lambda = 0$ the trend component is identical to the time series, i. e. the smaller the smoothing parameter for the filter, the smaller the cyclical component of the macroeconomic basis.

Chart 1

Real Per-Capita Compensation of Private Sector Employees and Hodrick-Prescott Filtered Trend

1,000 EUR at 1995 prices



Source: Statistics Austria, WIFO, OeNB.
[1]) 2001 to 2002: OeNB forecast data.

3.2 Computation of the Elasticity of a Budget Item with Regard to Economic Fluctuations

In the second step, the elasticities of individual budget items are linked to the respective macroeconomic indicators. Beforehand, the various revenue and expenditure categories of the general government need to be broken down into cyclically dependent and independent components.

Basically, a distinction should be made between revenues from private and public activities, as public activities are, as a rule, caused by structural or discretionary arrangements and do not mirror cyclical fluctuations. A case in point are the cyclical social security contributions; the imputed pension contributions and the government contributions made for civil servants, by contrast, are non-cyclical. Breaking down data according to these criteria is not always fully possible due to the dearth of data. The receipts stemming from government itself and other central, regional and local authorities (EU contributions from indirect taxes) are likewise adjusted. Furthermore, it is assumed that tax revenue from interest income does not fluctuate along with the business cycle.

Table 1 shows the structure of the 1998 budget as defined in the national accounts (ESA 95). Direct taxes are, for instance, split into three groups. The first two groups – direct taxes on households and direct taxes on companies – are dependent on a cyclical indicator. The rest is considered to be non-cyclical. Among the expenditure items only the unemployment-related items are cyclical, which is in line with the Organisation for Economic Co-operation and Development (OECD). In addition, a second item of public sector expenditures has to be included into the cyclically dependent balance. Article 108 of the General Social Security Act (ASVG) prescribes a rule for the annual adjustment of pensions. This rule links

Table 1

Breakdown of Public Revenue and Expenditure in Austria in 1998

PFR definition ESA 95	Macroeconomic indicator	1998	
		EUR milion	*% of GDP*
Revenue, total		97,999	51.6
Direct taxes, total		26,137	13.8
Direct taxes on households[1])	Average compensation of employees, private sector employment	15,305	8.1
Direct taxes on companies[1])	Operating surplus	8,577	4.5
Other direct taxes[2])		2,255	1.2
Indirect taxes		30,146	15.9
Taxes on goods and services[1])	Private consumption	22,151	11.7
Paid to the EU[2])		1,723[4])	0.9
Other indirect taxes[2])		6,272	3.3
Social security contributions		32,490	17.1
Private sector employees[1])	Average compensation of employees, private sector employment	26,783	14.1
Public sector employees[2])		1,921	1.0
Imputed[2])		3,786	2.0
Other revenue[2])		10,856	5.7
Discrepancy due to publication lag[3])		94	0.0
Primary expenditure, total		95,511	50.3
Unemployment-related expenditure[1])	Number of unemployed	1,940	1.0
Pension benefits [1])	Average compensation of employees	18,767	9.9
Other primary expenditure[2])		74,803	39.4
Interest payments[2])		7,161	3.8
Expenditure, total		102,672	54.1
Deficit or surplus		−4,673	−2.5
GDP		189,742	100.0

Source: Statistics Austria (March 2000).
[1]) The cyclical component is linked to the macroeconomic indicator.
[2]) Not linked to the macroeconomic indicator.
[3]) The individual components are based on data as at December 1999.
[4]) Not included in total revenue.

pensions to the development of covered employees' average per-capita wages.

The second column of table 1 shows for each cyclical budget item the respective macroeconomic indicator. Direct taxes on households are linked to the development of per-capita compensation of employees and of private sector employment. Direct taxes on companies hinge on the operating surplus as defined in the national accounts. The taxes on goods and services mirror the fluctuations of private consumption. The social security contributions made by private sector employees are related to the same macroeconomic indicators as the direct taxes on households. Unemployment-related expenditure (unemployment benefits, long-term unemployment assistance and social security contributions for the unemployed) are linked to the number of unemployed, while the pension benefits covered by social security depend on the per-capita compensation of employees.

The elasticities of all budget items are derived from the estimation of error correction regressions for each cyclical budget item. For each variable, an auxiliary equation based on logarithmized levels

$$\ln B_t^j = \phi + \delta T + \gamma \ln V_t^j + \sum_i \delta_i Z_i + u_t^j$$

is estimated, which is used to compute the error correction term u^j. In the auxiliary equation for the *jth* budget item B^j, ϕ is the constant, T the linear time trend with the slope δ; V^j is the respective macroeconomic indicator with the long-term elasticity γ. Structural changes are approximated with dummy variables $\delta_i Z_i$. The following dynamic equation is used to estimate the short-term elasticity of each budget item with regard to cyclical fluctuations of the macroeconomic indicator:

$$\Delta \ln B_t^j = \alpha + \beta u_{t-1}^j + \delta_1 \Delta \ln V_t^j + \delta_i \Delta \ln V_{t-1}^j + \ldots + \sum_i \delta_i \Delta Z_i + \xi_t^j.$$

The exogenous variables of these equations are identical to the logarithmized variables, but are measured as change on the previous period. The short-term elasticity δ indicates the fluctuation of the budget item in percent upon a 1% shift in the base.

Table 2a

Coefficients of the Dynamic Equation

Exogenous variable	Dependent variable: change in logarithms					
	direct taxes on households per employee[1])	direct taxes on companies	indirect taxes	social security contributions per employee[2])	unemployment-related expenditure	average pension benefits[3])
Constant	0.03	−0.01	0.02	0.01	0.11**	0.00
Change in						
Level dummy 1958	−0.10*					
Level dummy 1963	−0.11*					
Dummy 1968	−0.13**					
Dummy 1973		0.10**				
Dummy 1975					−0.15**	
Level dummy 1975	−0.17**					
Dummy 1984			0.04			
Level dummy 1989	−0.38**	−0.08*				
Level dummy 1994	−0.46**	0.20**				
Level dummy 1995			−0.11**			
Logarithm of average compensation of employees, private sector employment	1.34**			0.90**		0.97**
Logarithm of the operating surpluses (lag of one period)		0.58**				
Logarithm of the operating surpluses (lag of two periods)		0.53**				
Logarithm of private consumption			0.93**			
Unemployed (persons)					0.91**	
Ratio of average compensation to highest contribution base				−0.03**		
Share of long-term unemployed					−0.24*	
Lagged cointegration variable	−0.67**	−0.41*				

* *Significant at the 5% level.*

** *Significant at the 1% level.*

[1]) *Average compensation of employees, private sector employment less social security contributions.*

[2]) *Average compensation of employees, private sector employment multiplied by the social security rate plus pension benefits multiplied by the social security rate.*

[3]) *Average compensation of employees, private sector employment less social security contributions (lag of one period).*

Table 2b

Coefficients of the Cointegrating Equation

Exogenous variable	Dependent variable: logarithm of					
	direct taxes on households per employee[1])	direct taxes on companies	indirect taxes	social security contributions per employee[2])	unemployment-related expenditure	average pension benefits[3])
Constant	−9.80**	−1.69**	−5.94**	−7.81**	−0.17	−7.85**
Level dummy 1958	−0.22**					
Level dummy 1963	−0.06					
Dummy 1968	−0.10					
Dummy 1973		0.18**				
Dummy 1975					−0.03**	
Level dummy 1975	−0.07					
Dummy 1984			−0.01			
Level dummy 1989	−0.39**	−0.09*				
Level dummy 1994	−0.44**	0.15**				
Level dummy 1995			−0.09*			
Trend	0.05**		−0.02*	−0.01*		
Average compensation of employees, private sector employment	1.01**			1.12**		0.98**
Operating surpluses (lag of one period)		0.65**				
Operating surpluses (lag of two periods)		0.35				
Private consumption			1.37**			
Unemployed (persons)					1.89**	
Ratio of average compensation to highest contribution rate				−0.02**		

* *Significant at the 5% level.*
** *Significant at the 1% level.*
[1]) *Average compensation of employees, private sector employment less social security contributions.*
[2]) *Average compensation of employees, private sector employment multiplied by the social security rate plus pension benefits multiplied by the social security rate.*
[3]) *Average compensation of employees, private sector employment less social security contributions (lag of one period).*

3.3 Estimation Results

First of all, it must be clarified whether there is a stochastic relationship between the base variable and the tax variable in the estimation equations. This endogenity problem leads to biased estimators of the short-term elasticity and may be corrected merely via an alternative estimation method (instrumental variable). This method is applied to identify a proxy which has a close link to the base, yet is fairly independent of the tax variables. In our case, we are looking for a variable which captures the business cycle fairly accurately and, at the same time, is independent of tax revenue. The assessment of export orders contained in the WIFO (Austrian Institute of Economic Research) economic survey is a perfect fit. Since export orders are largely unaffected by the domestic tax policy, the link between the tax variable and export orders ought to be small. On the other hand, since the Austrian economy reacts strongly to export fluctuations, there should be a close link to the private sector per-capita compensation of employees. The Hausman specification test (1978) fails, however, to reject the null hypothesis that there are no measurement errors. Therefore the following presents only the results from the ordinary least squares (OLS) estimator.

Tables 2a and 2b show the estimation results and are indicative of the difficulties associated with econometric estimation of elasticities. The ongoing tax and spending reforms follow approximately the election cycle, undoing the direct connection between a budget item and its underlying

indicator variable. Only through additional information on the timing of reforms and on their assumed (short- or long-term) consequences is it possible to filter out from the raw data the original dependency by means of dummy variables. Two different dummy variables are used in this process. Ordinary dummy variables equal 0 throughout the entire observation period and take on the value 1 only in one period (step dummy). By contrast, a level dummy variable switches from 0 to 1 as of a given point in time and then continues to remain at that level.

Chart 2

Change in Direct Taxes and Compensation of Employees per Employee from 1956 to 1998

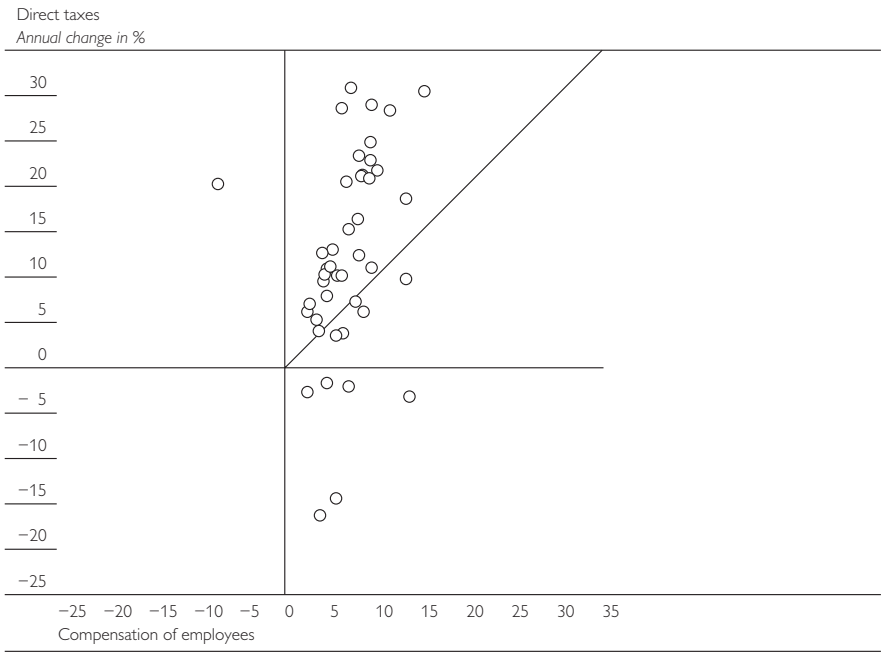


Chart 2 illustrates that there is no obvious link between tax revenue and the macroeconomic indicator underlying direct taxes on households. The horizontal axis tracks the rate of change in the private sector per-capita compensation of employees, the vertical axis shows the rate of change of direct taxes on households. The straight line at a 45 degree angle demonstrates the hypothetical link at a short-run tax elasticity of exactly 1. In such a case, a 1% raise in the base variables would increase the tax revenue by 1%. At the first glance, the link appears extremely steep, almost vertical. The implied elasticity of the direct taxes on households is high, if not even infinite. Put differently, chart 2 gives the impression that fluctuations in tax revenue are more or less decoupled from the development of the base variables. This is traceable above all to the years following a tax cut and declining tax revenue as well as the years following austerity measures and above-average tax revenue. By using dummy variables and considering the error correction term, it is possible to arrive at a significantly lower

elasticity estimate of 1.34. The direct taxes on households thus rise slightly more than proportionally to the base variables.

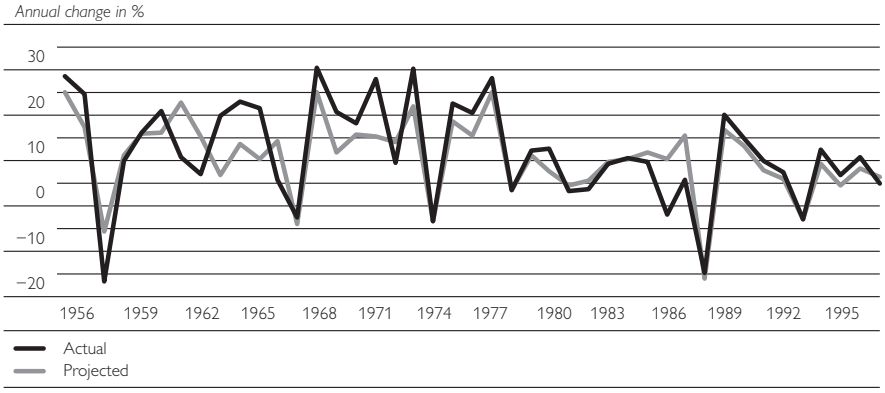
The comparatively high coefficient for the error correction term shows that reforms of direct household taxes are short-lived. Tax relief measures are corrected quickly due to the strong fiscal drag in the tax system and the resulting deficit; the same applies to tax burdens. The error correction term is derived from the auxiliary equation in table 2b. This equation determines the long-run relationship between tax revenues and the private sector per-capita compensation of employees, with the estimates equaling logarithmized levels. The long-term elasticity between the base variable and direct household taxes is almost exactly 1, which indicates a proportional relationship in the long run.

The relatively simple design of the estimation equation has an explanatory power of close to 70%, or put differently, almost three fourths of the existing fluctuations of direct household taxes may be explained through dummy variables, the private sector per-capita compensation of employees and the error correction term. The findings of various tests show that the estimation equation fulfills all statistical requirements for the coefficients and their significance values to be interpretable. Chart 3 allows for a comparison of actual and extrapolated rates of change in direct household taxes and illustrates the close link between direct household taxes and private sector per-capita compensation of employees. The exactness of the projection at the end of the sample indicates that there is no reason to assume any distortion in the elasticity at the actual end of the sample even though the data used span the period from 1956 to 1998.

Chart 3

Direct Taxes on Households

Actual and Projected, from 1956 to 1998



The elasticities of the remaining budget components are basically 1. Direct taxes on companies depend on lagged operating surpluses in relation to the deferred taxation of the self-employed and companies. In the equation, operating surpluses lag up to two periods. The two coefficients add up to slightly over 1, but their sum total is lower than the elasticity of direct household taxes. This outcome is easily traceable to the largely

proportional taxation on company profits. The elasticity of indirect taxes relative to private consumption stands at below 1, pointing to the influence of volume dependent indirect taxes on the entire elasticity. The coefficient of social security expenditures equals 0.9. It is utterly difficult to estimate this elasticity, because the social security law is being continuously reformed and the changes affect both the assessment base and the contribution rate. In the calculation at hand private sector per-capita compensation of employees serves as the assessment base. For the estimation, this value is multiplied by the contribution rate; the short-run elasticity is thus estimated directly from this assessment base. When this elasticity is used continuously, it is therefore necessary to adjust the assessment base whenever the contribution rate changes, while the value of the elasticity remains constant.

A comparison of the OeNB estimate of short-run elasticities with the OECD values recently released (van den Noord, 2000) yields no significant differences except for the direct taxes on households. The OeNB estimate for this budget item clearly underperforms the OECD figure. As is evident from the analysis of chart 2, this elasticity is expected to be high if tax reforms and austerity measures are not accounted for in a due manner. The expenditure side of the budget certainly shows the largest difference. Jaeger (1990) and Url (1997) already proved significant cyclical responses on the expenditure side of the federal budget beyond unemployment-related spending. In this study only those spending items are considered in addition to the unemployment outlays which by law are linked to a cyclical indicator. In Austria, article 108 ASVG directly connects pension adjustments to the development of per-capita incomes. As the OECD does not consider this expenditure item, it misses a cyclical fluctuation with an elasticity of some 0.2% with respect to GDP.

Economic policy discussions hardly touch upon the sensitivity of the budget to fluctuations in a macroeconomic indicator. The focus is, by contrast, on the impact of economic growth on the budget. Forecasts of a downturn or an unexpected intensification of economic activity usually make people wonder about the consequences such a movement has on the budget. This was particularly obvious in the spring of 2001, when the economic research institutes scaled back their GDP forecasts for 2001 (IHS, WIFO, OeNB; 2001).

Table 3

Comparison of the Cyclical Dependency in the Austrian Budget

	OeNB/ESCB	OECD
Reaction of the overall budget to a 1% change in GDP	0.47	0.31
Discrepancy vis-à-vis OECD		0.16

Table 3 demonstrates the responsiveness of the general government budget to a 1% change in GDP. While the OECD estimates a comparatively low elasticity of 0.31, the method described here yields an increased 0.47. According to the ESCB approach, the cyclical budget items are limited primarily to private sector revenues and expenditures. By extension, the

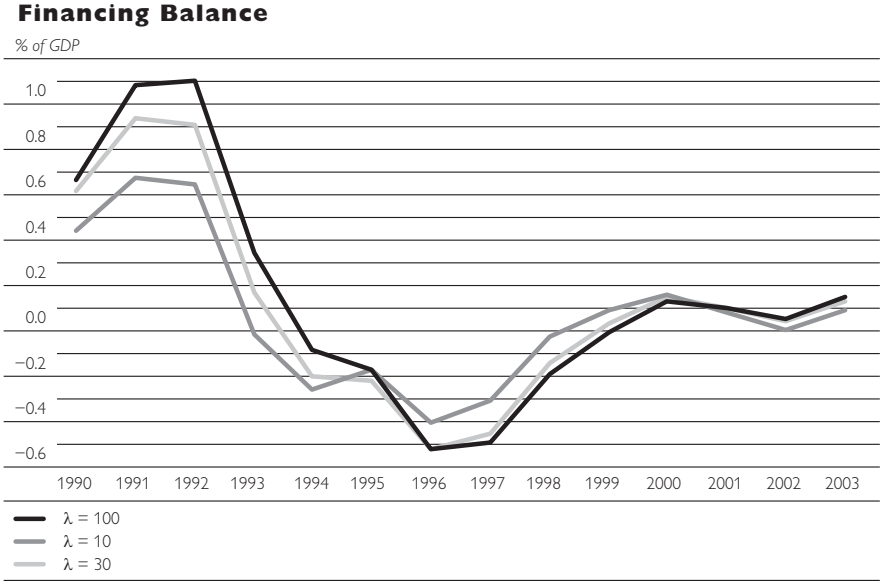
indicators are confined to private sector aggregates as well. As public activity is subject to much lower fluctuations, a more refined approach must lead to greater cyclical dependency of the budget.

4 Cyclical and Non-Cyclical Budget Balance in Austria

The cyclical budget deficit is calculated according to the three-step process described above. The cyclical variation of each macroeconomic indicator is approximated using its deviation from the Hodrick-Prescott trend. A necessary input for computing the cyclical budget balance is the deviation of the indicator from its long-term level in percent. For this reason, the gap is converted into a percentage of the Hodrick-Prescott trend. The standard smoothing parameter for calculating the Hodrick-Prescott trend amounts to 30, a comparatively small value. This is why cyclical fluctuations are somewhat subdued. To illustrate the sensitivity to changes in the smoothing parameters, the budget balances for the values 10 and 100 are likewise calculated (see chart 4). To avoid end point problems, future values for the macroeconomic indicators and the cyclical budget items were extrapolated on the basis of the OeNB economic forecast. All indicators were converted into real values with the consumption and GDP deflators. The fluctuation band of the indicators is thus somewhat wider than the band based on nominal values. Linking the indicators with the elasticities and the six cyclical budget items yields the cyclical components. The sum of these six components produces the cyclical budget balance presented in chart 4.

Chart 4

Cyclical Component of Austria's General Government



The cyclical budget balance of the general government is expressed relative to GDP to facilitate comparison. The difference of the three balances in chart 4 points to the importance of the smoothing parameter of the Hodrick-Prescott filter. The federal budget shows the greatest cyclical fluctuations at a parameter of 100. In this case the highest cyclical surplus

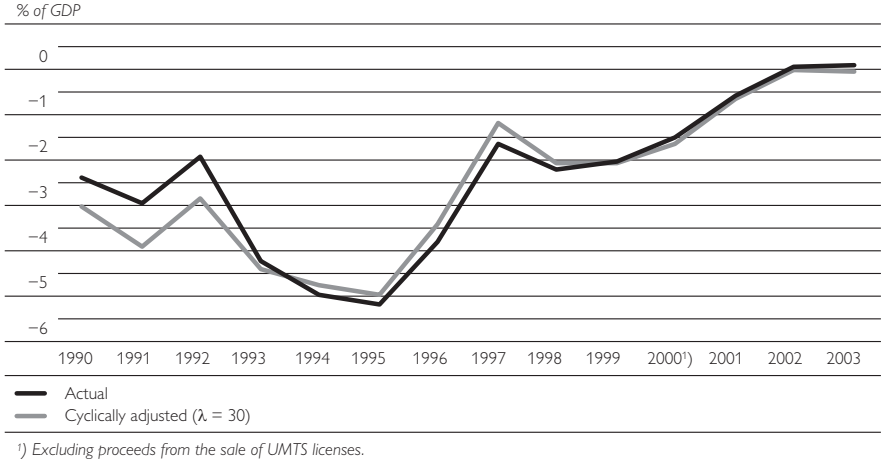
amounts to 1.1% of GDP (1992) and the largest deficit to –0.5% of GDP (1996). The standard deviation of this particular cyclical budget balance corresponds to 0.5% of GDP. The cyclical variation is somewhat smaller for the basic smoothing parameter. Given a standard deviation of 0.4% of GDP, the budget balances vary within a lower margin. This is also reflected by the extreme values of +0.9% and –0.5%. The difference between the variant with a high smoothing parameter and the basic variant comes to a mean of 0.1% of GDP. The difference between the calculations with a parameter of 30 and 10 are of a similar size; the cyclical fluctuation is naturally lower at $\lambda = 10$.

The upper and lower turning points in the cyclical budget do not quite correspond to the conventional understanding of the ups and downs in the Austrian business cycle. The cyclical budget balance slightly lags the business cycles. The typical recessionary years of 1968, 1975, 1978, 1981, 1984 and 1993 are juxtaposed by lower turning points of the cyclical budget balance in the years 1969, 1976, 1979, 1987 and 1996. The lagged response of the budget to economic growth is likely to be ascribable to the direct taxes on companies and the pension benefits. Both items respond to a shift in their base variables at a lag of one to two years. Apart from that, the link to refined macroeconomic indicators should also play a role. The impact of the current economic downturn on the budget balance is forecast to be small, because the international downswing will dampen, above all, Austria's exports (WIFO, 2001). Compared to other declining demand categories, the tax losses in this realm will be less pronounced.

Toward the end of the observation period, the uncertainty about the scope of the cyclical budget variation increases on account of end point problems and the use of forecasts instead of actual observations. On the basis of the OeNB's spring forecast, the cyclical budget is balanced at present, which means in turn that the existing budget deficit is completely traceable to structural and discretionary factors. Chart 5 compares in the basic scenario the current budget balance of the general government to the cyclically adjusted budget balance.

Chart 5

Austria's General Government Financing Balance



¹) Excluding proceeds from the sale of UMTS licenses.

5 Conclusions

The cyclically adjusted budget balance represents an important benchmark for national fiscal policy. Taking into account forecasts allows for a forward-looking assessment of the fiscal policy situation in the euro area Member States, and subsequently also to make timely use of the instruments outlined in the Stability and Growth Pact and reap the rewards of moderate fiscal policy coordination.

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STUDIES

Economic Aspects of the Euro Cash Changeover in Austria

Werner Dirschmid,
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1 The Euro Cash Changeover – The Completion of Economic and Monetary Union

The introduction of euro banknotes and coins marks the last step toward completing Economic and Monetary Union (EMU). Providing for a smooth changeover is not only an enormous logistical challenge, but has also required legislative and technical preparations on a massive scale. At the same time, the transition to the euro yields long-term macroeconomic benefits which surpass short-term costs by far and which have a positive impact on employment and economic growth, thus safeguarding and promoting welfare.

It is hard to quantify the costs and benefits of introducing the euro, and empirical evidence on this issue is limited (see e. g. Eurocommerce, 1997; Pollan, 1998). This study focuses only on the major implications of the transition to the euro. The first section reviews the introduction of the euro, delimiting it from historical currency reforms and outlining specifics of the euro cash changeover. The main section of the study analyzes the economic impact from a monetary point of view and the real effects, focusing above all on the impact on price developments.

2 No Changes in Financial Wealth

Many people are still rather skeptical about the euro or do not feel comfortable with the new currency yet, mostly because they wrongly associate the upcoming changeover with historical currency reforms.

– In fact, the transition to the euro cannot in any way be compared to currency reforms in Austrian or German history. Those currency reforms[1]) aimed at eliminating – mostly war-induced – monetary overhangs. To this end, financial assets were devalued and constraints were put on the liquidity supply for consumers and businesses.

1 Currency reforms with the aim of reforming the monetary system to overcome open, hidden or pent-up inflation were launched in Austria in 1811, 1924, 1945 and – for the last time so far – in 1947 (see Androsch, 1985).
– The currency reform of 1811 saw the issuing of the Bankrott Patent, according to which the bills used as paper money, the so-called Bancozettel, had to be exchanged for "redemption bills" ("Einlösungsscheine") at a 5:1 ratio. Hannes Androsch notes that Adolph Wagner referred to this patent as "the most drastic unlawful law that has ever been enacted by the government of a civilized country."
– The budget and currency stabilization efforts to overcome hyperinflation after World War I comprised, on the one hand, fixing the rate of the fiduciary crown against the gold crown ("peace crown" or "Friedenskrone") at a 14,400:1 ratio as part of an agreement under which the League of Nations provided a loan to the Austrian government, and, on the other hand, the Schilling Conversion Act of 1924, the legal basis for the introduction of the schilling two years after the stabilization of the national currency. One schilling was worth 10,000 fiduciary crowns (i. e., 1.44 schilling corresponded the value of 1 gold crown).
– The Schilling Act of 1945 initially stipulated only the blocking of accounts but contained no provisions for a withdrawal of funds from savings and checking accounts. In December 1945, the Reichsmark banknotes had to be exchanged for schilling at a 1:1 ratio within one week. Of the amount of Reichsmark people had applied for conversion, a maximum of ATS 150 per person were handed out in cash, the rest was credited to an account which was subject to various restrictions on use.
– The Currency Protection Act of 1947 was aimed at reducing the monetary base and the deposit money supply as well as enabling the banks to adjust their balance sheets. To this end, obsolete schilling banknotes had to be exchanged for new schillings at a 3:1 ratio. An amount of ATS 150 per person was exchanged at a 1:1 ratio. Deposit money supply was reduced by more than 50%, partly by simply eliminating certain deposit categories, partly by transforming deposits into claims on the Federal Treasury.

– The euro cash changeover, however, is taking place in an environment of relatively stable prices. Savings are not affected by the changeover at all, financial assets retain their full value.
– The transition to the euro was actually completed when the exchange rates of the constituent currencies were irrevocably set on January 1, 1999. Since then, the participating currencies have been subunits of the euro. The conversion rates of the Austrian schilling and the other national denominations against the euro, based on the market rates quoted on December 31, 1998, reflect the relationship between the economic fundamentals of the participating countries. The euro blends the former national currencies into one single currency.
– The exchange of national banknotes and coins into euro cash is the tangible completion of the transition to the euro. From March 1, 2002, euro banknotes and coins will be the only legal tender. In Austria, the Oesterreichische Nationalbank (OeNB) is required by law to exchange schilling banknotes for euro banknotes for an unlimited period of time (Münze Österreich AG will exchange coins on the same terms), so that no one will suffer a loss of financial wealth.
– Furthermore, the shift of monetary policymaking power to a joint European institution – EMU – marks a comprehensive, positive reform of the European monetary framework. Just like the OeNB in the past, the Eurosystem (consisting of the European Central Bank, the ECB, and the twelve national central banks, the NCBs, of the countries of the euro area, including the OeNB) is independent and committed to its primary objective of maintaining price stability. The new monetary constitution is the best possible insurance that the euro will continue to be an internally stable currency.

2.1 Majority Supports Introduction of the Euro

Opinion polls (conducted by the market polling institute) show that many Austrians expressed some skepticism towards the euro in 2000. In December 2000, 48% of the respondents welcomed the introduction of the euro; in mid-2000, support for the new currency had been significantly higher at 58%. It is rather difficult to ascertain the reasons for these swings of opinion, but the fact that the euro is a new currency and remains a virtual one to most consumers until the introduction of cash may have played a crucial role. Moreover, people attached far too much importance to the euro's low exchange rate against the U.S. dollar in the course of 2000. Thus, the public associated the single currency first and foremost with its external value, while a country's internal stability was often linked with the national currency, such as the Austrian schilling or the Deutsche mark.

However, a majority of 65% believes in the usefulness of the single European currency (see Kirchler and Meier, 2001). In fact, 80% of respondents expecting to have no difficulties handling the new currency support the euro.

Easier cross-border transactions, the elimination of exchange costs and higher price transparency are considered to be the most important advantages, and a large majority appreciates these benefits.

Box 1

The Spectacular Dimension of the Euro Cash Changeover in the Euro Area and in Austria

According to the scenario agreed upon at the Madrid European Council in December 1995, the introduction of the single currency cash on January 1, 2002, is the last step of Stage Three of EMU. Within only a few weeks, some 14.5 billion euro banknotes worth around EUR 640 billion and 50 billion euro coins worth EUR 16 billion will replace the currencies currently in circulation in twelve European countries. The unprecedented scale of the changeover requires comprehensive and meticulous strategic, logistical, technical and practical advance planning and the pooling of resources; it is a unique challenge to all bodies and persons involved from heads of projects to banks, businesses, the public administration, the public and the infrastructure providers.

The following figures highlight the gigantic scale of this project (see also report of the European Commission, 2001a):[1])

- *The euro coins to be put into circulation will weigh some 240,000 tons, the equivalent of 24 Eiffel Towers. Piled one on top of the other, they would reach a height of around 80,000 km. Some 480,000 trucks would be needed to transport the coins all at once.*
- *Placed end to end, the banknotes would cover a distance of 1.9 million km, or five times the distance between the Earth and the Moon.*
- *These figures would have to be doubled if the withdrawal of the national notes and coins were included (provided all national cash is returned).*
- *The Austrian dimension of the changeover may appear rather modest by comparison, but it is still fairly impressive for a country of only slightly more than eight million inhabitants. The OeNB's subsidiary OeBS (Oesterreichische Banknoten- und Sicherheitsdruck GmbH) is producing 520 million euro notes in seven denominations, 360 million of which will be put into circulation on January 1, 2002; they will replace some 480 million schilling banknotes. The remaining printed euro notes will serve as a strategic reserve. Münze Österreich AG is minting approximately 1.5 billion euro coins in eight denominations, which weigh 8,000 tons altogether. Austria's share in the total amount of banknotes and coins in circulation in the entire euro area comes to 3.6% and 3.0%, respectively.*
- *The distribution will be carried out in several stages: Frontloading to banks will take place in the course of 2001, frontloading of euro coins starter kits (worth ATS 2,000 each) to businesses and the retail/wholesale industry in September 2001, distribution of euro coins starter kits (worth ATS 200 each) to consumers in December 2001, supplying ATMs with EUR 10 and EUR 100 banknotes at the turn of 2001/2002, dual circulation of Austrian schillings and euro from January 1, 2002, to February 28, 2002. From March 1, 2002, the euro will be the sole legal tender.*

1 *For further details see the various information folders and brochures on the changeover, especially ECB (2001a and b) and OeNB (2000 and 2001).*

3 Economic Effects of EMU and the Euro

3.1 Substantial Macroeconomic Effects so Far

3.1.1 Favorable Economic Development since the Introduction of the Euro[1])

The first two years of Stage Three of EMU have been marked by an impressive macroeconomic success. The euro area economy gathered steam in 1999 and 2000, prices remained relatively stable, unemployment contracted sharply, budget deficits were reduced considerably and structural reforms took effect in many areas, boosting competitiveness. The creation of Monetary Union has, furthermore, speeded up the economic convergence of participating Member States and promoted the integration of European financial markets – developments which also made Austria a more attractive business location for investors. Thanks to EU membership and participation in EMU, Austria recorded a massive increase in financial flows, highlighting Austria's growing integration into global financial markets. In 2000, both inward and outward direct investment reached historic highs in Austria.

For the Austrian economy, a more than 35-fold enlarged monetary area with more than 300 million consumers offers the chance to actively meet the challenge of a changing economic environment. Cross-border transactions formerly deemed risky because of currency fluctuations are now equal to transactions within Austria, not causing transaction costs such as exchange fees or high hedging costs. With the introduction of the euro, the countries of the euro area come very close to forming a truly single market, which benefits first and foremost small and medium-sized enterprises (SMEs) in industry and trade, the pillars of growth and employment in the Austrian economy. Already now, 61% of Austrian imports and 54% of Austrian exports come from and go to the euro area. The introduction of euro cash reinforces free market mechanisms. As all prices are quoted in euro, which will also be the single payment currency, there is more price transparency throughout the euro area.

The euro also requires businesses to make far-reaching technical and operational adjustments. Many companies are taking this opportunity to review their business strategies and to implement modifications, some of which may have been planned for a while, and rationalization measures. In other words, the transition to the euro is prompting businesses to make adjustments and to reposition themselves in the national and international markets.

At the same time, the euro is encouraging further structural reforms in the goods, services and labor markets as well as fiscal policies in line with the Stability and Growth Pact. Since the beginning of Stage Three of EMU, Austria and the entire euro area have made substantial progress in all these areas, in particular in market liberalization.

