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Stability and Security.

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*Opinions expressed by the authors of studies do not necessarily reflect the official viewpoint of the OeNB.*



# ANALYSES

# Euro Area Economy Gains Strength

## Inflation Remains High Owing to Energy Component

Wolfgang Pointner,  
Martin Schneider,  
Josef Schreiner

The world economy continues to expand, albeit at a slightly more subdued pace. In the U.S.A., the growth deceleration was primarily attributable to lower investment and weaker consumer spending. In response to these developments, the Federal Reserve kept the key interest rate steady in August 2006, after raising it 17 consecutive times over the past two years. In Japan, the economic recovery gathered enough steam for the Bank of Japan to hike interest rates in July for the first time in six years. China's and Southeast Asia's high growth rates remained broadly unchanged; inflationary pressures have increased in several countries of the region, above all because of the high oil price.

The euro area economy continued to recover, with GDP growth exceeding expectations in the second quarter of 2006. Recent forecasts suggest that growth – which was carried primarily by domestic demand – will exceed potential growth in 2006, and unemployment is expected to decline markedly. Even though the short-term outlook for price stability has deteriorated owing to an increase in indirect taxes in Germany, the upward pressure on consumer prices may be expected to ease, as the oil price has decreased significantly since mid-August after triggering a rise in inflation.

In the first half of 2006, GDP growth in the new EU Member States again outpaced growth in the euro area, which was attributable to a strong rise in domestic demand. In the EU acceding and candidate countries of Southeastern Europe, GDP growth strengthened in the first quarter of 2006 mainly on the back of buoyant investment.

Austria's economy is on a steady high-growth path driven by exports and increasingly also by domestic demand. According to the OeNB's short-term economic indicator, growth in Austria's real GDP (seasonally and working-day adjusted, quarter on quarter) will come to 0.8% in both the third and fourth quarters of 2006. For full-year 2006, growth is thus projected to climb to 3.2%. The labor market situation in Austria has eased markedly as a result.

JEL classification: E200, E300, O100

Keywords: economic developments, global outlook, euro area, central and (south-) eastern Europe, Austria.

### 1 World Economic Growth Remains Robust

#### 1.1 U.S. Growth Slows Down Slightly in the Second Quarter of 2006

Real GDP growth in the U.S.A. decelerated to 2.9% (annualized) in the second quarter of 2006, down from 5.6% in the previous quarter. This slowdown was mainly attributable to weak quarter-on-quarter consumer spending in the second quarter of 2006, whose contribution to GDP growth almost halved. The contribution of corporate investment was negative, and investment in residential construction diminished more than in the previous quarter.

Still, the Federal Reserve's growth forecast remains optimistic at 3.25% to 3.5% for the full year 2006 and 3% to 3.25% for 2007. According to Ben Bernanke, chairman of the Federal Reserve Board, the U.S. economy appears to be in a period of transition from robust growth to a pace more consistent with the underlying productive potential. The *Conference Board's* index of leading economic indicators declined in August, signaling slower economic growth over the next months. The International Monetary Fund (IMF) expects real GDP growth rates of 3.4% and 2.9%, respectively, for the years 2006 and 2007.

Cutoff date for data:  
September 15, 2006

The unemployment rate fell slightly to 4.7% in August after increasing noticeably in July 2006. The number of newly created nonagricultural jobs came to 128,000 (seasonally adjusted), thus roughly matching the number recorded on average in the four previous months. This increase is considered sufficient to keep the unemployment rate stable at a low level. While the number of employees declined in the production sector, it expanded in the service sector.

In July 2006, consumer prices rose 4.1% year on year (somewhat less than in June 2006), whereas energy prices climbed 20.5% year on year. Even though the core inflation rate accelerated only slightly in July, coming to 2.7% year on year, it posted the strongest increase since December 2001.

In August 2006, the U.S. Federal Open Market Committee (FOMC) paused its so far longest cycle of raising the target level for the federal funds rate, which stood at 5.25% after 17 consecutive boosts by 25 basis points each over more than two years. In its press release, the FOMC pointed out that economic growth had moderated since the beginning of 2006. Moreover, it maintained that the high level of capacity utilization and the high prices of crude oil and other commodities had the potential to sustain inflationary pressures, but it expected these pressures to moderate over time.

The risks currently facing the U.S. economy include imbalances in the economy, the large (and probably still widening) current account deficit, the overindebtedness of consumers and their low propensity to save. Furthermore, higher interest rates are deterring consumers from taking out additional mortgage loans, thus

dampening house price growth, which may well curb consumption.

## 1.2 Japan: First Key Rate Hike in Six Years

Real GDP grew for the sixth consecutive time in the second quarter of 2006. Driven by domestic demand, it increased by 0.2% quarter on quarter, albeit at a slower pace than before. This growth slowdown was attributable to lower investment in housing and nonhousing construction, weaker exports and diminishing inventories. Still, the medium-term economic outlook remains favorable. The *Bank of Japan* expects economic growth to equal potential growth (1.5% to 2%). The results of the Bank of Japan's quarterly Tankan survey show that businesses have revised investment plans for the fiscal year 2006 upward to double-digit rates. The Organisation for Economic Co-operation and Development (OECD) expects growth to continue on the back of robust domestic demand, which is supported by rising corporate profits and a reversal of the downward trend in employment and wages. This should help cut the unemployment rate further (July 2006: 4.1%). In its growth forecast for Japan, the IMF expects real GDP to climb by 2.7% in 2006 and by 2.1% in 2007.

In July 2006, the Bank of Japan raised its key interest rate from 0% to 0.25% in a widely anticipated move. This first increase in almost six years marked a significant shift in the central bank's monetary policy stance. Furthermore, the Bank of Japan decided to raise the official discount rate to 0.4%; the rate had stood at 0.1% since 2001. This move aimed at preventing an excessive increase in interest rates at the short end of the

maturity spectrum. It did not come as a surprise to market participants, so that reactions were muted.

Following the revision of the consumer price index and its rebasement to 2005=100 at the beginning of 2006, core inflation was expected to decelerate by one-quarter percentage point. In fact, it decelerated by one-half percentage point in July 2006. Moreover, July 2006 was only the second consecutive month with positive core inflation readings, which dampened market expectations for a further key interest rate hike this year.

A medium-term plan for achieving a balanced primary surplus until 2011 was adopted in July 2006. It relies on cutting expenditure without including measures to increase revenues. However, this measure will only slightly reduce gross debt, which is mainly internally financed and exceeds 180% of GDP according to the IMF.

### **1.3 Asia, Led by China, Remains the Motor of Global Growth**

In mid-2005, the countries of non-Japan Asia (NJA) embarked on a period of dynamic growth, which continued in the first half of 2006. Growth was powered by exports and robust domestic demand. The IMF expects the economic upswing to continue in NJA in the full year 2006 and in most economies also in 2007. Inflationary pressures have intensified in certain parts of the region (India, Indonesia, Hong Kong) owing to the higher crude oil price. Raising service sector productivity remains the biggest challenge in several economies; high energy prices pose the biggest risk to economic growth.

In the first half of 2006, real GDP growth in China skyrocketed to

10.9% year on year (full year 2005: 10.2%), which is the highest increase in more than ten years. Consumption remained robust and investment was buoyant, supported by strong growth in lending and money supply. The People's Bank of China lifted its key interest rate in three steps between April and mid-August 2006. The credit standards for house purchase loans were tightened at the beginning of June 2006 to curb the sharp rise in house prices. Reserve ratios were raised across the board in mid-June and mid-July and for foreign currency deposits in September 2006. This tightening of China's monetary stance was aimed at withdrawing liquidity from the market and curbing persistently high loan growth so as to bring the Chinese economy on track to sustainable growth.

## **2 Euro Area: GDP Growth and Inflation Increase Further**

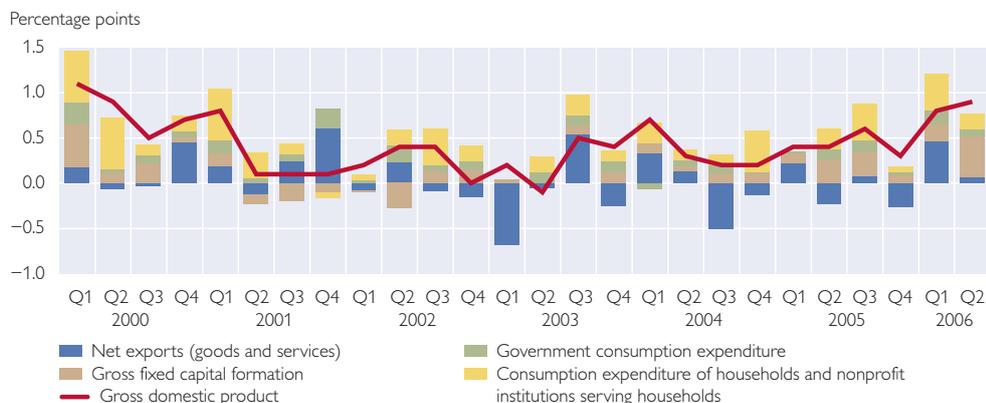
### **2.1 Growth Accelerates in the First Half of 2006**

The recovery in the euro area gained momentum in the first half of 2006; both quarterly growth rates were significantly higher than the respective values for 2005. In the second quarter, GDP growth at 0.9% was increasingly carried by domestic demand, whose contribution came to 0.8 percentage point in that period. In particular investment activity climbed steeply, with gross fixed capital formation augmenting by 2.1% quarter on quarter in the second quarter of 2006. Private and public consumption growth in this period lagged behind that observed in the previous quarter. After dampening GDP growth in the first quarter of 2006, inventory changes contributed positively to growth in the second

Chart 1

## Growth Contribution of Real GDP Components in the Euro Area

### Quarter-on-quarter changes



Source: Eurostat.

quarter. Net exports also made a positive contribution to GDP growth, even though their share was slightly lower in the second quarter of 2006. While GDP growth accelerated especially in Germany and France, Spain continued to post high growth.

In the first half of 2006, industrial production (excluding construction and energy production) posted rising growth rates, continuing a trend that started in mid-2005. Capital goods production again recorded stronger increases than consumer goods production, probably because economic activity was largely supported by investment demand in the previous quarters. According to a survey conducted by the European Commission, capacity utilization in industry rose to 83.6% in the third quarter of 2006, thus exceeding its long-term average.

Retail sales continued to rise modestly in real terms in July 2006, which points to persistently moderate advances of private consumption. The European Commission's survey of consumer confidence – which is another leading indicator of consump-

tion growth – reached the highest value in years in July and remained unchanged in August 2006.

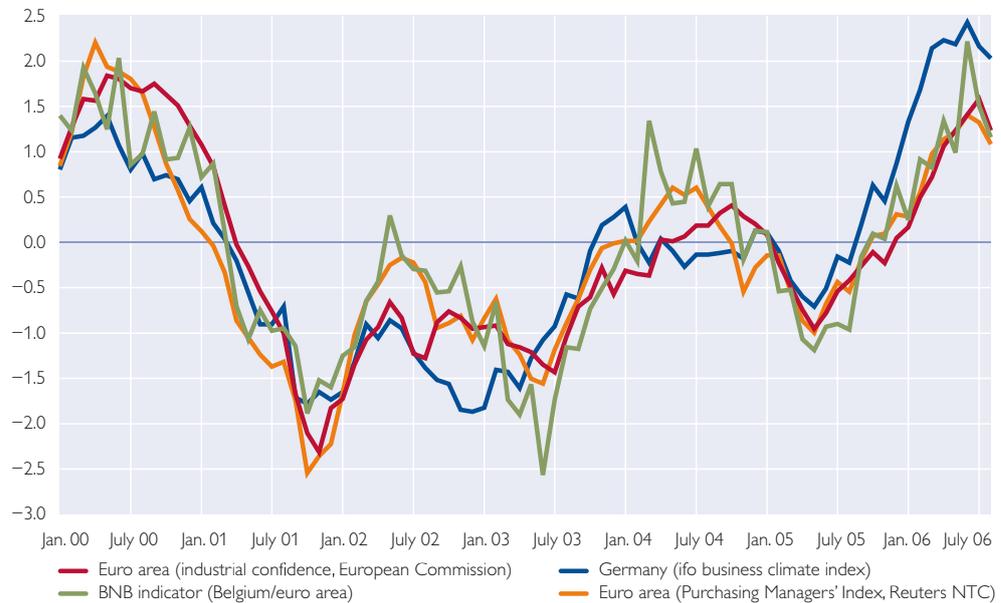
## 2.2 Forecasts Suggest Ongoing Growth

The various business climate indicators all pointed to a strong upswing from mid-2005; this trend was interrupted in mid-2006. While declining somewhat, most indicators remained on a relatively high level.

The European Commission's indicator for quarterly GDP growth forecast a range of 0.5% to 0.9% for the third quarter of 2006 and 0.4% to 0.9% for the fourth quarter of 2006. This means that the Commission revised upward expectations for the third quarter (which is, among other reasons, probably ascribable to the fact that estimates of economic growth had previously been too low), while slightly revising downward its forecast for the fourth quarter of 2006. The European Commission expects GDP growth to be in a range of 0.2% to 0.8% in the first quarter of 2007.