1 *Cyclical fluctuations, which occur in every economy, also within EMU, do not impinge on the assessment of EMU's favorable medium- and long-term effects on the Austrian economy given in this section. In general, the countries participating in EMU are now less exposed to monetary, exchange rate-induced asymmetrical shocks generated by international capital transactions than they were in the European Monetary System.*

Table 1

Selected Economic Parameters for Austria

since EU Accession and Participation in Stage Three of EMU

	1994	1995	1996	1997	1998	1999	2000	Change 1994/2000[1] average in %	Change 1994/2000[1] percentage points or in absolute terms	Change 1998/2000[1] average in %	Change 1998/2000[1] percentage points or in absolute terms
	EUR										
GDP per capita, in nominal terms	20,600	21,411	22,092	22,629	23,521	24,356	25,395	+ 3.5	×	+ 3.9	×
GDP per employed person, in nominal terms	42,107	43,866	45,588	46,533	48,038	49,141	50,908	+ 3.2	×	+ 2.9	×
	Real annual change in %										
Gross domestic product	+ 2.6	+ 1.6	+ 2.0	+ 1.3	+ 3.3	+ 2.8	3.2	+ 2.4	×	+ 3.0	×
Exports of goods and services	+ 5.6	+ 6.7	+ 6.2	+ 9.9	+ 5.5	+ 7.6	9.8	+ 7.6	×	+ 8.7	×
Exports of goods in % of GDP	+22.6	+24.5	+25.1	+28.5	+29.7	+30.7	33.7	27.8[1]	+11.1	31.4[1]	+ 4.0
Investment in % of GDP	+23.6	+24.3	+23.7	+24.2	+24.2	+24.0	24.1	24.0[1]	+ 0.5	24.1[1]	− 0.1
	%										
Labor force participation rate	43.0	42.7	42.4	42.4	42.7	43.0	43.2	+42.8[1]	+ 0.2	+43.0[1]	+ 0.5
	1,000										
Employed persons	3,070.7	3,068.2	3,047.3	3,055.6	3,076.7	3,107.9	3,133.7	×	+63.0	×	+57.1
Change in absolute terms	+15.8	−2.5	−20.9	+ 8.3	+21.1	+31.2	+25.8	×	×	×	×
Annual change in %	+ 0.5	−0.1	− 0.7	+ 0.3	+ 0.7	+ 1.0	+ 0.8	+ 0.3	×	+ 0.9	×
	%										
Unemployment rate	3.8	3.9	4.3	4.4	4.5	4.0	3.7	4.1[1]	×	4.1[1]	×
Inflation rate											
HICP	+ 2.7	+ 1.6	+ 1.8	+ 1.2	+ 0.8	+ 0.5	+ 2.0	+ 1.3	×	+ 1.2	×
CPI	+ 3.0	+ 2.2	+ 1.9	+ 1.3	+ 0.9	+ 0.6	+ 2.3	+ 1.5	×	+ 1.5	×
	Annual change in %										
Unit labor costs											
Whole economy	+ 1.6	+2.5	− 1.0	+ 0.2	+0.7	+ 0.9	+ 0.2	+ 0.6	×	+ 0.6	×
Manufacturing	− 3.6	−0.6	− 0.8	− 4.4	−1.7	− 0.5	− 1.1	− 1.5	×	− 0.8	×
In relation to trading partners	+ 0.8	+2.2	− 1.2	− 3.9	−0.6	− 1.5	− 5.3	− 1.8	−9.5[2]	− 3.4	− 7.4[2]
	EUR million										
Direct investment											
Inward direct investment	1,745	1,395	3,405	2,354	4,078	2,724	9,932	×	25,633[2]	×	16,734[2]
Outward direct investment	1,043	828	1,488	1,762	2,469	2,773	3,462	×	13,825[2]	×	8,704[2]
	Number										
Startups	14,306	14,161	19,843	21,706	19,722	21,954	23,742	+8.8	135,434[2]	+9.7	65,418[2]
	% of GDP										
Research expenditure	1.56	1.56	1.60	1.69	1.81	1.83	1.79	×	+0.23	×	− 0.02
Fiscal position											
General government budget balance	− 5.0	−5.1	− 3.8	− 1.7	− 2.3	− 2.1	− 1.1	×	+3.8	×	+ 1.1
General government debt	64.7	69.2	69.1	64.7	63.9	64.7	62.8	×	−1.9	×	− 1.1

Source: OeNB, Statistics Austria, WIFO, Austrian Federal Economic Chamber.
[1]) Average over the given period.
[2]) Sum of the given period.

Table 1 illustrates the development of the Austrian economy since joining the EU and EMU. Austria's good economic performance since EU accession in 1995 has improved further after the introduction of the euro as an accounting currency:

– At 3%, the overall growth rate was significantly higher between 1998 and 2000 than between 1995 and 1998.
– 50% of export growth recorded in the past five years have been achieved since the introduction of the euro.

– The labor force participation rate started to rise steadily only a few years ago.
– 60,000 new jobs have been created since the introduction of the euro, producing record payroll employment figures.
– Participation in Stage Three of EMU also triggered a trend reversal in unemployment. Joblessness had been on the rise until 1998, when it hit a record high, but declined markedly in 1999 and 2000.
– Prices have remained broadly stable.
– Unit labor costs increased moderately, thus strengthening the price competitiveness of Austrian products: Austria has been moving up in international competitiveness rankings year after year.
– The general government sector made substantial progress in consolidating its finances, cutting its deficit from 2.3% (1998) to 1.1% (2000) of GDP.
– Of the EUR 25.6 billion of inward direct investment recorded since Austria's EU entry, EUR 17 billion were made since the beginning of Stage Three of EMU.
– The number of business startups has been rising particularly quickly for the past two years; a total of 65,000 new firms were founded in Austria in this period; in 2000, the number even reached a new record high.
– Austrian research expenses as a percentage of GDP are approaching the 2% mark (according to the most recent estimates by Statistics Austria, the R&D ratio will come to 1.83% of GDP in 2000).

3.2 Hardly any Impact on Monetary Aggregates and Their Subaggregates Expected

The possible effects of the euro changeover on the Austrian contribution to M3 are examined below. However, this assessment cannot serve as a basis for forecasts, since – as mentioned before – this currency changeover is unprecedented. Therefore, it is impossible to make assumptions based on historical experience; rather, the authors evaluate four hypotheses.

1. Hypothesis One:

In the run-up to the changeover, currency in circulation will decline temporarily while liquid deposits will increase.

The cash changeover's direct effects will be observed mainly in currency in circulation. Consumers might opt to reduce their schilling cash holdings and pay them into deposit accounts by the end of 2001. In this case, one liquid component is merely substituted for another one, which does not affect the Austrian contribution to M3. Cash in circulation decreases, while deposits increase.[1]) It is possible that savings deposits will continue to rise even after the changeover. The changeover could encourage "cash hoarders" to reconsider and alter their savings habits. Banks should take the opportunity when consumers exchange their cash to convince them to switch to other forms of investment.

1 Since cash demand usually rises significantly in the Christmas season, it can be expected that cash in circulation will return to normal toward the end of the year.

2. Hypothesis Two:

As the changeover involves some uncertainty, demand for foreign currency and for illiquid assets will not increase toward the end of 2001.

It can be expected that demand for foreign cash will not increase after the changeover, as it cannot be used in transactions. It is also unlikely that long-term deposits and securities will be substituted for real estate, considering that the overwhelming share of deposited amounts is too small to acquire real estate. There are some 24 million Austrian savings accounts, 20 million of which hold amounts of only ATS 100,000 (EUR 7,267) or less (see table 2). Furthermore, real wealth is significantly less liquid than nominal assets like deposits. However, demand for long-term consumer goods may rise.

Table 2

Number of Savings Accounts of Austrian Customers in 2000

	Number of customers
Total	24,066,316
up to ATS 100,000	19,708,033
up to ATS 500,000	3,880,177
up to ATS 1 million	323,123
up to ATS 5 million	148,116
more than ATS 5 million	6,867

Source: OeNB.

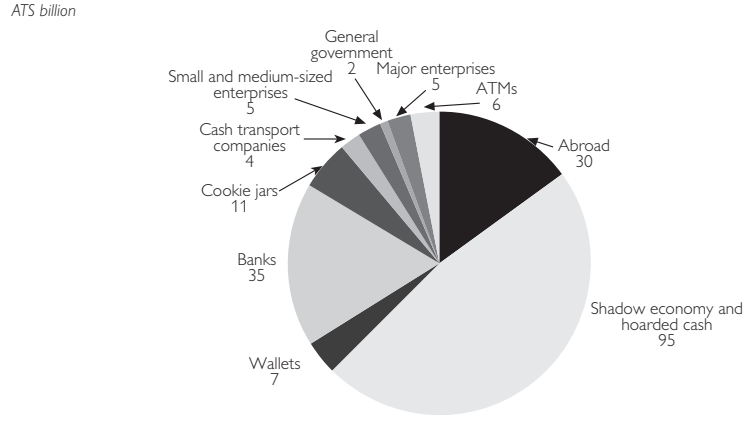
3. Hypothesis Three:

Subunits of the euro and foreign currencies held in Austria's neighboring countries will be exchanged for euro in Austria starting from January 1, 2002.

Apart from cash used for transactions in Austria, a substantial part of schilling cash in circulation has "disappeared" in cash hoarded at home and abroad or in the shadow economy. According to a study commissioned by the OeNB (IFES, 2000), 15% (ATS 30 billion or EUR 2.2 billion) of total cash in circulation in Austria (ATS 200 billion, EUR 14.5 billion) are held

Chart 1

Distribution of ATS 200 Billion of Currency in Circulation



Source: IFES (2000).

by nonresidents; 47.5% (ATS 95 billion or EUR 6.9 billion) cannot be identified. This gray area includes both the shadow economy in Austria and hoarded cash (plus unrecorded cash in circulation abroad).

After the U.S. dollar and the Deutsche mark, the Austrian schilling is the most popular foreign currency in Austria's Eastern European neighboring countries. Of the ATS 30 billion cash held by nonresidents (as found by the IFES study), Austria's neighbors in Eastern Europe account for ATS 7.7 billion or EUR 560 million (according to the most recent Gallup survey; see also Stix, 2001).

The exchange of schillings held by nonresidents for euro does not affect the Austrian contribution to cash in circulation at the beginning of 2002. In fact, this is the same procedure which will take place in Austria during the changeover period; the difference is merely in the cash holder's nationality.

Table 3

Foreign Currency Holdings in Eastern Europe[1])

	Austrian schilling		Deutsche mark		Swiss franc		U.S. dollar	
	ATS million	*% of foreign currency holdings*	*DEM million*	*% of foreign currency holdings*	*CHF million*	*% of foreign currency holdings*	*USD million*	*% of foreign currency holdings*
June 1997	5,062	7.3	5,863	59.6	330	4.3	1,374	28.8
October 1997	4,351	6.8	5,079	55.8	342	4.8	1,444	32.7
April 1998	5,683	12.0	4,283	63.9	416	7.9	528	16.2
October 1998	7,976	12.0	4,555	48.4	366	4.9	1,582	34.6
April 1999	5,731	10.8	4,203	55.6	237	4.0	1,088	29.6
November 1999	9,190	13.9	3,660	39.0	361	4.9	1,927	42.2
April 2000	7,713	11.4	4,699	48.7	358	4.7	1,653	35.3
November 2000	10,483	15.0	4,263	42.8	395	5.0	1,795	37.1
April 2001	5,916	12.7	3,161	47.9	232	4.5	1,118	34.9

Source: OeNB.

[1]) Exchange rate assumption: ATS/EUR 13.7603; DEM/EUR 1.95583; CHF/EUR 1.54; USD/EUR 0.95.

However, the exchange of other subunits of the euro in Austria could significantly affect the Austrian contribution to the money stock, as it would raise the Austrian contribution to currency in circulation. The large amount of Deutsche marks held by nonresidents will play the biggest role in this context; the Bundesbank estimates (see Seitz, 1995) that 30% to 40% of the total German currency in circulation is likely to be abroad.

According to a Gallup survey (see Stix, 2001), some 2% of the German currency in circulation are holdings in the countries to the east and southeast of Austria – Hungary, Slovenia, the Czech Republic and the Slovak Republic – and Croatia. These 2% correspond to ATS 31 billion (EUR 2.25 billion). If this entire amount were exchanged for euro in Austria, the Austrian currency in circulation in euro would surge by 19%.

Economic agents in Austria's Eastern European neighbors tend to hold Deutsche marks as a store of wealth. The amount of Deutsche marks that will finally be exchanged for euro will depend on exchange fees and the euro's predicted exchange rate.

Likewise, exchange rate expectations will determine the amount of money in other hoarding currencies – including the U.S. dollar and the

Swiss franc – to be exchanged for euro (see table 3). Assuming that holdings in these currencies (and in Deutsche mark) are exchanged for euro in Austria, the Austrian cash in circulation could soar by even 38% (see Stix, 2001).

The availability of euro banknotes and coins in Eastern European countries will also play a crucial part in consumers' decision to exchange Austrian schillings, Deutsche marks, U.S. dollars or Swiss francs for euro. The Austrian contribution to M3 will only be affected if there is demand in Austria for the euro banknotes provided in exchange for Deutsche marks, U.S. dollars and Swiss francs.

Summarizing, it can be assumed that the euro's subunits held by Austria's Eastern European neighbors (mostly Deutsche marks and Austrian schillings) will partly be exchanged for euro in Austria.

4. Hypothesis Four:

In the long term, a substantial demand for 200 and 500 euro banknotes will arise in the Eastern European shadow economy.

The shadow economy in the countries to the east and southeast of Austria can impact on the cash changeover and, in the long run, also on the Austrian contribution to M3. A significant share of monetary cash transactions in the shadow economy that are either designed to avoid taxes or that are part of illegal activities are made in foreign currencies such as the U.S. dollar. According to Rogoff (1998), the USD 100 note is the most popular note for illegal activities around the world. However, the high euro denominations, in particular the EUR 200 and EUR 500 notes, could crowd out the dollar.

Schneider and Enste (2000) estimate that between 1990 and 1993, the shadow economy on average accounted for 20% to 28% of GDP in Hungary and for 9% to 16% of GDP in the Czech Republic and in the Slovak Republic. If part of these activities were carried out in U.S. dollars and if the euro replaced the dollar after the changeover and demand for this cash arose in Austria, further expansive effects on the Austrian cash in circulation could ensue.

The Austrian shadow economy's activities will have no impact on cash demand during the changeover. It is assumed that just like in regular monetary transactions, undeclared cash will be exchanged for euro in the first two months of 2002.

Apart from the shadow economy, there is a range of economic reasons why demand for foreign currency in Eastern Europe will continue to run high also in the future: Despite having achieved a certain degree of economic stabilization in the past few years, these countries record inflation rates which encourage the holding of liquid assets in stable currencies. To safeguard the purchasing power of nominal wealth, it is more advisable to hold these assets in currencies like the U.S. dollar, Deutsche mark, Austrian schilling or Swiss franc – and the euro in the future – than in the national currency. Moreover, the euro's international role as a payment and investment currency could also sustainably enhance its attractiveness in the transition economies.

The four hypotheses allow the following conclusion: The euro cash changeover can influence the development of the Austrian contribution to the monetary aggregates, but it is difficult to quantify the impact. Of all the possible factors, foreign currency holdings in Austria's neighbors in Eastern Europe (especially Deutsche mark exchanged in Austria) may play the biggest part.

3.3 No Permanent Price Level or Inflation Effects

From a monetary point of view it is crucial to ascertain whether or to which extent the changeover will generate price and inflation effects. Since in many industries the euro changeover is a process stretching over several years, having started in 1998 and ending in the course of 2002, it is not easy to quantify possible price effects. In other words, costs incurred over several stages will or have already been factored (at least partly) into product prices. What is more, midway through the euro transition period, businesses also had to cope with the costs of the year-2000 change. At the same time, many companies took the euro challenge as an opportunity to upgrade their products – the introduction of the new currency triggered a boost in innovation, modernizing products and processes and thus strengthening competitiveness. These costs can be ascribed only indirectly to the changeover.

The actual cash changeover will come as a one-off shock driving up overhead costs (see section 3.5), but owing to numerous preemptive mechanisms against unjustified price hikes and heightened public interest, it will not produce permanent price effects. Rather, it can be assumed that the temporary cost shock will be absorbed by a temporary reduction in the profit margin; this will be particularly true of highly competitive industries.

Box 2

Will the Euro Cash Changeover Generate Price Effects?

Although the costs of the euro changeover (see section 3.5) are estimated to amount to some 0.3% to 0.8% of GDP in the countries of the euro area, the national central banks expect any pass-through to consumer prices to be marginal. The following section outlines two sets of reasons why price effects will or will not occur:

The changeover will not raise prices because:

- *Fierce competition and increased price transparency prevent price hikes; businesses' marketing measures are aimed at boosting sales by rounding down prices upon conversion, making them more attractive to consumers.*
- *One-off costs generated by the euro cash changeover will reduce profit margins (in highly competitive industries) only temporarily.*
- *Price transparency reduces wholesale prices, and retailers are expected to pass on the price cuts to consumers relatively quickly.*
- *Reduced transaction costs are expected to be passed on to consumers as well.*
- *Considering that the entire changeover period lasts for three years, most of the changeover costs have already been factored into prices; costs are fairly low for those – mostly small – enterprises that have not completed their changeover preparations yet.*

- *Legal provisions or voluntary arrangements will ensure that public and private institutions (e. g. consumer protection organizations, the general government, international wholesale/retail industry agreements, economic research institutes, etc.) strictly monitor dual pricing and rounding and that violations of conversion obligations may even result in sanctions.*
- *Rounding and new pricing policies (to obtain psychological price points) are expected to be inflation neutral from a macroeconomic point of view, thus safeguarding stable prices.*
- *Owing to fiercer competition and increased price transparency, price structures and psychological prices are expected to settle down at a lower level in the medium term.*

The changeover will raise prices because:

- *Competition is stiff in product markets only (and less fierce in the services sector); psychological price points are typical of tradable goods and account for considerable weight in the HICP (for instance, approximately 60% in the Austrian and the Belgian HICP).*
- *It is difficult to predict how pricing policies (psychological pricing) will develop, especially in the European context.*
- *According to a Dutch study (see Folkertsma and van Rooij, 2001), 40% of businesses change prices once a year, 25% two to four times a year and 10% (especially in food retailing) even more frequently. This implies that "regular" price adjustments will be made also during the sensitive changeover period.*
- *It is impossible (also for businesses)[1]) to reliably quantify macroeconomic and sectoral conversion costs; therefore, figures given in this context tend to swing widely.*
- *Euro conversion costs consist of investment costs (e. g. spending on hardware or software) and labor costs (e. g. overtime premiums, temporary staff), with the former probably feeding through to prices over a depreciation period of approximately three years and the latter being factored into prices already in the short run.*
- *Surveys show that a growing majority expects prices to rise during the euro changeover. In May 2001, 61% of Germans (April: 53%) said they anticipated price hikes, as did 56% of Austrians (July 2001).*

3.3.1 One-Off Price Level Effects or Inflation?

The new prices in euro have been a matter of intense public debate. Since there are clear, legally binding rounding rules (usually commercial rounding rules), it can be assumed that conversion as such will not generate price hikes; on the contrary, many companies have already made pledges to round down, therefore prices might actually decline. At the same time, it is difficult to ascertain how businesses have adjusted or will adjust their policies on psychological pricing in the run-up to and during the changeover (October 2001 to March 2002).[2])

1 *According to a survey by the Austrian Federal Economic Chamber (WKÖ), a third of Austria's businesses were unable to predict the costs involved in the changeover.*

2 *The Euro-Related Pricing Act (EWAG) states that the price commission (which is to be established under the Act) shall submit a first report about possible price effects (as a part of the periodic price monitoring process) to parliament in October 2001.*

Leaving aside this particular aspect, price roundings are expected to cause – if anything – primarily shifts in relative prices, while the general price level should remain largely unaffected. But even if roundings were asymmetric, price adjustment would be a one-off phenomenon which should result only in a one-off adjustment of the price level. Hence it is crucial that *inflationary expectations* do not rise and trigger a *permanent* increase of the general price level.[1]) In this case, monetary policymakers would not be compelled to take immediate action. And even if minor price level effects occurred, they would not harm the economy right away. However, it is also vital that second round effects – and thus sustained inflation – be avoided.

Prices in the countries of the euro area will continue to converge in the long run; but as consumer preference, purchasing power, transportation costs, settlement fees[2]) as well as excise and value-added tax rates will continue to vary from country to country also after the changeover, a certain difference in prices will persist nonetheless.

Access to online information and online trading will cut information deficits and costs; exchange fees will be eliminated altogether. Taking advantage of price differences thus becomes less time and cost consuming; consequently, price differences themselves are expected to diminish.

3.3.2 The Role of Attractive Price Points: A Trend toward Rounding Down?

Creating attractive prices in euro is one of the big challenges of the euro cash changeover (also in the international context), which may change pricing strategies in a number of areas. Eye-catching prices will play an important role particularly in the first few weeks of 2002, with consumers not yet fully accustomed to calculating in euro and cent. The GFK institute found that in Germany, 77% of all goods sold in the foods sector cost between DEM 0.99 and DEM 5.99. It is a fact that attractive prices drive consumer demand. In other words, a consumer is much more likely to pick a product that costs ATS 19.90 than one at ATS 20. These prices are called psychological price points (e. g. ATS 9.90 or ATS 99.90, see also Pollan, 1998). After the changeover, such price points which the consumer currently encounters every day, like ATS 9.90 (or EUR 0.72), ATS 19.90 (EUR 1.45), ATS 99.90 (EUR 7.26), ATS 990 (EUR 71.95) or ATS 9,990 (EUR 726) will be a thing of the past.

The simple conversion of schilling amounts into euro does not automatically create new attractive price points in euro. The appeal of psychological schilling price points is lost, slumps in sales (of impulse goods, for instance) would ensue. So how will the business community respond to the new pricing environment? Prices for certain items may actually decrease, whereas prices for other goods, in particular in relatively protected sectors, may increase. Also, the market has already signaled

1 *See, for instance, Blanchard (2000): Inflation is a sustained rise in the general level of prices.*

2 *The high charges for cross-border payments, which the European Commission has repeatedly criticized, are expected to be cut significantly at the beginning of 2002.*

higher psychological price points in euro can go along with changes in package size or amount.

In view of the forthcoming international transparency of prices, competitive pressure – which is known to be particularly high in the Austrian retail trade – and potential sales slumps attributable to unfamiliar figures on price tags, it is likely that enterprises will opt for rounding down. In this case, the euro conversion would have a slightly dampening one-off effect, which would not, however, result exclusively from the euro changeover, but also from businesses' new pricing policies, i. e. their effort to establish new attractive price points.[1]) Eventually, it can be expected that many businesses will opt for the strategy pursued by market leaders.

Psychological price points are particularly common for food and industrial goods (less common for services, rents and energy); as both groups of products contribute a significant 57% to the Austrian HICP, it is impossible to disregard them in inflation projections.

In the Austrian retail industry, the majority of fractioned prices of lower price products ends at the decimal .90. New consumer-friendly, eye-catching price points in euro for essential goods could look like this:

1. Prices rounded to the familiar 9: e. g. 1.49, 2.39, 3.19.

2. Prices with two identical figures: e. g. 1.22, 2.33, 3.44.

3. Prices rounded to 5: e. g. 1.25, 2.35, 3.45.

Trade organizations and major corporations (at least those which have publicly commented on the issue[2])) have signaled that prices ending at the familiar 9 (for lower price goods) and 90 (for higher price goods) will prevail also after the changeover (e. g. EUR 0.49, EUR 0.99, EUR 4.99 or EUR 99.90). New prices for services and fees are most likely to end at 5 (e. g. EUR 2.55) or at the decimal 0 (e. g. EUR 2, EUR 10).[3])

In Austria, prices for low-value goods rose at ATS 1 increments (e. g. 5.90, 6.90, 7.90, and so on) or some 8 cent. After the changeover, prices in 10 cent increments for low-value goods will probably be deemed appropriate (e. g. 1.09, 1.19, 1.29, etc.).

The following table is to illustrate these pricing options and possible price level and (one-off) inflation effects which these options may entail.

1 An Austrian food chain has already made public its strategy of a "rounding down pledge:" Converted amounts which would require rounding up because the third decimal place is 5 or greater are rounded down nonetheless (for instance, given that ATS 19.90 correspond to EUR 1.446, the retail chain sets the price at EUR 1.44, even though accurate – permissible – rounding would have resulted in EUR 1.45). However, this does not permit any conclusions about long-term psychological pricing.

2 See, for instance, http://www.metro24.de, http://www.bitverlag.de, http://www.fh-muenster.de.

3 See, for instance, Trend magazine, August 2001. At present, it cannot be predicted whether businesses will raise prices to the next higher price point or opt for the next lower price point; the latter, however, is a likely scenario in highly competitive sectors.

Table 4

Examples of Price Effects for a Basket of Goods in Common Price Categories in Austria under the Assumption of Various Rounding Options and Psychological Price Points

Weight in the basket of goods	Price		Rounded price	New possible price points, rounded down		Attractive price point rounded down or rounded up	Attractive price point/EUR price when converted accurately
%	*ATS*	*EUR*			*Change in %*	*EUR*	
1	2	3	4	5	6 (5:3)	7	8 (7:4)
7.9	5.90	0.429	0.43	0.42	−2.05	0.39	−9.04
6.3	6.90	0.501	0.50	0.50	−0.29	0.49	−2.28
9.5	7.90	0.574	0.57	0.57	−0.72	0.59	2.77
3.4	8.90	0.647	0.65	0.64	−1.05	0.69	6.68
12.6	9.90	0.719	0.72	0.71	−1.32	0.69	−4.09
7.9	11.90	0.865	0.86	0.86	−0.56	0.89	2.91
9.5	12.90	0.937	0.94	0.93	−0.80	0.89	−5.06
12.6	14.90	1.083	1.08	1.08	−0.26	1.09	0.66
11.1	17.90	1.301	1.30	1.30	−0.06	1.29	−0.83
17.5	19.90	1.446	1.45	1.44	−0.43	1.49	3.03
Mean (unweighted) ×	×	×	×	×	−0.75	×	−0.53
Mean (weighted) ×	×	×	×	×	−0.68	×	−0.61

Source: OeNB.

– The example given in table 4 suggests that the conversion does not alter price levels. The calculations were based on a basket of goods at prices common in the Austrian food retail industry; weights[1]) were assigned to these price categories. Conversion alone and collective downward rounding (as advertised in papers by an Austrian food retail chain) would reduce the price level for this basket by some 0.8%. Since prices converted at the exact exchange rate would seem rather unattractive and difficult for consumers to remember, it was assumed that more appealing prices would be created using the familiar psychological price points (ending on 9). The prices were then rounded up or down to establish attractive price points; hence, the price level went down slightly.
– The authors also examined a basket of approximately 160 items of food, beverages and tobacco as well as cosmetics as included in the CPI at present. The calculations are based on current market prices. Converting the prices to euro, rounding up or down to establish psychological price points, i. e. attractive prices (e. g. rounding EUR 5.53 to EUR 5.49 or EUR 0.67 to EUR 0.69) and multiplying the price changes by the weights of the goods (as currently reflected in the CPI) does not alter the price level (–0.01%). In a worst-case scenario, where all primary euro prices would be rounded up to the next psychological price point (ending on the figure 9), prices for this basket of goods would go up by 1%.

1 *This weight is based on a sample basket of approximately 160 goods.*

– German studies (see Müller-Hagedorn and Zielke, 1997, Deutsche Bank, 2001) underpin these findings, concluding that conversion and rounding will not notably affect the price level. Müller-Hagedorn and Zielke show that depending on the new dominant prices using the same price strategies, adjustments to prices will range from 0.1% increases to 0.5% decreases. The second and more recent study expects only marginal price effects, which, however, it does not quantify.
– Historical projects, like the adoption of the decimal currency system in the United Kingdom in 1971[1]) and the new price structure resulting from this transition, seem to confirm these expectations. Certain price effects occurred during the changeover, but since inflation was running high in the United Kingdom at that time, it was impossible to clearly identify price hikes generated directly by the transition to the decimal system. Under conditions of stable prices – which will prevail at year-end 2001 and in the first few months of 2002 – inflation effects triggered by the changeover are expected to play only a minor role, accounting for no more than 0.1 to 0.3 percentage point (see Scacciavillani and Sobczak, 2001).

3.3.3 Measures to Prevent Price Hikes during the Changeover

Apart from market forces and marketing instruments acting on the price structure especially in highly competitive industries during the changeover, accompanying administrative measures and arrangements are to ward off any price increasing effects in the more protected sectors.

In Austria, the federal government as well as employees' and employers' organizations took measures to guarantee legal certainty during the changeover and to prevent unjustified price hikes at an early stage of the preparatory process. At the same time, they paid heed to the requirements expressed by businesses, namely to keep as tight a rein on changeover costs as possible.

Austria's Euro-Related Pricing Act (EWAG) stipulates that all prices must be quoted in schilling and euro between October 1, 2001, and February 28, 2002 (if consumers deemed these five months of dual pricing insufficient, it would be possible to prolong this period). This Act also encompasses controls aimed at preventing undue price increases during the changeover to the euro. In case the Euro Price Commission identifies a company pursuing a price policy deviating from common market practice, the minister responsible is empowered to determine economically justifiable prices for a period of up to six months if the problem cannot be solved by other measures consistent with the market in question. The Euro-Related Pricing Act sets down strict controls and fines of up to ATS 20,000 in case of violation (up to ATS 200,000 in case of repeated violation).

The federal, regional and municipal governments emphasized that the changeover would not involve hidden price hikes or earn the administrative bodies "a little money on the side." Rather, the government strives to round

1 *In 1971, the United Kingdom abandoned the system of 12 pence to the shilling and 20 shillings to the pound and switched to a new system of 100 pence to the pound.*

payments to be made by consumers to the government in the consumers' favor (i. e. downwards), and public sector payments to consumers (e. g. tax credits) will generally be rounded upwards. This rule has apparently also been applied in the conversion of fees, even though there will be some rounding up for practical reasons.[1])

In addition to government bodies, the Austrian consumer protection association and the social partners will monitor the changeover very tightly. The Federal Ministry for Economic Affairs and Labour has commissioned the Austrian Institute of Economic Research (WIFO) to conduct a series of euro price monitoring surveys. The OeNB has focused on a disaggregated analysis of prices.

At the European level, 13 European retail and trade associations and consumer organizations signed an agreement stating that retailers guarantee stable prices during the changeover.

3.3.4 Price Effects: Already Here or Yet to Come?

Two thirds of Austrian businesses have already started to display prices in both Austrian schilling and euro. To date, prices have been converted at the irrevocable conversion rate of ATS 13.7603 and expressed with two decimals.

In the light of the projected strict controls during the dual pricing period, it can be assumed that businesses have already factored the (scheduled) costs of the changeover into their prices. However, price monitoring data and analyses indicate that there have not been any significant price hikes on the above-mentioned grounds so far. In the course of 2001, prices for goods like energy or food (especially meat) have risen – some markedly – for a number of other reasons (oil prices and animal diseases).

It can be expected that in the remaining period until March 2002, the euro cash changeover will generate inflationary pressures only to a very limited extent. A significant share of Austrian businesses has already completed the transition to the new currency. Those companies that have not finished their preparations yet are primarily small family enterprises where the changeover will not generate substantial costs[2]) which might feed through to consumer prices. The situation looks about the same in the other countries of the euro area (ECB, 2001c), none of which expects the euro cash changeover to cause significant price effects.[3])

However, collectors of prices used to calculate the Austrian inflation rate have recently reported that a growing number of food retailers (also

1 *For reasons of psychological pricing and, perhaps, for practical reasons (easier availability of coins) it may seem appropriate to turn a price (fee) of currently ATS 15 into EUR 1.10, even though the exact conversion equals EUR 1.09.*

2 *According to a survey by the Austrian Federal Economic Chamber in March 2001, one third of businesses estimated conversion costs at less than EUR 1,500, 35% at EUR 1,500 to EUR 14,500, and 28% expected the costs to be higher. A rather surprising third was unable to predict the conversion costs for their businesses.*

3 *A Dutch study (Folkertsma and van Rooij, 2001) predicts that rounding up all prices will produce a 0.7 percentage point contribution to inflation, without considering the impact of competition, however. Factoring conversion costs into prices will push up inflation by 0.2 to 0.3 percentage point in 2001 and 2002.*

shoe retailers as well as some service providers) had been raising prices since April 2001; these price hikes cannot be traced to BSE (bovine spongiform encephalopathy) or foot and mouth disease, but rather to a possible preemptive factoring in of euro conversion costs or to the creation of new eye-catching prices. Furthermore, the public overwhelmingly expects prices to increase with the changeover (high inflation expectations), which could make it easier for businesses to make their upward price adjustments.

Neither is there any certainty about how psychological pricing will impact on inflation. At any rate, new attractive price points will be established in the medium term, which will be internationally comparable and will thus be all the more difficult to predict. Also, it will be harder to maintain price differentials between countries.

3.3.5 Distinguishing between Changeover-Related and Other Cost-Related Price Hikes

A number of factors affect price developments in the short run, including commodity prices increases, tax measures, wage developments as well as demand conditions and inflation expectations. Increases in prices and thus in inflation will therefore have to be reckoned with also during the changeover. Wage settlements might play a crucial role in this context. In Austria, wage negotiations for the industrial sector usually take place in the fall, most collective bargaining agreements will become effective on November 1, 2002. After that, price hikes can be factored into product and consumer prices. These adjustments will be made during the changeover period, hence it will be difficult to distinguish between changeover-related price effects and other price effects.

3.3.6 Inflation in Austria Expected to Drop below 2% during the Changeover Period

The OeNB predicts inflation (as measured by the HICP) to trend downward as of July 2001. This trend is primarily linked to oil price developments, fading base effects generated by tax measures in 2000 and 2001 and, in particular, to the continuing liberalization of key markets like telecommunications, electricity and natural gas. The euro cash changeover will therefore take place in an environment of largely stable prices, which will improve the euro's public standing.

3.4 Only Minor Demand and Growth Effects?

The question of whether and how the euro cash changeover could alter demand will also have an impact on price developments.

3.4.1 Will the Euro Cash Changeover Dampen Consumption in the Short Run ...

As people will need some time to get accustomed to the new prices a temporary slight dampening of consumption cannot be ruled out. According to some studies (e. g. by Jacques Birouste of the University of Paris, commissioned by the European Commission), it will take at least one

to one and a half months until consumers develop a feel for the new euro pricing environment. Usually, consumers memorize the prices of up to 80 products. It will take some time until they adjust to the new price structures; the temporarily reduced signaling function of relative prices in this interval may dampen consumption and impulse sales. In any case, the large majority considers dual pricing to be the most crucial service to help consumers get accustomed to the new currency. Even if demand declined temporarily, the effects on the entire economy should be insignificant.

3.4.2 . . . Or Will It Stimulate Demand?

Since the euro came into existence already in 1999 (if only as a noncash currency) and since consumers have already familiarized themselves with the relationship between the national currency and the euro, domestic demand may well remain unaffected by the cash changeover. What is more, consumers need the bulk of their incomes to cover regular costs (e. g. for housing, telephone bills), payments which usually do not involve cash transactions, and so consumers have less than half of their net incomes to spend freely.

It is also conceivable that, stimulated by the novelty of a new currency or driven by the desire to get accustomed to euro prices quickly, consumers will even increase their shopping activities. Information campaigns should establish "anchors" – for instance, by highlighting euro prices in advertisements or by issuing telephone bills in euro only – to help consumers adjust to the new prices. Also, increased competition and possibly lower prices might generate positive real income effects, so that demand could even rise. Uncertainty about the changeover could prompt savers to invest part of their funds in durable consumer goods, which could also benefit the retail and wholesale industry.

According to a study conducted by the University of Vienna (see Kirchler and Meier, 2001), more than a third (37%) of the respondents believe that they will spend less after the euro changeover, about 50% say that their spending behavior will not change and 13% expect that they will spend more. Obviously, especially people who feel they are not or not well informed about the changeover believe that they will cut spending in the first few months after the introduction of euro cash.

The changeover and the consequent increase in activities in a range of sectors will act as a stimulus to the economy. The industries most affected include the transportation sector, banks (which have to fulfill not only logistical tasks but are also considering extending opening hours and taking on additional temporary staff) and the IT sector, which has already been expanding for some time. Also, demand for security personnel will rise. Companies that produce and operate vending machines may even witness a boom, considering that numerous vending machines and ATMs have to be replaced or converted. The media and advertising industry will meet the increased demand for information, stepping up its activities and thus benefiting from the cash changeover. If the changeover in the wholesale and retail trade runs smoothly and a creative pricing structure (the winter sale in January 2002 would be a good occasion to adjust prices) creates incentives for consumers, sales may rise and offset a possible decline in spreads.

3.5 The Changeover's Long-Term Benefits Outweigh Short-Term Costs by Far

The changeover to the euro already started in the second half of the 1990s and will be completed in the first quarter of 2002; given this long period of transition, it is difficult to accurately assess the costs involved. The introduction of the euro in 1999 first and foremost generated costs for adapting IT and accounting systems. Now it is especially banks and the wholesale and retail industry that have to bear the costs of the introduction of euro cash, the bulk of which is attributable to IT adaptations, external communications and staff training. On the whole, changeover-related costs can be divided into the following categories:

– the cost of handling two currencies (requires additional cash registers, software to calculate change, additional security measures; moreover, mistakes in making change may occur);
– infrastructure in shops (dual pricing);
– IT adaptations; and
– staff training.

These are one-off costs; dual pricing and dual circulation will generate temporary costs.

Both in Austria and across the EU, estimates of changeover-related costs vary widely and are hardly reliable. According to an internal survey among the euro area national central banks, total costs are expected to be 0.3% to 0.8% of GDP; 0.1% to 0.3% of these costs have to be covered by the banking sector.

Table 5

Costs[1]) of the Euro Cash Changeover in Austria

Source	Assumption	Whole economy	Banks	Sale/retail	Other sectors
		EUR billion			
Survey among NCBs (2001)	0.3 to 0.8% of GDP	0.6 – 1.6	×	×	×
	banks: 0.1 to 0.3% of GDP	×	0.2 – 0.6	×	×
Eurocommerce (1997)	1.3 to 1.4% of sales	×	×	0.4 – 0.5	×
Goldman Sachs (2001)	0.5 to 1.0% of sales	×	×	0.2 – 0.4	×
Austrian Federal Economic Chamber (WKÖ)	Eurocommerce 1996	1.5	0.6	0.3	0.6

[1]) *Estimates based on assumptions used by various sources.*

An estimate by Eurocommerce (1997), based on five country studies (Finland, Germany, the Netherlands, Sweden and the United Kingdom), concludes that a big-bang cash changeover would cost the retail industry 1.1% of sales; if the transition period were extended to six months, these costs would go up to 1.8%. Since the option chosen is neither of the above-mentioned ones, but rather a two-month dual circulation period, the costs according to this calculation could amount to 1.3% to 1.4% of sales.[1]) Scacciavillani and Sobzcak (2001) assume that the costs in the retail trade will total 0.5% to 1.0% of sales. Calculations for Austria (Pollan, 1998) are also based on a study by Eurocommerce. The Austrian Federal Economic

1 *The estimates for the individual countries ranged from 0.5% to 1.9% (big-bang changeover) and from 0.7% to 3.3% (six-month transition period).*

Chamber has repeatedly estimated overall costs in Austria at EUR 1.45 billion (0.7% of GDP); a similar amount is obtained when the calculations of various NCBs in the euro area (0.3% to 0.8% of GDP) are adapted to the Austrian situation. The costs in the retail industry are expected to come to EUR 180 million to EUR 470 million (see table 5).

Central government bodies will have to cope with additional costs of EUR 3 million, which is due to additional tasks to be carried out by the Euro Price Commission as required by the Euro-Related Pricing Act between 1999 and 2002;[1]) no figures on the additional financial burden for the entire civil service, which is caused mainly by the revision and adaptation of legislation, are available.

Leaving aside some already obvious short-term effects, EMU is, by its very nature, a project whose economic benefits and welfare gains will become fully tangible only in the long run. On the one hand, there are macroeconomic effects, such as accelerated economic growth, smaller prices and lower joblessness, and, on the other hand, the following favorable effects will emerge on the cost side:

– increased price transparency will diminish selling prices;
– exchange rate risks and hedging costs will be lower; and
– transaction costs will be lower.

B2B transactions will be carried out in euro, ensuring increased price transparency and comparability. Suppliers will find themselves under increased pressure to pass on cost advantages resulting from the single currency further down the sales channel, so that eventually, prices will trend downward. Hedging and conversion costs no longer apply; foreign exchange management costs for all players involved will be dramatically reduced.

Austrian entrepreneurs expect the euro changeover to save significant costs in the long run, which should more than offset the outlays. According to estimates (IFO, 1997; Pollan, 1998), *annual* savings resulting from the elimination of transaction costs will amount to 0.7% to 1.0% of GDP. Based on the (forecast) nominal GDP for 2001, the amount of costs saved in Austria would come to (an annual) EUR 1.5 billion to EUR 2 billion, which implies that these savings would offset the *one-off* conversion costs within one year.

4 Euro Extends Austria's Monetary Stability to Large Currency Area

The cash changeover marks the last, crucial step in the transition to the euro. The costs involved in the changeover must be considered to be investment in the European monetary infrastructure, and they contribute to promoting the long-term growth potential.

In the run-up to the final transition to the euro, the following facts and phenomena will be the focus of attention:

– The advent of the euro not only means substituting one currency for another (under the motto: "new money, same value"), but it is also the

1 *See http://www.euro.gv.at.*

tangible manifestation of how EMU has contributed to the emergence of a new European monetary constitution.

– The changeover may have an impact on the Austrian contribution to the monetary aggregates, as currency in circulation may increase, and on Austrians' savings and investment behavior in the short run. However, Austria's contribution to M3 would rise significantly only if large amounts of Deutsche mark held in Eastern Europe were exchanged in Austria, thus pushing up currency in circulation.
– Market and administrative mechanisms will help prevent price hikes. Still, it is impossible to completely rule out that prices will rise: A one-time price effect might occur before, during or after the actual transition period. It is deemed unlikely, however, that roundings and the creation of new psychological price points will generate macroeconomic price effects.
– Inflation is expected to be running below 2% during the transition period; thus the changeover will take place in an environment of highly stable prices.
– Short-term effects on consumption are difficult to predict: While the temporarily impaired signaling function of relative prices could dampen consumption, stable and (as a result of downward rounding) possibly lower prices could boost demand. The euro changeover involves significantly increased activities in certain sectors, which may stimulate the overall economy.
– Within one year, the estimated conversion costs of a maximum of EUR 1.5 billion will be offset by lower selling prices, reduced exchange rate risks and diminished transaction costs.

From a monetary point of view, it is vital that

– the signaling function of relative prices be impaired only for a short period of time and to a limited extent;
– price level effects be minor and not be transformed into inflation; and that
– monetary policymakers carefully analyze possible effects on monetary (sub)aggregates.

A single currency for the entire euro area facilitates numerous processes and yields substantial savings for Austrian entrepreneurs and consumers. For Austria which maintains close economic links with numerous other European countries, it is of crucial importance that the area of monetary stability will soon be extended to encompass a large currency area.

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Updating the Calculation of the Indicator for the Competitiveness of Austria's Economy

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1 Introduction

Since January 1, 1999, Austria has been a member of Economic and Monetary Union (EMU) and the European System of Central Banks (ESCB). On December 31, 1998, the conversion rates of the currencies of 11 EU Member States were irrevocably fixed.[2]) As the single currency, the euro replaces the Austrian schilling as the national currency. Thus from the very first day EMU was founded, a very large economic area with a single currency was created. If we perceive trade within this common economic area as being internal in nature since there are no longer any exchange rate risks involved in the trade relations within the euro area, then the single currency has made this a "domestic" economy, as it were, for every member country. Nevertheless, differences in prices and costs – and hence real exchange rates – continue to have a crucial influence on national and regional price competitiveness.

When analyzing the effects of exchange rates on an economy's price competitiveness, bilateral rate movement only reveals part of the picture, since from a macroeconomic standpoint it is generally the total effect on an economy of all changes in exchange rates that matters. *Effective exchange rate indices* capture this total effect, which is why they are among the most important indicators for assessing the external competitiveness of an economy. In the fields of economic policy and research, it is above all the real effective exchange rate index that is considered to be the central indicator for assessing the international price and cost competitiveness of a given country.[3])

In the case of monetary policy, on the other hand, it is the *nominal-effective* exchange rate index – which indicates the average trend in a currency's external value relative to the currencies of its major trade partners – that can deliver valuable information for evaluating the current monetary situation in view of the anticipated inflation and price trends. Thus, when considering the single monetary policy of the Eurosystem, we should be looking not only at the changes in euro rates over its major trade partners in the euro area, but also at the euro's nominal-effective exchange rate index and the trend in the price and cost competitiveness of the euro area as a whole. Consequently, the European Central Bank (ECB) calculates the euro's effective exchange rate index against the currencies of the originally 13 and since January 1, 2001, 12 most important trade partners for the euro area.[4])[5]).

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2 *As of January 1, 2001, Greece is also part of the euro area.*

3 *Nevertheless, real exchange rate indices are merely one yardstick of the trend in the relative price and cost position of a country or group of countries, as they only relate to one particular aspect of international competitiveness, namely the conditions for price and cost competition in international trade.*

4 *Two categories of indicators are calculated for the euro: first, a nominal effective exchange rate index and several real effective exchange rate indices based on various price and cost deflators for a small group of industrialized countries that have trade relations with the euro area and, second, a nominal effective and a real effective exchange rate index for a larger group of 39 trade partners, among them threshold and transition countries.*

5 *However, the method chosen to calculate the effective exchange rate indices for the euro allows us to analyze only the changes in the international price and cost competitiveness of the euro area; these indicators are less suited to assess the impact of exchange rate changes on inflation in the euro area as a consequence of higher import prices.*

2 National Indicators of Price and Cost Competitiveness as a Supplement to Euro Exchange Rate Indices

The impact of bilateral exchange rate changes over the euro on a real economy varies from one EMU participant to the next depending on the extent of foreign trade with countries outside EMU. Therefore, we cannot use the euro's effective exchange rate indices (based on the foreign trade flows of the entire euro area) to analyze the impact on the domestic economy of exchange rate fluctuations in the euro. Instead, the analysis must be based on Austria's foreign trade flows[1])

Calculating national competitiveness indices is thus indispensable to evaluate the national price and cost competitiveness of the individual EMU participants, because on the one hand the foreign trade structure of the various participants is not identical with that of the euro area as a whole, and on the other the national competitiveness of each participating state is determined not only by comparing price and cost trends to those outside the euro area, but also to a great extent by the trend in prices and costs relative to other EMU participants. The fact that intra-EU-11 trade[2]) is not taken into account in calculating effective euro exchange rate indices is one more reason why national competitiveness indices have to be calculated. Despite EMU, Austrian manufacturers are still engaged in price and cost competition with its foreign trade shares vis-à-vis EMU Member States, namely with suppliers within the euro area, thus they compete not only on the domestic market and in intra-EU-11 trade, but also on third markets outside EMU.

From the standpoint of the individual participants in EMU, it is thus worthwhile to analyze their price and cost competitiveness based on comprehensive national foreign trade matrices incorporating foreign trade with individual EMU participants as well as with other relevant trade partners outside EMU. Only in this way can we assess the impact of bilateral changes in euro rates on the participants' national economies, i. e. on their national trends in exports, production and employment.

3 Design and Structure of the New Competitiveness Indicator

3.1 Main Construction Elements

The crucial element in redesigning the national competitiveness indicator is the new calculation of the weighting scheme, which is based on the ECB exchange rate index.

As a result, the sample of the competitor and destination countries explicitly covered by the exchange rate index produced by WIFO (Austrian Institute of Economic Research) was extended substantially from 22 to 52. This then takes into account the more sophisticated trade structure of

1 For information on calculating the effective exchange rate indices of the ECB for the euro area see European Central Bank (2000).

2 This study is based on the original composition of EMU consisting of the 11 founding members. Since January 1, 2001, however, Greece has also been an EMU member.

Austria's economy since the beginning of the 1990s, i. e. the greater significance of overseas and East European trade.

The essential differences in the design and structure of the new competitiveness indices as compared to the previous WIFO calculation method are:

– the extended range of competitor and destination countries covered,
– the calculation periods for determining the fixed weights, and
– the choice of the base period.

The methodology and weighting procedures follow the dictates of the WIFO exchange rate system used thus far, which conforms with the international and ECB standards (see Mooslechner, 1995 and 1982). Köhler-Töglhofer (1999) offers a current overview of the methodological problems and procedures of the empirical exchange rate index construction.

The characteristic construction elements of the WIFO exchange rate design used thus far were also maintained. Among them are:

– an overall index comprised of partial indices for manufactured goods, food, energy and raw materials and one for tourism based on overnight stays,
– a geometrical weighting, and
– a fixed weighting system consisting of single (bilateral) import weights, single (bilateral) export weights for food, energy and raw materials and double (multilateral) export weights for manufactured goods and overnight stays.

The ECB exchange rate index for the euro, on the other hand, is based solely on a weighting scheme for manufactured goods.

The destination country sample (sales markets) and competitor country sample are based on the following factors:

– the country's status (OECD Member State, EU applicant country[1]) and/or far east tiger economy), and/or
– the destination country's significance for Austrian exports (export share of more than 0.5% in 1997), and/or
– the list of countries covered in the ECB exchange rate index.

These criteria are complementary and not mutually exclusive. They provide the most important partial indices (those for manufactured goods and tourism) with a highly differentiated depiction of Austria's current foreign trade structure broken down into destination and competitor countries. These criteria are also completely congruent with the sample of destination countries and currencies used in the ECB exchange rate index.

In contrast to the ECB index, the country list of the new competitiveness index also includes the member states of the euro area. This increases the total number of destination and competitor countries covered in the new competitiveness index from 22 to 52, while the currency basket was reduced from 52 currencies to 43 at the beginning of 1999 when the euro was introduced and to 42 at the beginning of 2001 when Greece joined EMU.

1 Although Malta is an EU applicant, it was not included in the list of countries for statistical reasons.

The use of an identical vector for competitor and destination countries in the new competitiveness index for the most frequently traded goods (manufactured goods pursuant to SITC 5–8) and tourism gives us a clear picture of the competitive relationships in the weighting scheme with the aid of double export weights, i. e. those taking into account third-market effects (see annexes A and B).

The Economic Logic of Third-Market Effects and How They are Calculated

The concrete empirical method of capturing third-market effects is based on complete competition matrices of foreign trade in manufactured goods and tourism services.[1]) The foreign trade matrix contains the market shares of those countries considered to be significant competitors of a given country in export business, which means that it contains, for example, the market shares on all sales markets of each country exporting manufactured goods. But that portion of the market volume which is produced and sold domestically, thus competing with imports from other countries, is also taken into account.

In calculating the effective exchange rate index based on manufactured goods, we begin with the gross output of the manufacturing sector[2]) of each sales market. The volume of manufactured goods exported by the country in question is then subtracted from this figure, leaving that portion of the domestic production of manufactured goods that is available for the domestic market. Then we add the imports (= the exports of all other countries to this country). The resulting figure is the market volume of the total sales of manufactured goods that is relevant for the calculation.

The market share of each exporter in this country is considered to be the share of market volume claimed by its exports, and the market share of the sales market (the main diagonal of the competition matrix) is defined as that share of market volume representing the domestic industrial production which remains in the country. Thus on a given sales market each exporter competes not only with all other exporters, but also with the industrial production of the country in question.

The double (extended) export weight of the currency of each country in the basket of the exchange rate index is the sum of the market shares of a given country on all markets multiplied by the share of the direct export weight of the respective sales market in total national exports.

1 *Statistics on overnight stays provide the main data for portraying tourist services.*

2 *The Austrian index differs in this respect from the euro index, as the Austrian index is calculated based on real net output (gross output less intermediate input).*

Algebraic Representation

If there are k foreign markets in which country j (Austria, for instance) competes with h competitors, then the weight that country i assumes in j's effective exchange rate index is expressed as follows in algebraic terms:
Double export weight:

$$w_i^x = \left(\frac{x_j^i}{x_j}\right)\left(\frac{y_i}{y_i + \sum_h x_h^i}\right) + \sum_{k \neq i}\left(\frac{x_j^k}{x_j}\right)\left(\frac{x_i^k}{y_k + \sum_h x_h^k}\right)$$

Bilateral import weight:

$$w_i^m = m_j^i / m_j$$

Combined weight as a weighted mean of import and double export weight:

$$w_i = \left(\frac{m_j}{x_j + m_j}\right) w_i^m + \left(\frac{x_j}{x_j + m_j}\right) w_i^x$$

y_j = *domestic sales of country j's own output.*
$x_j^i(m_j^i)$ = *exports (imports) of country j to (from) country i*
$x_j(m_j)$ = *total exports (total imports) of country j*

In conformity with the calculations for the ECB exchange rate index, the new national weighting scheme is based on arithmetic averages for the period 1995 to 1997 (the previous WIFO weighting scheme was based on production and trade flows for 1992). In the future the weighting scheme will be updated and, whenever needed, extended analogously to the ECB exchange rate index at least every five years.

Unlike for the ECB exchange rate index, the market volume of manufactured goods in a country was consistently calculated based on the gross output of the respective country. The ECB approximates output as real net output plus imports.

As in the ECB exchange rate index, the base period selected for the new national competitiveness index is the first quarter of 1999 (arithmetic average of the first quarter of 1999 = 100).

The real effective competitiveness index is also calculated in conformity with the ECB exchange rate index and – due to their rapid and reliable availability – is still based on consumer prices pursuant to the CPI format (for the pros and cons of this deflator see Köhler-Töglhofer, 1999).

The data sources used, particularly to calculate the single and double weights and the market share structure of each competitor and destination country in the supply structure matrix, are fully documented in Hahn and Magerl (2000).

3.2 The New Weighting Scheme at a Glance

The structure of the country weights in the new competitiveness index (consisting of the partial indices for manufactured goods, food, raw materials, energy and tourism) is dominated by Germany (35.2%), which has always been Austria's most important competitor by far, followed by

Italy (10.4%) and France (7.1%). The comparatively high total weight of the U.S. dollar (7.1%) results in part from the "technical allocation" of imports from the category "other countries" to the U.S. dollar area (see table 1), a method applied to the partial indices for imports of manufactured goods, food, raw materials and energy. The predominant role of the U.S. dollar as a transaction currency on international energy and raw material markets suggests this method, especially for these specific partial indices (the bulk of Austrian energy and raw material imports are invoiced in U.S. dollars). Even if we were to eliminate this allocation of "other countries," the weight of the U.S.A. in the overall index would still rank fourth at 5.9%, just after France.

A direct comparison of the new weighting scheme with the scheme used in the old index is not meaningful, as the country and currency basket was substantially extended, thereby causing direct changes in the weighting structure (see chart 1). In the new scheme the ranking of Austria's traditionally most important competitor countries remains essentially the same, although their relative significance is greatly reduced in some cases by the extension of the basket over the old weighting scheme. This applies to Germany in particular, whose influence on the manufactured goods index (and the tourism index) decreased by more than one fifth due to a great extent to the spread and supplementation of the weight structure. (In the old weighting scheme for manufactured goods, the countries which were not explicitly taken into account, i. e. the "other countries," were assigned a weight of zero for both exports and imports.) The additions to the basket made the weighting scheme somewhat flatter overall. To the extent that comparisons could be made, with only a few exceptions the differences between double and single export weights as a measure of the significance of third-market effects for manufactured goods follow the same pattern as before (see chart 2).

As expected, Austria's 14 fellow EU members still claim the lion's share of the new weighting scheme at 69.1% (see table 1). The entire OECD block even attained a weight share of 90.5% in the overall index. The East European countries,[1]) which were not taken into account before, were assigned a weight of 9.9% in the new scheme, while the Far East received 3.6%.

1 *Poland, the Czech Republic, Hungary, Bulgaria, Estonia, Croatia, Latvia, Lithuania, Romania, Russia, the Slovak Republic and Slovenia.*

Exchange Rate Index for the Euro Area Based on the Extended Competition Matrix

The ECB exchange rate index summarizes the (nominal and real) external value of the euro vis-à-vis the currencies of 13 partner countries (see table 2). With some simple transformations, the new calculation of the national weighting scheme shows us the effective external value of the euro vis-à-vis the currencies of 43 partner countries (see table 3).

For the period prior to the introduction of the euro, in accordance with the extended weighting scheme and in conformity with the practices of the ECB the effective exchange rate indices were based on fixed foreign trade weights to determine "theoretical" euro exchange rates (see table 4).

It comes as no surprise that comparing the ECB exchange rate index with the "extended" exchange rate index for the euro area reveals marked differences in the nominal effective dynamic, but a high degree of concordance in the real effective dynamic (see chart 3). In contrast to the more comprehensive calculation, the development of the effective exchange rate indicators for the euro according to the ECB calculation has been parallel and practically identical since 1993. Overall, the price trend in the euro area was similar to that in the 13 competitor countries covered in the ECB index, but distinctly better than the average for the extended country sample, which serves as the basis for the calculations presented here.

4 Extent and Interpretation of Third-Market Effects

4.1 Competitiveness of Austria's Export Industry by Region

Looking at the competition matrix for manufactured goods exports on a region-by-region basis, we can see that the EU has a weight of 66.9% in the national index. The weight of the euro area is 59.1%. This does not refer, however, to the share of Austrian exports that is no longer exposed to any disturbance that could potentially be caused by exchange rates, as the double export weights, for example, also reflect the competition on third markets, i. e. outside the single currency zone, for which the bilateral exchange rate changes in the euro over other currencies do indeed play an *indirect* role. But in this regard the competitors from the other EMU countries are actually all exposed to the same exchange rate risk.

Denmark, Sweden and the United Kingdom, the three countries opting out of EMU, are weighted at 7.8%. The weight of 7.1% assigned to the applicant countries[1]) emphasizes the already strong presence of these countries in manufactured goods exports. And at just under 4%, Switzerland continues to have quite a strong weighting in the Austrian index, albeit distinctly less than in the old index. Whereas the U.S.A. now has a slightly higher weight of 6% in the manufactured goods index, Japan's

1 *These were not taken into account in the old effective exchange rate index.*

weight is somewhat lower than in the old index at 3.5%. The "other countries"[1]) have been assigned a weight of 12.5% in the new index, 5.9% of which is claimed by the Asian countries excluding Japan.

Looking at the export side of the manufactured goods index, the *nominal effective* value of the Austrian schilling appreciated by 18.6% between the beginning of 1993 and the end of 2000. The strong surge of appreciation was due, above all, to the crisis in the European Monetary System (EMS) in the early 1990s and the aftermath of the Asian financial crisis in 1998.

The *exchange rate-induced* loss of competitiveness against the Member States of the European Union (EU) and against the countries that now belong to EMU was concentrated in the first half of the 1990s. Between the beginning of 1993 and mid-1995 the loss was around 7% and the loss of competitiveness vis-à-vis those EU Member States that do not belong to EMU was almost 12%. However, in the period from mid-1995 to the end of 1998 the competitive position over the latter recovered by almost 16% as a result of exchange rate movement compared to only about 4% improvement over the EMU Member States.

While the Austrian schilling appreciated by 17% over the U.S. dollar from the beginning of 1993 to mid-1995, it lost against the Swiss franc (–10%) and the Japanese yen (–22%). From mid-1995 to the end of 1998 the appreciation of the Austrian schilling over the U.S. dollar was offset again (–17%), while the exchange rate against the Swiss franc remained almost unchanged. But then in the wake of Asia's financial crisis, the Austrian schilling appreciated by about 16% against the Japanese yen (see chart 4).

Exchange rates seriously diminished the competitiveness of domestic exporters vis-à-vis the applicant countries and the "other countries" throughout the period from the beginning of 1993 to the end of 1998 due to the heavy depreciation of the currencies of these groups of countries. The nominal effective appreciation over the applicant countries came to 115% and was almost 270% over the "other countries."

The period since the beginning of 1999 has been marked by the exchange rate trend of the euro. This notwithstanding, exchange rates only improved the competitiveness of Austria's manufactured goods exports by 4%. The relatively weak impact of the exchange rate trend of the euro on competitiveness is a consequence of the heavy concentration of manufactured goods exports to EMU countries in general and Germany in particular.

However, from the beginning of 1999 to the end of 2000 as well exchange rates impaired competitiveness vis-à-vis the applicant countries. On the other hand, Austria's exporters reported improvements over all other regions, in some cases quite strong ones, e. g. over the American and Japanese markets (around 23% each). The Austrian schilling depreciated in

1 *Iceland, Norway, Turkey, Australia, Canada, Mexico, New Zealand, Russia, Israel, Argentina, Brazil, Algeria, Morocco, South Africa and Asian countries (South Korea, China, Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, Taiwan and Thailand).*

value by some 6% against the Swiss franc and by 9% over the currencies of the "other countries."

Caution is advised, however, when assessing the competitive advantages created by exchange rates. Although such advantages do stimulate the real economy (e. g. higher exports, increased market shares), at the same time they reduce – at least in the short term – the need for structural reform and improvements in innovation and production processes, which, in turn, can have negative implications for the growth potential of an economy in the medium and long term. And the gains in competitiveness brought about by exchange rates are lost when the domestic currency appreciates over those of the competitor countries.

In *real effective* terms, it was above all the applicant countries and the "other countries" group that contributed to the depreciation of the Austrian schilling in the period from 1993 to 2000 owing to their relatively strong inflation trend. According to the new index for manufactured goods exports, if both the exchange rate and relative price trends are taken into account, the Austrian schilling lost about 11% of its value in real effective terms from the beginning of 1993 to the end of 2000, which means that the price competitiveness of Austrian exporters over all other trade partners rose to the same extent.

While in the period from the beginning of 1993 to mid-1995 real effective depreciation of almost 7% was registered over other EU Member States in the wake of the EMS crisis (6% against countries in the euro area and about 11% over the three EU members that do not belong to EMU), consequently leading to a loss of price competitiveness over goods producers in these countries, in the period that followed (mid-1995 to the end of 1998) these losses were offset. The trend in both periods was influenced primarily by the development of the bilateral exchange rates of these countries relative to the Austrian schilling.

From the beginning of 1993 to the end of 1998 Austria's real effective devaluation vis-à-vis the applicant countries was around 21%, meaning that its price competitiveness improved. The same applies to the "other countries," where the differences in inflation compensated for the extreme nominal effective appreciation of the Austrian schilling against these currencies. During this period, however, the Austrian schilling also depreciated in real terms against the U.S. dollar (–6%), the Swiss franc (–6%) and the Japanese yen (–3%). The gains in price competitiveness vis-à-vis Switzerland and Japan, on the other hand, were concentrated in the period from 1993 to mid-1995 (see table 5).

Between the beginning of 1993 and mid-1995 the Austrian schilling's real effective exchange rate index fell against the applicant countries and the "other countries" as well as Switzerland and Japan, while appreciating in real effective terms over the EU, the U.S.A. and the Asian nations. The regional improvement in competitiveness during this period was caused by exchange rates in the case of Switzerland and Japan and by prices as regards the two other regions. The regional decline in competitiveness over European countries was caused chiefly by exchange rates (see chart 5).

The gains in competitiveness over the EU and the U.S.A. between mid-1995 and the end of 1998 were induced mainly by exchange rates, although prices did play a role as well. It was only vis-à-vis the applicant countries and the "other countries" that the gains were driven by prices. And the loss of competitiveness over Switzerland was also driven solely by prices, while that against Japan was caused by both exchange rates and prices.

The exchange rates between the EMU members were irrevocably fixed on January 1, 1999. As a result, price competitiveness has since been determined solely by the inflation spread. Although Austria was not able to improve its price competitiveness over EMU countries in the first two years, it did manage to improve over all other regions.

4.2 The Competitiveness of Selected Countries' Export Industries

The availability of comparable export competition indices for various countries allows for a more refined and hence more precise assessment and evaluation of the international competitiveness of a country's exporting industries. For this purpose, indices were calculated for the export industries of Belgium and Luxembourg, Denmark, Germany, Finland, the United Kingdom, the Netherlands, Japan, Sweden, Switzerland and the U.S.A. that could be directly compared with the Austrian competitiveness index for manufactured goods exports.

The trend exhibited by the real effective competition indices for manufactured goods exports of the comparison countries shows that the price-driven competitive situation of the export industries of practically all of the European countries observed in the sample (Belgium and Luxembourg, Denmark, Germany, Finland, the Netherlands, Switzerland and Austria) has been characterized by a similar dynamic since 1996 (see chart 6). The competition indicator for Sweden showed a distinct departure from this trend owing in part to the sharper fluctuation of the external value of the Swedish krona (possibly one of the consequences of the Swedish central bank's inflation targeting-based monetary policy) in connection with the fact that the country does not participate in the European exchange rate mechanism (ERM) (see chart 6). Of course, this also applies to the international competitive situation of the U.S. and Japanese export industries from 1996 to 2000, which were both impacted by the at times strong appreciation of the U.S. dollar and the Japanese yen (see chart 6).

Within the scope of this study it is not possible to analyze the causes of the disparate price competitiveness of the export industries of the countries in the sample as of 1996. Instead, let us take a closer look at a circumstance that is interesting from an Austrian perspective, but not really surprising: Particularly since the inception of EMU, the domestic export industry has only managed to gain rather small price advantages on its export markets compared to the majority of EMU Member States. The domestic export industry's price competition advantages have averaged 2.6% per year since 1999 measured in terms of the rates of change year on year calculated in the real effective competitiveness index. For the sake of comparison, the German export industry achieved a total annual price competition gain on its markets of 4.6% during the same period. Other countries whose export

industries averaged greater price competition advantages than Austria's were Finland (3.2%), Switzerland (3%), Sweden (2.9%) and Belgium and Luxembourg. Aside from the U.S.A. and Japan, which both suffered substantial exchange rate induced price competition disadvantages, only the Netherlands and Denmark trailed Austria's export industry in improving competitiveness (see table 6).

Since the beginning of 1999, the real effective exchange rate index calculated by the ECB for the euro area has shown a price-driven improvement in the competitiveness of its manufactured goods exports over the major competitor countries that averages 8% per year. But the comparison of the price competitiveness of individual EMU Member States with that of EMU in general has little informative value, because when calculating the real effective competitiveness index for the EMU countries used in the sample the mutual interlinking of competition in the individual export industries was also taken into account.

Comparing the price competitiveness on a nominal effective basis reinforces the impression that the Austrian export industry has profited significantly less from the weaker external value of the euro than e. g. the German export industry (see table 6). The price-induced changes in the competitiveness of Austria's export industry occurred more smoothly than in most of the other European countries used in this comparison (see table 6). The standard deviation of the annual rates of change in both the real effective and nominal effective competition indices on a monthly basis is smaller for Austria's export industry than for the comparison countries in the periods from 1996 to 2000 and 1999 to 2000.

The fact that the euro's external value since its introduction has only afforded the Austrian export industry a relatively small effective competitive advantage by European standards can be explained partially by the weighting scheme underlying the competitiveness index. It is widely known that the EMU countries hold an above-average significance as export markets for Austria's export industry. Germany stands out as the country that holds for Austria a far more dominant position as a sales market for industrial products than for any other country used in the comparison. Due to the mutual fixing of exchange rates, in nominal effective terms the countries participating in EMU have lost the status of competitor country among themselves since the introduction of the euro at the beginning of 1999. Since the beginning of 1999 it has only been through the respective national price and cost trends that EMU Member States have been able to achieve competitive advantages over one another, which are then depicted in the real effective competition indices of these countries. Consequently, those EMU countries exporting an above-average share of their manufactured goods to other EMU countries only felt the positive competition effects of the euro's devaluation in a correspondingly weaker form. No other EMU country represented in the index felt this effect as much as Austria. Since the mid-1990s a similar overall effect has been caused by the quasi-fixing of exchange rates of countries participating in the ERM.

Furthermore, an international comparison of single and double export weights shows that those countries whose currencies have greatly

appreciated over the euro and the Austrian schilling since 1999 have much less significance for the Austrian export industry as sales markets and as competitors on third markets than for the EMU countries in the sample (see chart 7). For instance, the countries with the greatest appreciation gains since the inception of EMU – the U.S.A., Japan and the United Kingdom – are noticeably less important as destination markets for the domestic industry's manufactured goods exports (measured in terms of the share they claim of Austrian manufactured goods exports) than for the German or Scandinavian industry. But not only does the bilateral competitive relationship with these countries play a relatively subordinate role for Austria's export sector, domestic businesses also compete on the so-called third markets with industrial enterprises from the U.S.A., the United Kingdom and Japan to a lesser extent than the export companies of most of the EMU countries used in the sample.

The calculation of the weighting structure of the price competitiveness index for manufactured goods exports is implicitly based on the simplifying assumption of product homogeneity. As a result, price competition aspects stemming from varying degrees of processing and differences in the technological quality of exported manufactured goods are not factored into the index. The degree of processing and product quality do, however, play a sizeable role in determining the concrete country-specific structure of the single and double export weights. By international standards, Austrian manufactured goods exports show an above-average concentration of semi-finished products and products with low to medium technology content. The comparatively low technology intensity of the product structure of Austrian manufactured goods exports is also one of the reasons for the small degree of bilateral and especially multilateral interlinking of domestic industry with export businesses in the U.S.A., the United Kingdom and Japan. Compared to Austria, the manufactured goods exports of these countries have a significantly larger share of industrial finished products with medium to highest technology content (see Aiginger, 2000; Peneder, 2001).

Nevertheless, it appears that for methodological reasons this competitiveness index tends to underestimate the impact of changes in the euro's external value on price competitiveness, particularly that of Austria's export industry. As presented in detail in section 3, the weighting scheme of the competitiveness index is designed solely to depict the direct bilateral and multilateral competitive relationships. Indirect competitive relationships arising from supplier services between export industries in different countries are not factored into the weighting scheme – for one thing because products are assumed to be homogeneous. This can lead to distortions when measuring the price competitiveness of the exports of a country whose industry produces an above-average share of intermediate input for the export industry of another country with overall higher international price competitiveness. For example, in the last few years an average of one sixth of the Austrian manufactured goods exported to Germany consisted of components supplied to the German automotive industry. German automobile exports account for about 25% of the total German manufactured goods exported to the U.S.A. Unfortunately, the

existing data does not provide any insight into the regional structure of the supplied components used in the German automotive industry's automobile exports. For an exact determination of the price competitiveness of a given export industry, however, the indirect competitive relationships created by parts supplies would have to be properly factored into the weighting scheme. In the example cited here, for the weighting scheme of Austria's export industry the single weight of the U.S.A. should thus be raised at the expense of Germany's single weight to adequately reflect the Austrian component share in Germany's manufactured goods exports to the U.S.A. According to the initial rough estimates based on expert opinions, by not taking into account such indirect competitive relationships the positive price effects of the euro's devaluation on the Austrian export industry are underestimated by at least ½ a percentage point per year since EMU began.

4.3 Tourism: A Traditionally Important Element of Austria's External Competitiveness

It is typical of the analysis of Austria's external competitiveness that special attention is always devoted to tourism. Whereas the indices of effective exchange rates and the external competitiveness in other countries concentrate on manufactured goods,[1]) for the most part services are not taken into account. However, this restriction may no longer be fully appropriate considering both the marked long-term decline in the share that manufacturing claims of the real net output of industrialized nations as well as the considerable rise in international trade in services,[2]) which has expanded for many reasons.

The EUR 10.7 billion in proceeds from international tourism and the upward trend in the cover ratio for the merchandise trade deficit since its trough in 1997 show just how important the international price competitiveness of Austria's tourism really is.

It is thus reasonable to attach particular importance to tourism as an indicator of the international competitiveness of Austria's economy in future as well. Even though Austria's participation in EMU since the beginning of 1999 did eliminate the exchange rate fluctuations that used to be so important over the decisive countries of origin for Austria's tourism exports, as a combined result of the substantial expansion of tourism originating from Eastern Europe (after it opened up), the growing importance of overseas countries and price-induced substitution effects on the import side of the tourism balance, these indicators still carry substantial weight for analytical purposes.

4.3.1 Significant Extension of Geographical Area Covered – Germany Assigned a Much Lower Export Weight

For the purposes of calculating the Austrian economy's new current price competitiveness indicators, not only was the tradition of including tourism

1 *As does the index of the ECB (2000), for example.*

2 *According to the Austrian balance of payments, in 2000 the revenues from services exports accounted for 45.4% of the income from goods exports, while the ratio for imports is somewhat lower at 42.4%.*

in the total index retained, but a series of improvements in the methods used to determine competitiveness in tourism were also made. In particular, the list of countries taken into account was increased to 41 countries and their currencies (e. g. Eastern Europe) to better reflect the structure of overnight stays and competition relevant to Austria in international tourism. At the same time, the market volume of tourism was recorded uniformly by taking the total number of overnight stays of Austrian tourists at home and abroad, which greatly improved the quality of the calculation of third-market effects by using double export weights. Calculations were based on a three-year average of overnight stays in the period from 1995 to 1997 (see annex B).

Owing to this change in the method applied, the tourism weights in the new index cannot be compared with those used in the old calculation (Mooslechner, 1995).

Exports, which play an especially important role in Austria's tourism industry, reflect the high weight claimed by Germany. The new calculation assigns Germany an extended export weight of 30.1%, followed by France with 19.7%. In contrast to Germany, the bulk of France's high export weights are attributed to indirect competition effects (Germany's direct weight is 64.6%, France's 2.4%). The weights assigned to the U.S.A. (8.8%), Italy (7.6%) and Spain (5%) are also a consequence of strong third-market effects. The direct export weights of these countries are 1.7%, 2.7% and 0.5%, respectively. The comparatively low extended weight assumed by the Netherlands (3.5%), a traditional country of origin for Austria's foreign tourism, stems primarily from the country's insignificance as a provider of tourism services (direct weight: 8.5%).

By groups of countries, the weight of the EU as a group of countries of origin for Austrian tourism heads the list at 76.8%. The weight of the country group consisting of Australia, Japan, the U.S.A., Canada and New Zealand comes to 11.4% in the new calculation. Eastern Europe claims an extended export weight of a full 4.9%.