**Business Climate Indicators**

Deviation from the mean value of the indicator relative to the standard deviation



Source: European Commission, ifo, Reuters NTC, BNB, OeNB.

The Eurosystem staff projections of August 2006<sup>1</sup> foresee GDP growth in a range between 2.2% and 2.8% in 2006 and between 1.6% and 2.6% in 2007. While the risks to the forecast are balanced in the short run, they are on the downside in the medium term owing to global imbalances and the negative growth effects associated with increased protectionism. The IMF's forecasts of August 2006 predict GDP growth to rise to 2.4% this year and to decline again to 2.0% in 2007. The fast acceleration in 2006 is attributed to stronger-than-anticipated investment activity; the contribution of private consumption is expected to be only modest, despite anticipation effects resulting from a VAT increase in Germany.

### 2.3 Labor Market Situation Improves Further

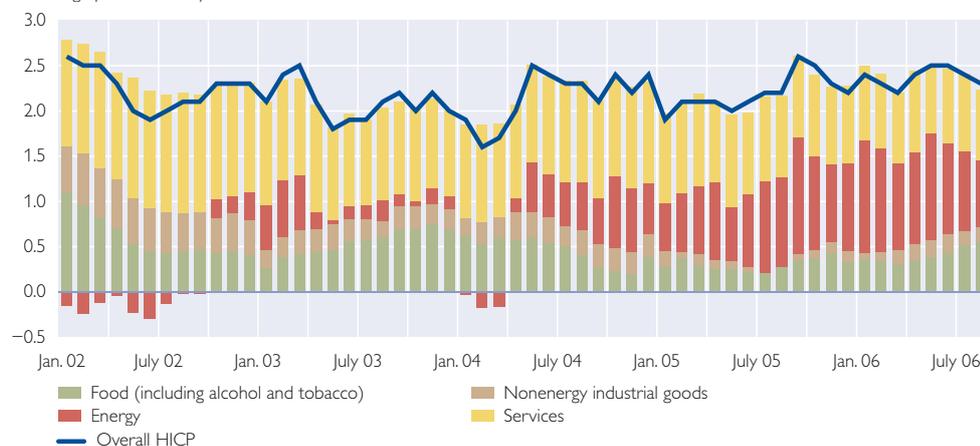
As a consequence of the protracted downturn between 2001 and 2003, the unemployment rate peaked at 8.9% in 2004. It has declined gradually since then, coming to 7.8% in July 2006. The labor market situation has thus improved markedly thanks to the economic recovery. In the fourth quarter of 2005 and in the first quarter of 2006, quarter-on-quarter employment growth was considerable at 0.3% in each quarter. Data on employment expectations until July 2006 for the industrial sector, the retail sector and the construction industry suggest that employment growth in the euro area remained dynamic. In its fall forecast, the IMF as-

<sup>1</sup> The forecast of euro area aggregate data for the first time also included projections of economic developments in Slovenia, which will join the euro area on January 1, 2007.

Chart 3

### HICP Components: Contributions to Inflation

Percentage points, monthly data



Source: Eurostat.

sumes an unemployment rate of 7.9% in 2006 and 7.7% in 2007.

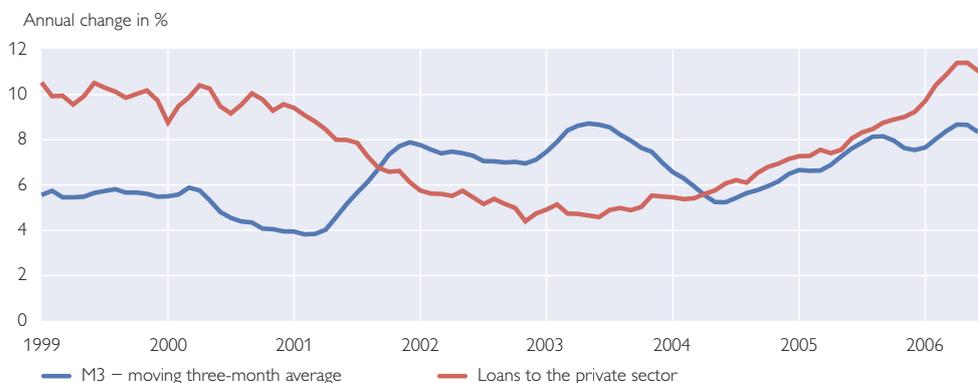
#### 2.4 Rising Energy Prices Keep Inflation Above 2%

After peaking at 2.5% in May and June 2006, respectively, the inflation rate measured by the Harmonised Consumer Price Index (HICP) eased to 2.4% in July and further to 2.3% in August 2006. As in the previous quarters, it thus remained above the Eurosystem's definition of price stability. The high inflation rate was mainly attributable to the direct impact of high crude oil and petroleum product prices on the energy component of the HICP, which is, however, expected to decline in the near future, given the recent oil price developments: The price of Brent crude has dropped by more than 20%, after reaching an all-time high of USD 78.3 per barrel on August 9, 2006. At 1.5%, the core inflation rate (i.e., excluding energy and unprocessed food) was again lower in August 2006 than in the previous month. The inflation rates in the nonenergy industrial goods sector remained particularly

low (0.5% according to the most recent data) owing to strong international competition. All in all, the indirect effects of the high oil price have been moderate so far. However, given the increased upward pressure on producer prices, consumer prices are also likely to climb more sharply in the future. Available data on wage developments show that wages have continued to rise moderately, with employee compensation increasing by 2% in the first quarter of 2006. Owing to productivity gains, unit labor cost growth remained subdued at around 1%. As a result, no significant second-round effects of the high oil price have been observed yet.

The ECB staff projections of August 2006 anticipate HICP inflation to be in a range between 2.3% and 2.5% in 2006 and between 1.9% and 2.9% in 2007. The VAT increase in Germany is expected to drive up inflation markedly in 2007. The upside risks to these projections of higher oil prices never materialized, as the oil price has dropped noticeably since the preparation of these projections.

### M3 and Loan Developments in the Euro Area



Source: European Commission, ifo, Reuters NTC, BNB, OeNB.

#### 2.5 Monetary and Loan Growth Reach All-Time Highs

In the second quarter of 2006, M3 growth came to 8.7%, the highest level observed since the start of monetary union. It was almost as strong in 2003, when geopolitical uncertainty in combination with weaker stock markets had induced portfolio shifts into liquid and safe assets. After slowing down to 7.8% in July 2006, M3 growth accelerated again in recent months, essentially because cash holdings and overnight deposits that are subsumed in the monetary aggregate M1 augmented. In addition to the transaction motive behind holding cash, the overall structure of interest rates (i.e., lower opportunity costs associated with liquid investments) is probably also driving the expansion of the money supply. The growth rate of deposits with a maturity of up to two years increased noticeably between the fourth quarter of 2005 and the second quarter of 2006, climbing from 6.5% to 15.4%.

In the period from May to July 2006, the growth rate of loans to other non-MFIs in the euro area also reached the highest levels since the

beginning of monetary union (around 11.2%). The strong uptrend was observed for loans to both nonfinancial corporations and households; it may be attributable to continued favorable financing conditions, high real estate prices in several euro area countries, a brighter outlook for income growth resulting from strengthened economic activity and an improvement of the labor market situation. The current high monetary growth is thus very different from the previous period of high monetary growth in 2003 – loan growth and economic activity had been subdued then.

#### 2.6 Euro Area Interest Rates Increase Amid Stable Inflation Expectations

On August 3, 2006, the Governing Council of the ECB decided to further raise the key interest rates by 25 basis points to 3.00% and announced that, if the baseline scenario for future economic developments continued to be confirmed, a progressive withdrawal of monetary accommodation would be warranted. Since December 2005, the key interest rates have been increased by a total of 100 basis points. Over the past three

Chart 5

### Interest Rate Developments in the Euro Area and in the U.S.A.,

#### USD/EUR Exchange Rate

From January 1, 2003, to September 12, 2006



Source: Thomson Financial.

months, the term structure of euro area money market interest rates has flattened noticeably. While short-term interest rates (for deposits with a maturity of up to six months) rose along with the key interest rates, forward rates at the long end of the money market yield curve (6 to 12 months) have been relatively constant at around 3.75% since the beginning of July.

In the U.S. and euro area *government bond markets*, ten-year bond yields have dropped slightly in recent months, after having increased steadily since the fourth quarter of 2005. This may be attributable to two factors, among others: First, the key interest rate hikes are expected to come to an end soon and second, the U.S. economy has cooled somewhat. Still, inflation expectations based on inflation-indexed ten-year bonds have been largely constant in the U.S.A. and in the euro area despite the high oil price. This is likely to be connected to continued low (albeit slightly increasing) core inflation rates and central banks' sustained credibility in guaranteeing price stability. By anchoring inflation expectations, central banks have contrib-

uted significantly to mitigating the effects of the oil price shock. The interest rate differential between the euro area and the U.S.A. has stabilized since the ECB started raising interest rates and has even decreased recently, notably for deposits with a maturity of up to two years.

After experiencing severe losses owing to global risk aversion in May 2006, stock markets rebounded, supported by continued sound corporate profits and declining long-term interest rates. According to recent data, the Dow Jones EURO STOXX index was around 7% higher than in early 2006. Stock market uncertainty, as measured by implicit volatility, declined again after increasing in May 2006.

In the *foreign exchange markets*, the strengthening of the euro exchange rate, which had started in November 2005, continued until May 2006. On June 5, 2006, the EUR/USD exchange rate stood at 1.2958, which means it increased by about 10% within six months. It has since remained just below this level, which is relatively high compared with the long-term average. The euro appreciated against a number of other cur-

rencies, most markedly against the Japanese yen, but not against the pound sterling. Since the beginning of 2006, the euro's nominal effective exchange rate has appreciated around 4%.

### 3 Economic Developments in Central and Eastern Europe

#### 3.1 Economic Activity Gains Momentum in the First Quarter of 2006

At 5.4%, average economic growth in the new EU Member States of the Czech Republic, Hungary, Poland, Slovenia and Slovakia was marginally lower in the second quarter of 2006 than the very high average rate of 5.6% observed in the first quarter. This decline was primarily attributable to slightly slower growth in the Czech Republic and Hungary. Still, given the value for the full year of 2005 (4.3% on average), economic activity has been increasing, which is mainly ascribable to the upswing in the (large) Polish economy: its annual growth rate accelerated by 1.2 percentage points against 2005 as a whole. In the second quarter of 2006, economic growth was especially pronounced in Slovakia (+6.7%) and thus significantly higher than the country group average. The Czech

and the Polish economies also posted above-average growth, whereas the performance of the Hungarian and the Slovenian economies was slightly below average.

The EU acceding and candidate countries of Southeastern Europe (SEE) also posted solid growth. The development in Romania was especially remarkable: After the country was hit by a series of floods in 2005, its growth rate increased considerably in the first quarter of 2006. The economic situation in the EU candidate country Croatia also improved clearly. Despite a very solid economic performance, no substantial growth acceleration was observed in Bulgaria.

The developments of GDP components outlined below draw on first-quarter data of 2006, as more recent figures were not available for all countries at the cutoff date for data.

In the first quarter of 2006, private consumption was a key driver of economic growth in all new EU Member States, especially in Poland, where the growth rate of this GDP component almost doubled. This development implies an improvement of the labor market situation, which is reflected in higher employment and lower unemployment rates on the one hand, and in strong growth in real wages on the other. A similar trend

Table 1

#### Real GDP Growth in Central, Eastern and Southeastern Europe

Annual real GDP growth rate in %

	2002	2003	2004	2005	Q4 05	Q1 06	Q2 06
Poland	1.4	3.9	5.3	3.4	4.3	5.2	5.5
Slovakia	4.1	4.2	5.4	6.1	7.4	6.3	6.7
Slovenia	3.5	2.7	4.2	3.9	3.7	5.1	4.9
Czech Republic	1.9	3.6	4.2	6.1	6.9	7.1	6.2
Hungary	3.8	3.4	5.2	4.1	4.3	4.6	3.8
Bulgaria	4.9	4.5	5.7	5.5	5.5	5.6	x
Romania	5.2	5.2	8.4	4.1	4.3	6.9	x
Croatia	5.6	5.3	3.8	4.3	4.8	6.0	x

Source: Eurostat, national statistical offices.

was observed in Slovakia, which benefited from a more favorable labor market situation as well. Private consumption growth was more modest in the Czech Republic, Hungary and Slovenia. While this development was attributable to the government's efforts to moderate wage growth in Slovenia, it was ascribable to longer-term developments in the Czech Republic and in Hungary.

The role of private consumption for GDP growth in the SEE countries reviewed was by no means uniform in the first quarter of 2006. While GDP growth outpaced consumption growth in Croatia and Bulgaria – which was probably mainly traceable to the weaker expansion of lending in both countries – private consumption growth in Romania regained double-digit rates after flagging slightly in previous quarters, despite only modest increases in real wages.