Looking at tourism imports, the new calculation leaves the weights virtually unchanged for the two most important destination countries, Italy (24.6% against 24.5%) and France (12.2% against 12.4%). The U.S.A. takes third place with a ranking that fell from 20% in the 1992 index to 11.3% in the new index. The United Kingdom also shows a slight decline to 7.2% compared with 8.5% in the 1992 index. Croatia, which was not included in the 1992 index, ranks fifth as a destination country with 6.9%. Other countries claiming a substantial weight in the index are Turkey and Greece (4.7% each), followed by Germany (4.5%). Of the remaining countries, only Spain has a comparable weight (3.9%). However, Austria's East European neighbors, which are newcomers to the index, also claim considerable weights: Hungary (2.4%), the Czech Republic (2.1%) and Slovenia (1.5%).

All in all, the EU share of tourism imports diminished from 68.6% to 61.6%. The weight of 13.9% assigned to the group of countries consisting of 5 industrialized nations overseas registered a drop of 10 percentage

points over the old index. The 12 East European countries covered in the new index[1]) jointly account for an impressive weight of 14.5%.

Based on the new weighting structure, in the comparison period since 1993 Austria's tourism industry has experienced distinctly stronger nominal effective appreciation (+25.4%) than in the old index (+0.8%). In real effective terms, however, Austria's more favorable price trend (especially compared with the newcomers to the index) caused a marked improvement in international competitiveness (10.4% against 4.4% in the old calculation).

4.3.2 Comparatively Little Long-Term Deterioration in Price Competitiveness of Austrian Tourism

The significantly improved database of the new tourism matrix allows for much more in-depth analysis of the international price competitiveness of Austrian tourism. This can be illustrated by comparing Austria with five major competitor countries in tourism (Italy, Portugal, Switzerland, Spain and Turkey), which clearly shows the trend in the relative competitive positions they hold.

This is based on uniform weight structures that were calculated for the six comparison countries from a reduced competition matrix, thus allowing for consistent comparisons. To accomplish this we formed two groups of countries of origin: Eastern Europe (Hungary, the Czech Republic, Slovenia, Poland, Croatia, Russia, the Slovak Republic, Romania, Bulgaria, Lithuania, Estonia, Latvia) and overseas (U.S.A., Japan, Canada, Australia, Indonesia, Israel, Thailand, Mexico, Malaysia, New Zealand, Morocco, Cyprus). This added to the 18 individually recorded countries (including Austria) plus the rest of the world gives us the total overnight stays. For data reasons, the number of destination countries was reduced to 30 European countries. In this manner, we were able to set up a fully comparable geographical competition structure between the six comparison countries.

Seen in terms of the development of the nominal effective index, the competitive position of Austria's tourism industry deteriorated the most since 1980 (index = 100) over the five competitor countries, with the index value climbing to 238.2, but close on its heels was Switzerland at 237.0. Of the other four countries, Italy (109.5) registered minor nominal effective deterioration, while Spain (95.6), Portugal (51.6) and Turkey (0.0) recorded competitive advantages that were marked in some cases (see chart 8).

As was to be expected, however, the bulk of these advantages were offset by the distinctly better price trend in Austria. In the real effective calculation, Austria's tourism industry has only suffered a very small annual competitive disadvantage, with the index rising to 109.3 over a period of 20 years. This is considerably lower than the figures for Switzerland (118.6) and Portugal (124.9), for instance. Even the spread over Italy (102.8) and

1 *Poland, the Czech Republic, Hungary, Bulgaria, Estonia, Croatia, Latvia, Lithuania, Romania, Russia, the Slovak Republic and Slovenia.*

Turkey (101.9) remains small and only Spain can boast an improvement in its price competitiveness between 1980 and 2000.

Granted, the trend in real effective indices in the course of a year reveals distinct differences over this long-term analysis. The exchange rate trend, in particular, has definitely left its mark on the relative tourism competitiveness between the countries covered. While the competitiveness of Italy, Spain and Portugal continually deteriorated in the 1980s, Austria and Switzerland managed to record small improvements beginning in 1987. And in 1990 the Austrian index, with the exception of Turkey, was the best positioned among the comparison countries.

In the 1990s the trend was shaped primarily by the impact of the exchange rate crises in the EMS. After the devaluations in 1992, Italy, Spain and Portugal all managed to make significant and lasting improvements in their competitive position. In contrast, the realignment in 1995 had the most negative impact in the index on Austria and Switzerland. Comparing 2000 with 1990, it is true that the competitive position of Austria's tourist industry only deteriorated by 1%, while Switzerland's worsened by 4.6%, Portugal was down 9.9% and Turkey 20.5%. Only Italy (84.8) and Spain (84.6) were able to strengthen their price competitiveness in international tourism significantly in the 1990s.

What contributed the most to the real effective change[1]) in the competitive position of Austrian tourism during the entire period from 1980 to 2000 (a total of 8.9 percentage points) was primarily the loss of competitiveness over France (3.9 percentage points), Russia (3.3 percentage points) and Germany (2.8 percentage points). Competitive advantages were gained, above all, over Croatia (–1.6 percentage points) (see table 7). The competitive losses, however, were concentrated almost entirely in the 1980s (7.9 percentage points), the biggest contributors being Germany (3.3 percentage points) and France (2.7 percentage points). In the 1990s, on the other hand, Austria's competitive position only recorded a minimal drop (1 percentage point), which was attributed chiefly to the less favorable price competitiveness over Russia (2.8 percentage points), Italy (1.3 percentage points) and France (1.2 percentage points) as well as to the marked improvement in competitiveness vis-à-vis Croatia (–1.6 percentage points) and the United Kingdom (–1.4 percentage points).

5 Summary

Despite the single currency, the national price and cost competitiveness of the EMU Member States will continue to be determined to a considerable extent by the varying trends in prices and costs from one country to the next within the euro area. As a consequence, in order to evaluate national competitiveness it is indispensable that competition indices be calculated based on comprehensive national foreign trade matrices representing the transactions in goods and services not only with the relevant trade partners

1 *The contributions to changes in competitiveness are calculated consistently and symmetrically on a logarithmic basis. In some cases the corresponding values are thus substantially different from the change in index values, which is expressed in arithmetic terms.*

outside EMU, but also within the euro area. Austria's newly calculated competition indices for recording the price and exchange rate effects relevant to competition are based – particularly regarding manufactured goods and tourism – for the first time on a highly differentiated depiction of Austria's current foreign trade structure broken down into destination and competitor countries.

It was not until 1993 that the effects of the resulting new weighting scheme on trends in the national nominal effective and real effective competition indices were first recorded in their entirety. From then we have been able to obtain full quotes for all of the currencies included in the new extended basket.

The most remarkable feature is the strong nominal effective appreciation of the Austrian schilling since 1993, which the previous calculation did not reflect. According to the new calculation, between January 1993 and December 2000 the cumulative appreciation of the Austrian schilling totaled 17.6% measured in nominal effective terms as measured by the overall index, whereas the old calculation indicated a depreciation of 1.0%. This means that the currencies making the major nominal contributions to appreciation are the newcomers to the index, hence the predominantly softer currencies of the East European and South American countries. Looking at the development of the real effective competitiveness index during the same period, however, reveals a completely different picture. Taking into account the distinctly more favorable trend in domestic inflation, particularly compared with the new additions to the list of countries covered, Austria has actually shown a cumulative improvement in its competitiveness of 10.3% over the average for its competitors (compared to 5.6% in the old calculation). The distinctly larger discrepancy between the nominal effective and real effective trend in competition makes the inequality of the price trend between Austria and the average of its trade partners much more obvious than in the previous calculation, which was influenced by the ever-narrowing inflation spread between Austria and the comparatively small circle of OECD countries.

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Table 1

Weighting Scheme of the New WIFO Exchange Rate Index

	Exports						Imports						Exports and Imports					
	Manufactured goods[1])	Raw materials, energy	Food	Goods	Tourism[1])	Total	Manufactured goods	Raw materials, energy	Food	Goods	Tourism	Total	Manufactured goods	Raw materials, energy	Food	Goods	Tourism	Total
Belgium and Luxembourg	2.56	1.10	0.97	2.42	1.21	2.21	2.63	1.04	2.30	2.46	0.37	2.17	2.60	1.06	1.79	2.44	0.82	2.19
Denmark	0.88	0.12	0.50	0.83	0.97	0.86	0.73	0.38	1.32	0.74	0.12	0.65	0.81	0.30	1.01	0.78	0.58	0.75
Germany	33.71	30.87	31.80	33.49	30.08	32.89	45.29	23.96	35.16	42.67	4.49	37.36	39.66	26.12	33.88	38.38	18.24	35.22
Finland	0.88	0.29	0.48	0.84	0.16	0.72	0.71	0.57	0.14	0.66	0.11	0.58	0.79	0.48	0.27	0.74	0.13	0.65
France	6.58	1.52	2.48	6.16	19.67	8.54	5.12	0.86	6.56	4.81	12.15	5.83	5.83	1.06	5.01	5.44	16.19	7.13
Greece	0.34	0.55	0.85	0.37	1.32	0.53	0.23	0.18	0.86	0.26	4.66	0.88	0.28	0.29	0.85	0.31	2.86	0.71
United Kingdom	5.27	0.61	2.39	4.92	5.45	5.02	3.40	0.52	1.62	3.02	7.22	3.61	4.31	0.55	1.91	3.91	6.27	4.28
Ireland	0.51	0.01	0.04	0.46	0.29	0.43	0.45	0.23	1.64	0.50	0.52	0.50	0.48	0.16	1.03	0.48	0.39	0.47
Italy	8.81	32.25	21.34	10.47	7.59	9.97	8.99	4.06	11.51	8.67	24.59	10.89	8.90	12.87	15.25	9.51	15.46	10.45
Netherlands	2.52	1.31	2.85	2.47	3.54	2.66	2.91	3.91	7.87	3.30	2.12	3.13	2.72	3.09	5.96	2.91	2.88	2.91
Portugal	0.56	0.16	0.12	0.52	0.83	0.57	0.67	0.31	0.16	0.60	1.25	0.69	0.61	0.26	0.14	0.56	1.03	0.64
Sweden	1.68	0.29	1.47	1.60	0.69	1.44	1.53	1.88	0.41	1.50	0.11	1.31	1.60	1.38	0.81	1.55	0.42	1.37
Spain	2.64	0.51	1.12	2.47	5.02	2.92	1.33	0.67	3.92	1.42	3.88	1.77	1.97	0.62	2.85	1.91	4.49	2.32
Iceland	0.02	0.00	0.03	0.02	0.03	0.02	0.00	0.02	0.02	0.01	0.03	0.01	0.01	0.02	0.02	0.01	0.03	0.01
Norway	0.52	0.03	0.24	0.49	0.24	0.44	0.20	0.15	0.11	0.19	0.10	0.17	0.35	0.11	0.16	0.33	0.17	0.30
Switzerland	3.99	4.90	5.40	4.10	3.18	3.94	3.73	0.91	2.02	3.36	1.42	3.09	3.86	2.16	3.31	3.71	2.36	3.50
Poland	1.48	0.72	1.84	1.45	0.57	1.30	0.57	3.61	1.03	0.88	0.23	0.79	1.01	2.71	1.34	1.15	0.41	1.03
Czech Republic	1.65	5.49	3.45	1.91	0.92	1.74	1.54	7.52	0.80	2.06	2.07	2.06	1.59	6.88	1.81	1.99	1.45	1.91
Hungary	1.91	4.30	2.81	2.06	0.98	1.87	2.30	4.91	3.27	2.60	2.40	2.57	2.11	4.72	3.09	2.35	1.64	2.24
Turkey	0.86	1.00	0.50	0.85	1.31	0.94	0.46	0.67	1.92	0.57	4.72	1.15	0.66	0.78	1.38	0.70	2.89	1.05
Australia	0.45	0.04	0.06	0.42	0.65	0.46	0.02	0.12	0.10	0.04	0.73	0.13	0.23	0.09	0.09	0.21	0.69	0.29
Japan	3.47	3.15	1.67	3.38	0.64	2.90	2.77	0.14	0.04	2.36	0.17	2.05	3.11	1.08	0.66	2.84	0.42	2.46
Canada	0.65	0.13	0.09	0.60	1.01	0.68	0.57	0.92	0.19	0.58	1.30	0.68	0.61	0.68	0.15	0.59	1.15	0.68
Mexico	0.27	0.13	0.03	0.26	0.05	0.22	0.05	0.17	0.16	0.07	0.56	0.14	0.16	0.16	0.11	0.16	0.28	0.18
New Zealand	0.07	0.00	0.04	0.07	0.35	0.12	0.01	0.06	0.45	0.04	0.38	0.09	0.04	0.04	0.30	0.05	0.36	0.10
South Korea	1.19	0.41	0.09	1.10	0.00	0.91	0.43	0.01	0.02	0.37	0.00	0.32	0.80	0.14	0.04	0.71	0.00	0.60
U.S.A.	5.93	0.84	1.49	5.50	8.75	6.07	6.29	16.74	10.24	7.51	11.33	8.04	6.12	11.78	6.91	6.57	9.95	7.10
Bulgaria	0.20	0.18	0.37	0.20	0.31	0.22	0.09	0.17	0.23	0.11	0.09	0.10	0.14	0.17	0.29	0.15	0.20	0.16
Estonia	0.03	0.01	0.17	0.04	0.00	0.03	0.01	0.01	0.01	0.01	0.08	0.02	0.02	0.01	0.07	0.02	0.04	0.03
Croatia	0.65	1.31	3.11	0.78	0.85	0.80	0.32	0.53	0.34	0.35	6.85	1.25	0.48	0.78	1.39	0.55	3.63	1.03
Latvia	0.02	0.00	0.16	0.02	0.01	0.02	0.01	0.02	0.00	0.01	0.11	0.03	0.02	0.01	0.06	0.02	0.06	0.02
Lithuania	0.04	0.01	0.26	0.05	0.02	0.05	0.03	0.06	0.02	0.04	0.19	0.06	0.04	0.04	0.11	0.04	0.10	0.05
Romania	0.43	0.35	1.90	0.49	0.15	0.43	0.28	0.28	0.41	0.28	0.20	0.27	0.35	0.30	0.98	0.38	0.18	0.35
Russia	1.60	0.27	3.48	1.61	0.63	1.44	0.36	13.58	0.10	1.60	0.30	1.41	0.96	9.42	1.39	1.60	0.47	1.43
Slovak Republic	0.73	1.85	1.33	0.81	0.20	0.70	0.82	2.27	0.22	0.92	0.46	0.86	0.78	2.14	0.64	0.87	0.32	0.78
Slovenia	0.63	3.87	3.78	0.92	0.22	0.79	0.93	0.38	0.20	0.83	1.49	0.92	0.78	1.47	1.57	0.87	0.81	0.86
China	1.46	0.06	0.02	1.33	0.00	1.10	1.44	0.69	0.26	1.30	0.00	1.12	1.45	0.49	0.17	1.31	0.00	1.11
Hong Kong	0.17	0.07	0.09	0.16	0.00	0.13	0.41	0.01	0.00	0.34	0.00	0.30	0.29	0.02	0.04	0.26	0.00	0.22
India	0.45	0.05	0.01	0.41	0.00	0.34	0.28	0.05	0.28	0.26	0.00	0.23	0.37	0.05	0.18	0.33	0.00	0.28
Indonesia	0.43	0.18	0.13	0.40	0.12	0.35	0.17	0.24	0.29	0.19	0.14	0.18	0.30	0.22	0.23	0.29	0.13	0.26
Israel	0.26	0.11	0.13	0.25	0.29	0.26	0.11	0.13	0.39	0.12	0.52	0.18	0.18	0.12	0.29	0.18	0.39	0.22
Malaysia	0.35	0.05	0.08	0.33	0.14	0.29	0.28	0.41	0.07	0.28	0.05	0.24	0.31	0.30	0.07	0.30	0.10	0.27
Philippines	0.10	0.01	0.01	0.09	0.00	0.07	0.07	0.07	0.04	0.07	0.00	0.06	0.08	0.05	0.03	0.08	0.00	0.07
Singapore	0.54	0.01	0.08	0.49	0.00	0.41	0.25	0.01	0.02	0.22	0.00	0.19	0.39	0.01	0.04	0.35	0.00	0.29
Taiwan	0.80	0.33	0.20	0.75	0.00	0.62	0.83	0.00	0.02	0.70	0.00	0.60	0.81	0.11	0.09	0.72	0.00	0.61
Thailand	0.39	0.03	0.10	0.36	0.98	0.47	0.20	0.11	0.40	0.20	1.96	0.45	0.29	0.09	0.29	0.28	1.43	0.46
Cyprus	0.01	0.02	0.17	0.02	0.28	0.07	0.00	0.00	0.22	0.02	0.33	0.06	0.01	0.01	0.20	0.02	0.30	0.06
Argentina	0.19	0.03	0.06	0.17	0.00	0.14	0.00	0.04	0.39	0.03	0.00	0.03	0.09	0.03	0.26	0.10	0.00	0.08
Brazil	0.64	0.08	0.18	0.59	0.00	0.49	0.09	0.73	1.49	0.23	0.00	0.20	0.36	0.52	0.99	0.40	0.00	0.34
Algeria	0.07	0.08	0.00	0.06	0.00	0.05	0.00	3.52	0.00	0.33	0.00	0.29	0.03	2.45	0.00	0.21	0.00	0.17
Moarocco	0.04	0.10	0.01	0.04	0.30	0.09	0.04	0.07	0.12	0.05	0.20	0.07	0.04	0.08	0.08	0.05	0.25	0.08
South Africa	0.37	0.22	0.07	0.35	0.00	0.29	0.05	2.12	0.62	0.28	0.00	0.24	0.20	1.53	0.41	0.31	0.00	0.26
OECD	89.41	90.73	84.12	89.25	95.50	90.35	92.93	74.50	93.85	91.24	87.04	90.66	91.22	79.57	90.14	90.31	91.58	90.51
OECD Europe	77.36	86.03	80.66	77.92	84.06	79.00	82.79	56.34	82.64	80.28	72.56	79.21	80.15	65.62	81.88	79.18	78.74	79.11
EU	66.93	69.58	66.39	67.04	76.82	68.76	73.99	38.55	73.47	70.61	61.60	69.36	70.56	48.25	70.77	68.94	69.78	69.07
OECD Overseas	12.05	4.70	3.46	11.33	11.44	11.35	10.14	18.16	11.21	10.96	14.48	11.45	11.07	13.96	8.26	11.13	12.85	11.40
Eastern Europe[2])	4.33	7.84	14.55	4.93	2.40	4.48	2.86	17.29	1.54	4.14	9.77	4.93	3.57	14.34	6.50	4.51	5.81	4.71
Developing countries	6.26	1.42	1.33	5.82	2.10	5.17	4.22	8.20	4.61	4.62	3.19	4.42	5.21	6.09	3.36	5.18	2.61	4.78
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

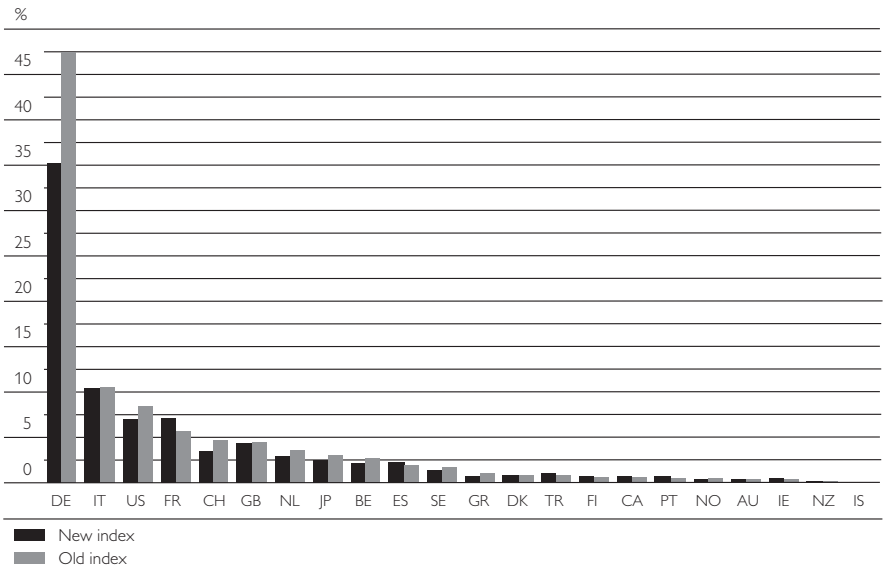
Source: WIFO.

[1]) *Double weights.*

[2]) *East European countries outside the OECD.*

Chart 1

Weighting Scheme of the Old and New Total Indices

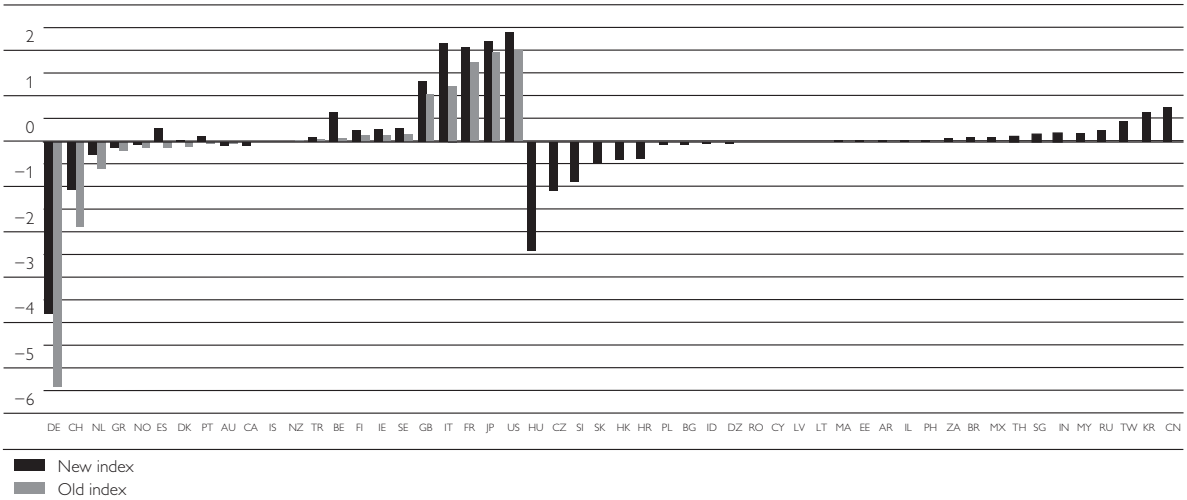


Source: WIFO.

Chart 2

Negative and Positive Third-Market Effects in the New and Old Indices for Manufactured Goods Exports

Difference between direct and extended weights in percentage points



Source: WIFO.

Table 2

Competition Matrix and Weighting of the ECB Exchange Rate Index

Competitor countries	Sales markets: Denmark	Greece	United Kingdom	Sweden	Norway	Switzerland	Poland	Czech Republic	Hungary	Turkey	Australia	Japan	Canada	Mexico
	Market share in %													
Denmark	71.70	0.47	0.95	8.91	4.95	1.16	10.04	5.20	3.73	1.26	0.16	0.05	0.06	0.07
Greece	0.17	83.63	0.15	0.23	0.05	0.44	0.65	0.73	1.36	1.35	0.03	0.00	0.01	0.00
United Kingdom	7.46	4.71	75.60	13.61	6.49	8.89	24.17	36.80	24.90	22.03	3.09	0.65	1.06	0.84
Sweden	9.54	1.08	2.34	53.31	11.93	2.67	14.94	11.32	12.27	5.87	0.93	0.25	0.35	0.35
Norway	2.41	0.45	0.63	4.89	67.50	0.31	1.92	1.50	0.59	0.85	0.05	0.05	0.05	0.04
Switzerland	1.76	2.13	1.76	6.82	1.38	71.22	8.17	14.30	12.88	8.97	0.90	0.28	0.20	0.59
Australia	0.10	0.05	0.30	0.22	0.02	0.14	0.31	0.20	0.14	0.38	74.51	0.19	0.08	0.03
Japan	2.07	2.46	5.00	3.60	2.55	4.09	3.99	6.92	18.69	13.91	7.07	91.42	1.73	6.58
Canada	0.12	0.18	0.58	0.32	0.38	0.31	1.10	1.42	1.43	1.25	0.52	0.20	47.74	0.82
South Korea	0.80	1.61	1.24	0.85	0.96	0.60	13.92	2.17	2.70	8.91	1.64	1.38	0.65	2.11
U.S.A.	3.25	2.90	9.40	6.18	2.75	8.79	14.34	14.19	14.55	28.52	9.11	4.71	47.32	87.24
Hong Kong	0.49	0.19	0.88	0.76	0.41	1.07	4.94	4.54	4.45	4.99	0.65	0.23	0.38	0.72
Singapore	0.14	0.13	1.18	0.31	0.64	0.32	1.52	0.69	2.31	1.71	1.36	0.59	0.37	0.61
Direct weight	17.27	13.37	3.89	6.62	3.88	1.74	2.52	2.00	1.40	1.22	1.43	1.62	1.18	0.18

Source: WIFO.

Table 2

Competition Matrix and Weighting Scheme of the ECB Exchange Rate Index (cont.)

Competitor countries	Sales markets: New Zealand	South Korea	U.S.A.	Estonia	Croatioa	Romania	Russia	Slovak Republic	Slovenia	China	Hong Kong	India	Indonesia	Israel	Malaysia
	Market share in %														
Denmark	0.47	0.16	0.08	11.70	6.85	3.19	2.02	6.62	4.05	0.19	0.24	1.53	0.54	0.98	0.13
Greece	0.03	0.01	0.02	0.14	1.34	7.60	2.12	0.64	2.96	0.03	0.05	0.06	0.11	0.97	0.00
United Kingdom	7.44	1.08	1.51	10.36	25.54	25.76	13.51	32.31	26.27	1.07	5.20	18.45	4.16	16.64	3.15
Sweden	1.64	0.38	0.36	50.49	18.71	7.28	6.66	12.99	10.76	1.06	0.97	2.54	1.72	2.03	0.90
Norway	0.36	0.14	0.07	4.55	3.63	0.72	0.94	1.87	1.10	0.11	0.15	0.53	0.09	0.31	0.07
Switzerland	2.17	0.55	0.43	1.98	13.10	11.44	3.29	21.73	20.18	0.54	2.82	3.43	1.46	8.12	0.77
Australia	39.79	0.74	0.11	0.08	0.36	0.18	0.13	0.22	0.21	0.34	1.68	1.39	4.39	0.24	1.42
Japan	18.35	19.05	6.70	2.07	2.07	6.28	11.15	5.42	7.71	19.40	31.84	18.45	48.79	10.40	28.52
Canada	1.27	0.65	6.64	0.85	1.54	3.19	1.46	2.90	0.79	0.79	0.68	1.37	1.11	1.22	0.65
South Korea	2.56	62.30	1.21	1.16	3.93	9.06	17.34	1.71	4.94	10.01	11.69	8.76	15.95	3.48	7.02
U.S.A.	17.58	12.94	81.19	15.13	20.06	20.42	28.50	11.38	15.25	9.14	12.92	22.16	16.75	49.25	14.52
Hong Kong	3.89	0.64	0.58	1.48	1.94	3.74	4.32	2.21	3.80	54.38	18.44	5.74	4.93	4.33	3.00
Singapore	4.46	1.37	1.12	0.00	0.94	1.14	8.57	0.00	1.98	2.94	13.31	15.58	0.00	2.04	39.86
Direct weight	0.54	0.80	1.64	2.03	0.54	0.18	1.88	0.19	1.54	1.15	0.87	1.35	0.93	0.77	0.64

Source: WIFO.

Tabelle 2

Competition Matrix and Weighting Scheme of the ECB Exchange Rate Index (cont.)

	Sales markets													
Competitor countries	Philippines	Singapore	Taiwan	Thailand	Cyprus	Argentina	Brazil	Algeria	Morocco	South Africa	Other countries	Exports: double weight	Imports: single weight	Total weight
	Market share in %													
Denmark	0.21	0.25	0.21	0.38	1.70	0.91	0.57	1.11	1.47	0.84	1.82	3.48	3.41	3.45
Greece	0.03	0.04	0.03	0.03	17.16	0.07	0.05	0.89	0.62	0.09	0.77	1.80	0.77	1.47
United Kingdom	2.60	4.40	2.44	3.20	22.92	7.10	5.74	8.58	33.22	23.83	13.55	21.37	29.21	23.92
Sweden	0.94	0.90	1.09	1.44	2.51	3.81	2.85	2.03	6.06	3.36	3.68	5.47	7.54	6.14
Norway	0.18	0.42	0.07	0.12	2.58	0.58	0.32	0.31	0.38	0.17	0.74	1.70	1.66	1.68
Switzerland	0.85	1.65	1.32	1.65	2.40	3.17	3.16	5.79	6.22	4.60	1.99	7.62	10.97	8.71
Australia	1.67	1.73	1.82	1.82	0.37	0.50	0.30	0.00	0.06	2.77	1.20	1.48	0.36	1.12
Japan	37.92	31.13	46.00	46.86	14.51	8.21	12.80	17.48	10.84	21.44	22.49	15.16	13.99	14.78
Canada	0.56	0.51	1.35	0.58	0.57	2.21	2.82	1.25	1.21	1.35	0.60	2.12	1.55	1.93
South Korea	9.29	7.40	7.13	6.44	10.31	6.51	7.72	2.34	1.82	4.91	11.08	5.74	2.84	4.80
U.S.A.	24.92	20.91	31.24	15.75	13.79	58.55	55.89	57.04	31.98	24.94	18.86	25.25	23.64	24.72
Hong Kong	9.88	7.47	2.83	4.66	2.73	6.09	5.63	1.13	3.59	7.72	12.29	4.83	1.76	3.83
Singapore	10.94	23.18	4.47	17.07	8.46	2.28	2.17	2.05	2.52	3.99	10.92	3.99	2.30	3.44
Direct weight	0.41	2.52	0.59	2.22	0.56	0.78	1.02	1.31	0.99	2.20	14.00	×	×	×

Source: WIFO.

Table 3

Competition Matrix and Weighting Scheme of the WIFO Exchange Rate Index for the Euro Area – Manufactured Goods Exports

Competitor countries	Sales markets: Denmark	Greece	United Kingdom	Sweden	Iceland	Norway	Switzerland	Poland	Czech Republic	Hungary	Turkey	Australia	Japan	Canada	Mexico	New Zealand
	Market share in %															
Denmark	66.13	0.59	0.58	3.65	10.53	4.65	0.53	1.01	0.87	0.65	0.15	0.15	0.02	0.05	0.03	0.17
Greece	0.17	70.89	0.10	0.11	0.05	0.05	0.09	0.06	0.12	0.23	0.16	0.02	0.00	0.01	0.00	0.01
United Kingdom	7.46	6.26	79.36	6.70	13.25	6.24	4.57	2.46	6.12	4.31	2.69	2.57	0.24	0.97	0.34	2.62
Sweden	9.39	1.41	1.49	77.11	8.36	11.11	1.25	1.48	1.81	2.06	0.68	0.74	0.09	0.30	0.14	0.54
Iceland	0.01	0.00	0.01	0.00	44.80	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Norway	2.37	0.58	0.40	2.31	5.98	67.53	0.14	0.19	0.24	0.10	0.10	0.04	0.02	0.05	0.02	0.12
Switzerland	1.99	2.12	1.14	1.18	1.02	0.78	81.40	0.88	2.50	2.36	1.16	0.50	0.13	0.22	0.27	0.45
Poland	1.20	0.55	0.19	0.52	0.28	0.35	0.16	84.00	3.34	1.92	0.07	0.01	0.00	0.02	0.00	0.02
Czech Republic	0.31	0.32	0.15	0.19	0.29	0.17	0.22	1.70	60.98	2.15	0.10	0.03	0.00	0.02	0.01	0.01
Hungary	0.12	0.20	0.10	0.11	0.06	0.05	0.13	0.46	1.06	65.29	0.06	0.01	0.00	0.01	0.00	0.01
Turkey	0.29	0.82	0.26	0.10	0.10	0.11	0.19	0.41	0.34	0.94	85.87	0.02	0.00	0.03	0.01	0.02
Australia	0.09	0.06	0.16	0.08	0.02	0.02	0.05	0.03	0.03	0.02	0.04	73.28	0.06	0.05	0.01	10.03
Japan	2.03	3.22	3.17	1.70	3.33	2.34	1.90	0.39	1.11	3.15	1.63	5.63	94.52	2.11	2.65	6.09
Canada	0.13	0.24	0.39	0.16	0.59	0.37	0.16	0.15	0.24	0.26	0.15	0.43	0.07	51.54	0.36	0.42
Mexico	0.02	0.03	0.09	0.04	0.01	0.03	0.20	0.01	0.01	0.26	0.03	0.05	0.01	0.74	59.56	0.05
New Zealand	0.03	0.01	0.02	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.01	1.23	0.03	0.02	0.01	67.47
South Korea	0.78	2.09	0.79	0.40	0.64	0.89	0.28	1.41	1.01	1.40	1.04	1.31	0.49	0.56	0.88	0.85
U.S.A.	3.19	3.78	5.98	2.91	7.53	2.56	4.09	1.22	2.29	2.57	2.30	7.25	1.68	40.69	33.69	5.72
Bulgaria	0.03	1.14	0.02	0.02	0.01	0.01	0.03	0.04	0.11	0.15	0.35	0.00	0.00	0.01	0.00	0.00
Estonia	0.11	0.00	0.01	0.24	0.05	0.05	0.03	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Croatia	0.01	0.04	0.01	0.01	0.01	0.01	0.04	0.03	0.15	0.22	0.01	0.00	0.00	0.00	0.00	0.00
Latvia	0.09	0.00	0.01	0.04	0.01	0.01	0.01	0.03	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Lithuania	0.18	0.00	0.02	0.05	0.10	0.02	0.03	0.09	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00
Romania	0.03	0.53	0.06	0.05	0.02	0.07	0.04	0.09	0.09	1.02	0.27	0.00	0.00	0.01	0.01	0.00
Russia	0.13	0.32	0.17	0.13	0.69	0.45	1.14	0.46	0.94	3.14	0.80	0.00	0.06	0.02	0.02	0.02
Slovak Republic	0.06	0.07	0.03	0.04	0.05	0.02	0.07	0.56	12.58	1.79	0.03	0.00	0.00	0.01	0.00	0.00
Slovenia	0.12	0.10	0.04	0.06	0.03	0.03	0.07	0.23	0.82	0.81	0.03	0.01	0.00	0.01	0.00	0.01
China	0.76	0.93	0.74	0.46	0.18	0.73	0.39	0.93	1.04	2.20	0.54	1.25	0.92	0.60	0.18	0.93
Hong Kong	0.33	0.11	0.33	0.25	0.06	0.13	0.19	0.02	0.03	0.03	0.04	0.19	0.05	0.19	0.03	0.15
India	0.33	0.25	0.41	0.16	0.22	0.13	0.29	0.06	0.13	0.21	0.20	0.24	0.04	0.12	0.05	0.23
Indonesia	0.25	0.25	0.23	0.07	0.00	0.05	0.05	0.08	0.06	0.11	0.09	0.33	0.16	0.08	0.05	0.20
Israel	0.12	0.75	0.27	0.09	0.04	0.07	0.31	0.10	0.22	0.34	0.23	0.16	0.05	0.05	0.04	0.10
Malaysia	0.21	0.18	0.61	0.13	0.08	0.07	0.10	0.09	0.08	0.26	0.07	0.65	0.25	0.20	0.18	0.49
Philippines	0.04	0.03	0.10	0.02	0.01	0.01	0.02	0.01	0.01	0.06	0.00	0.09	0.08	0.05	0.02	0.05
Singapore	0.18	0.33	0.83	0.15	0.00	0.18	0.30	0.14	0.11	0.39	0.16	1.66	0.30	0.16	0.26	1.26
Taiwan	0.71	0.75	0.74	0.51	0.89	0.49	0.47	0.54	1.18	0.84	0.54	1.29	0.40	0.78	0.59	1.40
Thailand	0.46	0.37	0.36	0.15	0.29	0.10	0.34	0.50	0.21	0.49	0.09	0.45	0.22	0.14	0.08	0.26
Cyprus	0.01	0.08	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Argentina	0.01	0.05	0.01	0.01	0.00	0.03	0.09	0.02	0.00	0.01	0.03	0.02	0.00	0.02	0.08	0.01
Brazil	0.09	0.41	0.16	0.08	0.02	0.04	0.10	0.08	0.07	0.14	0.16	0.15	0.06	0.13	0.42	0.10
Algeria	0.00	0.03	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Morocco	0.00	0.02	0.03	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.08
South Africa	0.02	0.08	0.41	0.02	0.36	0.01	0.49	0.01	0.02	0.03	0.04	0.22	0.02	0.04	0.02	0.12
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Direct export weight for the euro area	2.57	1.69	17.17	3.98	0.07	1.45	6.75	2.58	1.93	1.54	2.20	1.20	3.98	1.22	0.78	0.18
Adjusted direct export weight for Austria[1])	1.99	1.10	9.16	3.23	0.06	1.37	11.74	3.59	6.31	10.00	1.79	1.24	2.94	1.71	0.40	0.19

Source: WIFO.

[1]) *Matrix abridged to 43 countries.*

Table 3

Competition Matrix and Weighting Scheme of the Exchange Rate Index for the Euro Area – Manufactured Goods Exports (cont.)

	Sales markets															
Competitor countries	South Korea	U.S.A.	Bulgaria	Estonia	Croatia	Latvia	Lithuania	Romania	Russia	Slovak Republic	Slovenia	China	Hong Kong	India	Indonesia	Israel
	Market share in %															
Denmark	0.07	0.04	0.53	1.76	0.59	2.83	4.47	0.25	0.10	0.47	0.80	0.02	0.14	0.11	0.15	0.39
Greece	0.00	0.01	5.02	0.02	0.10	0.19	0.31	0.54	0.09	0.04	0.51	0.00	0.03	0.00	0.03	0.37
United Kingdom	0.49	0.83	2.31	1.69	2.03	5.17	4.15	1.90	0.62	2.19	4.73	0.13	3.19	1.33	1.50	6.68
Sweden	0.17	0.19	0.75	7.77	1.41	8.96	4.31	0.51	0.28	0.86	1.87	0.12	0.57	0.18	0.49	0.78
Iceland	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Norway	0.06	0.04	0.10	0.70	0.27	0.97	0.42	0.05	0.04	0.12	0.19	0.01	0.09	0.04	0.03	0.12
Switzerland	0.26	0.23	1.49	0.34	1.08	0.73	0.69	0.74	0.15	1.64	3.22	0.07	1.69	0.27	0.47	3.50
Poland	0.02	0.02	0.53	0.90	0.40	2.98	7.11	0.27	0.42	2.40	0.74	0.00	0.03	0.03	0.03	0.05
Czech Republic	0.01	0.01	1.34	0.41	1.95	1.20	2.73	0.43	0.24	33.11	5.00	0.01	0.06	0.04	0.02	0.13
Hungary	0.00	0.01	0.48	0.23	1.01	0.44	1.08	1.33	0.20	2.10	2.07	0.00	0.01	0.01	0.01	0.12
Turkey	0.02	0.04	2.62	0.10	0.28	0.17	0.98	1.61	0.55	0.23	0.50	0.00	0.16	0.01	0.03	0.92
Australia	0.31	0.05	0.01	0.01	0.03	0.01	0.00	0.01	0.00	0.01	0.03	0.03	0.89	0.09	1.18	0.06
Japan	8.35	3.49	0.37	0.32	0.12	0.23	0.22	0.45	0.45	0.36	1.21	2.10	18.74	1.22	13.52	3.50
Canada	0.29	3.60	0.10	0.14	0.13	0.38	0.13	0.24	0.06	0.19	0.16	0.10	0.49	0.10	0.34	0.52
Mexico	0.05	2.01	0.04	0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.01	0.01	0.21	0.03	0.05	0.03
New Zealand	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01	0.06	0.01
South Korea	79.37	0.68	0.88	0.33	0.60	0.44	1.34	2.50	0.63	0.71	2.65	1.00	6.88	0.59	4.37	1.35
U.S.A.	5.65	84.41	0.93	1.34	1.06	4.59	1.68	0.71	0.68	0.77	2.32	0.92	7.60	1.49	3.93	15.29
Bulgaria	0.00	0.00	74.96	0.06	0.13	0.21	0.44	0.38	0.12	0.16	0.10	0.00	0.00	0.01	0.02	0.09
Estonia	0.00	0.00	0.01	73.48	0.00	7.92	3.49	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Croatia	0.00	0.00	0.06	0.00	76.30	0.03	0.00	0.01	0.06	0.16	8.24	0.00	0.00	0.00	0.00	0.01
Latvia	0.00	0.00	0.03	1.17	0.00	29.06	3.15	0.00	0.09	0.04	0.03	0.00	0.00	0.00	0.00	0.00
Lithuania	0.01	0.00	0.15	1.64	0.01	7.74	46.30	0.02	0.18	0.03	0.02	0.00	0.00	0.00	0.00	0.00
Romania	0.01	0.01	0.91	0.00	0.12	0.01	0.06	84.83	0.05	0.19	0.34	0.01	0.01	0.04	0.02	0.31
Russia	0.19	0.10	4.01	6.37	1.07	23.53	14.62	0.69	93.15	3.56	0.47	0.34	0.09	0.24	0.06	0.24
Slovak Republic	0.00	0.00	0.37	0.21	0.76	0.52	0.84	0.23	0.12	48.45	1.59	0.00	0.00	0.03	0.01	0.03
Slovenia	0.00	0.01	0.23	0.03	9.48	0.21	0.42	0.15	0.13	0.72	60.02	0.00	0.01	0.01	0.01	0.03
China	1.74	0.82	0.50	0.20	0.10	0.21	0.33	0.88	0.57	0.39	0.42	92.29	25.53	0.30	1.66	0.75
Hong Kong	0.08	0.22	0.03	0.05	0.00	0.02	0.01	0.01	0.01	0.00	0.06	0.78	7.47	0.03	0.23	0.14
India	0.09	0.16	0.08	0.03	0.07	0.10	0.05	0.04	0.21	0.04	0.07	0.02	1.32	91.90	0.31	0.92
Indonesia	0.22	0.13	0.07	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.06	0.97	0.08	66.98	0.00
Israel	0.11	0.19	0.18	0.14	0.08	0.35	0.09	0.80	0.08	0.18	1.17	0.01	0.81	0.17	0.01	60.00
Malaysia	0.30	0.43	0.05	0.00	0.03	0.08	0.02	0.02	0.04	0.02	0.02	0.10	2.87	0.18	1.15	0.00
Philippines	0.08	0.13	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.10	0.01	0.43	0.01	0.11	0.02
Singapore	0.91	0.68	0.13	0.00	0.07	0.28	0.08	0.05	0.34	0.00	0.09	0.24	5.96	0.85	0.00	0.65
Taiwan	0.70	0.89	0.27	0.33	0.52	0.25	0.19	0.18	0.04	0.71	1.14	1.49	11.19	0.20	2.14	1.35
Thailand	0.12	0.27	0.19	0.17	0.01	0.13	0.10	0.05	0.07	0.07	0.04	0.07	1.88	0.11	0.72	0.73
Cyprus	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.04
Argentina	0.01	0.03	0.00	0.00	0.00	0.01	0.15	0.00	0.02	0.00	0.02	0.01	0.12	0.02	0.05	0.03
Brazil	0.13	0.21	0.02	0.02	0.14	0.01	0.00	0.02	0.02	0.04	0.02	0.03	0.19	0.05	0.19	0.14
Algeria	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Morocco	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.01	0.00
South Africa	0.09	0.04	0.07	0.00	0.01	0.01	0.00	0.04	0.00	0.03	0.00	0.01	0.26	0.07	0.10	0.72
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Direct export weight for the euro area	1.77	13.50	0.22	0.19	0.55	0.10	0.16	0.59	2.24	0.58	0.80	2.08	2.04	1.16	0.88	1.38
Adjusted direct export weight for Austria[1])	1.30	8.21	0.58	0.06	2.42	0.08	0.11	1.05	3.16	2.74	3.51	1.65	1.35	0.62	1.07	0.56

Source: WIFO.

[1]) *Matrix abridged to 43 countries.*

Table 3

Competition Matrix and Weighting Scheme of the WIFO Exchange Rate Index for the Euro Area – Manufactured Goods Exports (cont.)

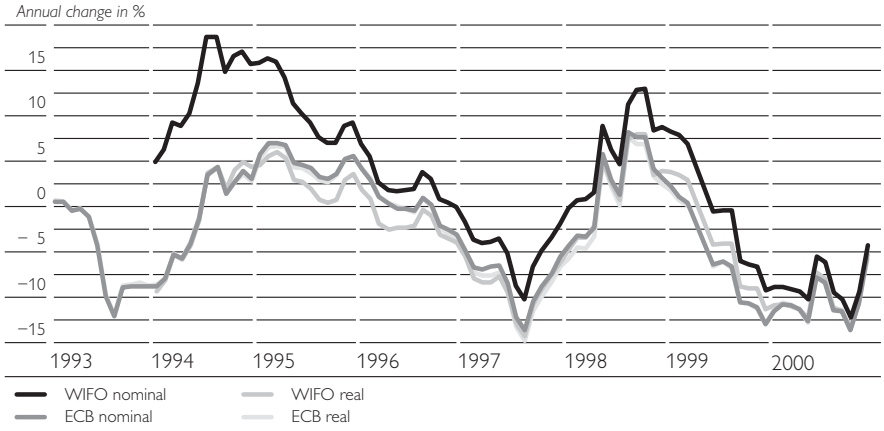
	Sales markets														
Competitor countries	Malaysia	Philippines	Singapore	Taiwan	Thailand	Cyprus	Argentina	Brazil	Algeria	Morocco	South Africa	Other countries	Exports: double weight	Imports: single weight	Total weight
	Market share in %														
Denmark	0.08	0.10	0.19	0.06	0.15	0.52	0.08	0.05	0.16	0.21	0.13	1.54	2.37	2.05	2.24
Greece	0.00	0.01	0.03	0.01	0.01	7.25	0.01	0.00	0.08	0.09	0.02	0.47	1.34	0.52	0.99
United Kingdom	1.89	1.28	3.38	0.76	1.28	10.42	0.62	0.58	0.88	5.08	3.80	9.44	16.76	18.06	17.31
Sweden	0.51	0.44	0.66	0.33	0.56	1.09	0.33	0.27	0.19	0.91	0.57	1.48	4.34	4.83	4.55
Iceland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.03	0.04
Norway	0.04	0.08	0.30	0.02	0.05	1.12	0.04	0.03	0.03	0.06	0.04	0.49	1.33	1.01	1.20
Switzerland	0.49	0.42	1.22	0.44	0.72	0.99	0.31	0.34	0.57	1.04	0.78	3.16	6.62	6.86	6.72
Poland	0.05	0.06	0.06	0.08	0.11	1.30	0.03	0.02	0.13	0.57	0.02	0.93	2.55	2.04	2.33
Czech Republic	0.01	0.01	0.10	0.03	0.04	0.27	0.02	0.01	0.15	0.14	0.08	0.93	1.70	1.80	1.75
Hungary	0.01	0.01	0.02	0.00	0.01	0.17	0.01	0.01	0.02	0.05	0.02	0.90	1.25	1.62	1.40
Turkey	0.11	0.07	0.28	0.04	0.08	3.71	0.01	0.01	2.09	0.55	0.09	1.77	2.31	1.53	1.98
Australia	0.74	0.72	1.03	0.50	0.66	0.14	0.04	0.02	0.00	0.01	0.38	0.98	1.15	0.23	0.76
Japan	16.07	17.05	22.79	15.52	17.84	6.26	0.71	1.17	1.65	1.63	3.14	14.31	8.95	10.25	9.50
Canada	0.39	0.27	0.39	0.42	0.24	0.26	0.21	0.29	0.11	0.18	0.23	1.26	1.46	1.02	1.28
Mexiko	0.05	0.07	0.28	0.05	0.09	0.02	0.55	0.36	0.09	0.04	0.02	1.94	1.05	0.39	0.77
New Zealand	0.08	0.08	0.09	0.04	0.05	0.07	0.02	0.01	0.00	0.00	0.04	0.16	0.18	0.05	0.12
South Korea	3.57	4.22	5.42	2.15	2.24	4.60	0.57	0.74	0.61	0.71	0.99	7.68	3.36	1.96	2.76
U.S.A.	8.45	10.76	15.31	8.20	6.04	1.58	5.18	5.22	3.14	2.33	3.51	22.80	18.24	22.93	20.23
Bulgaria	0.02	0.02	0.00	0.00	0.02	0.50	0.01	0.00	0.14	0.11	0.01	0.38	0.26	0.26	0.26
Estonia	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.05	0.18	0.10	0.15
Croatia	0.00	0.00	0.00	0.00	0.00	0.71	0.00	0.00	0.04	0.06	0.00	0.36	0.55	0.33	0.46
Latvia	0.00	0.01	0.01	0.00	0.00	0.02	0.00	0.00	0.04	0.00	0.00	0.06	0.06	0.06	0.06
Lithuania	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.21	0.13	0.12	0.13
Romania	0.03	0.06	0.05	0.02	0.04	0.69	0.02	0.01	0.45	0.16	0.04	0.47	0.63	0.74	0.68
Russia	0.14	0.28	0.12	0.23	0.19	4.92	0.03	0.05	0.50	0.32	0.04	3.06	2.85	1.33	2.20
Slovak Republic	0.01	0.01	0.01	0.00	0.01	0.05	0.02	0.00	0.08	0.03	0.01	0.36	0.65	0.68	0.66
Slovenia	0.01	0.00	0.01	0.00	0.01	0.08	0.01	0.01	0.07	0.01	0.01	0.54	0.66	0.91	0.77
China	1.32	1.64	3.61	1.52	1.38	1.18	0.45	0.37	0.56	0.90	0.96	5.07	3.77	5.23	4.39
Hong Kong	0.33	0.69	1.36	0.52	0.32	0.07	0.02	0.04	0.00	0.07	0.09	0.49	0.41	1.18	0.74
India	0.31	0.19	0.69	0.16	0.32	0.56	0.08	0.05	0.09	0.21	0.35	2.21	1.57	1.20	1.41
Indonesia	0.74	0.62	3.35	0.40	0.41	0.39	0.05	0.06	0.20	0.05	0.10	1.31	0.95	0.83	0.89
Israel	0.07	0.35	0.23	0.09	0.30	2.30	0.12	0.08	0.00	0.06	0.27	0.71	1.11	0.79	0.97
Malaysia	37.53	1.54	14.78	1.39	1.84	0.35	0.07	0.16	0.05	0.11	0.16	1.13	1.05	1.36	1.18
Philippines	0.30	50.07	0.89	0.24	0.39	0.04	0.01	0.01	0.00	0.00	0.02	0.18	0.32	0.42	0.36
Singapore	21.02	4.50	11.00	2.69	5.85	1.35	0.17	0.19	0.06	0.29	0.51	3.48	1.41	1.76	1.56
Taiwan	3.66	2.98	5.50	62.93	2.92	1.29	0.40	0.35	0.26	0.57	1.15	1.25	1.98	2.48	2.19
Thailand	1.55	1.04	6.41	0.66	55.43	0.71	0.05	0.06	0.14	0.09	0.19	2.12	1.20	1.05	1.14
Cyprus	0.00	0.00	0.00	0.00	0.00	44.23	0.00	0.00	0.00	0.03	0.00	0.04	0.08	0.02	0.05
Argentina	0.08	0.03	0.05	0.03	0.03	0.04	83.79	1.57	0.06	0.08	0.04	0.98	0.86	0.12	0.55
Brazil	0.20	0.26	0.26	0.20	0.27	0.63	5.84	87.75	0.04	0.44	0.37	2.97	2.02	0.71	1.46
Algeria	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87.02	0.19	0.00	0.02	0.48	0.04	0.29
Morocco	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.22	82.52	0.00	0.16	0.55	0.61	0.58
South Africa	0.11	0.08	0.15	0.25	0.11	0.06	0.09	0.09	0.06	0.08	81.84	2.12	1.27	0.48	0.93
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Direct export weight for the euro area	0.95	0.42	1.41	1.37	1.01	0.15	0.82	1.68	0.54	0.63	1.05	12.45	100.00	×	×
Adjusted direct export weight for Austria[1])	0.38	0.17	0.84	0.85	0.63	0.07	0.41	1.26	0.22	0.09	0.73	9.06	100.00	×	×

Source: WIFO.

[1]) *Matrix abridged to 43 countries.*

Chart 3

Comparison of the ECB Exchange Rate Index with the WIFO Exchange Rate Index for the Euro Area



Source: WIFO.

Table 4

Weights for the „Theoretical Euro"

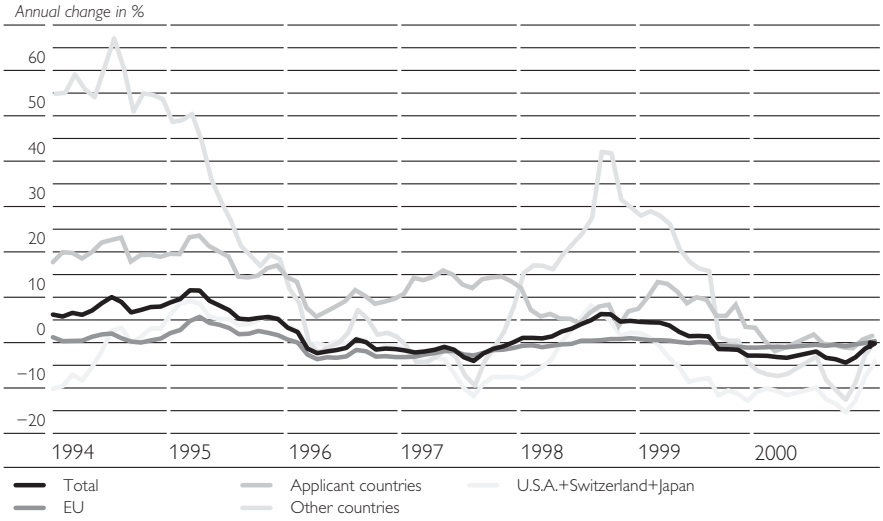
Germany	34.66
France	17.83
Italy	14.34
Netherlands	9.19
Belgium and Luxembourg	8.01
Spain	4.95
Ireland	3.75
Finland	3.27
Austria	2.91
Portugal	1.08

Source: ECB.

Chart 4

Development of the Nominal Effective Exchange Rate Indices

for Manufactured Goods Exports by Region



Source: WIFO.

Table 5

Development of the Exchange Rate Indices for Manufactured Goods

Exports by Period and Region

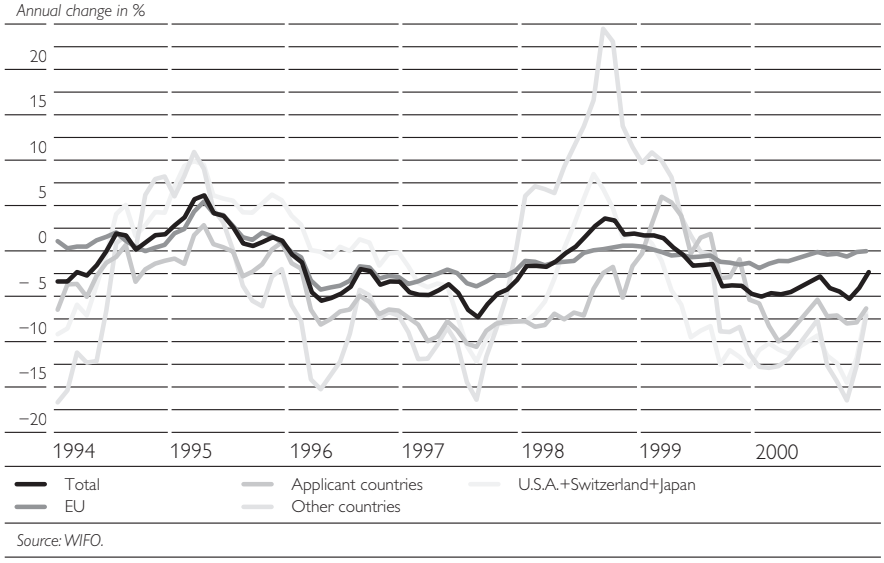
	Total	EU	Euro-area[1])	Remaining EU countries	Applicant countries	Other countries	U.S.A.	Switzerland	Japan	USA +Switzerland +Japan	Asian countries
	Change in %										
Nominal effective											
January 1999 to December 2000	− 4.3	−1.1	+0.0	− 9.6	+ 4.1	− 9.1	−22.7	− 5.8	−23.4	−18.2	−18.9
January 1993 to April 1995	+21.2	+6.9	+6.3	+11.8	+ 53.9	+161.2	+17.0	−10.0	−21.5	− 2.4	+27.6
April 1995 to December 1998	+ 2.1	−5.6	−4.1	−16.3	+ 39.5	+ 41.1	−17.2	− 1.1	+15.7	− 4.8	+12.7
January 1993 to December 2000	+18.6	−0.3	+1.9	−16.0	+123.7	+242.9	−25.9	−15.5	−33.6	−25.1	+15.9
January 1993 to December 1998	+23.8	+0.9	+1.9	− 6.4	+114.7	+268.7	− 3.2	−11.0	− 9.2	− 7.1	+43.7
Real effective											
January 1999 to December 2000	− 6.5	−1.2	+0.0	−10.2	− 9.8	−18.1	−24.0	− 4.6	−19.6	−17.4	−17.3
January 1993 to April 1995	+ 3.4	+6.7	+6.0	+11.2	− 2.5	− 5.3	+17.2	− 7.8	−17.6	− 0.5	+11.0
April 1995 to Dezember 1998	− 7.7	−7.1	−5.3	−19.0	−18.7	− 7.6	−20.0	+ 1.9	+17.6	− 5.0	− 2.2
January 1993 to December 2000	−10.9	−2.0	+0.5	−19.3	−29.7	−27.9	−29.7	−10.0	−25.4	−23.1	−11.2
January 1993 to December 1998	− 4.5	−0.9	+0.4	− 9.9	−20.7	−12.5	− 6.3	− 6.0	− 3.2	− 5.4	+ 8.6

Source: WIFO.

[1]) Greece has already been factored in for the entire time period.

Chart 5

Development of the Real Effective Exchange Rate Indices for Manufactured Goods Exports by Region



Source: WIFO.

Table 6

International Comparison of National Competitive Performance

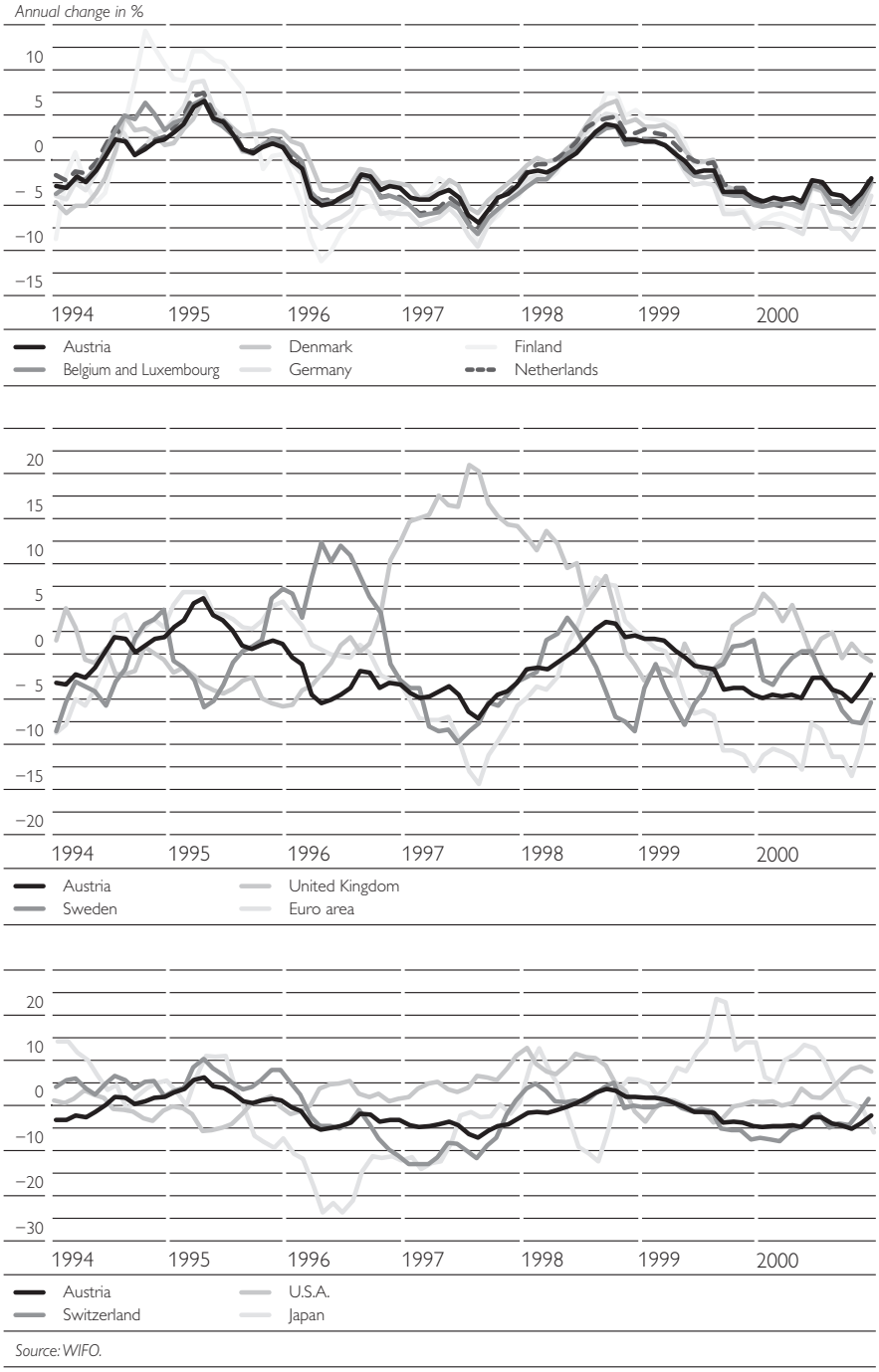
Exchange rate indices for manufactured goods exports	Austria	Belgium and Luxem-bourg	Den-mark	Germany	Nether-lands	Finland	Euro area	Sweden	United Kingdom	Switzer-land	U.S.A.	Japan
Nominal effective												
January 1996 to December 2000												
Standard deviation	2.9	3.3	3.7	4.4	3.2	5.4	6.2	5.9	6.8	5.2	4.5	11.4
Median	−0.1	−1.3	−0.8	−1.0	−1.3	−0.2	−4.3	1.4	6.0	−0.7	5.6	2.5
January 1999 to December 2000												
Standard deviation	2.9	3.0	3.6	4.2	2.8	6.3	4.7	2.7	2.7	3.2	3.0	6.8
Median	−0.8	−2.0	−2.4	−2.3	−2.0	−0.8	−8.3	−0.7	1.7	−1.5	2.0	12.3
Real effective												
January 1996 to December 2000												
Standard deviation	2.6	3.0	3.4	3.9	3.3	4.5	6.1	5.6	7.1	4.9	4.0	11.4
Median	−2.4	−2.7	−1.5	−3.8	−2.2	−3.2	−4.5	−1.4	5.5	−3.1	3.9	– 0.5
January 1999 to December 2000												
Standard deviation	2.2	2.5	3.3	3.5	2.9	4.2	4.5	2.9	2.8	2.9	3.4	7.0
Median	−2.6	−2.9	−2.5	−4.6	−2.3	−3.2	−8.0	−2.9	1.1	−3.0	1.7	8.9

Source: WIFO.

Chart 6

Dynamic of the Real Effective Competition Indices

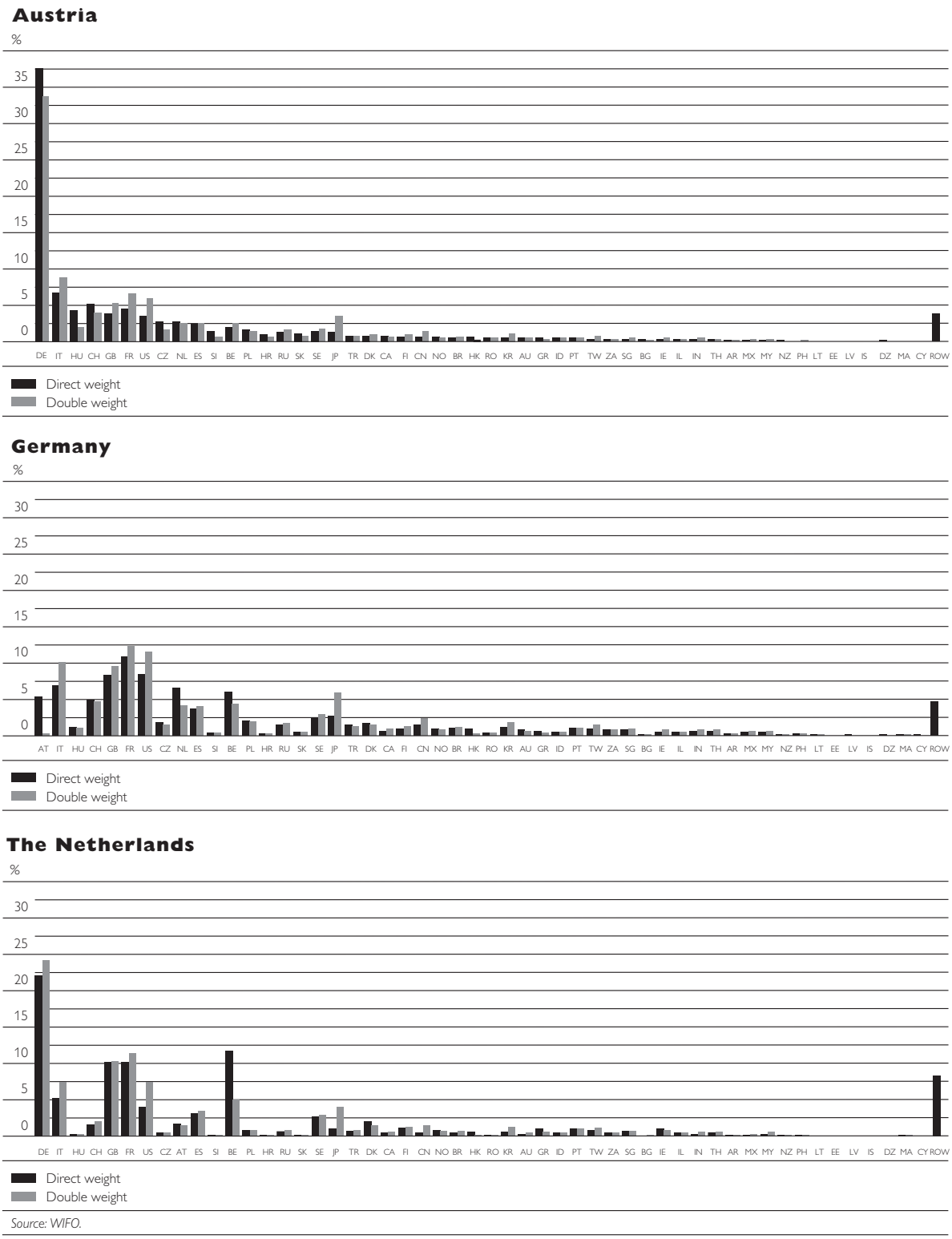
for Manufactured Goods Exports



Source: WIFO.

Chart 7

Single and Double Export Weights of Selected Countries

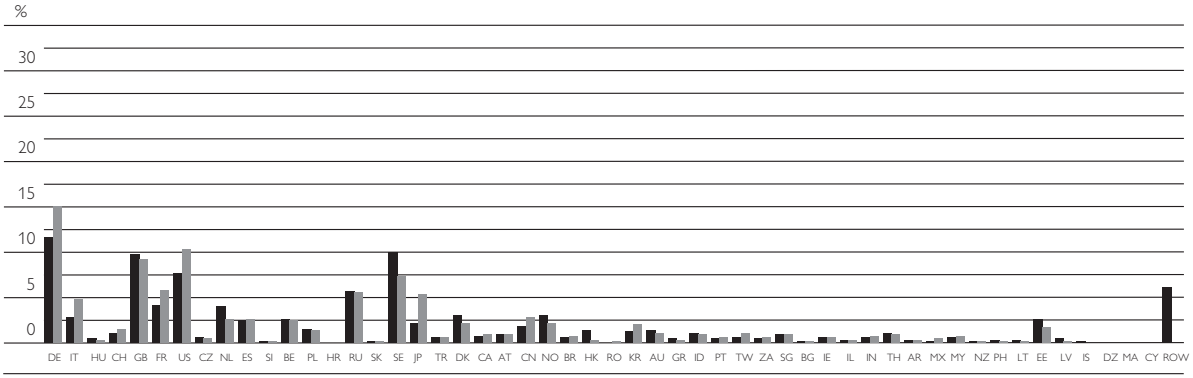


Source: WIFO.

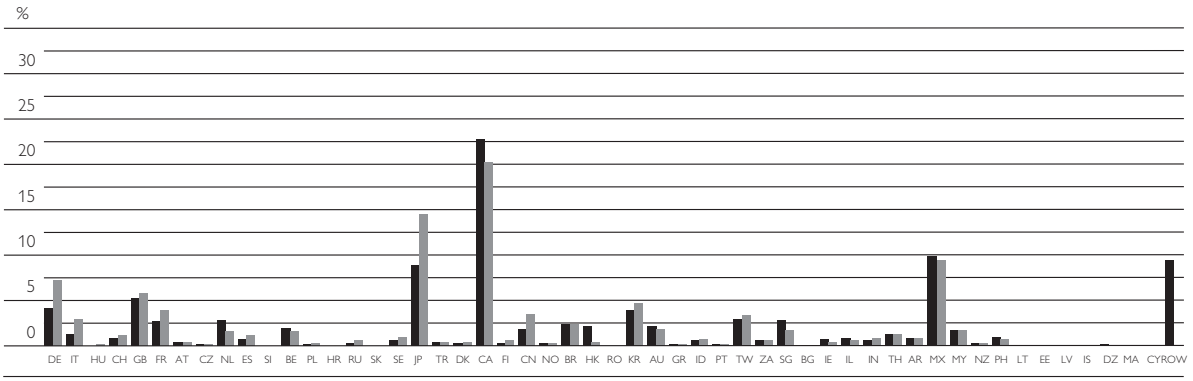
Chart 7

Single and Double Export Weights of Selected Countries (cont.)

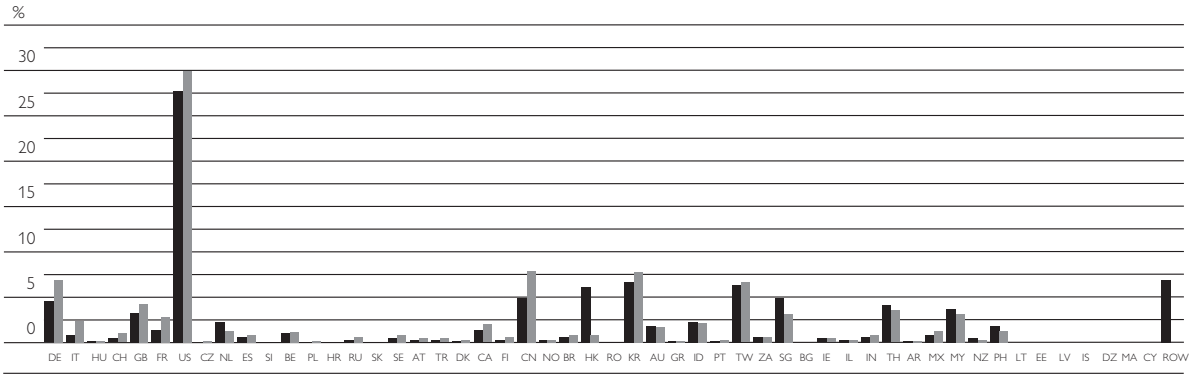
Finland



U.S.A.