The dynamic growth trend in gross fixed capital formation in the new EU Member States, which materialized at the end of 2005, continued throughout the first quarter of 2006. Growth rates ranged from 7.1% (Czech Republic) to 16.1% (Slovakia). Beside the Czech Republic, Hungary posted the largest increases. The strength of investment was traceable to a broadly-based rise in corporate investment, investment in residential construction and investment in public infrastructure. While the contribution of gross fixed capital formation to GDP growth was also considerable in Slovenia and Slovakia, it was less pronounced in Poland, partly because investment projects were postponed owing to harsh winter conditions.

In the first quarter of 2006, investment increased considerably in the SEE countries reviewed, with

growth rates coming to 11.4% (Romania), 18.1% (Croatia) and 21.4% (Bulgaria). While this rise was linked to the uninterrupted high inflow of foreign direct investment and continued strong construction activity in Bulgaria and Romania, Croatia seems to have profited from higher investor confidence connected with the start of accession negotiations with the EU.

Looking at the entire year 2005, the contribution of net exports to GDP growth declined in all new EU member countries under review except Hungary, which is ascribable to a substantial expansion of imports that was not matched by – albeit robust – export growth. In the first quarter of 2006, however, the contribution of net exports started improving quarter on quarter in Hungary, Poland, Slovenia and Slovakia. In Poland, stronger export growth exceeded import growth (which was fueled by stronger domestic demand), so that trade once again made a positive contribution to Polish GDP growth after having made a negative contribution in the fourth quarter of 2005. While export growth was increasingly dynamic in Slovakia, import growth remained high primarily owing to technology imports and the high oil price, so that the contribution of net exports to growth, while negative, nevertheless improved. In Hungary, growth was primarily supported by sharply rising exports, which were to some extent linked to the depreciation of the forint. A decline in the (positive) contribution of net exports to growth was only observed in the Czech Republic, where imports mounted faster than exports.

The contribution of net exports to GDP growth was negative in all SEE countries under review. After

declining in the second half of 2005, growth still lagged behind import growth. Bulgarian exports picked up again in the first quarter of 2006, but export growth.

Box 1

### Economic Outlook for Central and Eastern European Countries

The OeNB compiles semiannual forecasts of economic developments in Poland, Hungary, the Czech Republic as well as Russia. Taken together, the three new EU members account for more than 75% of the ten new EU Member States' overall GDP and are thus representative of trends in this region of the EU.<sup>1</sup>

In the **three new EU Member States discussed here**, real GDP growth for 2006 is expected to range from 3.7% (Hungary) to 6% (Czech Republic). Compared to 2005, economic growth will accelerate by nearly 2 percentage points to 5.2% in Poland, whereas it will remain stable at a high level in the Czech Republic and will decline by about ½ percentage point in Hungary. The more dynamic euro area import growth and these three countries' higher export competitiveness (through lower unit labor costs) will boost real annual export growth from a range of 8% to 10% in 2005 to between 12% and 15% in 2006. Poland and the Czech Republic will see export growth speed up even though their currencies have appreciated in real terms. Hence, in all three countries, exports will be the demand component with the biggest contribution to GDP growth – perceptibly higher than that of consumer spending. Robust export growth in recent years has, moreover, helped revive the labor market since 2005, as will be apparent in 2006 in the noticeable increase in average real wages as well as (in the Czech Republic and Poland) in the rise in the employment ratio and the decline in unemployment. Strong increases in minimum wages and/or social transfers in all three countries, income tax cuts in the Czech Republic and Hungary, and the drop in inflation in Poland and Hungary will also strengthen real disposable incomes in 2006. Together with the unabatedly dynamic rise in household lending, these factors will accelerate private consumption growth in all three countries in 2006 as a whole. However, in Hungary annual consumer spending growth will remain considerably below first-half growth in the second half of 2006 following the upward adjustment of (administered) gas prices and of the middle VAT rate (e.g. on food, energy and some services), and in anticipation of further fiscal consolidation measures from 2007, which weakened consumer confidence. Following the cooling of residential and road construction activity and with consumer spending set to flag, investment growth in Hungary will be slower in 2006 compared to 2005. Conversely, in Poland and in the Czech Republic, both the powerful expansion of exports and higher consumer spending growth as well as the positive outlook for sales will sharply lift investment growth. The rise in investment will be sustained further by the decline in nominal unit labor costs in industry, pronounced corporate profitability and liquidity, high capacity utilization in industry, the stepped-up absorption of transfers from EU structural funds and the vigorous expansion of housing loans to households. Greater investment growth will, in turn, enhance labor market performance and additionally fuel private consumption. Stepped-up export production in all three countries and the accelerated rise in investment in Poland and the Czech Republic will lift import growth from a range of 5% to 7% in 2005 to between 11% and 13% in 2006 and will shrink or even fully eliminate the positive contribution to growth of net exports.

<sup>1</sup> These forecasts are based on preliminary global growth projections and technical assumptions about oil prices and USD/EUR exchange rates, which are prepared by the ECB for the Eurosystem by means of broad macroeconomic projection exercises. These assumptions are central to the current outlook for two reasons: first, the sizeable export links of these three new EU countries with the euro area, and second, the fact that Russia is one of the world's largest oil-producing nations and that energy sources account for some 60% of the country's total exports. (In the case of Russia, the forecast is established in collaboration with Suomen Pankki, Finland's central bank.)

In 2007, real GDP growth will ease moderately at a high level in the Czech Republic and in Poland, whereas it will drop markedly to only about 2½% in Hungary following fiscal consolidation efforts. While set to remain at the double-digit level, export growth will be marginally lower in all three countries. Domestic demand growth will stay high in the Czech Republic and in Poland, as the substantial increase of real average wages and of employment will boost consumer spending, and robust export and consumption demand hand in hand with a further decline of nominal unit labor cost (due to solid advances in productivity) will strengthen investment. High growth of both export and domestic demand will, however, cause imports to rise faster than exports, so that the contribution of net exports to growth will sink to zero in the Czech Republic and will even be slightly negative in Poland. In Hungary, by contrast, the announced fiscal consolidation measures, which have not yet been fully implemented, will trigger a real reduction of domestic demand. Public sector reform (job cuts and a nominal wage freeze amid rising inflation) will dampen public and private consumption (despite severance payments). Higher taxes and social contribution rates will weaken consumer spending even more, and will also depress investment growth. Moreover, the slump in consumer spending and the decrease in households' residential building activity will add to the decline in investment growth. However, these developments will also result in a sharper slowdown in import compared to export growth, so that the positive contribution of net exports to growth will climb moderately.

The risks in the outlook for these three new EU members include deviations from assumptions regarding euro area growth and regarding oil prices, as well as more pronounced exchange rate fluctuations, which would affect investment as well as both exports and imports. In addition, the design and implementation of the budget consolidation plans and households' and enterprises' reactions to them are fraught with a degree of uncertainty.

In **Russia**, assuming that oil prices will no longer rise substantially, GDP growth is anticipated to stagnate or to dip slightly at a relatively high level in 2006 and 2007. Therefore, as in the past few years, GDP growth will not gain speed despite high oil prices. Consumer spending, buoyed by export receipts, public sector wage increases and a credit boom, remains the driving force of economic activity. In fact, with fiscal policy loosening measures before the parliamentary and presidential elections (at the end of 2007 and at the beginning of 2008, respectively), for which the 2007 budget has provided already some hints, private consumption in 2007 should even outpace the high 2005 result of +11.1%. Animated domestic demand and ample liquidity as a result of high nominal export receipts and powerful credit growth will also reinforce investment. Investment will probably be directed in particular to the alleviation of capacity bottlenecks in the primary sector. These bottlenecks and the drastically higher taxes imposed on the energy sector in 2005 are dampening output and real export growth in the commodity sector. In view of the existing uncertainties regarding the investment climate and little progress in administrative and judicial reform, though, investment growth is not expected to accelerate strongly. Moreover, major efforts to revitalize bogged-down structural and institutional reforms cannot be expected before the elections. The manufacturing industry faces the challenge of nominal upward pressure on the currency and a high inflation differential compared to other countries as a result of persistently high commodity prices and revenues (danger of the so-called Dutch disease), whereas robust domestic demand growth triggers a powerful import pull. Therefore, strong real net exports (13.6% of GDP in 2005) will contract further, so that net exports will once again make a negative contribution to GDP growth and will thus dampen GDP growth.

The risks to this forecast include oil price changes given Russia's increased dependence on energy deliveries abroad, a stronger than expected real appreciation of the Russian currency (including the possibility that budget expenditure may mount substantially and

may thus heat up inflation in the run-up to the election), as well as continued uncertainty about the course of reform policies.

Table 2

### Three New Member States and Russia: Forecast of September 2006

Annual change at constant prices (%)

Gross domestic product	2002	2003	2004	2005	2006 <sup>1</sup>	2007 <sup>1</sup>
Poland	1.4	3.9	5.3	3.4	5.2	4.8
Czech Republic	1.5	3.6	4.2	6.1	6.0	5.2
Hungary	3.8	3.4	5.2	4.1	3.7	2.4
Russia	4.7	7.3	7.2	6.4	6.4	6.1

Source: Eurostat, national statistical offices, OeNB, Suomen Pankki.

<sup>1</sup> Forecast.

### 3.2 Inflation Developments Differ across Eastern Europe

While inflation rates in the new Member States had trended downward in 2005, partly strongly, no clear trend could be discerned during the first half of 2006. In Hungary and in Poland, price dynamics slowed; by contrast, inflation quickened in Slovenia, the Czech Republic and above all in Slovakia. Generally, inflation momentum speeded up somewhat in the second quarter of 2006 and now ranges between 1.4% in Poland and 4.6% in Slovakia. The rise in inflation is primarily attributable to the powerful rise in energy prices, as reflected by the relative stability of core

inflation rates. So far in 2006, no major second-round effects of the higher energy prices on wage growth have been discernible.

Inflation developments in South-eastern Europe have also been different across countries. Whereas the rate of inflation remained nearly unchanged from 2005 in Croatia, Romania was able to continue its disinflation course. In Bulgaria, though, inflation rose sharply. The introduction of new or higher alcohol and tobacco taxes had a greater effect on the general price level than in Romania, where the decline in food prices offset upward price pressure.

Table 3

### Inflation Developments in Central, Eastern and Southeastern Europe

Annual change of the HICP (%)

	2001	2002	2003	2004	2005	Q1 06	Q2 06
Poland	5.3	1.9	0.7	3.6	2.2	0.9	1.4
Slovakia	7.2	3.5	8.4	7.5	2.8	4.2	4.6
Slovenia	8.6	7.5	5.7	3.7	2.5	2.3	3.1
Czech Republic	4.5	1.4	-0.1	2.6	1.6	2.4	2.5
Hungary	9.1	5.2	4.7	6.8	3.5	2.4	2.8
Bulgaria	7.4	5.8	2.3	6.1	5.0	8.0	8.3
Romania	34.5	22.5	15.3	11.9	9.1	8.7	7.2
Croatia <sup>1</sup>	5.0	1.7	1.8	2.1	3.4	3.5	3.8

Source: Eurostat, wiw.

<sup>1</sup> CPI.

Table 4

**Ratings of Long-Term Foreign Currency Debt**

Currency	Moody's		Standard & Poor's	
	Current rating <sup>1</sup>	Last change (old rating)	Current rating <sup>2</sup>	Last change (old rating)
Polish zloty	Aa1	May 2006 (A2)	BBB+	May 2000 (BBB)
Slovak koruna	Aa1	May 2006 (A2)	A	Dec. 2005 (A-)
Slovenian tolar	Aaa	May 2006 (Aa3)	AA	May 2006 (AA-)
Czech koruna	Aa1	May 2006 (A1)	A-	Nov. 1998 (A)
Hungarian forint	Aa1	May 2006 (A1)	BBB+	June 2006 (A-)
Bulgarian lew	A1	May 2006 (Baa3)	BBB	Oct. 2005 (BBB-)
Romanian leu	A2	May 2006 (Ba1)	BBB-	Sep. 2005 (BB+)
Croatian kuna	A1	May 2006 (Baa3)	BBB	Dec. 2004 (BBB-)

Source: Bloomberg.

<sup>1</sup> Aaa (best), Aa, A, Baa, Ba, B, Caa, Ca and C (worst); 1, 2 and 3 are used to subdivide each grade.

<sup>2</sup> AAA (best), AA, A, BBB, BB, B, CCC, CC, C and D (worst); + and - are used to subdivide each grade.

### 3.3 Ratings Improve in 2006

Following a review of Moody's rating methodology, Slovenia, Slovakia, Poland, the Czech Republic, Bulgaria, Romania and Croatia have all been upgraded. Slovenia's rating was upgraded also by Standard & Poor's, from AA- to AA. With Hungary's fiscal policy lacking sustainability and given its substantial need for external funding, Standard & Poor's downgraded Hungary from A- to BBB+. Of all countries covered in this section, Slovenia received the best rating (Aaa/AA) from both agencies. Moody's placed all other new Member States in the very next category (Aa1), whereas Standard & Poor's gave more divergent ratings. Both agencies produced identical ratings (A1/BBB) for Bulgaria and Croatia, ahead of Romania (A2/BBB-). With regard to the latter, Moody's announced a review whereas Standard & Poor's stated a positive outlook.

## 4 Austria: OeNB Short-Term Economic Indicator Predicts 3.2% Growth in 2006

### 4.1 Solid Export Activity and Vigorous Investment Buoy Growth

In the first half of 2006, Austrian exports developed very dynamically. Although the quarterly record of first-quarter results showed a decline in exports, this reduction is the result of a change in the reporting of services.<sup>2</sup> Exports of goods continued to expand dynamically. The ongoing strength of the world economy and, above all better than expected euro area economic activity – in the second quarter of 2006, euro area growth even outpaced U.S. growth – support expectations that Austrian exports will advance robustly in the second half of 2006. The current strong enlargement of incoming export orders and export order books confirm this assessment.

<sup>2</sup> On January 1, 2006, the reporting system for the Austrian balance of payments (the basis for services in the quarterly national accounts) was adjusted in line with international trends: cross-border payments are no longer reported by banks but are collected directly from economic agents. This change has caused a break in the time series.

Table 5

**Results of the National Accounts (in real terms)**

	2004	2005	Q3 05	Q4 05	Q1 06	Q2 06
	Annual change in % (seasonally adjusted, annualized)		Quarterly change in % (seasonally adjusted, annualized)			
Gross domestic product	+2.3	+2.6	+0.9	+0.8	+0.6	+0.9
Consumer spending	+2.0	+1.6	+0.5	+0.5	+0.5	+0.4
Public spending	+1.4	+1.9	+0.4	+0.3	+0.5	+0.2
Gross capital formation	+0.2	+0.9	+0.4	+0.9	+1.3	+2.2
Exports	+9.5	+6.9	+2.0	+1.8	-2.0	+2.2
of which: goods	+0.3	+2.1	+2.4	+1.7	+2.1	+2.8
services	+1.7	+1.9	+1.8	+1.6	-16.8	+1.3
Imports	+8.3	+6.1	+1.5	+1.3	-2.9	+1.7
of which: goods	+0.7	+1.1	+1.6	+1.1	+1.3	+1.5
services	+0.5	+0.8	+1.1	+1.2	-16.9	+1.8

Source: WIFO (quarterly national accounts data).

Corporate investment is on a roll: After investment had slumped for five years – taking until the fourth quarter of 2005 to regain the level of 2000 – investment became a driving force of economic activity again in the first half of 2006. External impulses, above all, stimulated equipment investment. The business cycle survey of the Austrian Institute of Economic Research WIFO for the third quarter of 2006 showed capacity utilization to stand at 84%, signaling continued powerful investment, especially in capacity-increasing investment. The order situation and employment figures are expected to improve also in the construction sector.

Consumer spending growth has stabilized at about ½% in recent quarters. Although the rise in real wages remains moderate, sturdy employment growth is boosting household purchasing power. Moreover, retail trade confidence and consumer confidence are trending upward and are bolstering consumer spending in the second half of 2006.

The smooth transmission of external impulses to domestic demand points to increasingly self-sustained economic growth. This scenario also

underlies the OeNB's short-term outlook based on the OeNB short-term indicator for the third and fourth quarters of 2006 (see box 2). Currently, the outlook is sustained by solid economic activity in Europe and in Austria. Volatile energy and commodity prices, a slowdown in the U.S. economy, slower growth in Germany as a result of the value added tax increase scheduled for the beginning of 2007 and a stronger appreciation of the euro are seen as the current risks to the economy.

#### 4.2 Dynamic Development of Industrial Output

The manufacturing sector (Austrian Statistical Classification of Economic Activities, sections C through F) succeeded in raising output by 6.9% in the first half of 2006 compared with the same period of 2005. In more detail, capital goods (+8.1%) and intermediate goods (+8.0%) performed best. These figures underline the picture of strong investment activity. The least pronounced rise by comparison was noted in the category of consumer nondurables (+3.7%).

Industry's assessment of manufacturing output in the last few and in

Box 2

## The OeNB's short-term indicator of September 2006

### Signals Robust, Self-Sustained Economic Growth<sup>1</sup>

According to the most recent calculation of the OeNB's short-term economic indicator, Austria's real GDP will expand by 0.8% (seasonally and working-day adjusted, compared to the previous quarter) in both the third and fourth quarters of 2006. For full-year 2006, growth thus comes to 3.2%. Compared to the last short-term economic indicator results published in June 2006, the growth forecast for the third quarter of 2006 was raised marginally by 0.1 percentage point.

Table 6

### Short-Term Outlook for Austrian Real GDP for the Third and Fourth Quarters of 2006 (seasonally and working-day adjusted)

	2004	2005	2006	Q1 05	Q2 05	Q3 05	Q4 05	Q1 06	Q2 06	Q3 06	Q4 06
Quarterly year-on-year change (%)	x	x	x	2.5	2.5	2.7	2.9	3.1	3.3	3.1	3.2
Change from previous quarter (%)	x	x	x	0.4	0.7	0.9	0.8	0.6	0.9	<b>0.8</b>	<b>0.8</b>
Change from previous year (%)	2.3	2.6	3.2	x	x	x	x	x	x	x	x

Source: OeNB – Results of the OeNB short-term indicator of September 2006, Eurostat.

<sup>1</sup> Since the first quarter of 2003, the short-term indicator of the OeNB has been published four times a year. It forecasts real GDP growth for the current and the next quarter (in each case, on a quarterly basis, using seasonally adjusted data). The figures are based on the results of two econometric models: a stochastic state space model and a dynamic factor model. Further details on the models employed can be found at [www.oenb.at](http://www.oenb.at) in the Monetary Policy and Economics section. The next publication is scheduled for January 2007.

the next few months (chart 6) illustrate the favorable development of industrial activity. Both indicators are moving clearly above their averages of the past five years. As expectations of manufacturing developments in the upcoming months are clearly positive and do not show any tendency to decline, industrial activity is anticipated to remain powerful throughout the next few months.

### 4.3 Inflation Will not Exceed 2% despite Rising Energy Prices

HICP inflation has been on the increase again since March 2006, when it had bottomed out so far in 2006 at +1,3% and has been hovering around the 2% mark since April 2006 (August 2006: 2.1%). In an international comparison, Austria thus belongs to

the group of countries with the most stable prices. In the euro area, only Finland (+1.3%) and the Netherlands (+1.9%) had lower rates of inflation in August 2006.

The category “energy” contributed substantially to overall inflation; its rate of price increase averaged 9.3% from January through August 2006. However, services – above all the recent rise in inflation in the categories “restaurants and hotels” and “transport services” – had an especially strong impact on intrayear changes in the overall price index. Inflation as measured by the national consumer price index (CPI) is somewhat more moderate, coming to only 1.8% in August 2006. The discrepancy compared to the HICP is rooted mainly in the difference between the

**Assessment of Manufacturing Output in Recent and Upcoming Months<sup>1</sup>**

Source: European Commission.

<sup>1</sup> Both series were centered around their average of the period from M1 01 to M8 06.

baskets of goods. Negotiated standard wages advanced by 2.6% in the first eight months of 2006 year on year and thus by 0.8% more than the HICP.

#### **4.4 Strong Employment Growth Entails a Drop in Unemployment**

The situation on the Austrian labor market has improved substantially in the course of 2006 so far. Employment growth has accelerated steadily, reaching +1.8% year on year in August 2006, a value last recorded in the early 1990s. Employment growth is thus strong enough to produce a decline in unemployment figures.

The unemployment rate (Eurostat definition) peaked at 5.3% in October 2005 and has been declining continuously since to reach 4.8% in August 2006. The development of registered vacancies signaled the drop in unemployment at an early point in time: 19.7% more vacancies were registered in the first eight months of 2006 than in the same period of 2005. The ratio of registered unemployed to registered vacancies has been diminishing, reflecting the positive situation on the Austrian labor market.

Chart 7

**Labor Market Developments in Austria**



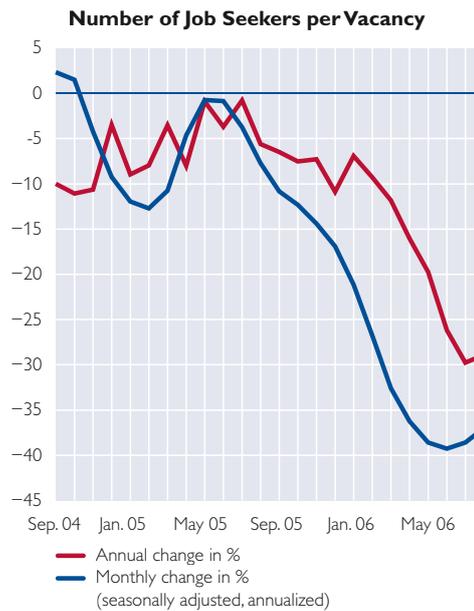
Source: Statistics Austria.



Source: Statistics Austria.



Source: Statistics Austria.



Source: Statistics Austria.

# Globalization, Import Prices and Producer Prices in Austria

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The growing theoretical and empirical literature suggests that globalization may have reduced inflation, particularly in high-income countries. Austria's integration in the world economy has made a quantum leap over the past decade. Has this development dampened inflation in Austria? This paper first offers a broad overview of six channels through which one could expect globalization to reduce inflation. Then, two specific channels are investigated empirically for Austria. First, the effects from the increasing share of imports from low-cost countries on import prices are estimated. It is found that overall import prices were slightly dampened by the rising, and meanwhile substantial, share of imports from the new EU Member States. By contrast, China and other emerging economies play a negligible role for Austrian import price developments. Second, the effect of global competition on producer prices in Austria is studied. It is found that globalization has moderately dampened relative producer prices in the Austrian manufacturing sector, while increases in labor productivity had a larger effect. A rationale for the rather modest globalization effects on import and producer price inflation in Austria is that the country's foreign trade and FDI links are still – despite the surge of links with central and eastern European countries – mainly with other high-income European countries.

JEL classification: E31, E50, F15

Keywords: globalization indicators, import and producer prices, inflation, Austria.

## 1 Worldwide Disinflation, Globalization and Austria's Increasing Integration in the World Economy

Inflation has fallen sharply worldwide over the past two decades, both in industrial countries and in emerging economies (chart 1).<sup>2</sup> Various reasons for this trend have been put forward: the deregulation and liberalization of markets both within and across countries; faster productivity growth prompted by stronger domestic and foreign competition and by important technological advances; a decline in wage pressure due to abundant labor and eroding trade union influence;

improved governance of monetary authorities;<sup>3</sup> and sounder fiscal policies. There are also indications that inflation is now less influenced by domestic output gap developments, while worldwide capacity constraints seem to play a more important role. Recently, prompted by the vigorous expansion of the Chinese and Indian economies and their progressing integration into the world economy, globalization has frequently been mentioned as a source of changes in the inflation process.

For this study, (economic) globalization is defined as the growing economic interdependence of countries

<sup>1</sup> The authors are grateful to their referee and to Walpurga Köhler-Töglhofer and Johann Scharler for useful comments.

<sup>2</sup> The fall in inflation has been accompanied by lower inflation persistence, which means that after a price shock it takes shorter for inflation to return to its long-run value. Furthermore, the pass-through of exchange rate fluctuations and shocks to energy and other raw material prices to consumer price inflation seems to have declined.

<sup>3</sup> Some of the policy changes that have contributed to better governance are central bank independence, the shift to price stability as a primary objective, prohibition of monetary financing and monetary policy strategies that are more directed toward stabilizing inflation expectations at low levels.