Japan



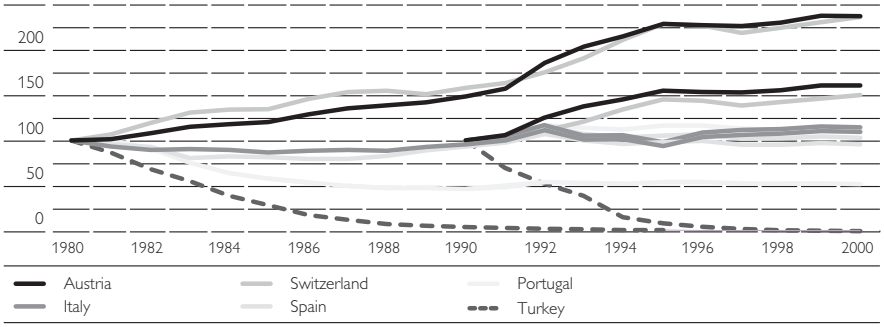
Source: WIFO.

Chart 8

Comparison of the Competition Indices for Tourism Exports

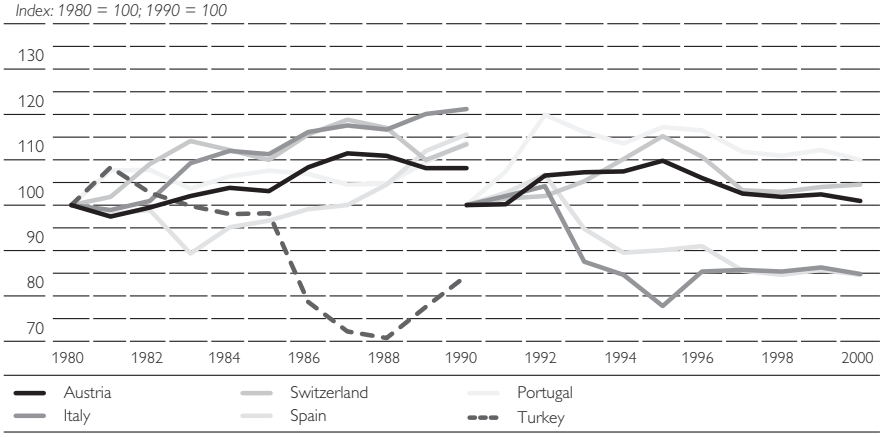
Nominal effective

Index: 1980 = 100; 1990 = 100



Real effective

Index: 1980 = 100; 1990 = 100



Source: WIFO.

Table 7

Contributions to the Change in Austria's Real Effective Tourism Index

	Logarithmic calculation		
	1981 to 1990	1991 to 2000	1981 to 2000
	percentage points		
Total	7.89	0.99	8.88
France	2.66	1.21	3.87
Russia	0.49	2.80	3.29
Germany	3.33	−0.50	2.83
Netherlands	0.58	−0.05	0.52
Spain	−0.35	0.83	0.48
Italy	−0.95	1.32	0.37
Belgium and Luxembourg	0.21	0.03	0.24
Turkey	0.37	−0.23	0.14
Czech Republic	0.39	−0.42	−0.03
Hungary	0.09	−0.26	−0.18
Poland	0.27	−0.49	−0.22
Switzerland	−0.18	−0.14	−0.32
United Kingdom	0.84	−1.41	−0.57
Croatia	−0.04	−1.56	−1.60
Remaining currencies	0.18	−0.13	0.05

Source: WIFO.

Appendix A

Competition Matrix for the National Exchange Rate Index of Manufactured Goods

Competitor countries	Sales markets: Belgium and Luxembourg	Denmark	Germany	Finland	France	Greece	United Kingdom	Ireland	Italy	Netherlands	Portugal	Sweden	Spain	Iceland
	Market share in %													
Belgium and Luxembourg	21.91	2.26	2.53	1.28	3.73	2.18	2.48	1.71	1.44	9.32	1.88	1.83	1.77	1.47
Denmark	0.42	45.87	0.59	1.24	0.22	0.38	0.45	0.68	0.12	0.75	0.26	2.78	0.19	8.19
Germany	19.28	13.67	71.13	7.03	8.20	8.96	7.22	6.59	6.27	17.51	7.99	9.35	6.78	8.75
Finland	0.64	1.80	0.37	64.29	0.23	0.53	0.65	0.67	0.19	0.80	0.30	2.99	0.34	1.44
France	11.82	3.45	3.51	1.77	66.56	4.59	4.04	4.00	3.71	5.36	5.35	3.16	7.10	2.47
Greece	0.08	0.12	0.14	0.04	0.06	46.03	0.08	0.07	0.10	0.09	0.05	0.08	0.05	0.04
United Kingdom	8.08	5.18	2.47	3.26	3.22	4.06	61.46	34.87	2.11	9.38	3.44	5.11	3.20	10.30
Ireland	1.42	0.80	0.46	0.33	0.53	0.31	1.53	12.80	0.27	1.61	0.27	0.61	0.35	0.95
Italy	4.17	3.10	3.36	1.77	4.51	12.30	2.67	2.72	76.13	3.64	5.30	1.85	4.41	2.10
Netherlands	9.98	4.09	2.41	2.18	1.99	3.46	2.30	3.95	1.22	18.99	2.10	2.87	1.54	3.82
Portugal	0.55	0.71	0.41	0.23	0.48	0.26	0.44	0.29	0.14	0.55	55.42	0.40	1.10	0.45
Sweden	2.12	6.51	0.66	5.26	0.51	0.91	1.15	1.30	0.43	2.12	0.58	58.86	0.57	6.49
Spain	1.62	0.75	1.04	0.41	2.62	2.48	1.23	1.12	1.36	1.29	11.24	0.60	66.87	0.84
Iceland	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	34.82
Norway	0.20	1.64	0.18	0.75	0.12	0.38	0.31	0.40	0.10	0.39	0.16	1.76	0.10	4.65
Switzerland	1.17	1.38	1.58	0.77	1.15	1.37	0.88	0.73	1.06	1.16	0.95	0.90	0.70	0.79
Poland	0.30	0.83	0.66	0.25	0.14	0.36	0.15	0.09	0.21	0.53	0.05	0.40	0.09	0.22
Czech Republic	0.22	0.22	0.65	0.12	0.10	0.21	0.11	0.14	0.13	0.24	0.05	0.15	0.06	0.23
Hungary	0.19	0.08	0.38	0.08	0.08	0.13	0.08	0.09	0.14	0.19	0.02	0.09	0.05	0.05
Turkey	0.24	0.20	0.39	0.04	0.14	0.53	0.20	0.17	0.19	0.32	0.10	0.08	0.10	0.08
Australia	0.07	0.06	0.03	0.11	0.02	0.04	0.12	0.05	0.05	0.05	0.01	0.06	0.01	0.02
Japan	2.95	1.41	1.67	2.04	0.90	2.09	2.46	6.05	0.71	5.46	1.31	1.30	0.89	2.59
Canada	0.32	0.09	0.11	0.13	0.13	0.16	0.30	0.49	0.07	0.42	0.06	0.13	0.06	0.46
Mexico	0.22	0.02	0.04	0.00	0.05	0.02	0.07	0.06	0.03	0.11	0.03	0.03	0.09	0.01
New Zealand	0.00	0.02	0.01	0.00	0.00	0.01	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.02
South Korea	0.37	0.54	0.46	0.37	0.22	1.36	0.61	0.91	0.20	0.90	0.61	0.30	0.34	0.50
U.S.A.	6.41	2.21	1.71	2.26	2.00	2.46	4.63	10.30	1.20	7.49	0.88	2.22	1.36	5.85
Bulgaria	0.04	0.02	0.03	0.01	0.02	0.74	0.02	0.01	0.09	0.03	0.02	0.01	0.04	0.01
Estonia	0.01	0.08	0.01	0.54	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.18	0.00	0.04
Croatia	0.03	0.01	0.07	0.00	0.01	0.03	0.01	0.05	0.14	0.04	0.00	0.01	0.00	0.00
Latvia	0.01	0.06	0.01	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.03	0.00	0.01
Lithuania	0.02	0.13	0.02	0.04	0.01	0.00	0.01	0.09	0.02	0.03	0.02	0.04	0.01	0.07
Romania	0.09	0.02	0.13	0.01	0.07	0.34	0.05	0.02	0.26	0.14	0.02	0.04	0.03	0.01
Russia	0.12	0.09	0.11	1.53	0.05	0.21	0.13	0.37	0.09	1.72	0.02	0.10	0.04	0.54
Slovak Republic	0.07	0.04	0.15	0.05	0.03	0.05	0.02	0.02	0.07	0.07	0.01	0.03	0.02	0.04
Slovenia	0.05	0.08	0.22	0.03	0.09	0.06	0.03	0.03	0.21	0.07	0.02	0.05	0.02	0.02
China	0.72	0.53	0.50	0.33	0.30	0.61	0.57	0.31	0.34	1.86	0.21	0.35	0.39	0.14
Hong Kong	0.04	0.23	0.13	0.12	0.06	0.07	0.26	0.30	0.03	0.37	0.05	0.19	0.04	0.05
India	0.73	0.23	0.15	0.07	0.10	0.16	0.32	0.16	0.15	0.30	0.13	0.12	0.14	0.17
Indonesia	0.36	0.17	0.08	0.05	0.07	0.16	0.18	0.10	0.08	0.40	0.06	0.05	0.09	0.00
Israel	0.71	0.08	0.08	0.05	0.08	0.49	0.21	0.29	0.10	0.38	0.07	0.07	0.12	0.03
Malaysia	0.50	0.15	0.19	0.14	0.10	0.12	0.47	1.05	0.08	1.04	0.06	0.10	0.10	0.06
Philippines	0.04	0.03	0.05	0.02	0.03	0.02	0.08	0.09	0.01	0.41	0.01	0.01	0.02	0.01
Singapore	0.27	0.12	0.33	0.35	0.37	0.21	0.64	4.75	0.10	1.64	0.10	0.11	0.12	0.00
Taiwan	0.31	0.49	0.46	0.39	0.32	0.49	0.58	1.35	0.22	1.27	0.18	0.39	0.28	0.69
Thailand	0.52	0.32	0.11	0.14	0.11	0.24	0.28	0.46	0.09	0.73	0.13	0.11	0.11	0.23
Cyprus	0.00	0.01	0.00	0.00	0.00	0.05	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Argentina	0.02	0.00	0.01	0.00	0.01	0.03	0.01	0.01	0.04	0.08	0.01	0.01	0.04	0.00
Brazil	0.22	0.06	0.09	0.05	0.06	0.26	0.12	0.09	0.15	0.47	0.37	0.06	0.10	0.01
Algeria	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.00
Morocco	0.07	0.00	0.01	0.00	0.15	0.01	0.02	0.10	0.03	0.03	0.04	0.00	0.05	0.00
South Africa	0.27	0.01	0.07	0.01	0.03	0.05	0.32	0.08	0.06	0.23	0.03	0.01	0.06	0.28
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	1.92	0.86	37.48	0.65	4.51	0.47	3.94	0.25	6.64	2.79	0.44	1.39	2.35	0.02

Source: WIFO.

Appendix A

Competition Matrix for the National Exchange Rate Index of Manufactured Goods (cont.)

	Sales markets													
Competitor countries	Norway	Switzer-land	Poland	Czech Republic	Hungary	Turkey	Australia	Japan	Canada	Mexico	New Zealand	South Korea	U.S.A.	Bulgaria
	Market share in %													
Belgium and Luxembourg	1.01	1.67	1.37	1.88	2.15	1.03	0.39	0.07	0.15	0.14	0.38	0.13	0.20	0.99
Denmark	3.83	0.37	0.78	0.50	0.38	0.13	0.14	0.02	0.05	0.03	0.16	0.07	0.04	0.41
Germany	7.05	15.75	12.77	29.02	25.27	7.14	2.42	0.50	1.12	1.81	1.85	1.67	1.18	11.33
Finland	1.88	0.27	0.73	0.77	0.82	0.21	0.34	0.03	0.10	0.04	0.26	0.13	0.08	0.57
France	2.04	5.32	2.27	3.49	3.16	2.17	0.84	0.17	0.63	0.60	0.70	0.53	0.46	2.33
Greece	0.04	0.06	0.05	0.07	0.13	0.13	0.02	0.00	0.01	0.00	0.01	0.00	0.01	3.87
United Kingdom	5.15	3.16	1.88	3.49	2.52	2.24	2.43	0.24	0.94	0.33	2.49	0.47	0.81	1.78
Ireland	0.72	0.58	0.17	0.39	0.31	0.13	0.17	0.05	0.11	0.07	0.10	0.12	0.13	0.08
Italy	1.94	5.22	4.12	4.90	6.71	4.05	1.06	0.19	0.63	0.58	0.96	0.71	0.50	5.92
Netherlands	1.85	1.30	1.41	1.63	1.91	1.01	0.29	0.05	0.16	0.13	0.39	0.22	0.14	1.14
Portugal	0.36	0.24	0.04	0.05	0.23	0.06	0.05	0.00	0.03	0.01	0.05	0.01	0.03	0.15
Sweden	9.17	0.86	1.13	1.03	1.20	0.57	0.70	0.09	0.29	0.14	0.52	0.16	0.18	0.58
Spain	0.63	0.55	0.69	0.87	0.99	0.85	0.21	0.03	0.13	0.43	0.14	0.14	0.10	0.39
Iceland	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Norway	55.73	0.10	0.15	0.14	0.06	0.08	0.04	0.02	0.05	0.01	0.11	0.06	0.04	0.07
Switzerland	0.65	56.24	0.67	1.42	1.38	0.97	0.47	0.13	0.22	0.26	0.42	0.25	0.22	1.15
Poland	0.28	0.11	64.21	1.90	1.12	0.06	0.01	0.00	0.02	0.00	0.01	0.02	0.02	0.41
Czech Republic	0.14	0.15	1.30	34.76	1.26	0.08	0.02	0.00	0.02	0.01	0.01	0.01	0.01	1.03
Hungary	0.04	0.09	0.35	0.60	38.17	0.05	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.37
Turkey	0.09	0.13	0.32	0.19	0.55	71.58	0.02	0.00	0.03	0.01	0.01	0.02	0.04	2.02
Australia	0.01	0.04	0.02	0.02	0.01	0.04	69.05	0.06	0.05	0.01	9.55	0.30	0.05	0.01
Japan	1.93	1.31	0.30	0.63	1.84	1.36	5.30	93.47	2.05	2.55	5.80	8.05	3.39	0.29
Canada	0.30	0.11	0.12	0.13	0.15	0.12	0.41	0.07	49.96	0.35	0.40	0.28	3.49	0.08
Mexico	0.03	0.14	0.01	0.01	0.15	0.02	0.04	0.01	0.72	57.28	0.04	0.05	1.95	0.03
New Zealand	0.01	0.00	0.00	0.00	0.00	0.01	1.16	0.03	0.02	0.01	64.20	0.06	0.01	0.00
South Korea	0.73	0.19	1.08	0.57	0.82	0.87	1.23	0.49	0.54	0.84	0.81	76.46	0.66	0.68
U.S.A.	2.11	2.82	0.93	1.31	1.50	1.92	6.84	1.66	39.45	32.40	5.44	5.44	82.04	0.72
Bulgaria	0.01	0.02	0.03	0.06	0.09	0.29	0.00	0.00	0.01	0.00	0.00	0.00	0.00	57.79
Estonia	0.04	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Croatia	0.01	0.02	0.02	0.09	0.13	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Latvia	0.01	0.00	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Lithuania	0.02	0.02	0.07	0.02	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.11
Romania	0.06	0.03	0.07	0.05	0.59	0.22	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.70
Russia	0.37	0.79	0.35	0.54	1.84	0.66	0.00	0.06	0.02	0.02	0.02	0.19	0.10	3.09
Slovak Republic	0.02	0.05	0.43	7.17	1.05	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.29
Slovenia	0.02	0.05	0.18	0.47	0.47	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.18
China	0.60	0.27	0.71	0.59	1.28	0.45	1.18	0.91	0.58	0.17	0.89	1.68	0.80	0.38
Hong Kong	0.11	0.13	0.02	0.02	0.02	0.03	0.18	0.05	0.18	0.03	0.14	0.08	0.22	0.03
India	0.11	0.20	0.04	0.07	0.12	0.17	0.23	0.04	0.11	0.05	0.22	0.09	0.16	0.06
Indonesia	0.04	0.03	0.06	0.03	0.07	0.08	0.31	0.15	0.08	0.04	0.19	0.21	0.13	0.05
Israel	0.05	0.22	0.08	0.13	0.20	0.19	0.15	0.05	0.04	0.04	0.10	0.10	0.19	0.14
Malaysia	0.06	0.07	0.07	0.04	0.15	0.06	0.62	0.25	0.19	0.17	0.47	0.29	0.42	0.04
Philippines	0.01	0.01	0.01	0.01	0.03	0.00	0.09	0.08	0.05	0.02	0.05	0.07	0.13	0.00
Singapore	0.15	0.20	0.11	0.06	0.23	0.13	1.57	0.30	0.15	0.25	1.20	0.88	0.66	0.10
Taiwan	0.40	0.32	0.42	0.67	0.49	0.45	1.22	0.40	0.75	0.57	1.33	0.68	0.87	0.21
Thailand	0.08	0.24	0.38	0.12	0.29	0.07	0.42	0.22	0.13	0.07	0.25	0.12	0.26	0.14
Cyprus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Argentina	0.02	0.06	0.02	0.00	0.01	0.02	0.02	0.00	0.02	0.07	0.01	0.01	0.02	0.00
Brazil	0.03	0.07	0.06	0.04	0.08	0.14	0.14	0.06	0.12	0.40	0.10	0.12	0.20	0.02
Algeria	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Morocco	0.00	0.02	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00
South Africa	0.01	0.34	0.01	0.01	0.02	0.03	0.21	0.02	0.04	0.02	0.12	0.08	0.04	0.06
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	0.59	5.05	1.54	2.71	4.30	0.77	0.53	1.26	0.73	0.17	0.08	0.56	3.53	0.25

Source: WIFO.

Appendix A

Competition Matrix for the National Exchange Rate Index of Manufactured Goods (cont.)

Competitor countries	Sales markets: Estonia	Croatia	Latvia	Lithuania	Romania	Russia	Slovak Republic	Slovenia	China	Hong Kong	India	Indonesia	Israel	Malaysia
	Market share in %													
Belgium and Luxembourg	0.59	0.95	1.28	1.47	0.78	0.34	1.23	1.55	0.07	0.82	1.34	0.33	8.16	0.31
Denmark	1.24	0.40	1.96	3.15	0.20	0.09	0.31	0.35	0.02	0.13	0.10	0.14	0.28	0.07
Germany	5.61	13.94	14.85	15.86	9.01	2.67	20.77	22.41	0.68	2.79	1.49	3.51	6.73	2.68
Finland	19.77	0.23	7.37	3.34	0.12	0.82	0.52	0.37	0.06	0.33	0.11	0.49	0.25	0.22
France	0.70	1.52	1.97	2.16	2.45	0.63	2.76	9.53	0.26	2.02	0.44	1.58	2.81	1.54
Greece	0.02	0.07	0.13	0.22	0.42	0.08	0.03	0.22	0.00	0.03	0.00	0.03	0.27	0.00
United Kingdom	1.19	1.36	3.58	2.93	1.50	0.58	1.48	2.05	0.13	2.88	1.28	1.38	4.86	1.76
Ireland	0.15	0.13	0.35	0.15	0.05	0.06	0.17	0.16	0.00	0.12	0.02	0.02	0.27	0.41
Italy	1.58	14.32	2.91	3.52	7.36	1.30	4.93	19.21	0.27	2.71	0.52	1.12	5.63	0.94
Netherlands	0.95	1.07	1.53	1.92	0.83	0.32	1.23	1.49	0.06	0.51	0.18	0.63	1.32	0.30
Portugal	0.04	0.02	0.05	0.23	0.03	0.03	0.11	0.04	0.00	0.04	0.01	0.00	0.26	0.01
Sweden	5.47	0.95	6.21	3.04	0.40	0.26	0.58	0.81	0.12	0.52	0.17	0.45	0.57	0.48
Spain	0.27	0.45	0.41	0.78	0.37	0.15	0.63	1.87	0.06	0.40	0.08	0.31	1.79	0.22
Iceland	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Norway	0.50	0.18	0.67	0.30	0.04	0.04	0.08	0.08	0.01	0.08	0.03	0.02	0.09	0.04
Switzerland	0.24	0.73	0.50	0.49	0.58	0.14	1.11	1.40	0.07	1.53	0.26	0.43	2.55	0.46
Poland	0.63	0.27	2.07	5.02	0.22	0.39	1.62	0.32	0.00	0.02	0.03	0.03	0.04	0.05
Czech Republic	0.29	1.31	0.83	1.93	0.34	0.23	22.40	2.17	0.01	0.05	0.04	0.02	0.09	0.01
Hungary	0.16	0.68	0.30	0.76	1.05	0.18	1.42	0.90	0.00	0.01	0.01	0.01	0.09	0.01
Turkey	0.07	0.19	0.12	0.69	1.27	0.51	0.15	0.22	0.00	0.14	0.01	0.03	0.67	0.11
Australia	0.01	0.02	0.00	0.00	0.01	0.00	0.01	0.01	0.03	0.80	0.08	1.08	0.04	0.69
Japan	0.22	0.08	0.16	0.16	0.35	0.42	0.24	0.52	2.07	16.91	1.17	12.44	2.55	15.00
Canada	0.10	0.09	0.26	0.09	0.19	0.06	0.13	0.07	0.10	0.45	0.09	0.32	0.38	0.36
Mexico	0.00	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.19	0.02	0.05	0.02	0.04
New Zealand	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.06	0.01	0.08
South Korea	0.23	0.40	0.31	0.94	1.97	0.59	0.48	1.15	0.99	6.21	0.57	4.02	0.98	3.34
U.S.A.	0.95	0.72	3.18	1.19	0.56	0.63	0.52	1.01	0.91	6.86	1.43	3.61	11.13	7.89
Bulgaria	0.04	0.09	0.15	0.31	0.30	0.11	0.11	0.04	0.00	0.00	0.01	0.02	0.07	0.02
Estonia	51.68	0.00	5.48	2.47	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Croatia	0.00	51.39	0.02	0.00	0.01	0.06	0.11	3.57	0.00	0.00	0.00	0.00	0.01	0.00
Latvia	0.82	0.00	20.13	2.22	0.00	0.09	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Lithuania	1.16	0.01	5.36	32.67	0.02	0.17	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Romania	0.00	0.08	0.00	0.04	67.01	0.05	0.13	0.15	0.01	0.01	0.04	0.02	0.23	0.02
Russia	4.48	0.72	16.30	10.31	0.54	87.27	2.41	0.20	0.33	0.08	0.23	0.05	0.18	0.13
Slovak Republic	0.15	0.51	0.36	0.59	0.18	0.11	32.77	0.69	0.00	0.00	0.03	0.01	0.02	0.01
Slovenia	0.02	6.38	0.14	0.30	0.11	0.12	0.49	26.03	0.00	0.01	0.01	0.01	0.02	0.01
China	0.14	0.07	0.15	0.23	0.69	0.54	0.26	0.18	90.93	23.04	0.28	1.52	0.55	1.24
Hong Kong	0.03	0.00	0.01	0.01	0.01	0.01	0.00	0.03	0.76	6.74	0.03	0.21	0.10	0.31
India	0.02	0.05	0.07	0.04	0.03	0.19	0.03	0.03	0.02	1.19	88.06	0.28	0.67	0.28
Indonesia	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.06	0.87	0.08	61.63	0.00	0.69
Israel	0.10	0.06	0.24	0.07	0.63	0.07	0.12	0.51	0.01	0.73	0.16	0.01	43.67	0.07
Malaysia	0.00	0.02	0.06	0.01	0.02	0.03	0.01	0.01	0.10	2.59	0.17	1.06	0.00	35.04
Philippines	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.04	0.01	0.39	0.01	0.10	0.01	0.28
Singapore	0.00	0.05	0.19	0.06	0.04	0.32	0.00	0.04	0.24	5.38	0.81	0.00	0.47	19.63
Taiwan	0.23	0.35	0.18	0.13	0.15	0.03	0.48	0.49	1.47	10.10	0.19	1.97	0.98	3.42
Thailand	0.12	0.01	0.09	0.07	0.04	0.07	0.05	0.02	0.07	1.70	0.10	0.66	0.53	1.45
Cyprus	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00
Argentina	0.00	0.00	0.00	0.10	0.00	0.02	0.00	0.01	0.01	0.11	0.02	0.05	0.02	0.08
Brazil	0.01	0.10	0.01	0.00	0.02	0.02	0.03	0.01	0.03	0.17	0.05	0.18	0.10	0.19
Algeria	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Morocco	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	0.00	0.00
South Africa	0.00	0.01	0.01	0.00	0.03	0.00	0.02	0.00	0.01	0.24	0.07	0.10	0.52	0.11
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	0.03	1.04	0.03	0.05	0.45	1.36	1.18	1.51	0.71	0.58	0.27	0.46	0.24	0.16

Source: WIFO.

Appendix A

Competition Matrix for the National Exchange Rate Index of Manufactured Goods (cont.)

	Sales markets											
Competitor countries	Philippines	Singapore	Taiwan	Thailand	Cyprus	Argentina	Brazil	Algeria	Morocco	South Africa	Other countries	Double weight
	Market share in %											
Belgium and Luxembourg	0.29	0.56	0.29	0.68	1.11	0.27	0.29	1.17	1.90	0.68	1.87	2.56
Denmark	0.09	0.17	0.06	0.14	0.40	0.08	0.05	0.12	0.14	0.12	0.96	0.88
Germany	2.33	3.65	2.54	3.07	7.38	1.71	2.18	2.77	4.90	4.92	14.11	33.71
Finland	0.23	0.34	0.11	0.36	0.27	0.11	0.09	0.03	0.16	0.24	0.76	0.88
France	1.66	2.04	0.92	1.08	3.00	1.33	0.58	13.87	16.49	1.24	7.26	6.58
Grecce	0.01	0.02	0.01	0.01	5.58	0.01	0.00	0.06	0.06	0.02	0.29	0.34
United Kingdom	1.20	3.04	0.72	1.19	8.02	0.58	0.55	0.65	3.31	3.43	5.88	5.27
Ireland	0.34	0.28	0.06	0.04	0.40	0.06	0.05	0.12	0.19	0.28	0.48	0.51
Italy	0.73	1.75	0.78	1.02	7.03	1.70	1.32	4.03	4.58	1.52	7.23	8.81
Netherlands	0.39	0.82	0.54	0.43	1.17	0.23	0.27	0.51	1.32	0.59	3.69	2.52
Portugal	0.02	0.10	0.01	0.02	0.29	0.04	0.05	0.12	0.49	0.07	0.31	0.56
Sweden	0.41	0.59	0.31	0.52	0.84	0.31	0.25	0.14	0.59	0.52	0.92	1.68
Spain	0.16	0.50	0.15	0.20	2.43	1.32	0.42	3.49	4.87	0.34	2.01	2.64
Iceland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02
Norway	0.08	0.27	0.02	0.04	0.86	0.04	0.03	0.02	0.04	0.03	0.30	0.52
Switzerland	0.39	1.10	0.41	0.67	0.76	0.29	0.32	0.42	0.67	0.70	1.97	3.99
Poland	0.06	0.06	0.08	0.10	1.00	0.03	0.02	0.10	0.37	0.01	0.58	1.48
Czech Republic	0.01	0.09	0.03	0.03	0.21	0.02	0.01	0.11	0.09	0.07	0.58	1.65
Hungary	0.01	0.01	0.00	0.01	0.13	0.01	0.01	0.01	0.03	0.01	0.56	1.91
Turkey	0.06	0.25	0.03	0.07	2.86	0.01	0.01	1.54	0.36	0.08	1.10	0.86
Australia	0.67	0.93	0.48	0.61	0.11	0.04	0.02	0.00	0.01	0.34	0.61	0.45
Japan	16.00	20.50	14.68	16.60	4.81	0.66	1.11	1.22	1.06	2.83	8.91	3.47
Canada	0.25	0.35	0.40	0.23	0.20	0.20	0.28	0.08	0.12	0.21	0.79	0.65
Mexico	0.07	0.25	0.04	0.08	0.02	0.52	0.34	0.07	0.03	0.02	1.21	0.27
New Zealand	0.07	0.08	0.04	0.05	0.05	0.01	0.01	0.00	0.00	0.03	0.10	0.07
South Korea	3.96	4.87	2.04	2.09	3.54	0.54	0.70	0.45	0.46	0.89	4.78	1.19
U.S.A.	10.10	13.77	7.76	5.62	1.21	4.83	4.94	2.32	1.52	3.16	14.20	5.93
Bulgaria	0.02	0.00	0.00	0.02	0.39	0.01	0.00	0.10	0.07	0.00	0.24	0.20
Estonia	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.03
Croatia	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.03	0.04	0.00	0.23	0.65
Latvia	0.01	0.01	0.00	0.00	0.02	0.00	0.00	0.03	0.00	0.00	0.04	0.02
Lithuania	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.13	0.04
Romania	0.05	0.04	0.02	0.03	0.53	0.02	0.01	0.33	0.10	0.04	0.29	0.43
Russia	0.26	0.10	0.22	0.17	3.78	0.03	0.05	0.37	0.21	0.03	1.91	1.60
Slovak Republic	0.01	0.00	0.00	0.01	0.04	0.01	0.00	0.06	0.02	0.01	0.23	0.73
Slovenia	0.00	0.01	0.00	0.01	0.06	0.01	0.01	0.05	0.01	0.00	0.33	0.63
China	1.54	3.25	1.44	1.28	0.90	0.41	0.35	0.41	0.59	0.86	3.16	1.46
Hong Kong	0.64	1.23	0.49	0.30	0.05	0.02	0.04	0.00	0.05	0.08	0.31	0.17
India	0.18	0.62	0.15	0.30	0.43	0.07	0.04	0.07	0.14	0.32	1.37	0.45
Indonesia	0.58	3.02	0.38	0.38	0.30	0.04	0.06	0.15	0.04	0.09	0.82	0.43
Israel	0.33	0.21	0.09	0.28	1.77	0.11	0.08	0.00	0.04	0.24	0.44	0.26
Malaysia	1.45	13.30	1.32	1.71	0.27	0.06	0.15	0.04	0.07	0.15	0.71	0.35
Philippines	46.99	0.80	0.23	0.37	0.03	0.01	0.01	0.00	0.00	0.02	0.11	0.10
Singapore	4.22	9.90	2.54	5.45	1.04	0.16	0.18	0.04	0.19	0.46	2.17	0.54
Taiwan	2.79	4.95	59.53	2.72	0.99	0.38	0.33	0.19	0.37	1.04	0.78	0.80
Thailand	0.97	5.76	0.62	51.60	0.54	0.05	0.06	0.10	0.06	0.17	1.32	0.39
Cyprus	0.00	0.00	0.00	0.00	34.02	0.00	0.00	0.00	0.02	0.00	0.03	0.01
Argentina	0.03	0.04	0.03	0.03	0.03	78.11	1.49	0.05	0.05	0.03	0.61	0.19
Brazil	0.25	0.23	0.19	0.25	0.48	5.44	83.15	0.03	0.28	0.34	1.85	0.64
Algeria	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.30	0.13	0.00	0.01	0.07
Morocco	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.16	53.71	0.00	0.10	0.04
South Africa	0.08	0.13	0.24	0.10	0.05	0.09	0.09	0.04	0.05	73.75	1.32	0.37
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	0.07	0.36	0.37	0.27	0.03	0.18	0.54	0.10	0.04	0.32	3.89	100.00

Source: WIFO.

Appendix B

Competition Matrix for the National Exchange Rate Index of Tourism

Competitor countries	Sales markets										
	Belgium and Luxem-bourg	Denmark	Germany	Finland	France	Greece	United Kingdom	Ireland	Italy	Nether-lands	Portugal
	Market share in %										
Belgium and Luxembourg	17.71	0.46	0.48	0.40	0.16	0.46	0.35	0.19	0.18	3.70	0.62
Denmark	0.08	42.45	0.73	0.60	0.01	0.00	0.08	0.00	0.08	0.54	0.00
Germany	1.69	3.53	45.48	1.29	0.17	1.15	0.65	0.35	0.72	4.73	1.06
Finland	0.03	0.23	0.09	46.68	0.01	0.08	0.05	0.02	0.04	0.08	0.04
France	52.69	15.17	15.80	4.34	91.97	13.25	14.70	9.97	14.73	35.51	14.70
Greece	0.86	3.31	1.25	2.00	0.19	59.81	1.43	0.55	0.83	1.20	0.28
United Kingdom	3.92	7.08	3.47	5.88	1.86	10.23	52.15	42.92	4.01	4.62	5.54
Ireland	0.15	0.26	0.24	0.00	0.13	0.00	1.15	30.48	0.20	0.29	0.00
Italy	3.34	3.80	7.44	1.74	0.74	2.66	1.46	0.81	68.42	2.94	1.77
Netherlands	1.34	0.56	1.60	0.28	0.08	0.00	0.45	0.26	0.21	28.46	0.37
Portugal	0.68	1.02	0.89	1.12	0.14	0.17	1.20	1.32	0.30	1.16	62.96
Sweden	0.04	2.41	0.32	1.79	0.02	0.00	0.08	0.00	0.06	0.29	0.00
Spain	5.88	2.18	5.79	1.97	0.79	0.69	6.02	1.79	2.00	3.71	5.73
Iceland	0.01	0.13	0.03	0.06	0.00	0.00	0.01	0.01	0.01	0.01	0.00
Norway	0.04	2.52	0.17	0.40	0.03	0.04	0.09	0.01	0.05	0.17	0.04
Switzerland	3.65	0.43	2.28	0.31	0.19	0.47	0.35	0.13	0.45	1.76	0.36
Poland	0.05	0.30	0.18	0.14	0.01	0.05	0.04	0.00	0.06	0.08	0.00
Czech Republic	0.24	0.75	0.71	0.30	0.04	0.25	0.08	0.00	0.27	0.61	0.00
Hungary	0.15	0.52	0.73	0.49	0.02	0.30	0.06	0.00	0.16	0.37	0.00
Turkey	0.54	0.46	1.68	0.72	0.20	0.38	0.39	0.00	0.28	0.54	0.00
Australia	0.00	0.00	0.43	0.00	0.00	0.00	1.26	0.00	0.04	0.00	0.00
Japan	0.05	0.14	0.07	0.20	0.03	0.07	0.17	0.13	0.06	0.08	0.12
Canada	0.56	0.61	0.82	0.46	0.56	1.52	1.54	0.66	0.45	0.93	1.13
Mexico	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
New Zealand	0.08	0.73	0.23	0.12	0.02	0.08	0.80	0.31	0.03	0.33	0.05
U.S.A.	4.74	6.79	6.03	6.36	1.93	5.11	12.70	9.92	4.12	5.69	4.74
Bulgaria	0.04	0.17	0.32	0.22	0.01	0.40	0.11	0.00	0.02	0.07	0.00
Estonia	0.00	0.00	0.00	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Croatia	0.14	0.15	0.59	0.02	0.01	0.03	0.04	0.02	0.84	0.27	0.02
Latvia	0.00	0.08	0.01	0.20	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Lithuania	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Romania	0.05	0.07	0.06	0.04	0.01	0.23	0.03	0.02	0.07	0.05	0.01
Russia	0.05	0.20	0.15	16.12	0.03	0.28	0.07	0.06	0.10	0.09	0.05
Slovak Republic	0.03	0.04	0.12	0.02	0.00	0.04	0.01	0.00	0.02	0.05	0.00
Slovenia	0.06	0.03	0.10	0.02	0.00	0.02	0.02	0.01	0.18	0.07	0.01
Indonesia	0.05	0.11	0.07	0.08	0.02	0.00	0.07	0.00	0.05	0.22	0.05
Israel	0.20	0.32	0.14	0.47	0.08	0.28	0.18	0.07	0.13	0.22	0.13
Malaysia	0.00	0.00	0.08	0.00	0.00	0.00	0.20	0.00	0.04	0.00	0.00
Thailand	0.58	2.01	0.82	1.66	0.25	0.00	0.90	0.00	0.53	0.82	0.00
Cyprus	0.00	0.82	0.24	1.12	0.00	1.95	1.03	0.00	0.00	0.24	0.00
Morocco	0.29	0.14	0.35	0.36	0.25	0.00	0.08	0.00	0.26	0.08	0.23
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	3.00	0.94	64.56	0.15	2.38	0.17	3.00	0.07	2.73	8.45	0.06

Source: WIFO.

Appendix B

Competition Matrix for the National Exchange Rate Index of Tourism (cont.)

Competitor countries	Sales markets: Sweden	Spain	Iceland	Norway	Switzerland	Poland	Czech Republic	Hungary	Turkey	Australia	Japan
	Market share in %										
Belgium and Luxembourg	0.32	0.26	2.04	0.27	0.17	0.17	0.19	0.26	0.14	0.02	0.06
Denmark	3.29	0.07	0.00	5.32	0.08	0.10	0.00	0.00	0.00	0.00	0.02
Germany	1.86	0.61	3.95	1.77	1.98	1.70	1.71	3.36	1.16	0.15	0.30
Finland	0.97	0.05	0.54	0.64	0.10	0.06	0.06	0.15	0.03	0.01	0.03
France	7.92	15.90	4.25	3.74	26.61	5.39	7.66	0.00	3.56	2.49	0.78
Greece	3.08	0.26	0.00	2.49	1.15	0.52	1.56	4.09	0.68	0.10	0.07
United Kingdom	7.34	9.27	26.92	10.93	4.65	5.21	7.99	9.32	5.10	6.54	1.25
Ireland	0.28	0.00	0.00	0.34	0.37	0.00	0.00	0.00	0.00	0.20	0.00
Italy	2.38	1.65	0.00	1.89	6.59	0.00	0.00	0.00	0.98	0.49	0.89
Netherlands	0.37	0.27	0.00	0.46	0.32	0.00	0.00	0.00	0.00	0.10	0.07
Portugal	0.81	1.51	4.42	0.85	0.39	0.06	0.00	0.20	0.03	0.03	0.03
Sweden	51.83	0.04	0.00	6.72	0.14	0.09	0.00	0.00	0.00	0.01	0.03
Spain	2.36	62.61	0.00	2.73	2.42	0.75	4.01	2.25	0.14	0.03	0.22
Iceland	0.11	0.01	21.59	0.18	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Norway	1.18	0.08	1.01	44.17	0.08	0.02	0.05	0.04	0.01	0.01	0.04
Switzerland	0.36	0.34	0.60	0.33	40.11	0.15	0.00	0.82	0.30	0.07	0.21
Poland	0.15	0.02	0.00	0.14	0.04	74.59	0.12	0.19	0.00	0.00	0.01
Czech Republic	0.28	0.36	0.00	0.20	0.17	0.66	60.93	0.51	0.00	0.02	0.03
Hungary	0.21	0.04	0.00	0.24	0.23	0.73	0.23	59.47	0.13	0.01	0.03
Turkey	0.51	0.23	0.00	0.61	0.24	0.13	0.00	0.43	81.03	0.04	0.13
Australia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.89	1.33
Japan	0.18	0.06	0.00	0.17	0.11	0.03	0.05	0.16	0.10	0.27	69.31
Canada	0.50	0.32	1.26	0.55	1.45	0.74	0.61	1.69	0.20	0.80	0.82
Mexico	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
New Zealand	0.38	0.04	0.26	0.25	0.53	0.15	0.04	0.11	0.04	2.97	0.47
U.S.A.	8.87	5.11	32.34	10.15	8.81	2.00	2.29	7.88	4.06	4.64	21.67
Bulgaria	0.27	0.01	0.00	0.65	0.02	0.03	0.37	0.07	0.14	0.00	0.00
Estonia	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Croatia	0.06	0.02	0.41	0.10	0.10	0.58	8.93	4.66	0.03	0.01	0.00
Latvia	0.10	0.00	0.00	0.06	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Lithuania	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00	0.00
Romania	0.08	0.03	0.00	0.18	0.03	0.02	0.08	0.90	0.21	0.00	0.00
Russia	0.30	0.07	0.23	0.44	0.10	4.80	0.28	0.59	1.68	0.02	0.04
Slovak Republic	0.02	0.01	0.00	0.03	0.02	0.68	2.60	1.71	0.00	0.00	0.00
Slovenia	0.02	0.01	0.07	0.02	0.04	0.05	0.16	0.58	0.03	0.00	0.00
Indonesia	0.10	0.04	0.00	0.10	0.11	0.00	0.00	0.00	0.00	0.56	0.36
Israel	0.27	0.09	0.11	0.32	0.21	0.11	0.06	0.55	0.21	0.05	0.02
Malaysia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.47
Thailand	2.02	0.29	0.00	1.71	1.70	0.00	0.00	0.00	0.00	1.08	1.29
Cyprus	1.00	0.00	0.00	1.12	0.73	0.00	0.00	0.00	0.00	0.00	0.00
Morocco	0.19	0.34	0.00	0.13	0.19	0.00	0.00	0.00	0.00	0.00	0.02
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	0.77	0.48	0.01	0.17	3.44	0.58	0.57	0.71	0.07	0.18	0.64

Source: WIFO.

Appendix B

Competition Matrix for the National Exchange Rate Index of Tourism (cont.)

Competitor countries	Sales markets: Canada	Mexico	New Zealand	U.S.A.	Bulgaria	Estonia	Croatia	Latvia	Lithuania	Romania	Russia
	Market share in %										
Belgium and Luxembourg	0.01	0.01	0.02	0.02	0.17	0.00	0.18	0.00	0.00	0.10	0.05
Denmark	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Germany	0.05	0.04	0.14	0.10	0.00	0.90	0.00	1.81	1.10	0.00	0.52
Finland	0.00	0.00	0.01	0.01	0.04	7.46	0.04	1.81	0.42	0.02	0.27
France	1.07	0.38	2.46	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Greece	0.03	0.01	0.00	0.03	7.35	0.00	0.00	0.00	0.00	0.72	0.00
United Kingdom	1.56	0.22	7.50	0.85	0.00	0.00	0.00	0.00	0.00	0.00	1.12
Ireland	0.05	0.00	0.18	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Italy	0.13	0.09	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.39
Netherlands	0.03	0.00	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Portugal	0.04	0.00	0.03	0.02	0.07	0.00	0.00	0.00	0.00	0.03	0.02
Sweden	0.00	0.00	0.00	0.01	0.00	1.70	0.00	1.25	0.67	0.00	0.04
Spain	0.03	0.10	0.03	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iceland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Norway	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Switzerland	0.03	0.00	0.06	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poland	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	1.51	0.00	0.11
Czech Republic	0.01	0.00	0.00	0.01	0.42	0.00	0.00	0.00	0.00	0.12	0.28
Hungary	0.01	0.00	0.01	0.01	0.49	0.00	1.28	0.00	0.00	0.64	0.17
Turkey	0.01	0.00	0.00	0.03	0.68	0.00	0.00	0.00	0.00	0.52	0.00
Australia	0.30	0.00	9.02	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Japan	0.09	0.02	0.36	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Canada	42.59	0.35	0.94	1.45	0.56	0.00	0.00	0.00	0.00	0.50	0.00
Mexico	0.05	17.80	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00
New Zealand	0.13	0.01	71.03	0.06	0.09	0.04	0.18	0.09	0.00	0.01	0.21
U.S.A.	53.52	80.95	6.85	95.17	1.92	8.14	3.18	10.12	5.12	1.36	1.20
Bulgaria	0.00	0.00	0.00	0.00	85.38	0.00	0.00	0.00	0.00	0.04	0.00
Estonia	0.00	0.00	0.00	0.00	0.00	6.07	0.00	0.41	0.20	0.00	0.00
Croatia	0.00	0.00	0.01	0.00	0.28	0.05	89.26	0.08	0.12	0.06	0.05
Latvia	0.00	0.00	0.00	0.00	0.00	3.01	0.00	11.75	1.75	0.00	0.11
Lithuania	0.00	0.00	0.00	0.00	0.00	1.81	0.00	2.51	7.15	0.00	0.07
Romania	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	95.42	0.03
Russia	0.01	0.00	0.02	0.02	1.95	70.52	1.14	68.40	81.70	0.24	94.15
Slovak Republic	0.00	0.00	0.00	0.00	0.11	0.00	0.49	0.00	0.00	0.05	0.06
Slovenia	0.00	0.00	0.00	0.00	0.06	0.00	4.16	0.00	0.00	0.05	0.04
Indonesia	0.01	0.00	0.20	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Israel	0.03	0.02	0.05	0.05	0.20	0.30	0.09	1.76	0.27	0.12	0.16
Malaysia	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Thailand	0.15	0.00	1.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Cyprus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56
Morocco	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight	0.18	0.02	0.04	1.65	0.07	0.01	0.22	0.01	0.01	0.09	0.17

Source: WIFO.

Appendix B

Competition Matrix for the National Exchange Rate Index of Tourism (cont.)

Competitor countries	Sales markets: Slovak Republic	Slovenia	Indonesia	Israel	Malaysia	Thailand	Cyprus	Morocco	Other countries	Double weight
	Market share in %									
Belgium and Luxembourg	0.11	0.15	0.00	0.36	0.03	0.02	0.00	0.37	0.37	1.21
Denmark	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.97
Germany	0.00	0.00	0.00	1.76	0.00	0.00	0.00	0.00	1.26	30.08
Finland	0.03	0.05	0.01	0.06	0.01	0.02	0.02	0.02	0.06	0.16
France	10.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.12	19.67
Greece	2.08	0.00	0.00	1.63	0.00	0.00	9.50	0.00	1.28	1.32
United Kingdom	0.00	0.00	0.00	0.00	5.42	2.36	0.00	0.00	10.36	5.45
Ireland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.29
Italy	0.00	0.00	0.00	3.12	0.00	0.00	0.00	0.00	5.10	7.59
Netherlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	3.54
Portugal	0.00	0.00	0.00	0.29	0.01	0.01	0.00	0.16	0.26	0.83
Sweden	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.69
Spain	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	5.02
Iceland	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03
Norway	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.24
Switzerland	0.00	0.00	0.00	1.73	0.00	0.00	0.00	0.00	0.55	3.18
Poland	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.57
Czech Republic	5.27	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.27	0.92
Hungary	0.57	0.77	0.00	0.66	0.00	0.00	0.00	0.00	0.38	0.98
Turkey	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	1.31
Australia	0.00	0.00	0.00	0.00	7.00	3.14	0.00	0.00	4.54	0.65
Japan	0.05	0.00	0.39	0.25	1.00	0.75	0.00	0.00	3.25	0.64
Canada	0.72	0.00	0.00	4.03	0.71	0.43	0.00	0.00	2.96	1.01
Mexico	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.05
New Zealand	0.02	0.07	0.29	0.67	1.21	0.89	0.05	0.00	1.83	0.35
U.S.A.	2.67	0.40	2.33	27.96	5.03	4.05	4.51	4.06	31.50	8.75
Bulgaria	0.24	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.47	0.31
Estonia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Croatia	5.86	45.27	0.00	0.09	0.00	0.00	0.00	0.00	0.61	0.85
Latvia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01
Lithuania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.02
Romania	0.14	0.10	0.00	1.66	0.00	0.00	0.00	0.00	0.13	0.15
Russia	0.39	0.60	0.01	0.72	0.02	0.02	0.98	0.13	6.76	0.63
Slovak Republic	71.09	0.13	0.00	0.29	0.00	0.00	0.00	0.00	0.09	0.20
Slovenia	0.16	52.47	0.00	0.07	0.00	0.00	0.00	0.00	0.16	0.22
Indonesia	0.00	0.00	95.74	0.00	3.41	0.23	0.00	0.00	0.90	0.12
Israel	0.25	0.00	0.06	50.60	0.05	0.03	0.92	0.19	0.41	0.29
Malaysia	0.00	0.00	0.56	0.00	63.96	0.86	0.00	0.00	1.81	0.14
Thailand	0.00	0.00	0.61	3.28	12.16	87.19	0.00	0.00	4.85	0.98
Cyprus	0.00	0.00	0.00	0.00	0.00	0.00	84.02	0.00	0.61	0.28
Morocco	0.00	0.00	0.00	0.00	0.00	0.00	0.00	95.06	0.19	0.30
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Austria's direct export weight.	0.11	0.22	0.00	0.25	0.01	0.01	0.00	0.02	3.76	100.00

Source: WIFO.

The Single Financial Market: Two Years into EMU

Results of the 29th Economics Conference of the Oesterreichische Nationalbank[1])

Georg Hubmer,
Walter Waschiczek

1 Introduction

The introduction of a single European currency, the euro, had a twofold impact on financial markets across Europe: To begin with, the establishment of Economic and Monetary Union (EMU) had a number of directly measurable immediate impacts: Among other things, it lowered transaction costs and made prices more transparent, it eliminated currency conversion risks and impediments to investment, and it set in motion a harmonization of bank refinancing within the euro area. Alongside these immediate impacts, supply and demand behavior on the market have undergone changes whose full extent will be felt only in the long run. These adjustments include improved product supply, more liquid capital markets, broader diversification options for investors and a heightened competitiveness of the European financial system.

The introduction of the euro not only triggered far-reaching structural changes on Europe's financial markets, but also had an impact on banks' financing function. On the whole, the integration of European financial markets should markedly improve their functioning and should thus help to sustainably enhance Europe's economic framework conditions.

While the introduction of the single currency eliminated a key obstacle to cross-border banking in Europe, a number of institutional and legal hurdles remained. Hence, the European financial sector's competitive position hinges on the refinement of financial market regulations for the euro area. Moreover, the changes in financial markets and the adjustment of financial market participants have quite important implications for financial market supervision and on the role central banks, such as the OeNB, play in supervision.

The 29th Economics Conference attempted to provide information and answers covering this wide range of issues in a series of sessions organized by theme. The first session explored the convergence of Europe's financial markets and financial market regulation and highlighted the consequences of integration for financial market supervision. The speakers also focused on how much and how fast changes in European financial markets had caused market-based and bank-based financial systems to converge. The second session dealt with the optimal design of financial regulation and supervision. Finally, recent economic policy developments in Europe were also discussed on the first day of the economics conference. The third session of the conference analyzed the long-run perspectives of new technologies in financial markets and supervision. During the panel discussion which followed, the speakers presented various perspectives on developments in the banking and financial services industries.

1 *The conference was held on May 31 and June 1, 2001, in Vienna. The speakers' written contributions will be published in a conference volume in the fall of 2001. The bulk of the papers may be accessed on the OeNB's website.*

2 The Integration of European Financial Markets and Financial Market Regulation

2.1 EMU as a Catalyst for the European Financial System

Klaus Liebscher underlined the role EMU played as a catalyst for the development of Europe's financial system. Apart from the direct impacts, such as the elimination of exchange rate risk, increased price transparency or the harmonization of bank refinancing, longer-run effects have already become apparent – just two years after the establishment of EMU, a structural change toward a more market-based European financial system has clearly begun. This is evidenced not just by the marked rise in the issuing volume of corporate bonds, but also by the enhanced attractiveness of the euro area for equity issues. The development of the money market and the rapid evolution of a European interest rate derivatives market confirms the assumption that the European financial market has undergone perceptible volume and quality changes since the introduction of the euro.

While these developments on the capital market may reduce the significance of banks' traditional business lines, they also spawn new business opportunities, e. g. in investment management and investment banking. If banks succeed in taking advantage of these opportunities, their role may in fact grow more, not less, powerful as the financial system becomes more market-oriented. In this process, Europe's banks may profit from the expertise they have acquired as universal (all-purpose) banks offering a wide range of products and services.

The structural change in the financial system faces financial market supervision with new challenges, above all now that institutional reform of the supervisory system is a hot topic across Europe. Klaus Liebscher emphasized that the positive experience of the past showed that regardless of the institutional design of the regulatory framework, the national central banks (NCBs) were especially suited to fulfilling supervisory functions, so that their involvement in banking supervision was crucial.

2.2 Highly Developed Financial Markets Foster Economic Growth

In his keynote address, *Wim Duisenberg* discussed the influence of financial systems on economic growth. As many studies confirm, there is a positive relation between the degree of sophistication of a financial system and a country's economic development. However, there is no such thing as an optimum financial system. Both market- and bank-based financial systems have their comparative advantages, so that they complement one another rather than ruling each other out. The introduction of the euro and the integration of Europe's financial markets has strengthened the role of the markets in the European financial system. European bond markets have registered robust growth in the face of remaining regulatory barriers lately. A number of initiatives have been kicked off at the European level to dismantle these regulatory obstacles, which should help these markets operate even more smoothly.

The developments which have taken place since the advent of the single currency have influenced the interplay between monetary policy, economic growth and the financial markets. As past episodes have shown, financial

crises considerably affect economic growth. The financial market supervisory authority is the guardian of financial market stability; its design and structure are key to a financial system's contribution to the allocation of capital in the economy and to its capacity to absorb liquidity shocks.

A supervisory authority may help foster economic growth in two ways: It may reinforce crisis prevention by analyzing potential dangers to financial market stability, and it may react swiftly and effectively to cope with any crises that have broken out. Effective supervisory bodies must be able to spot systemic risk in a timely manner, which means that they must bridge the gap between information of a microprudential nature and macroprudential analysis. A more market-based approach in supervision has reduced the power of the argument that equal treatment of all financial market players calls for a uniform supervisory authority for all segments of finance. Moreover, the single monetary policy in the euro area has eliminated the traditional conflict of interest between national monetary policymaking and supervision. At the same time, financial market supervisory authorities must pay attention to developments in the euro area as a whole, as national borders are gradually losing significance with the stepped-up international consolidation of the financial sector. Financial market stability in Europe, a major prerequisite for growth, could thus benefit from a possible larger supervisory role of the NCBs.

3 Convergence of Financial Systems

3.1 Change Makes Financial Markets More Efficient

In his contribution, *Sir Edward George* presented an account of the causes for the massive changes financial markets have experienced in the past decades. The governor of the Bank of England identified three major drivers of change in financial systems: deregulation, globalization and information technology. Growing competition on financial markets, he pointed out, had speeded up deregulation efforts. Although it was not clear how much deregulation had contributed to the convergence of financial systems, it certainly made them more efficient. The cutback of rules and provisions hand in hand with more open markets also helped boost market globalization. London, the hub of international finance, is especially aware of the importance and effects of the ongoing integration of world financial markets and is patent proof that it is activity rather than nationality of ownership that creates a competitive marketplace. Finally, technological progress, above all in information technology, has thoroughly changed the face of markets – it has opened up new transactions channels, altered cost structures and lowered market entry barriers.

These transformations have made European financial markets much more internationally competitive in the past few years. At the same time, intensified competition has blurred the lines which used to separate different financial services. In this environment of rapid change the euro, among other influences, has contributed fundamentally to integrating European financial markets.

How can policymakers contribute to improving the functioning of financial systems? At the national level, Sir Edward George sees the main

goal in working to ensure that the financial system reaches those parts of the economy that are traditionally most difficult to get at, above all in encouraging small and medium-sized enterprises and newly founded companies to tap financial markets. At the European level, the main task facing the countries is the continued development of the single financial market, with the aim of speeding up the consolidation of the currently still quite fragmented markets. It is not up to the public sector to find solutions for these issues on their own; rather, their task consists in removing barriers and promoting the global free movement of capital at the international level through cooperation.

3.2 Economic and Monetary Union and Financial Market Stability

In his comments, *Franklin Allen* discussed the effects of EMU on financial market stability. Securing the country's financing ability was the main reason why the Bank of England was founded, and financing remained the primary purpose of central banks until the 19th century. The experience of the U.S.A. was quite different, as the deep-seated distrust of centralized power of any kind left the country without a central bank for many decades – indeed, until the foundation of the Federal Reserve System in 1913 – but with numerous financial crises. The U.S. experience with this historical development raises the question, stated Franklin Allen, whether the current division of responsibility between the European Central Bank (ECB) and banking supervisors and regulators was optimal. Considering the high speed with which crises develop and spread, a coordination between different institutions could prove problematic.

On the issue of whether the UK should join EMU, Franklin Allen viewed the advantages as outweighing the disadvantages. Above all, participation in EMU could considerably enhance London's prominence as a financial center.

3.3 Economic and Monetary Union Fosters a Single Bond Market in the Euro Area

Ernst-Ludwig von Thadden also applauded the progress achieved in integrating European capital markets. The powerful boost in demand for public sector bonds has greatly increased market depth. This not only raised the degree of homogenization of public debt markets, so that different yields now practically only reflect liquidity differences, but also impressively expanded the liquidity and depth of the corporate bond market. The corporate bond market is now in a position to absorb far larger issuing volumes than the individual national markets were; it quadrupled in size between 1998 and 2000. Bonds can now be sold across Europe, and the higher liquidity of this larger market in turn contributes to a larger supply. Moreover, the bigger market allows investors to diversify their portfolios more, cutting down on home bias in investment management.

However, this success is partly based on a change in market expectations and hence is not irreversible. If the success story of EMU is to continue, further reform is called for. Like Sir Edward George, Ernst-Ludwig von

Thadden considers that the reforms must be implemented above all at the European level.

3.4 Corporate Financing Facilitated by the Integrated Financial Market

Alfred Steinherr expressed the view that the efforts involved in implementing EMU had already paid off simply because EMU had produced an integrated capital market. Prior to EMU, the European Investment Bank (EIB) had needed to refinance itself in 20 currencies, partly on very rudimentary capital markets, whereas the introduction of the single currency allowed for the placement of much larger volumes: Only two years ago, an issue of EUR 1 billion was considered large, and now it had become easy to place EUR 5 billion on the market. It was this development that enabled the launch of large-scale mergers and acquisitions, e. g. in telecommunications, in turn providing important restructuring impulses to the economy. Moreover, the larger market also gave less highly rated companies in Europe the chance to tap the bond market for the first time.

EMU has also made a perceptible impact on the national credit markets, as the potential for competition between various financial centers in the euro area gave borrowers access to a new range of credit financing conditions, such as longer maturities.

3.5 Basel II as a Possible Barrier to International Capital Flows

While the integration of capital markets in the euro area has progressed substantially, capital flows to the emerging markets remain subject to sharp fluctuations. *Helmut Reisen* examined the impact on the convergence of international capital flows of the proposal for the new capital adequacy framework submitted by the Basel Committee on Banking Supervision, the new Basel Capital Accord (Basel II) .

The proposal aims at improving the way regulatory capital requirements reflect underlying risks. However, the higher risk weights resulting from the use of an internal ratings-based approach could face banks with a higher likelihood of default, above all most banks in the developing countries, with noticeably higher financing costs and more pronounced cyclical volatility of credit supply and may in fact make it very difficult for these banks to tap world financial markets. Helmut Reisen underlined the danger that capital flows to developing countries would become more volatile, and thus more susceptible to currency crises, identifying the following causes: The 8% minimum capital ratio was too rigid; agency ratings as well as the probability of default and yield spreads often had a significant cyclical component, and finally, incentives for short-term rather than long-term interbank lending were embedded in Basel II.

3.6 Regulatory and Economic Capital

Esa Jokivuolle drew attention to the goal of Basel II, which was to bring banks' regulatory capital more in line with their economic capital. Economic capital is reserved against banks' true portfolio risk and is allocated to each credit exposure according to its contribution to the portfolio's overall risk. These risk contributions are used to determine the

minimum interest rate on a loan. If this approach is applied strictly, the economic capital of a bank represents its primary capital constraint, so that the changes in pricing after Basel II should be quite limited. In practice, however, the actual spreads are higher than the pricing which would correspond to economic capital.

On the other hand, numerous banks hold capital in excess of the minimum requirements as a cushion in the event of an economic downturn. Such capital cushions may become even larger when rating-sensitive risk weighting is introduced with the new capital requirements. These cushions, together with the new minimum requirements that already appear to be well above the economic capital levels, should be given due consideration when the risk weights are finally calibrated in Basel, cautioned Esa Jokivuolle.

4 The Optimal Design of Financial Regulation and Supervision

Effectively containing risk represented a fundamental prerequisite for the smooth operation and the stability of financial markets, emphasized *Gertrude Tumpel-Gugerell* in her introduction to Session 2, which centered on financial market regulation. The growing complexity of financial markets and the new framework conditions, e. g. the new capital adequacy requirements (Basel II), raise the demands on supervisors and call for a more sophisticated supervision based not merely on ratios and key figures, but on assessments of actual risk and the quality of a bank's risk management, which may translate into higher required capital charges. A number of models are available for organizing financial market supervision, with the most suitable choice being the model which best reflects the structure of the respective market. The key aim is to ensure efficient and effective supervision.

Several arguments support a key role for central banks in financial market supervision: the positive synergies of monetary and supervisory issues, the lower cost for institutions supervised, the great expertise of the central bank on financial market issues, the central bank's independence, which is suited to the Basel principles' demand for a high degree of supervisory independence, and central banks' important role in dealing with financial crisis.

4.1 Central Banks' Large-Scale Involvement in Supervision

Ernst Welteke, too, advocated a strong involvement of central banks in banking supervision. Under Article 105 of the EC Treaty, central banks are obligated to contribute to the stability of the financial system, as interest rate and liquidity policy signals are conveyed through the financial markets. Central banks have an inherent interest in financial market stability and a toolkit which enables them to spot crisis symptoms early and above all to take counteractive measures swiftly. Their close contacts with market participants provide them with detailed information about how individual risk profiles relate to systemic risk. Micro- and macroprudential analysis are closely linked. In view of the very high risk potential of payment systems, payment systems oversight is also a key function of the central bank. It

would be wise to take advantage of central banks' proximity to markets in banking supervision, international cooperation and the development of new supervisory concepts. As it is imperative to act swiftly when a crisis erupts, a central bank in charge of financial market stability must have immediate access to all relevant information, chiefly from its own sources, to be able to distinguish between illiquid and insolvent institutions in cooperation with any supervisory body.

According to the Maastricht Treaty, banking supervision is a task to be exercised at the national level, though it requires increasingly close international cooperation that is regulated e. g. by bilateral memoranda of understanding between the supervisory bodies. International cooperation is reinforced by groups such as the Banking Supervision Committee or the Groupe de Contact. It is important to determine sound provisions aimed at ensuring minimum harmonization standards. Various sources and methods may be used, such as data submitted by banks, desk research, personal contacts with management or on-site inspections carried out by highly qualified experts.

Ernst Welteke noted that the optimal structure of banking supervision was one reflecting market structures rather than leading market developments, i. e. that form would follow function. With the stability of the financial market as the superordinate goal, the individual banking, financial market or insurance oversight goals differ among each other. Financial supervision varies from country to country in Europe, ranging from central bank as the sole supervisory authority to a one-stop banking authority; Ernst Welteke noted that overlaps between banking and the insurance business were still quite small at the current juncture.

4.2 Banks' Interest in Professional Supervision

In the interest of a reliable financial market, Austrian commercial banks welcome reforms to improve the efficiency of supervision, as banks also stand to benefit from a modern and efficient supervisory authority. Following this statement, *Walter Rothensteiner* pointed out that considering the additional responsibilities supervisors would face in assessing banks' capital requirements on the implementation of Basel II, banks had a keen interest in a thoroughly professional banking supervisory authority with a knowledge of overall economic relationships. In the final analysis, financial market supervision was a core function of the public sector and included responsibility for financing, he noted. As the cost of banking supervision was comparatively high in a small country like Austria, cost control was a crucial concern for banks. The sectoral structure of banking supervision had proved its mettle, so it should be maintained to benefit from the experience supervisors had acquired so far under a new system, advocated Walter Rothensteiner. Supervision fit for a modern financial system must also hew to the principles of efficiency, transparency, synergy with other authorities and cost-effectiveness within its own organization.

4.3 A Comprehensive Supervisory Framework: The Prerequisite for a Stable Financial System

Problems in banking will never be fully preventable, but automatic public assistance to banks grappling with folding is unacceptable, as it intensifies the moral hazard danger. As bank failures always entail a high cost, there is a general economic interest in reducing both the probability of banking crises and the cost that arises when a bank collapses. In this context, *David T. Llewellyn* spoke of the "twin objectives of the regulatory regime." A comprehensive approach, this twin objective comprises more than just the establishment of rules and supervision by designated institutions. While banking and financial supervisory authorities contribute significantly to the stability and robustness of financial systems, the management of financial institutions bears a vital responsibility for risk management and the fulfillment of standards.

The key components of the regulatory regime are:

– the rules established by regulatory agencies,
– monitoring and supervision by official agencies,
– incentive structures,
– market discipline,
– intervention arrangements in the event of bank failures,
– the role of internal corporate governance arrangements within banks, and
– the accountability arrangements applied to regulatory agencies.

It is crucial to combine all components of the regulatory regime into a well-balanced overall regulatory strategy, avoiding negative tradeoffs. The more regulatory structures concentrate on a single element, e. g. by means of comprehensive rules, the less effective this may make other elements; such a setup may be counterproductive and, on the whole, may even impair the quality of supervision. Before taking any action, supervisory agencies should ask how market participants might react and what effect their action might have, because it may well make sense in some cases not to take (overly) swift regulatory action that would result in a "rules escalation."

There is no standard regulatory model, as the composition of components differs among countries and even among banks, and changes over time. A standard set of rules for all banks would overregulate sound banks and underregulate weaker banks. The approach applied should also enable different treatment for different banks. Therefore, there should be sufficient flexibility with room for modification of the regulatory regime, meaning that the need for detailed prescriptive rules declines and the focus moves toward incentive structures and reinforced market discipline. Many of these elements have been integrated into the proposed new Basel Capital Accord (Basel II).

As supervisory agencies are not governed by market mechanisms, market participants cannot choose the degree of supervision they would prefer. Supervision comes at a cost, but does not have a market price. This setup could lead to an oversupply of supervision, leading to excessive regulation.

4.4 Regulatory Capital Requirements Remain a Key Theme

Arturo Estrella noted that a largely mechanical calculation of capital charges as prescribed by the rules is unable to distinguish between minimum and "optimum" capital. Also, mechanical regulation is not well suited to the treatment of new financial instruments, which are frequently designed to avoid the effects of the regulation itself. Banks should have a process for assessing their overall capital adequacy that enables them to operate above the minimum regulatory ratio. Like David Llewellyn, Arturo Estrella advocates that less emphasis should be placed on formal prescriptive rules and more on supervision and market discipline. Banks' internal risk management may contribute swiftly and importantly to this shift.

4.5 Well-Balanced Prudential Requirements for Banks

Norbert Walter underlined the importance of a greater focus on incentive structures for banks on the market. He indicated that in banks' disclosure requirements, it was not the data as such, but information that was essential. Banks often compile a multitude of data, among other things about customers, but gather very little information. Counterparty risk was a particular incentive to gather more information. From the banks' perspective, "information overkill" should be avoided, as disclosure involved costs for banks and implied an obligation for supervisory authorities to use the data.

Nobert Walter pointed out that in the discussion of the neutrality of regulation, one must distinguish between the neutrality of instruments and the neutrality of the results of regulation. It is difficult to attain equal regulatory treatment, as internationally active institutions can easily circumvent a regulatory environment they consider disadvantageous.

4.6 Improved Cooperation Among Supervisors in the European Union

According to the Maastricht Treaty, supervision is to be exercised at the national level in the European Union (EU), noted *Jean-Claude Thébault*. The legal framework was not aimed at harmonizing supervisory structures, but rather at promoting cooperation between national supervisory agencies, with the exchange of information between home and host country supervision resulting in more convergence of supervisory practice. The intensified cooperation has crystalized in more than 80 Memoranda of Understanding concluded bilaterally between EU banking supervisors and in the growing importance of numerous committees dealing with supervisory issues.

The regulatory framework must be flexible enough to cope with market developments, and activities should be coordinated at the EU level to ensure that a level playing field is maintained. The Commission considers the rapid and successful implementation of the Financial Services Action Plan (FSAP) an important priority; moreover, cross-sector cooperation between supervisors should be fostered. Measures to modify and accelerate the legislative process should contribute to a more flexible regulatory framework.

The conglomeration and acquisition trends in the EU's financial sector, both at the national level and increasingly at the cross-border level, have

drawn attention to the importance of supervision for large, systemically relevant financial institutions to preserve financial market stability. The growing integration of financial markets will place additional demands on supervisory cooperation and will keep alive the discussion about the most suitable supervision of systemically relevant banking groups.

4.7 Different Skill Profiles for Central Bankers and Supervisors

Financial market stability has moved to the center of attention in recent years as financial crisis has been recognized as a key issue. *Dirk Schoenmaker* cautioned that we still lack sufficient experience to determine which structures are best to forestall financial crisis. Financial crisis in recent years have been both microinduced – by individual problem banks – and macroinduced by the systemic effects of interest rate volatility, recession or real estate price fluctuations. Central banks differ from supervisory agencies in that they employ more economists, so that central banks are more likely to endorse the macroinduced approach. Empirical studies conducted in 2000 also show that countries with a larger banking system employ relatively fewer bank supervisors, indicating that economies of scale are effective there.

5 Economic Policy in the European Context

5.1 Much Reform Needed at the National and European Levels

Wolfgang Schüssel commented on topical national and European economic policy issues. He noted with satisfaction that the economic framework conditions for budget consolidation were favorable and listed the measures taken to reach this goal. Wolfgang Schüssel emphasized that raising the ratio of R&D expenditure to 2.5% of GDP by 2005 represented an important target of Austria's federal government. An additional issue the government was working on was integrating termination benefits into occupational pension schemes, which could also provide the capital market with important impulses. While the current budget situation called for quick action, the objective, underlined Wolfgang Schüssel, was to develop longer-term perspectives for the reforms planned for the future and thus to stabilize expectations over the long run.

The EU was currently experiencing three milestone developments – enlargement, the introduction of the euro and institutional reform along with the discussion of Europe's future. Enhanced coordination within the institutions was indispensable to prevent a duplication of efforts. Here, Wolfgang Schüssel expressed his preference for a system with three main pillars – the Commission, with the sole right to take initiatives, the Council, which introduces and develops topics, and a strong EU Parliament, which should receive full budget authority and should therefore also exercise control. A clearer division of responsibilities, not only across vertical lines, but also horizontally, would make Europe far more effective.

5.2 Further Budgetary Policy Challenges

The Austrian government was committed to balance the budget by 2003, explained *Karl-Heinz Grasser,* and to accomplish this goal with a mix of

spending cuts (two thirds) and revenue increases (one third). Despite these necessary austerity measures, globalization was an opportunity and was to be fostered by targeted measures, among others a special R&D initiative and education and infrastructure investment. The European Council meeting of Lisbon showed the way with its catchphrase of a knowledge-based society. Other activities include further privatization and liberalization in the power and gas supply sectors. Karl-Heinz Grasser emphasized that the fair distribution of contributions and structural policy were important issues linked to EU enlargement. Financial system supervision was also a key topic in the interest of the finance minister and the OeNB both.

6 New Technologies, Financial Markets and Financial Market Supervision

6.1 Close Link Between Technological Progress and Financial Market Development

EMU is an important mainspring of change on financial markets, albeit not the only one. While there is no clear answer to whether technological progress was the cause or effect of market developments, both were closely linked, reported *Hermann-Josef Lamberti*. Technological change also alters customers' expectations; access to financial services over the Internet has by now become a principal factor in securing customer loyalty, he claimed. At the same time, the new technologies have perceptibly stepped up competitive pressure and in this way contributed to a further fragmentation of the value chain. The greater concentration on core competences in the wake of the new technologies in turn calls for a stronger standardization of financial products, so that the difference between banks offering these products will show more along the lines of customer service and brand recognition. The sectoral differences between financial services, which used to be mainly along product lines, are becoming increasingly blurred.

All things told, the Internet is a massive challenge to the banking sector: While there is no getting around using the new technologies to meet today's higher customer demands, cost pressure and shrinking profit margins are forcing banks to reap the benefit of the new technologies' economies of scale. At the same time, banks face more relentless competition from new providers now that market entry barriers are lower.

Banks invest the trust they have accumulated in their Internet business. With the more powerful IT tools now available, banks can automate many standard services without forgoing catering to customers personally. A bank must be large enough to use these tools efficiently, so the concentration trend in the banking sector is quite likely to continue.

6.2 Electronic Markets Compete with Stock Markets

In his contribution, *Christophe Bisière* focused on the Internet's effect on securities exchanges, which he examined by looking at the competition through growing trade on electronic exchanges. Electronic communication networks (ECNs), such as the second-largest ECN, Island, collect limit and market orders and match them or display them on Internet-based order books. A comparison of the quotes for Island and Nasdaq for March 2000

showed that both bid and ask quotes were frequently better than on Nasdaq. One reason is Island's thinner price grid, with Nasdaq's decimalization in the meantime perhaps to be seen as a reaction to Island's competitive edge. Nevertheless, limit orders placed on Island earned profits. Hence, one may conclude that ECNs are important contributors to the price discovery process on stock markets.