Refereed by:  
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Chart 1

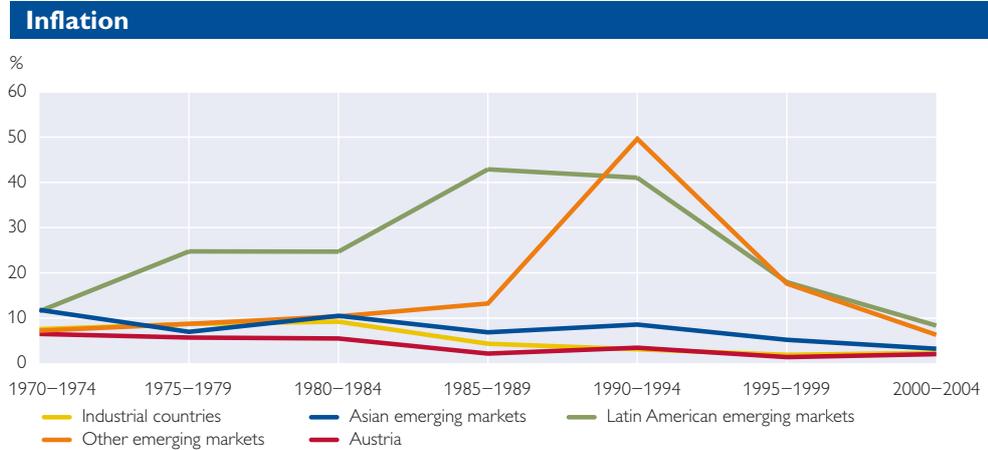
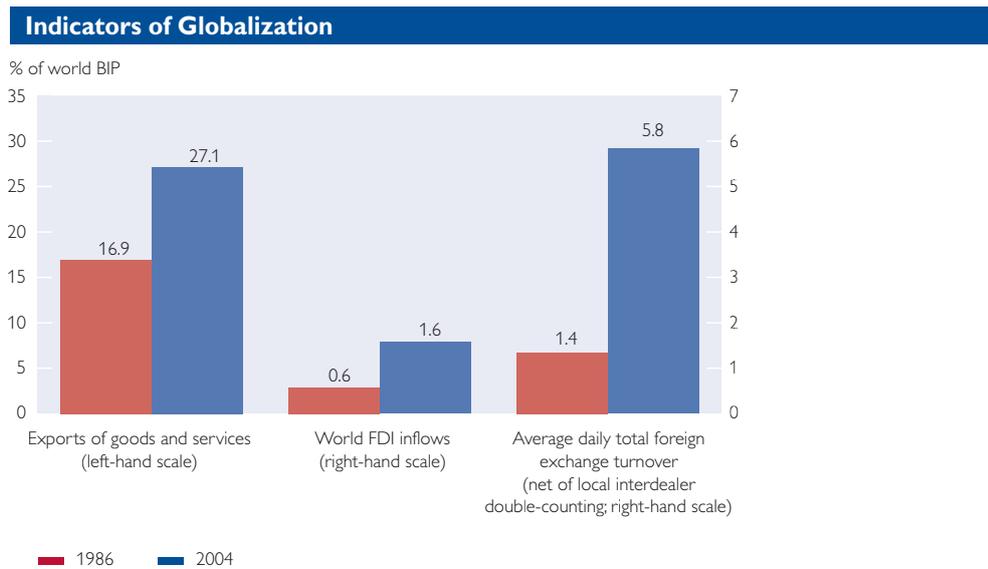


Chart 2

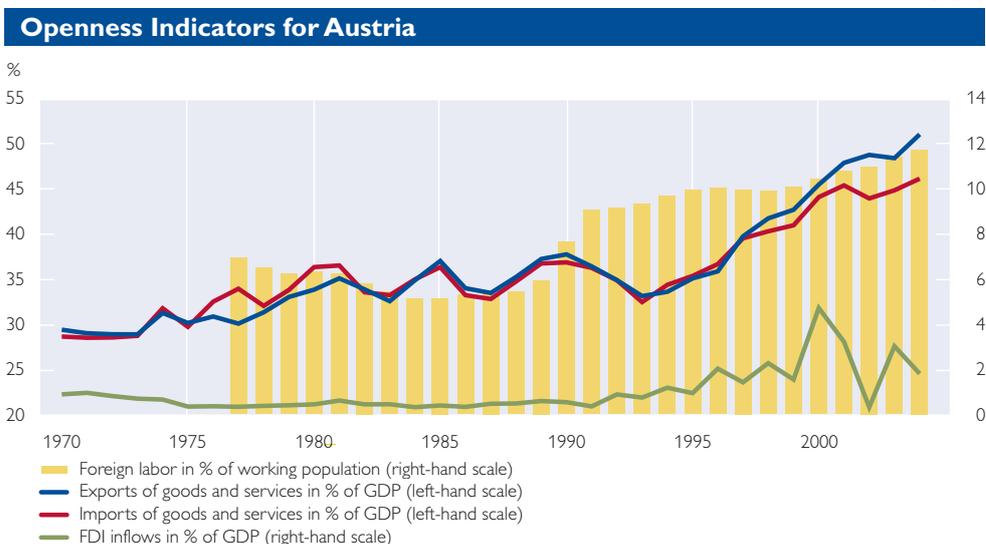


worldwide, brought about by an increasing volume and variety of cross-border transactions in goods and services as well as by the higher mobility of factors of production, including a more rapid and widespread international diffusion of technology (Wagner, 2001; IMF, 2006).<sup>4</sup> While

globalization is by no means a new phenomenon, the scope and rate of change of the globalization process seems to have increased over recent years (Taylor, 2006). For instance, over the past two decades, world trade has increased more than one and a half times as fast as world GDP,

<sup>4</sup> Other authors distinguish e.g. between “globalization” and “integration” or “neighborhood globalization,” with the former referring to links between “regions very different not only with respect to distance, but culture, economic system, and income level” (Aiginger, 2006). In this paper, this distinction is not pursued further as it is difficult to distinguish between the two concepts and because, in economic terms, possible differences seem to be more of a gradual than of a principal nature.

Chart 3



Source: Eurostat, IMF.

Note: Series on foreign labor starts in 1977 only.

while world FDI has gone up more than two and a half times as fast and daily world foreign exchange turnover roughly four times as fast as world GDP (chart 2).

For Austria, economic globalization as defined above encompasses a number of developments: Austria's full liberalization of capital movements in 1991; the country's accession to the European Economic Area in 1994, to the European Union (EU) in 1995 and to the European Monetary Union (EMU) in 1999; the fall of the iron curtain in the late 1980s; the ensuing gradual opening-up of Austria's eastern neighbor countries; their accession to the EU in May 2004 and their ongoing – or expected – monetary integration into EMU; and the broader effects on Austria of the General Agreement on Tariffs and Trade (GATT), the General Agreement on Trade in Services (GATS) and the World Trade Organization (WTO). All these developments form part of the overall move toward economic globalization.

This paper first briefly summarizes current thoughts on the channels through which globalization can affect inflation (section 2). Sections 3 and 4 undertake empirical estimates of the direct and indirect effect of globalization on Austrian import prices and on Austrian producer prices in the manufacturing sector. The authors show that the price effects of globalization for the manufacturing sector have so far been rather limited. Section 5 concludes.

## 2 Globalization Can Influence Inflation through Multiple Channels

The current debate on the effects of globalization on inflation distinguishes six main channels.

The *first* channel operates directly through import prices. Low price levels or inflation rates on imports from low-income countries, combined with these countries' rising import shares in high-income countries' overall imports, have been shown to have noticeably dampened import

prices and consumer price inflation in the United States and in other high-income countries (IMF, 2006, and Chen et al., 2004).

The *second* channel, also known as the global competition effect, refers to the indirect effects on inflation from the integration of the goods and services markets. Price dampening effects emanate from comparative advantage, technological progress and stronger competition. As a result, profit margins are squeezed, productivity goes up and price increases in the sectors concerned are dampened (IMF, 2006, and OECD, 2006).

The *third* channel works through labor markets. The rise in labor supply available for the world economy puts pressure on wages in richer countries. So does increased cost-cutting pressure, which arises from stiffened product market competition. New labor institutions, whose change was in turn partly triggered by globalization, weaken unions' wage negotiating power. Lower wages imply lower production costs and thus, other things being equal, lower prices for goods and services.

The *fourth* channel works through capital markets. Liberalized capital movements and the global integration of financial institutions and markets can affect inflation in various ways. For one thing, they can facilitate access to credit, reduce borrowing costs and affect saving behavior (better portfolio choice; reduced need for precautionary savings as credit constraints might be reduced). Aggregate price effects are e.g. conceivable via changes in the cost of capital and through effects on aggregate demand.<sup>5</sup> On the other hand, financial liberalization and integration act as

“catalysts” for the integration of goods and labor markets. Foreign direct investment (FDI) in low-cost countries drives up competitive pressure in the global goods and services markets. It can also dampen wage claims as production relocates to low-cost destinations (or the mere threat production might relocate). The free flow of capital also imposes a “sanctioning” mechanism on monetary and fiscal policies that are considered destabilizing or unsustainable (threat of devaluation; risk premiums; Tytell and Wei, 2004).

This leads to the *fifth* group of channels: changes in policy incentives due to globalization. Globalization can – through various mechanisms – reduce the ability (Romer, 1993) and incentives (Rogoff, 2003, Borio and Filardo, 2006) for monetary policy to temporarily stimulate output through “surprise inflation.” This effect can support central bank credibility and thus facilitate the achievement of low inflation. Furthermore, the trend toward central bank independence can in itself be seen as an expression of globalization in the sense that a global benchmarking process has taken place among legislators. As regards fiscal policy, more open economies themselves benefit less from expansionary domestic fiscal policy; while financing budget deficits might initially be made easier in internationally integrated capital markets, the consequences of unsustainable macroeconomic policies may be all the more severe. Globalization also drives structural policies toward deregulation and liberalization in the attempt of boosting the attractiveness of business locations.

<sup>5</sup> Possible effects on global interest rates are discussed in Crespo Cuaresma et al. (2005).

*Sixth*, globalization can affect the balance between the global demand and supply of goods and services. As long as emerging economies' production expands vigorously and faster than their demand, inflation would be expected to be dampened globally. As emerging economies' demand catches up with production over time, globalization might also accelerate inflation (Gamber and Hung, 2001).

The above channels are inter-linked. Many of the effects in fact only concern the relative prices of the sectors involved. The overall price level is ultimately anchored by central banks' monetary policies. However, to the extent that the objectives of the central banks are influenced by globalization, globalization may ultimately also influence the overall price level and inflation (Rogoff, 2003; Borio and Filardo, 2006).

This study takes a microeconomic view on goods market effects and thus focuses on the effects of globalization on the Austrian economy via the first two channels.

### **3 Did Globalization Dampen Import Prices for Austria?**

#### **3.1 Prices in High-Cost Countries May Be Dampened by Low Import Price Inflation and by Low-Cost Countries' Rising Share in Imports**

Globalization implies that many emerging economies, where wages and prices for other factors of production are low, become more integrated into world trade.<sup>6</sup> Increased trade with low-cost countries should dampen import prices – and eventu-

ally consumer price inflation – in high-cost countries. This can happen through two effects.<sup>7</sup> *First*, when the share of imports from low-cost countries in overall imports to a high-cost country increases, this dampens the level of *average* import prices, given that the price level in low-cost countries is lower than in high-cost countries. This phenomenon should, in turn, help dampen consumer price inflation in the high-cost country (*“import share effect”*). *Second*, if price increases of imports from low-cost countries were smaller than those from high-cost countries; this would dampen overall import price inflation. To the extent that import price inflation is lower than price increases in domestically produced goods, this development would dampen overall inflation in a high-cost country (*“import price effect”*).

To assess the empirical relevance of these effects for Austria, we first consider the development of the share of imports of manufacturing goods from emerging economies to Austria over the past ten years. Then we verify whether import price developments and emerging economies' higher import share have dampened import prices in Austria. The analysis distinguishes between high-cost countries<sup>8</sup> and low-cost countries. The latter are in turn split into China, the new EU Member States and other low-cost countries.

<sup>6</sup> This implies an increase of the world supply curve.

<sup>7</sup> These effects are similar to what the OECD labels the import penetration effect and the imported disinflation effect (see box I.5, OECD, 2006).

<sup>8</sup> EU members plus Australia, Canada, Japan, New Zealand, Norway and the United States.

### 3.2 Rising Share of Low-Cost Countries in Austrian Manufacturing Imports

The share of manufacturing imports from low-cost countries has nearly doubled, from 9.7% of total imports in 1995 to 18.4% by 2005. In 1995 the import share of China and the new EU Member States were 1% and 4.9%, respectively; these figures roughly doubled to 2.5% and 8.6% by 2005. Thus, China's share in total Austrian imports continues to be rather low, while the new Member States – as was to be expected owing to their geographical and cultural proximity – have become important trading partners. The import share of low-cost countries has mostly gone up at the expense of the import share of the EU-15 countries,<sup>9</sup> which declined from 80% in 1995 to 72% in 2005. With an import share of 67.6% in 2005,<sup>10</sup> the euro area countries remain Austria's most important trading partners by far.

The strong rise in emerging countries' share in imports is particular to the manufacturing sector: the share of low-cost countries in *total* imports to Austria increased much less markedly, from 19.2% in 1995 to 25.6% in 2005. Total imports from

the new Member States increased proportionally more from 6.4% in 1995 to 10.2% in 2005. Thus, roughly 60% of the increase in the import share of low-cost countries was attributable to higher imports from the new EU Member States. This development also occurred at the expense of imports from the EU-15 countries.

### 3.3 Marked Differences among Average Import Unit Values of Low-Cost Countries

Chart 5 shows the development of the unit value of manufacturing imports from different regions.<sup>11</sup> The average import unit value for high-cost countries is around four times higher than that for the new Member States and about twice as high as the average value of imports from China. This may reflect price competitiveness and/or quality competitiveness (Aiginger, 1997), i.e. prices may indeed be higher in high-cost countries and/or a higher price per kilogram of goods imported from high-cost countries may reflect better quality or technology.

Interestingly, the unit value of imports of manufacturing goods from China was almost twice as high as the unit values of imports from the new

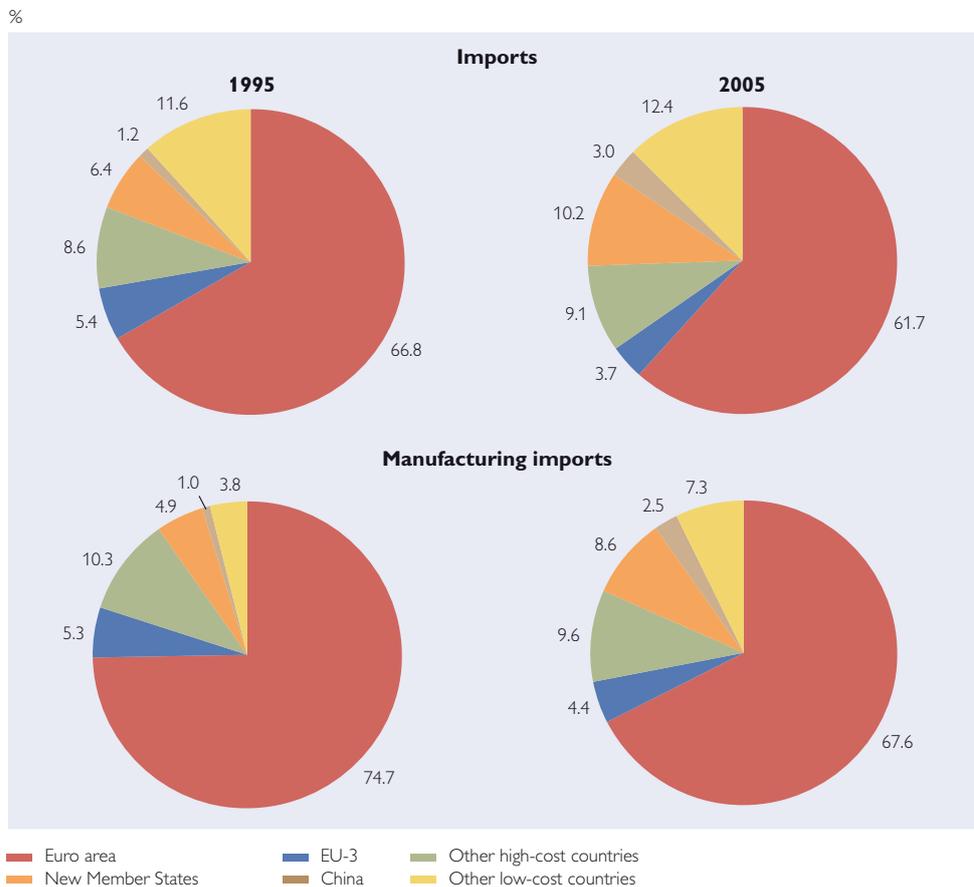
<sup>9</sup> EU 15: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

<sup>10</sup> These figures are influenced by non-euro area imports being brought to Austria via other euro area countries (e.g. through Rotterdam). Such imports are considered imports from euro area countries in the above statistics. Adjusting for such effects yields higher shares – and higher increases in shares in recent years – for imports from overseas, in particular from low-cost countries such as China. For example, China's manufacturing import share according to these adjusted import statistics went up from 1.4% to 3.9% between 1995 and 2005, and the share of other low-cost countries climbed from 5.1% to 9%. There is no marked difference between the two statistics for the new EU Member States; their import shares according to the adjusted statistics augmented from 5.3% to 8.4% between 1995 and 2005. Also the share of the EU-3 (Denmark, Sweden and United Kingdom) is not much affected; it decreased from 5.8% to 4.5% according to the adjusted data. By contrast, the manufacturing import share of euro area countries declined from 70.3% to 63.8%, and the share of other high-cost countries from 12.1% to 10.5%. However, for lack of plausibility of import unit values derived from these adjusted statistics, all further calculations presented in section 3 of this paper are based on the unadjusted import statistics as contained in the Eurostat Comext database.

<sup>11</sup> Unit values are measured as euro per kilogram of manufacturing imports. Unit values are used because of a lack of import price data for Austria.

Chart 4

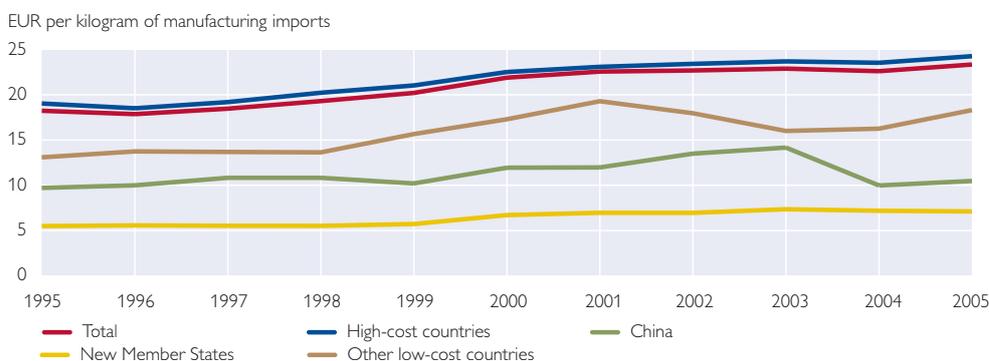
### Austrian Goods Imports by Region



Source: Statistics Austria, Eurostat.

Chart 5

### Austrian Manufacturing Import Unit Values



Source: Eurostat (Comext), OeNB.

Member States between 1995 and 2003. Although unit values of Chinese manufacturing imports fell strongly in 2004, they still remain

higher, on average, than those from the new Member States. In general, compared to all other low-cost countries, the unit values of imports from

the new Member States are significantly lower. Moreover, unit values not only for China but also for the other low-cost countries increased from 1998 onward, while the unit value of manufacturing goods imported from the new Member States remained almost unchanged for the entire period.

### 3.4 Increasing Import Share of Low-Cost Countries and Their Slower Price Increases Dampen Inflation in Austria

According to table 1, the unit value inflation of imported manufacturing goods was 2.05% on average during the ten years ending in 2005. The contribution to this value from high-cost countries was 2.72% on average, while the contribution of low-cost countries caused a fall in import unit values by 0.66%: The shift of import shares toward low-cost countries and the slower rise of prices of imports from these countries exerted an overall small dampening effect on Austrian import prices. The largest contribution to this decrease came from manufacturing imports from

the new Member States, whose contribution to the unit value inflation was  $-0.46\%$  on average. The remainder of the negative contribution to import price inflation is almost equally split between China and the other low-cost countries.

We now distinguish between the price decline caused by an increase in the share of imports from low-cost countries (“import share effect”) and the price decline caused by a decrease (or smaller increase) in prices of manufacturing goods in these countries (“import price effect”). In the last ten years, two-thirds ( $-0.44\%$ ) of the decline in prices of imports from low-cost countries were caused by a rise in the share of imports from these countries, especially from the new Member States. The remaining decline originated from the fact that the price change of manufacturing imports from these countries was smaller, on average, than the price change of high-cost country imports. This results in a contribution of low-cost countries to import unit value inflation of  $-0.22\%$  (table 1). Of this decrease, more than three-quarters

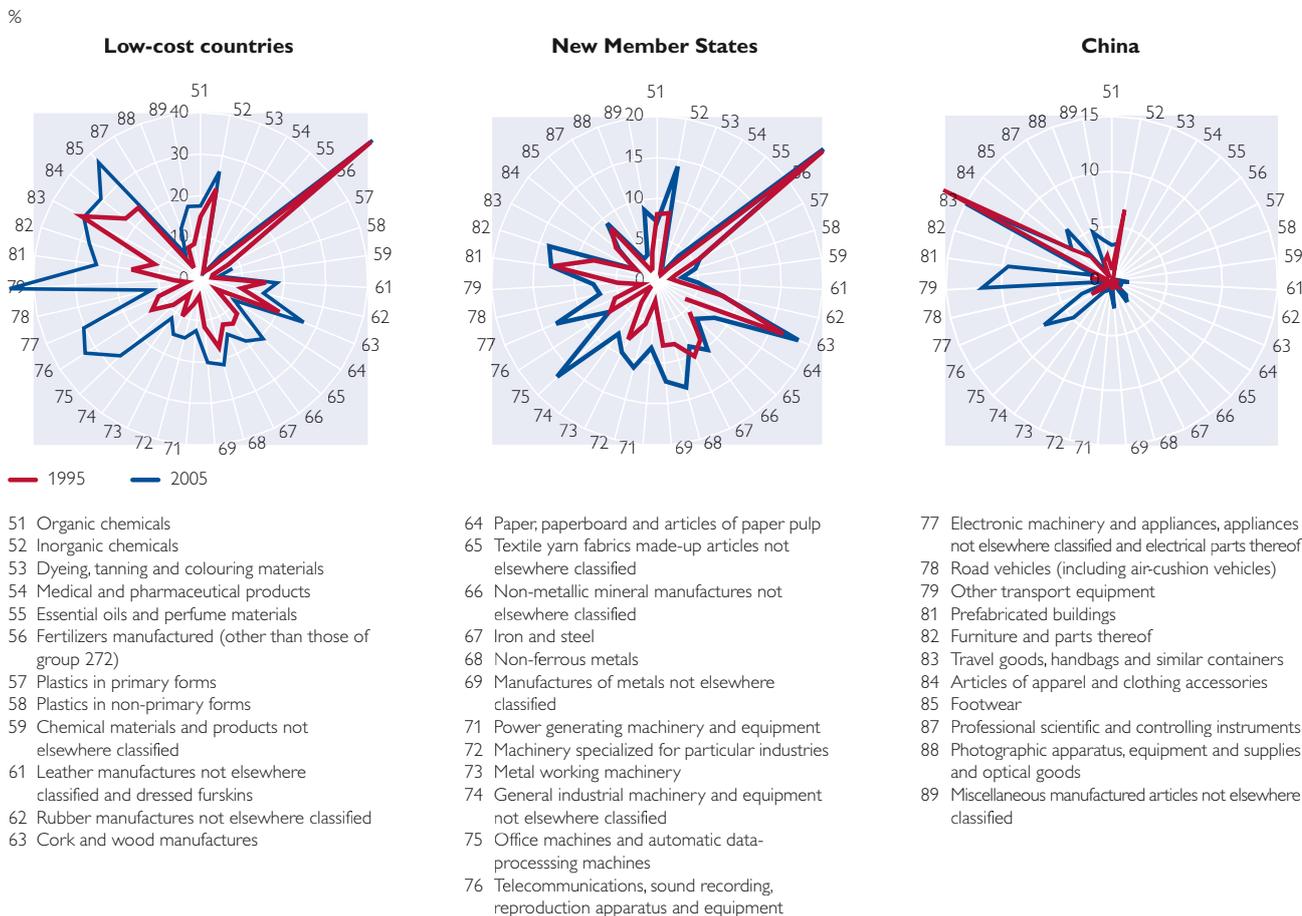
Table 1

#### Average Annual Import Unit Value Inflation and Its Contributions

Manufacturing price inflation, %	2.05		
High-cost effect (pp)		2.72	
Low-cost effect (aggregate direct effect, pp)		-0.66	
of which:			
China			-0.11
New EU Member States			-0.46
Other low-cost countries			-0.09
Low-cost effect (aggregate direct effect, pp)	-0.66		
Share effect (pp)		-0.44	
of which:			
China			-0.06
New EU Member States			-0.29
Other low-cost countries			-0.09
Price effect (pp)		-0.22	
of which:			
China			-0.04
New EU Member States			-0.17
Other low-cost countries			-0.01

Source: Eurostat (Comext); OeNB calculations; see Kamin et al. (2004).

**Country Shares in Austrian Manufacturing Imports by Sector**



Source: Eurostat (Comext), OeNB.

were attributable to price developments of manufacturing imports from the new Member States. For a detailed decomposition formula of import unit value inflation, see appendix 1.

**3.5 Low-Cost Countries Gained Import Shares across Most Sectors**

How did import prices develop by sector? Since the units used here are weights, an increase in the unit value could e.g. be caused either by an in-

crease in prices or by a decline in kilograms due to quality improvements.<sup>12</sup> Considering individual sectors helps understand developments in import unit values more fully and avoid gross misinterpretations of data. Turning to chart 6, for all but two types of goods the share of imports from low-cost countries in total imports augmented. For 15 out of 35 types of goods this rise was more than 5 percentage points, and for 6 groups it was more than 10 percentage points. Thus, the origin of manu-

<sup>12</sup> For example, technological progress in electronic goods has reduced the average weight of these goods.

facturing imports in Austria has shifted markedly from high-cost to low-cost countries for most sectors.

Within the group of low-cost countries there are considerable differences: The import share of manufacturing goods from China went up by more than 5 percentage points for 3 out of 35 sectors; for the new Member States the same applied for 9 out of the 35 sectors. For China and the new Member States, there were even losses of import share in some sectors. Thus, within the low-cost countries there was a shift in the origin of imports. In particular, China's import share is above 5% for only five sectors, with the highest, albeit decreasing, share of 15% for travel goods, handbags and similar containers. The import share of the new Member States is above 5% for 26 out of the 35 groups.<sup>13</sup>

The increase of low-cost countries' import share is not confined to low-tech goods: Their import share in electronic goods<sup>14</sup> has more than doubled (almost tripled in sector 77) over the last ten years. This higher import share comes mostly from the other low-cost countries; the import share of electronic goods from China and from the new Member States changed on average by less than 4 and 8 percentage points, respectively.