6.3 The Influence of the Internet on the Structure of Financial Markets Is Currently Still Small

In his comment, *Clive Briault* started by pointing out that e-commerce still accounted for a low share of business in financial services; Internet use is largely limited to information procurement and the handling of online banking transactions. At the same time, e-commerce is fraught with considerable risk such as system failure, fraud, uncertainty about the identity of business partners and the danger of market manipulation.

In Clive Briault's opinion, Christophe Bisière's contribution clearly illustrated how new competitors influenced the activities of established enterprises; similar reactions had been noted in other parts of the financial sector. Where market participants yield to competitive pressure, room for new competitors is created steadily; by analogy to Schumpeter's "creative destruction," this could be referred to as "creative fragmentation." Christophe Bisière's contribution also showed the potential impact of market fragmentation on liquidity, on the efficiency of price formation and discovery, on the transparency of prices and trades, and on whether a market might be more prone to disorderly behavior.

However, while the new technologies lower market entry barriers, as Hermann-Josef Lamberti indicated, it is already clear that the response of many consumers, especially retail consumers, to technological developments is to place their trust in established brand names. Clive Briault doubted whether the future really held in store that a few large institutions would dominate the market; mergers among the larger players would continue, but there would still be new entrants diversifying into novel business lines.

6.4 Electronic Trade and Market Liquidity: Impacts Cannot Be Gauged Yet

In his comment, *Gert Wehinger* identified the Internet as the common denominator of Hermann-Josef Lamberti's and Christophe Bisière's papers. Not all products and markets, however, lend themselves easily to an online Internet application. Currently, the share of online business differs greatly from one type of service to the other. Christophe Bisière implied that the Internet could have an important influence on the structure and operation of trade systems. Electronic communications networks could have a significant impact on market liquidity, but currently it was still difficult to gauge the extent and type of effect, Gert Wehinger noted. On the one hand, lower spreads could lead to tighter pricing due to decreasing transaction costs, thus improving liquidity; on the other hand, lower spreads reduce the profitability of active market-making, causing financial insti-

tutions to scale back this activity, with negative effects on liquidity. Moreover, the growing number of trade platforms could exacerbate market fragmentation, again reducing liquidity. Shallower markets could increase intra-day volatility and could lead to greater turbulence in addition to a less efficient price-discovery mechanism.

6.5 The Internet in a Historical Perspective: Is It like the Telephone?

Unlike the contributions oriented on the latest advances, *Erich Streissler* contended that, historically seen, only relatively few truly revolutionary technical innovations had occurred on financial markets and that the final judgment about whether Internet technology was one of those revolutionary changes was still outstanding. The last innovation to really revolutionize the working of international financial markets was the telephone, noted Erich Streissler. Since the invention of the telephone, market players have been in a position to act virtually simultaneously, so that information rents had largely disappeared. By comparison, the effects of the Internet were a far less important advance.

In fact, the 20th century was an era characterized financially not by technological progress, but much rather by retrogression. The financial markets lost their single monetary anchor, gold, which had been the first major innovation in finance and in fact made cross-border financial transactions on a large scale possible, when World War I broke out. During specific periods, inflation registered in the 20th century was far higher than in the 19th century, and exchange rates were subject to huge volatility.

The key feature of financial market developments in recent years was the expanding role of institutional investors, spurred by the growing significance of providing for retirement. The need to make old age provisions has changed investors' risk preference. Considering the massive increase in the volume of transactions on financial markets, financial innovation may significantly augment instability on the markets.

6.6 Institutional Framework Conditions Influence Financial Market Integration

Gianni Toniolo remarked that financial markets were fairly well integrated as early as the mid-18th century, if progress in market integration is measured in terms of converging prices rather than growing capital flows. Apart from the progress in IT, institutional framework conditions also played an important role in the development and integration of financial markets. Gianni Toniolo demonstrated this link by explaining the development of price differences on Italian stock exchanges since the unification of Italy in 1861 and the introduction of a single currency a year later. Despite the dramatic fall in the prices of communications services following the rapid expansion of the telegraph network, the price differences between the individual markets remained large, as financial institutions resisted changes in the regulatory and legal framework for a long time.

Gianni Toniolo stated that despite having made impressive progress since the introduction of the euro, European financial markets did not appear to be fully integrated in EMU. The speaker drew three conclusions from the

development of Italian markets in the 19th century for the further integration of European financial markets: First, de facto monetary unification in Europe may be much slower than its legal counterpart. Second, financial market integration does not benefit everybody to the same extent. Third, while investors stand to gain from unification, financial institutions may lose lucrative rent positions. Third, Italy's experience in the 19th century underlined the importance of well-designed further legal, regulatory and administrative actions to complete the European financial market.

7 The Banking Industry and Financial Services

In recent years, banks have had to cope with constant change. The introduction of the euro, the rising importance of new IT developments, and pronounced consolidation efforts are typical of the changes fraught with both risk and opportunity. *Gertrude Tumpel-Gugerell* observed that the universal banks had succeeded in securing a foothold in international business, but also in adapting flexibly to local conditions.

7.1 The Rise of Bond Market Financing

The rise of bond markets' importance as a source of finance will affect banks' intermediation of deposits into lending. The euro government bond market has already grown larger than the U.S. Treasury market. The market for corporate bonds has also expanded significantly since the establishment of EMU. *Graham Bishop* regards the eurobond market as a serious rival to the banks in providing credit. As corporates increasingly turn to the market for finance, banks will be left with making lower-quality or smaller-size loans that may therefore be riskier.

The developments underway are liable to reinforce this disintermediation. The Financial Services Action Plan and the Lamfalussy Report represent important steps toward an efficient capital market and lay the groundwork for faster and more transparent implementation of good quality legislation.

The new technologies will speed up the evolution of the capital markets. Online access to a rising number of electronic trading platforms give investors cheap access to bond buying at higher yields than savings deposits. The infrastructure revolution, noted Graham Bishop, would drive a financial services revolution.

7.2 New Challenges for European Banks

Alessandro Profumo remarked that the euro would be a major factor in the change toward a single European market. Nevertheless, numerous obstacles remained, such as protectionism for national markets or the fragmented clearing and settlement structures in Europe. Banks' return on equity (ROE) and their cost/income ratio has trended downward in recent years, and the disparities across countries have narrowed. This indicates both that competition in banking has intensified and that the banking industry has become more harmonized across Europe.

While UniCredito Italiano today operates very efficiently with an ROE of 21% after taxes, dimmer growth prospects on the home market compel banks to focus commercial banking activities on the more promising Central and Eastern European market. As prospective EU members, these countries represent less of a risk than e. g. South American countries.

7.3 EMU Has a Lasting Impact on Swiss Banking

According to *Urs P. Roth,* EMU has also had an impact on the Swiss financial sector. The greater international competition following the introduction of EMU forces the Swiss banking industry to permanently reexamine and enhance its international attractiveness. The Swiss franc's independence and the country's monetary policy autonomy play a central role in the Swiss financial market's competitiveness, so pegging the currency to the euro is not an issue at the moment. This does not mean that the euro is not an important currency for Swiss banks, as they offer accounts and payment services also in euro.

Switzerland considers it important to prevent any regulatory discrimination resulting from Switzerland's position outside the EU. Time and again, proposals for directives cover topics which could become problematic for Swiss banks. Therefore, close cooperation on financial market supervision is important.

7.4 Banks Remain an Important Source of Finance for Small and Medium-Sized Enterprises

Even though the banking system in Europe will to a certain degree remain fragmented along national lines, *Reinhard H. Schmidt* assumes that banking and capital markets will gradually become more and more integrated. So far, legal and cultural impediments in the consolidation of the European banking industry have made cross-border mergers difficult.

EMU and progress in European integration will strengthen financial markets. While this development will reduce the banks' role in financial intermediation, traditional banking still plays an important part in mainland Europe, as the comparatively very low extent of financial intermediation in Germany and Austria until the late 1990s shows. Banks will retain their central position in the financial system, but the variety of banking types existing side by side is likely to augment. Even universal banks – banks offering all kinds of financial services to all kinds of customers – will come under pressure to specialize. Conversely, universal banks which provide a comprehensive set of services to specific groups of clients may even gain in importance.

Reinhard Schmidt voiced his conviction that relationship banking would retain an important role in European banking, albeit a declining one if large enterprises opt more and more to tap capital markets for financing. Relationship banking will remain important for small and medium-sized enterprises, and above all not strictly profit-oriented banks, e. g. savings banks and cooperative banks, will continue to lend to the real economy. In fact, this type of bank might even benefit from some large banks' retreat from traditional market segments, above all retail banking and lending to

small and medium-sized enterprises. The pace of change in retail banking opens up opportunities for cooperative banks, as many retail clients do not want large banks to view them as less important customers. A key to success will be a bank's ability to cultivate customer loyalty.

7.5 New Perspectives in Handling Information Made Available through Technological Progress

Wilhelm Hemetsberger cautioned that the elimination of information barriers by means of the new technologies would present financial intermediaries with a major challenge, as they stand to lose information rents though this development. This process has been ongoing for some time, but the burgeoning market has so far obscured its effects. What is important is that information has become much cheaper nowadays. The Internet even goes one step further – it delivers information to everybody's doorstep. Information monopolies no longer exist. This diminishes margins, but enlarges the market, opening up new vistas for banks. Banking activities have a local and a global component, but it has become clearer and clearer that the perspective is not limited to Austria, instead spanning Europe or even the whole globe. Disintermediation will further erode margins, and in the future customers will no longer pay for simple transactions, but only for solutions. Banks will be summoned to offer value-added services.

8 Central Banking and Banking Supervision in EMU – A Summary

What answers did the speakers at the economics conference present to the question of the euro's effects on European financial markets and the implications for prudential supervision? In the first two years of Stage Three of EMU, the introduction of the euro had the greatest impact on bond markets. A number of contributions impressively demonstrated how the securities markets were gaining importance for corporate financing. The convergence of national bond markets to a single European market has slashed the cost of borrowing, so that issuing volumes have surged accordingly. As a consequence, the euro area's financial system has become more market-oriented. This development also impacted the role of banks, which need not necessarily decline; quite to the contrary, banks are likely to hold their ground in a financial sector serving Europe's typical small and medium-sized enterprises, noted Gertrude Tumpel-Gugerell.

Many speakers emphasized that EMU was a driving force – albeit not the only one – in the enormous change on European financial markets. Liberalization and deregulation alongside technological progress have sustainably altered the framework conditions for the financial sector, and for the real economy, just as much in the past years and decades. They have helped lower market entry barriers and have thus stepped up competition on the financial markets. With information transmitted more efficiently using the new technologies, the need for intermediation is reduced and information rents decline for intermediaries. Whether the Internet is really the factor destined to change the financial services sector as much as the telephone once did remains to be judged.

A number of speakers also touched upon the effects of demographic change in the industrialized nations: For politics, these demographic changes mean that pension systems must be adjusted accordingly; for the capital markets, they represent one reason institutional investors have become so important, which also explains why financial systems have become more market-oriented.

Politics is thus called upon to act in several areas. Initiatives at the European level to eliminate remaining trade barriers are indispensable for the further integration of European financial markets. A number of participants drew listeners' attention to the reform efforts underway in Europe aimed at improving how financial markets operate. Proposals to prevent and combat financial crises include those submitted by the Brouwer Group and the proposals of the working group chaired by Alexandre Lamfalussy, ranging from a better integration of securities markets to an expedient implementation of the Financial Services Action Plan. Another major international discussion centers on the proposed new Basel Capital Accord (Basel II). Whatever steps are taken, it is important to ensure equal treatment for all market participants, which also means that small-scale loans must not be relatively more expensive.

As the Treaty establishing the European Community stipulates, financial market supervision is within national jurisdiction; its institutional framework within the EU is based largely on national provisions calling for an organizational makeup that differs from country to country. In his summary statement, *Franco Bruni* emphasized that accelerating the structural reforms of European financial markets was a necessary condition for the sustainability of their convergence and the introduction of the euro. There was no optimal solution for a prudential regime, but it was important also to consider the euro area's perspective in the overall design. With the volume of cross-border financial transactions skyrocketing in recent years, developments in the design of financial market regulation need to take into account international aspects. The design of a supervisory regime must also consider the broader international level to prevent regulatory arbitrage.

The continued pace of financial market development also has an impact on financial intermediaries' risk situation. From the supervisory perspective, the elimination of information asymmetries resulting from the use of modern IT methods is welcome even though these innovations make supervisors' tasks far more complex. Franco Bruni underlined that the establishment of a stable, predictable regulatory regime for financial markets was key.

Market participants, central banks and governments have an intrinsic interest in keeping financial market supervision effcient, so that the system is capable of guaranteeing financial market stability and of nipping signs of crisis in the bud, concluded *Gertrude Tumpel-Gugerell* in her closing remarks, which summed up the implications of the core statements of the conference for regulatory regime design. The discussion confirmed that there are no pat solutions. The conference clearly stressed how important it is for central banks, which have proved themselves as guardians of financial market stability, to be involved in financial market supervision. Arguments for

central bank involvement in supervision include the synergies of central banking and supervision and the lower cost for supervised institutions as well as central banks' great financial market expertise, along with their independence and the critical role central banks fulfill in handling financial crises no matter how the supervisory regime is organized.

Contributions to the Oesterreichische Nationalbank's 29th Economics Conference on: The Single Financial Market: Two Years into EMU

Opening of the Conference

Klaus Liebscher	Governor Oesterreichische Nationalbank	Opening and Introductory Remarks

Keynote Speech

Wim Duisenberg	President European Central Bank	The Role of Financial Markets for Economic Growth

Convergence of Financial Systems

Franklin Allen	Professor Wharton School University of Pennsylvania	Comments on "Comparing Financial Systems: How Much Convergence?"
Sir Edward George	Governor Bank of England	Comparing Financial Systems: How Much Convergence?
Esa Jokivuolle	Project Supervisor Financial Markets Department Suomen Pankki	Comments on "Will Basle II Contribute to Convergence in International Capital Flows?"
Helmut Reisen	Head of Division 1 OECD Development Centre	Will Basle II Contribute to Convergence in International Capital Flows?
Alfred Steinherr	Chief Economist European Investment Bank	Comments on "The Single Financial Market: An Assessment and an Outlook for the Future"
Ernst-Ludwig von Thadden	Professor Ecole des hautes études commerciales Université de Lausanne	The Single Financial Market: An Assessment and an Outlook for the Future

The Optimal Design of Financial Regulation and Supervision: Coping with an Increasingly Internationalized Financial Industry

Arturo Estrella	Senior Vice President Fed New York	Discussant
David T. Llewellyn	Professor Loughborough University	A Regulatory Regime for Financial Stability
Walter Rothensteiner	Chief Executive Officer Raiffeisen Zentralbank Österreich	The Design of Supervisory Systems: The View of a Commercial Banker
Dirk Schoenmaker	Head of the Financial Stability Division Dutch Ministry of Finance	The Skill Profile of Central Bankers and Supervisors
Jean-Claude Thébault	Director of Direction C European Commission	Banking Supervision – The EU Approach
Norbert Walter	Chief Economist Deutsche Bank	Discussant
Ernst Welteke	President Deutsche Bundesbank	The Design of Supervisory Systems: The View of the Deutsche Bundesbank

Economic and Budget Policy

Karl-Heinz Grasser	Austrian Minister of Finance	Dinner Speech: Topical Budget Issues
Wolfgang Schüssel	Austrian Federal Chancellor	Kamingespräch: Topical Economic Issues

New Technologies, Financial Markets and Supervision in the Long Run

Christophe Bisière	Professor Université de Perpignan	The Internet and Financial Markets
Clive Briault	Director of the Prudential Policy and Review Division Financial Services Authority	Discussant
Hermann-Josef Lamberti	Member of the Management Board Deutsche Bank	New Technologies and Financial Markets in the Long Term
Erich Streissler	Professor University of Vienna	Financial Institutions and Technological Progress: A Historical Perspective
Gianni Toniolo	Professor Università degli Studi di Roma "Tor Vergata" und Duke University	A Tale of Two Financial Market Integrations
Gert Wehinger	Economics Department OECD	Discussant

Panel Discussion: The Banking Industry and Financial Services

Graham Bishop	Adviser on European Financial Affairs to Schroder Salomon Smith Barney
Wilhelm Hemetsberger	Member of the Managing Board Bank Austria
Alessandro Profumo	Chief Executive Officer UniCredito Italiano
Urs Philipp Roth	Chief Executive Officer Swiss Banking Association
Reinhard H. Schmidt	Professor Johann Wolfgang Goethe-Universität Frankfurt am Main

Summary Statement

Franco Bruni	Professor Università Bocconi

Closing Remarks

Gertrude Tumpel-Gugerell	Vice Governor Oesterreichische Nationalbank

Abbreviations

AMS	Arbeitsmarktservice Österreich (Austrian Public Employment Office)
ARTIS	Austrian Real Time Interbank Settlement
BWA	Bundes-Wertpapieraufsicht (Federal Securities Supervisory Authority)
BWG	Bankwesengesetz (amendments to the Banking Act)
CAD	Capital Adequacy Directive
CEECs	Central and Eastern European Countries
COICOP	Classification of Individual Consumption by Purpose
CPI	Consumer Price Index
EC	European Community
ECB	European Central Bank
EEA	European Economic Area
EEC	European Economic Community
EGVG	Einführungsgesetz der Verwaltungsverfahrensgesetze (Introductory Act to the Administrative Procedure Acts)
EMU	Economic and Monetary Union
EQOS	Electronic Quote and Order Driven System
ERM	Exchange Rate Mechanism
ERP	European Recovery Program
ESCB	European System of Central Banks
ESNA	European System of National Accounts
EU	European Union
Eurostat	Statistical Office of the European Communities
GDP	Gross Domestic Product
HICP	Harmonized Index of Consumer Prices
IHS	Institut für Höhere Studien (Institute for Advanced Studies)
IIP	International Investment Position
IMF	International Monetary Fund
NACE	Nomenclature générale des Activités économiques dans les Communautés Européennes (Statistical Classification of Economic Activities)
ÖCPA	Austrian Version of the Classification of Products by Activities
OECD	Organisation for Economic Co-operation and Development
OeKB	Oesterreichische Kontrollbank
OeNB	Oesterreichische Nationalbank
ÖNACE	Austrian Version of the Statistical Classification of Economic Activities
RTGS	Real Time Gross Settlement System
SDR	Special Drawing Right
SNA	System of National Accounts
TARGET	Trans European Automated Real Time Gross Settlement Express Transfer System
TEU	Treaty on European Union
WIFO	Österreichisches Institut für Wirtschaftsforschung (Austrian Institute of Economic Research)
WWU	Wirtschafts- und Währungsunion

Legend

– = The numerical value is zero
. . = Data not available at the reporting date
× = For technical reasons no data can be indicated
0 = A quantity which is smaller than half of the unit indicated
∅ = Mean value
_ = New series

Note: Apparent arithmetical discrepancies in the tables are due to rounding.

Official Announcements of the Oesterreichische Nationalbank

		Authentic German text published in the Official Gazette (Amtsblatt zur Wiener Zeitung)	Translation published in "Reports and Summaries" and "Focus on Austria" issue no
Official Announcements Regarding the Foreign Exchange Law			
DL 1/91	Promulgation of the new Official Announcements regarding the Foreign Exchange Law; general provisions 1. Issuance of new Official Announcements 2. Definitions 3. Fees	Sept. 24, 1991	4/1991
DL 2/91	Granting of general licenses 1. General license 2. Waiver of obligation to declare; release 3. Nonbanks 4. Banks not engaged in foreign business 5. Foreign exchange dealers 6. Exchange bureaus 7. Special banks and financial institutions 8. Provisions applying to both banks and financial institutions	Sept. 24, 1991	4/1991
DL 3/91	Reporting requirements 1. General provisions 2. Exemptions from the reporting obligation 3. General reports 4. Reports by banks 5. Reports by nonbanks and financial institutions 6. Special reports	Sept. 24, 1991	4/1991
DL 4/91	Assets of nonresidents with residence (domicile) in Iraq	Oct. 29, 1991	4/1991
DL 2/93	Modification of the Official Announcement DL 3/91	May 5, 1993	2/1993
DL 1/95	Repeal of the Official Announcement DL 1/93; SC Resolution 1022 (1995) Concerning the suspension of the sanctions of the United Nations against the Federal Republic of Yugoslavia	Dec. 21, 1995	4/1995
DL 1/96	Modification of Official Announcement DL 3/91	Sept. 3, 1996	3/1996
DL 1/99	Modification of Official Announcements DL 2/91 and DL 3/91 to the Foreign Exchange Act	Dec. 21, 1998	4/1998
DL 2/99	Abrogation of Official Announcement DL 3/93 Sanctions of the United Nations against Libya	April 30, 1999	1/1999
DL 3/99	Modification of Official Announcement DL 3/91 with respect to the Foreign Exchange Act	Dec. 16, 1999	3/1999
DL 1/01	Modification of Official Announcement DL 3/91 with respect to the Foreign Exchange Act	June 19, 2001	2/2001

Please see the German-language publication "Berichte und Studien" for a list of all Official Announcements in German.

Council Regulations of the European Communities

		Published in the Official Journal of the European Communities
Minimum Reserve Regulations		
No 2531/98	Council Regulation (EC) concerning the application of minimum reserves by the European Central Bank	Nov. 23, 1998
No 2532/98	Council Regulation (EC) concerning the powers of the European Central Bank to impose sanctions	Nov. 23, 1998
No 2818/98	Regulation (EC) of the European Central Bank on the application of minimum reserves	Dec. 1, 1998

List of Reports, Summaries and Studies[1])

	Published in "Focus on Austria"
Oesterreichische Nationalbank and Selected Monetary Aggregates	
Official Announcements Regarding the Foreign Exchange Law and Minimum Reserve Requirements – see preceding page	
Calendar of Monetary Highlights	1/1999
Calendar of Monetary Highlights	2/1999
Calendar of Monetary and Economic Highlights	3/1999
The Possibilities and Limitations of Monetary Policy – Results of the OeNB's 27th Economics Conference	3/1999
Calendar of Monetary and Economic Highlights	4/1999
Calendar of Monetary and Economic Highlights	1/2000
Calendar of Monetary and Economic Highlights	2/2000
Calendar of Monetary and Economic Highlights	3/2000
The New Millennium – Time for a New Economic Paradigm? – Results of the OeNB's 28th Economics Conference	3/2000
Calendar of Monetary and Economic Highlights	4/2000
Calendar of Monetary and Economic Highlights	1/2001
Calendar of Monetary and Economic Highlights	2/2001
The Single Financial Market: Two Years into EMU – Results of the OeNB's 29th Economics Conference	2/2001
Austrian Financial Institutions	
Money and Credit in 1998	1/1999
Money and Credit in the First Quarter of 1999	2/1999
Austria's Major Loans Register in 1998	2/1999
Money and Credit in the First Half of 1999	3/1999
Banking Holidays in Austria	4/1999
Money and Credit in the First Three Quarters of 1999	4/1999
Money and Credit in 1999	1/2000
The Austrian Supervisory Risk Assessment System	1/2000
Money and Credit in the First Quarter of 2000	2/2000
Risk Analysis of a Representative Portfolio of International Assets	2/2000
Calculating the Thresholds for the Notification of Mergers of Banks – The New Legal Situation	2/2000
Money and Credit in the First Half of 2000	3/2000
Banking Holidays in Austria	4/2000
Money and Credit in the First Three Quarters of 2000	4/2000
Money and Credit in the Year 2000	1/2001
Money and Credit in the First Quarter of 2001	2/2001
Interest Rates	
An International Comparison of Term Structures – Estimations Using the OeNB Model	1/1999
Austrian Capital Market	
Venture Capital in Austria	2/2000
Austrian Stock Market Survey and Outlook	4/2000

Please see the German-language publication "Berichte und Studien" for a list of all German-language reports, studies and special publications of the OeNB.

1 For a comprehensive list of reports, summaries and studies hitherto published please refer to issue no. 4/2000 of "Focus on Austria."

List of Studies on Focus on Austria Main Topics

Focus on Austria 2/2000:

The Monetary Policy of the Eurosystem
Monetary Policy and Monetary Policy Strategy in EMU:
New Framework – New Challenges
The Credibility of the Eurosystem
Monetary Growth during the Changeover to Economic
and Monetary Union
Indicators for Assessing Price Changes
Estimate and Interpretation of the Taylor Rule for the Euro Area
Modification to the Monetary Policy Framework
and Structural Changes in the Austrian Money Market
in Stage Three of EMU

Focus on Austria 3/2000:

On a New Capital Adequacy Framework as Proposed by Basel and Brussels
Regulatory Capital Requirements for Austrian Banks –
A Supervisory Tool Subject to Change
Supervisory Review
Credit Risk
Critical Evaluation of the Basel Committee's
and the European Commission's Proposals on the
Treatment of Other Risks in the New Capital Adequacy Framework
Interest Rate Risk in the Banking Book

Focus on Austria 2/2001:

The New Framework for Fiscal Policy
Fiskal Policy Design in the EU
Measures and Strategies for Budget Consolidation
in EU Member States
Distributive Aspects of Economic Policy in EMU –
An Analysis from an Employee Perspective
Problems Relating to the Taxation of Cross-Border Capital Income
Austria's Sovereign Debt Management Against the Background
of Euro Area Financial Markets
Cyclically Adjusted Budgetary Balances for Austria

Publications of the Oesterreichische Nationalbank

Periodical Publications	Published
Statistisches Monatsheft	monthly
Focus on Statistics (English translation of "Statistisches Monatsheft")	http://www.oenb.at
Leistungsbilanz Österreichs, revidierte Jahresdaten gegliedert nach Regionen und Währungen	annually
Berichte und Studien	quarterly
Focus on Austria (selected chapters from „Berichte und Studien")	quarterly
Focus on Transition	semiannually
Finanzmarktstabilitätsbericht	semiannually
Financial Stability Report (English translation of "Finanzmarktstabilitätsbericht")	semiannually
Geschäftsbericht	annually
Annual Report (English translation of "Geschäftsbericht")	annually
Volkswirtschaftliche Tagung (for a list of the topics discussed at the conferences, see below)	annually
The Austrian Financial Markets – A Survey of Austria's Capital Markets – Facts and Figures	annually

Other Publications	
New Developments in Banking and Finance in East and West (Kranichberg 1989)	1990
Erfahrungen Österreichs beim Übergang von administrativer Regulierung zur Marktwirtschaft (Moscow 1990)	1990
Challenges for European Bank Managers in the 1990s (Badgastein 1990)	1991
From Control to Market - Austria's Experiences in the Post-War Period (Warsaw 1990)	1991
The Economic Opening of Eastern Europe (Bergsten Conference Vienna 1991)	1991
Erneuerung durch Integration – 175 Jahre Oesterreichische Nationalbank	1991
Striking a Balance – 175 Years of Austrian National Bank	1991
Transparente Dispositionen – Liberalisierter Devisenverkehr unter Beachtung internationaler Publizitätsverpflichtungen	1991
Ausgeglichene Position – Die neue Präsentation der österreichischen Zahlungsbilanz	1992
Aktive Bilanz – Ein Jahr vollständig liberalisierter Devisenverkehr in Österreich	1992
Economic Consequences of Soviet Disintegration (Bergsten Conference Vienna 1992)	1993
Neuorientierung – Internationale Vermögensposition und Außenwirtschaftliche Investitionsbilanz Österreichs	1993
Bankwesengesetz 1993	1994

Other Publications (cont.)	Published
Internationale Vermögensposition 1992 – Die grenzüberschreitenden Forderungen und Verpflichtungen Österreichs	1994
International Investment Position for 1992 – Austria's Cross-Border Assets and Liabilities	1994
Western Europe in Transition: The Impact of the Opening-up of Eastern Europe and the Former Soviet Union	1995
Die Oesterreichische Nationalbank als Unternehmen	1996
Monetary Policy in Central and Eastern Europe: Challenges of EU Integration	1996
Monetary Policy in Transition in East and West	1997
Die Auswirkungen des Euro auf den Finanzmarkt Österreich	1997
Die Bank der Banken	1997
Die Zukunft des Geldes: Auf dem Weg zum Euro Grundlagen – Strukturen – Termine	1997
Geld & Währung	1997
Kompendium von Texten zur Wirtschafts- und Währungsunion	1997
Nationalbankgesetz 1984 (as of January 1999)	1999
Information literature on banknote security	recurrently
Working Papers (for a list of the topics discussed in the papers, see below)	recurrently

Videos	
Wie Mozart entsteht (banknote security)	1990
The Evolution of W. A. Mozart (English version of "Wie Mozart entsteht")	1995
Bank der Banken (tasks and functions of the OeNB)	1991
The Banks' Bank (English version of "Bank der Banken")	1991

List of the Topics Discussed at the Economics Conferences (Volkswirtschaftliche Tagungen)

1975	Die ökonomischen, politischen und sozialen Konsequenzen der Wachstumsverlangsamung
1976	Störungsanfällige Bereiche in unserem ökonomischen und sozialen System
1977	Fiskalismus kontra Monetarismus
1978	Wirtschaftsprognose und Wirtschaftspolitik
1979	Technik-, Wirtschaftswachstums-, Wissenschaftsverdrossenheit: Die neue Romantik – Analyse einer Zeitströmung
1980	Probleme der Leistungsbilanz in den achtziger Jahren
1981	Systemkrisen in Ost und West
1982	Forschung und Wirtschaftswachstum
1983	Ausweg aus der Krise – Wege der Wirtschaftstheorie und Wirtschaftspolitik
1984	Der Weg zur Welthandelsnation
1985	Weltanschauung und Wirtschaft
1986	Vollbeschäftigung, ein erreichbares Ziel?
1987	Vollendung des Binnenmarktes in der Europäischen Gemeinschaft – Folgen und Folgerungen für Österreich
1988	Sand im Getriebe – Ursachen und Auswirkungen der Wachstumsverlangsamung in Österreich
1989	Banken und Finanzmärkte – Herausforderung der neunziger Jahre
1990	Wettbewerb und Kooperation im Finanzbereich
1991	Wirtschaftliche und politische Neugestaltung Europas – Rückblick und Perspektiven
1992	Zukunft regionaler Finanzmärkte in einem integrierten Europa
1993	Europäische Währungspolitik und internationaler Konjunkturverlauf
1994	Neue internationale Arbeitsteilung – Die Rolle der Währungspolitik
1995	Die Zukunft des Geldes – das Geld der Zukunft
1996	Auf dem Weg zur Wirtschafts- und Währungsunion – Bedingungen für Stabilität und Systemsicherheit
1997	Die Bedeutung der Unabhängigkeit der Notenbank für die Glaubwürdigkeit der europäischen Geldpolitik
1998	Wirtschaftspolitik 2000 – Die Rolle der Wirtschaftspolitik und nationaler Notenbanken in der WWU
1999	Möglichkeiten und Grenzen der Geldpolitik
2000	Das neue Millennium – Zeit für ein neues ökonomisches Paradigma?
2001	Der einheitliche Finanzmarkt – Eine Zwischenbilanz nach zwei Jahren WWU

List of the Topics Discussed in the Working Papers

		Published
No. 5	Die Auswirkungen der Finanzmarkt- und Kapitalverkehrsliberalisierung auf die Wirtschaftsentwicklung und Wirtschaftspolitik in Norwegen, Schweden, Finnland und Großbritannien – mögliche Konsequenzen für Österreich[1])	1991
No. 6	Zwei Jahre G-24-Prozeß: Bestandsaufnahme und Perspektiven unter besonderer Berücksichtigung makroökonomischer Unterstützungsleistungen[1])	1991
No. 7	Die Finanzoperationen der öffentlichen Haushalte der Reformländer ČSFR, Polen und Ungarn: Eine erste quantitative Analyse	1991
No. 8	Erfüllung der Konvergenzkriterien durch die EG-Staaten und die EG-Mitgliedswerber Schweden und Österreich[1])	1992
No. 9	Alternative Strategies For Overcoming the Current Output Decline of Economies in Transition	1992
No. 10	Signaling a Hard Currency Strategy: The Case of Austria	1992
No. 11	The Impact of the Opening-up of the East on the Austrian Economy – A First Quantitative Assessment	1993
No. 12	The Scope for Regional Autonomy in Russia	1993
No. 13	EMU and the International Monetary System: A Transatlantic Perspective	1993
No. 14	Austria's Role as a Bridgehead Between East and West	1993
No. 15	Prospects for Growth in Eastern Europe – Some questions raised in the course of a macroeconomic forecasting exercise	1994
No. 16	A Survey of the Austrian Capital Market	1994
No. 17	Trade and Employment: Can We Afford Better Market Access for Eastern Europe?	1994
No. 18	Interdependence of Politics and Economic Development: Financial Stabilization in Russia	1994
No. 19	Austrian Exchange Rate Policy and European Monetary Integration	1995
No. 20	Monetary Spill-over Effects in the ERM: The Case of Austria, A Former Shadow Member	1995
No. 21	Investing in Insider-dominated Firms: A Study of Voucher Privatization Funds in Russia	1995
No. 22	Pessimism Confounded? Economic Recovery in Eastern Europe	1996
No. 23	Will Asymmetric Shocks Pose a Serious Problem in EMU?	1996
No. 24	Exchange Rates and Monetary Policy in Central Europe – a Survey of Some Issues	1997
No. 25	Sources of Currency Crises: An Empirical Analysis	1998
No. 26	Structural Budget Deficits and Sustainability of Fiscal Positions in the European Union	1998
No. 27	Trends in European Productivity: Implications for Real Exchange Rates, Real Interest Rates and Inflation Differentials	1998
No. 28	What Do We Really Know About Real Exchange Rates?	1998
No. 29	Goods Arbitrage and Real Exchange Rate Stationarity	1998

1 *Published in a modified form in "Berichte und Studien."*

List of the Topics Discussed in the Working Papers (cont.)

		Published
No. 30	The Great Appreciation, the Great Depreciation, and the Purchasing Power Parity Hypothesis	1998
No. 31	The Usual Suspects? Productivity and Demand Shocks and Asian Pacific Real Exchange Rates	1998
No. 32	Price Level Convergence Among United States Cities: Lessons for the European Central Bank	1998
No. 33	Core Inflation in Selected European Union Countries	1998
No. 34	The impact of EMU on European unemployment	1998
No. 35	Room for Manoeuvre of Economic Policy in the EU Countries – Are there Costs of Joining EMU?	1998
No. 36	Heterogeneities within Industries and Structure-Performance Models	1998
No. 37	Estimation of the Term Structure of Interest Rates A Parametric Approach	1999
No. 38	On the Real Effects of Monetary Policy: Central Banker's View	1999
No. 39	Democracy and Markets: The Case of Exchange Rates	1999
No. 40	Central Banks in European Emerging Market Economies in the 1990s	2000
No. 41	Is there a Credit Channel in Austria? The Impact of Monetary Policy on Firms' Investment Decisions	2000
No. 42	Integration, Disintegration and Trade in Europe: Evolution of Trade Revolutions During the 1990s	2000
No. 43	The Bank, the States, and the Market: An Austro-Hungarian Tale for Euroland, 1867–1914	2001
No. 44	The Euro Area and the Single Monetary Policy	2001
No. 45	Is There an Asymmetric Effect of Monetary Policy over Time? A Bayesian Analysis Using Austrian Data	2001
No. 46	Exchange Rates, Prices and Money. A Long Run Perspective.	2001
No. 47	The ECB Monetary Policy Strategy and the Money Market	2001
No. 48	A Regulatory Regime for Financial Stability	2001
No. 49	Arbitrage and Optimal Portfolio Choice with Financial Constraints	2001
No. 50	Macroeconomic Fundamentals and the DM/$ Exchange Rate: Temporal Instability and the Monetary Model	2001
No. 51	Assessing Inflation Targeting after a Decade of World Experience	2001
No. 52	Beyond Bipolar: A Three-Dimensional Assessment of Monetary Frameworks	2001
No. 53	Why Is the Business-Cycle Behavior of Fundamentals Alike Across Exchange-Rate Regimes?	2001
No. 54	New International Monetary Arrangements and the Exchange Rate	2001
No. 55	The Effectiveness of Central Bank Intervention in the EMS: The Post 1993 Experience	2001

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