If imports from low-cost countries exerted downward pressure on import prices, import price inflation could be expected to have fallen more strongly in sectors in which the import share of low-cost countries in-

creased most. However, this is not the case.

Indeed, turning once again to the example of electronic goods, the increase in import share had a mixed effect on inflation (see table 2). For the first of the relevant sectors (75 – office machines and automatic data-processing machines), the increase in the share of imports from low-cost countries was inflationary, due mostly to the rise in import prices of the other low-cost countries. By contrast, for sector 76 (telecommunications, sound recording, reproduction apparatus and equipment), imports from the new EU Member States exerted a strong price dampening effect, which in turn resulted mainly from an increase in the share of imports and to a lesser extent from falling import prices. For sector 77 (electronic machinery and appliances, appliances not elsewhere classified and electrical parts thereof), the highest dampening effect on inflation stemmed from falling prices for imports from high-cost countries, while the higher share of imports from low-cost countries dampened prices only negligibly.

Similarly, low-cost countries' import share in textiles (sectors 65 – textile yarn fabrics, made-up articles not elsewhere classified and related products, 84 – articles of apparel and clothing accessories and 85 – footwear) went up by an average of 10 percentage points in the last ten years. This increase is mainly attributable to a rise in imports from the

<sup>13</sup> For further details see table A1 in appendix 1. The results are qualitatively similar when based on trade statistics adjusted for imports coming through other euro area countries (see footnote 10); as with aggregate import figures, sectoral import shares of low-cost countries including China are also somewhat larger and have developed more dynamically.

<sup>14</sup> Sectors 75 to 77: office machines and automatic data-processing machines; telecommunications, sound recording, reproduction apparatus and equipment; and electronic machinery and appliances, and appliances not specified as well as electrical parts thereof.

Table 2

Import Unit Values														
Overall, Import share and Import price Effects by Sector														
Average annual change 1995–2005														
Sector	All countries	High-cost countries	Low-cost countries											
			Overall effect				Import share effect				Import price effect			
			All low-cost countries	China	New Member States	Other low-cost countries	All low-cost countries	China	New Member States	Other low-cost countries	All low-cost countries	China	New Member States	Other low-cost countries
	%	percentage points												
51	4.09	5.72	-1.63	-0.19	-0.54	-0.90	-0.36	-0.06	0.07	-0.38	-1.27	-0.14	-0.61	-0.52
52	-25.68	0.36	-26.05	-21.20	-2.56	-2.29	-8.02	-5.74	-2.73	0.45	-18.03	-15.46	0.18	-2.74
53	-2.41	-2.13	-0.28	0.05	-0.12	-0.21	-0.13	0.02	-0.17	0.02	-0.15	0.04	0.05	-0.24
54	5.58	5.51	0.08	0.00	-0.08	0.15	0.11	0.02	0.07	0.03	-0.04	-0.01	-0.15	0.13
55	-0.91	-1.55	0.65	-0.03	-0.15	0.83	-0.05	-0.03	-0.15	0.13	0.69	0.00	0.00	0.70
56	2.84	46.60	-43.76	-0.08	-29.39	-14.29	-18.04	0.02	-7.83	-10.24	-25.72	-0.10	-21.56	-4.05
57	-19.20	-19.98	0.78	0.01	0.51	0.26	0.21	0.00	0.13	0.07	0.57	0.01	0.38	0.18
58	-10.49	-10.65	0.16	0.02	0.01	0.12	-0.28	0.02	-0.22	-0.07	0.43	0.00	0.24	0.19
59	-5.86	-4.67	-1.19	0.05	-1.18	-0.06	-1.37	-0.01	-1.27	-0.09	0.17	0.05	0.10	0.03
61	16.52	20.43	-3.91	0.00	-1.59	-2.32	-0.06	0.03	-1.50	1.42	-3.85	-0.03	-0.09	-3.74
62	5.77	5.87	-0.10	-0.01	0.02	-0.10	0.24	-0.01	0.36	-0.11	-0.34	0.00	-0.34	0.00
63	-11.61	-14.16	2.55	0.07	1.88	0.61	-1.32	0.02	-1.32	-0.03	3.87	0.04	3.20	0.63
64	-6.99	-5.66	-1.33	0.08	-1.25	-0.16	-0.82	0.16	-0.95	-0.02	-0.51	-0.08	-0.29	-0.14
65	-4.94	-4.37	-0.57	-0.01	-0.74	0.18	-1.02	-0.01	-0.79	-0.23	0.45	0.00	0.05	0.41
66	-5.66	-6.35	0.69	0.07	0.52	0.11	-0.22	0.02	-0.16	-0.07	0.91	0.05	0.68	0.18
67	-6.33	-6.81	0.48	0.00	0.00	0.48	-0.46	-0.01	-0.40	-0.05	0.94	0.01	0.40	0.53
68	-9.21	-8.68	-0.53	0.09	-0.75	0.12	-0.34	-0.10	-0.82	0.58	-0.19	0.19	0.07	-0.45
69	-1.25	-1.29	0.05	0.03	-0.18	0.19	-0.31	-0.07	-0.31	0.07	0.36	0.11	0.13	0.13
71	-3.02	-2.61	-0.41	0.04	-0.04	-0.41	-0.63	-0.04	-0.10	-0.49	0.22	0.08	0.07	0.07
72	-4.83	-4.88	0.05	0.00	0.08	-0.03	-0.37	-0.01	-0.33	-0.03	0.42	0.01	0.41	0.00
73	27.94	27.54	0.40	-0.11	0.57	-0.06	3.03	-0.01	2.52	0.51	-2.62	-0.11	-1.95	-0.57
74	-1.85	-1.01	-0.84	-0.06	-0.65	-0.14	-0.81	-0.08	-0.67	-0.06	-0.03	0.02	0.02	-0.07
75	0.37	-0.65	1.02	0.04	0.19	0.79	0.33	0.17	0.27	-0.11	0.69	-0.13	-0.08	0.90
76	0.97	6.06	-5.09	-0.05	-4.98	-0.07	-3.58	0.16	-3.37	-0.38	-1.51	-0.21	-1.61	0.31
77	-3.74	-3.49	-0.25	-0.03	-0.83	0.60	-1.86	-0.11	-1.65	-0.09	1.60	0.09	0.82	0.69
78	-2.00	-1.95	-0.05	-0.01	-0.21	0.16	-0.33	-0.01	-0.44	0.12	0.28	0.00	0.23	0.04
79	30.71	31.08	-0.37	-0.14	1.60	-1.83	1.65	-0.12	3.08	-1.31	-2.02	-0.02	-1.48	-0.52
81	-0.57	2.15	-2.72	-0.53	-1.78	-0.42	-2.26	-0.28	-1.95	-0.03	-0.46	-0.25	0.17	-0.38
82	-4.34	-4.43	0.08	-0.11	0.04	0.15	-0.81	0.03	-0.77	-0.07	0.89	-0.14	0.81	0.22
83	-15.48	-20.07	4.59	3.41	0.09	1.09	-2.15	-1.34	-0.28	-0.53	6.74	4.75	0.37	1.62
84	-18.38	-22.12	3.74	0.96	0.51	2.27	-1.47	-0.22	-0.89	-0.35	5.20	1.19	1.40	2.62
85	4.10	2.89	1.22	-0.55	-0.33	2.10	-0.69	-0.47	-0.16	-0.06	1.91	-0.08	-0.18	2.16
87	-6.14	-6.35	0.21	-0.08	0.09	0.20	-0.22	-0.13	-0.02	-0.08	0.43	0.06	0.10	0.28
88	1.43	1.59	-0.16	0.03	-0.02	-0.17	0.19	0.04	0.07	0.08	-0.34	-0.01	-0.09	-0.25
89	2.46	3.17	-0.71	-0.20	-0.90	0.38	-0.90	-0.17	-0.73	0.00	0.19	-0.03	-0.17	0.38

Source: Eurostat (Comext), OeNB.  
Note: For sector names see Chart 6.

other low-cost countries and not to a surge in imports from China or the new Member States. The average fall in import prices by 6.41% in these three sectors in the ten years to 2005

was mostly attributable to a very strong decline of prices in sector 84. Surprisingly, this price decline comes from a fall in prices of imports from the high-cost countries, while the

price of imports from the low-cost countries actually went up.

### 3.6 Modest Import Price Dampening from the New EU Member States

As we have seen above, the higher import share of manufacturing goods from low-cost countries dampened import price inflation a little. However, since the lion's share of Austria's imports still comes from euro area countries and since not all prices of goods from low-cost countries have gone down over the last ten years, the total dampening effect on inflation from low-cost countries is rather small. The effect of imports from China on Austrian inflation is negligible, while there was a larger, albeit still quite small, dampening effect from a rise in imports from the new Member States.<sup>15</sup>

## 4 Did Stiffer Global Competition<sup>16</sup> Dampen Producer Prices in Austria?

### 4.1 Trade, Competition, Productivity and Profit Margins

Apart from the direct effects on import prices described above, more integrated global markets for goods and services can exert downward pressure on prices in several further ways.

*First*, increased world trade allows better exploitation of countries' comparative advantages and of economies of scale. Thus, for the world as a whole, more can be produced with

the same resources, which should eventually result in falling prices.

*Second*, lower barriers to trade intensify competition in the tradables sector. Stronger competition from foreign producers reduces individual firms' pricing power. Globalization also enhances the trend toward larger, internationally operating and more efficient retailers, which are able to put downward price pressure on their suppliers given their large-volume purchases. Other things being equal, such a trend should eventually result in lower profit margins and consequently lower prices.<sup>17</sup> Within a sector, the marginal (i.e. the least efficient) firms will exit the industry, thus driving up average productivity and lowering average cost. As a result of these two effects (lower mark-up and higher productivity), producer prices should decline. Other things being equal, such a development should dampen overall price inflation.

*Third*, firms facing increased competition will have strong incentives to innovate: New products temporarily reestablish some monopoly pricing power. New production technologies increase productivity and reduce production costs. Again, such a trend should eventually dampen prices. Globalization also facilitates positive technological spillovers, thus speeding up the diffusion of technological innovations. This development supports technological catching up and further spurs the race for innovations,

<sup>15</sup> The OECD (2006) arrives at a similar conclusion for China's effect on the euro area.

<sup>16</sup> See IMF (2006) or OECD (2006) for further aspects of this "global competition effect."

<sup>17</sup> This reasoning is based on the idea that markets are not perfectly competitive because consumers' preference for variety makes every good unique. Under monopolistic competition, producers enjoy some market power, i.e. they apply mark-up pricing, which will depend on the elasticity of demand for a particular good. This, in turn, will depend first on how "unique" consumers find a product and, second, on the degree of competition in an industry (Chen et al., 2004).

boosting global productivity growth and dampening prices.

It is impossible to disentangle the effects of globalization from the price dampening effects that (domestic) deregulation, liberalization and technological progress could have exerted without globalization. Some price dampening could also have occurred without globalization; however, globalization seems to have intensified these forces, e.g. by building up pressure on governments to improve their economies' efficiency and their countries' attractiveness as a business location. Globalization and deregulation may in fact have reinforced each other (Rogoff, 2003).

#### 4.2 Did Rising Trade Openness Dampen Producer Prices in Austria?

Let us now investigate empirically how globalization has affected producer prices in the Austrian manufacturing industry. More specifically, has increased trade openness (measured as import penetration) over the past 10 to 15 years affected Austrian manufacturers' productivity and pricing power?

Our empirical estimation is based on sectoral data of a sample of medium-sized and large Austrian manufacturing firms for the years 1990 to 2002, where all variables<sup>18</sup> except aggregate consumer price inflation are allowed to vary across sectors.<sup>19</sup> The classification of industrial sectors is

based on the two-digit level NACE classification, which means that a total of 15 sectors are considered.<sup>20</sup> Appendix 2 includes a list of variables and their sources as well as details on the panel data estimation technique used.

To study this question further, table 3 presents the results of variants of a single equation model. As outlined above, one would expect that changes in labor productivity and trade openness are inversely related to changes in producer prices, while changes in the mark-up ratio are positively related to producer prices. The first two columns present a simple model in which changes in relative producer prices<sup>21</sup> depend only on changes in productivity, inflation and its own lagged values. In this first specification, productivity carries the expected negative sign, but it is significant only in the case of medium-sized firms, while overall inflation is only significant for large firms.

In columns 3 to 4 a measure of globalization, namely import penetration, is introduced as a further explanatory variable. Specification tests confirm for both groups of firms that the model is well specified.<sup>22</sup> For the group of medium-sized firms, overall inflation becomes significant, but import penetration – while it has the expected negative sign – is not significant. An interesting result, however, is that the effect of labor productivity – although still significant – is

<sup>18</sup> Relative producer prices, labor productivity, import penetration and mark-up ratio.

<sup>19</sup> All variables are transformed into logarithms.

<sup>20</sup> After correcting for outliers, there are only 14 sectors that concern large firms. This is due to the exclusion of sector 23, "Petroleum, petroleum products and related materials."

<sup>21</sup> Relative producer prices are measured as the difference between sectoral producer prices and overall producer prices.

<sup>22</sup> For the case of medium-sized firms, this model seems to be better specified than the first model; this is, however, not the case for the group of large firms.

Table 3

**Producer Prices, Productivity, Mark-ups and Openness**

	Num- ber of lags in years	Medium-sized firms (1)	Large firms (2)	Medium-sized firms (3)	Large firms (4)	Medium-sized firms (5)	Large firms (6)	Medium-sized firms (7)	Large firms (8)
Number of observations		168	147	168	147	168	147	168	147
F-test <sup>1</sup>		3.0	7.04	7.2	10.52	15.4	3.79	13.3	3.96
p-value		(0.06)	*	(0.01)	**	(0.00)	**	(0.03)	**
<b>Estimated coefficients</b>									
Changes in relative producer prices	1	-0.170	**	-0.188	**	-0.171	**	-0.145	*
Changes in labor pro- ductivity	1	-0.187	**	-0.105	**	-0.124	**	-0.107	**
Inflation in Austria	0	-0.635		-0.946	**	-0.693	**	-0.842	*
Changes in import penetration	1			-0.043		0.094		-0.007	0.082
Changes in mark-up ratio	1					0.299		0.052	0.196
<b>Specification tests</b>									
Sargan test of overidenti- fying restrictions <sup>2</sup>		4.51	(0.72)	3.35	(0.85)	3.53	(0.94)	7.79	(0.35)
Arellano-Bond test for AR(1) in first differences <sup>3</sup>		-1.87	(0.06)	-1.69	(0.09)	-1.97	(0.05)	-1.66	(0.10)
Arellano-Bond test for AR(2) in first differences <sup>3</sup>		-0.70	(0.48)	-0.81	(0.42)	-0.64	(0.52)	-0.59	(0.55)

Source: OeNB calculations.

Note: \* significant at 90%; \*\* significant at 95%; p-values in parenthesis.

<sup>1</sup> Tests the overall significance of the regression. The null hypothesis is that all parameters are zero.

<sup>2</sup> Tests the validity of the overidentifying restrictions used in the GMM estimator. A failure to reject the null hypothesis indicates that there is no violation in the zero correlation assumption between additional instruments and the error term.

<sup>3</sup> The AR(1) and AR(2) tests refer to the test for the null of no first-order and second-order autocorrelation, respectively, in the first-differenced residuals, which is a necessary condition for the GMM estimator to be consistent and unbiased.

smaller in this specification, while the effect of overall inflation is slightly higher. For the case of large firms, we find that only overall inflation is significant, but its effect is again smaller than in the case when import penetration is not included. Moreover, in this model import penetration is not only not significant, but it has a counterintuitive positive effect on relative producer prices.

In the last four columns of the table we estimate a model in which the mark-up ratio is included, and we first exclude and then include import penetration. In all four cases, the ef-

fect of the mark-up on relative producer prices is not significant, although the effect is positive as expected.

The comparability of these results with other studies is limited by methodological differences.<sup>23</sup> Chen et al. (2004) e.g. find different effects of all variables on producer prices for selected EU countries:<sup>24</sup> The coefficients of openness on sectoral inflation measured by Chen et al. (2004) in their first estimates range from -0.010 to -0.068, depending on the additional variables included. By contrast, according to the above esti-

<sup>23</sup> In particular, differences exist in the model specification, number of lags, data used and instrumental variables used.

<sup>24</sup> Belgium, Germany, Denmark, Spain, France, Italy, Netherlands and the United Kingdom.

mates, in Austria the coefficient of openness on relative producer prices is between  $-0.043$  and  $0.094$ , but is never significant. The coefficients of the mark-up ratio oscillate between  $0.104$  and  $0.148$  in the cross-country study, while for Austria they vary between  $0.299$  and  $0.037$  for medium sized firms and  $0.052$  and  $0.196$  for large firms, but are again never significant. Finally, the coefficients of productivity are much higher in Austria, coming to between  $-0.056$  and  $-0.187$ .

The above results for Austria are also at odds with studies by the IMF at the European level (IMF, 2006). But they are in line with other studies on Austria (Badinger and Breuss, 2005), which find, for example, that following EU accession in 1995, there was no general reduction in mark-ups for most manufacturing goods. According to our estimates, increases in productivity dampen relative producer prices, while neither changes in the mark-up ratio nor the degree of openness have a significant effect on relative producer prices. This may reflect that changes in relative producer prices were mostly driven by technological progress rather than by enhanced competition from international low-cost producers.

## 5 Conclusions

Austria's integration in the world economy has made a quantum leap over the past decade. The growing theoretical and empirical literature suggests that globalization may have dampened inflation, particularly in high-income countries. This study investigated whether this is also the case for Austria, a high-cost, small open economy.

The paper first offered a broad overview of six channels through

which one could expect globalization to dampen inflation: (1) direct effects on import prices, (2) indirect effects on producer prices through competition and the resulting higher productivity growth and lower mark-ups, (3) lower wage claims in the face of abundant global labor supply and changing labor market institutions, (4) lower financing costs and other "catalytic" effects from the global liberalization of capital movements, (5) better monetary, fiscal and structural policies and (6) changes to the global balance between the supply and demand of goods and services. The first two channels were investigated empirically for Austria.

First, the effects from the increasing share of imports from low-cost countries on manufacturing import prices were estimated. Overall import prices were slightly dampened by the rising – and meanwhile substantial – share of imports from the new EU Member States. By contrast, China and other emerging economies play a negligible role for Austrian import price developments.

Second, this paper studied the indirect effect of global competition on Austrian producer prices. A single-equation estimate found that globalization had a moderate effect on dampening relative producer prices at least for a sample of medium-sized and large manufacturing firms in Austria. These estimations show that gains in labor productivity seem to be the main drivers of dampening inflation in relative producer prices.

A rationale for the rather modest globalization effects on import and producer price inflation in Austria is that the country's foreign trade and FDI links are still (despite the surge of links with central and eastern European countries) dominated by

other high-income European countries. Furthermore, and maybe more importantly, Austrian social partners have pursued a policy of wage moderation for several years to maintain and bolster global competitiveness. Judging from the favorable evolution of the country's price competitiveness as well as from its export performance and trade and current account development particularly since the start of EMU, this policy has been a success. Given favorable cost and price developments in Austria, it should come as no surprise that imports from the rest of the world (including emerging economies) exert less of a price-dampening effect on Austrian import and producer prices than in some other high-income countries.

A note of caution on these findings seems warranted. The estimates in this paper do not capture to what extent "domestic" deregulation and liberalization were, in turn, motivated by globalization. In particular, Austria's accession to the EU in 1995 fostered liberalization and deregulation through EU law (e.g. network industries) and through market pressure (e.g. labor market). These effects are captured by productivity increases in the above estimates, while they ultimately go back to globalization. Furthermore, globalization is likely to have facilitated technological spillovers, thus boosting productivity growth also in Austria. Again, in the estimates undertaken in this study, this effect is captured under "productivity," while it was facilitated by globalization. Finally, the study was limited to the effects on the manufac-

turing sector, while services meanwhile account for more than three-quarters of Austria's output. Indeed, globalization has more recently substantially extended to the services sector, while gains in imports and exports of manufacturing goods in the last 15 years have been more modest. In that sense, the rather limited effects on Austrian inflation, as found in this study, may be a lower bound for overall true effects.

#### **Appendix 1: Data and Calculation Method Used in Section 3**

The data used were taken from Eurostat's COMEXT database. We extracted import values and volumes for all available trading partners and for the years 1995 to 2005. The trading partners were grouped in the following way:

- high-cost countries: Australia, Canada, Switzerland, Liechtenstein, Norway, New Zealand, U.S.A., EU Member States,
- low-cost countries: new EU Member States, China, rest of the world.

For the product categorization we used the SITC classification at the two-digit level. Before processing the data further, we replaced missing values and outliers by interpolated values.

Table A1 shows the change in import share for the group of low-cost countries.

The percentage change in the euro area import unit value can be decomposed by equation A1 setting the high-cost countries as a reference.

Table A1

Country Shares in Austrian Manufacturing Imports by Sector										
%	Low-cost countries			China			New Member States			
	1995	2005	Change	1995	2005	Change	1995	2005	Change	
51	Organic chemicals	15.0	17.5	2.5	1.0	3.3	2.2	8.1	7.1	-0.9
52	Inorganic chemicals	21.9	26.2	4.4	6.6	3.5	-3.1	8.4	14.1	5.8
53	Dyeing, tanning and colouring materials	1.7	2.5	0.8	0.1	0.3	0.3	0.9	1.7	0.8
54	Medical and pharmaceutical products	1.4	1.7	0.4	0.2	0.1	0.0	0.8	1.0	0.2
55	Essential oils and perfume materials	3.2	7.2	4.0	0.1	0.1	0.0	2.2	3.9	1.8
56	Fertilizers manufactured (other than those of group 272)	52.2	52.9	0.6	0.2	0.1	-0.1	46.5	29.3	-17.2
57	Plastics in primary forms	7.6	7.4	-0.2	0.0	0.0	0.0	5.9	5.9	0.0
58	Plastics in non-primary forms	3.0	8.0	5.0	0.0	0.4	0.3	2.4	4.8	2.4
59	Chemical materials and products not elsewhere classified	2.7	4.4	1.8	0.4	0.4	0.0	1.6	3.0	1.4
61	Leather, leather manufactures not elsewhere classified and dressed furskins	15.6	18.2	2.6	0.7	1.5	0.9	2.9	4.9	2.1
62	Rubber manufactures not elsewhere classified	10.0	15.4	5.4	0.1	0.3	0.2	8.1	8.1	-0.1
63	Cork and wood manufactures (excluding furniture)	20.4	26.7	6.3	0.3	1.1	0.7	16.5	18.5	2.0
64	Paper, paperboard and articles of paper; pulp of paper or of paperboard	4.5	9.6	5.0	0.2	0.3	0.1	4.0	8.2	4.2
65	Textile yarn fabrics made-up articles not elsewhere classified and related products	12.2	20.7	8.5	0.8	1.8	1.0	5.4	6.6	1.2
66	Non-metallic mineral manufactures not elsewhere classified	13.2	18.5	5.3	0.7	2.4	1.7	8.9	10.4	1.5
67	Iron and steel	12.1	14.9	2.7	0.1	0.1	-0.1	10.2	8.9	-1.3
68	Non-ferrous metals	17.0	21.4	4.4	0.3	0.2	-0.1	8.0	13.4	5.4
69	Manufactures of metals not elsewhere classified	11.6	20.2	8.6	0.8	2.5	1.6	7.9	12.3	4.4
71	Power generating machinery and equipment	4.2	12.5	8.3	0.5	0.7	0.2	2.5	8.2	5.7
72	Machinery specialized for particular industries	6.4	14.7	8.2	0.0	0.6	0.6	5.4	10.9	5.5
73	Metal working machinery	9.9	14.8	5.0	0.4	1.0	0.6	7.9	9.7	1.8
74	General industrial machinery, equipment not elsewhere classified and machine parts not elsewhere classified	4.5	11.7	7.2	0.3	1.2	0.9	3.3	8.0	4.7
75	Office machines and automatic data-processing machines	9.0	26.6	17.6	0.9	4.8	3.9	0.9	16.8	15.9
76	Telecommunications, sound recording, reproduction apparatus and equipment	13.7	32.8	19.2	2.2	7.3	5.1	6.7	6.9	0.2
77	Electronic machinery appliances, appliances not elsewhere classified and electrical parts thereof	10.9	30.3	19.4	0.9	2.9	2.0	5.5	13.2	7.7
78	Road vehicles (including air-cushion vehicles)	3.3	12.0	8.7	0.0	0.2	0.2	1.9	7.1	5.2
79	Other transport equipment	6.3	45.7	39.4	0.1	11.7	11.6	4.8	7.7	2.9
81	Prefabricated buildings	16.6	25.1	8.5	1.9	9.5	7.5	12.7	12.9	0.2
82	Furniture and parts thereof	11.5	28.0	16.5	0.4	1.7	1.3	8.0	13.7	5.6
83	Travel goods, handbags and similar containers	32.1	31.5	-0.6	21.3	15.0	-6.3	2.9	3.0	0.1
84	Articles of apparel and clothing accessories	23.0	30.5	7.5	4.6	4.7	0.1	6.4	6.0	-0.4
85	Footwear	22.7	37.0	14.3	2.9	6.2	3.3	8.5	9.2	0.8
87	Professional scientific, controlling instruments and apparatus not elsewhere classified	3.2	6.9	3.8	0.4	0.9	0.5	1.5	3.1	1.6
88	Photographic apparatus, equipment and supplies and optical goods	8.1	12.9	4.8	1.9	4.7	2.8	1.6	3.4	1.8
89	Miscellaneous manufactured articles not elsewhere classified	8.5	17.6	9.1	2.4	3.7	1.3	3.5	8.7	5.2

Source: Eurostat (Comext), OeNB.

Equation A1

$$\frac{\Delta P_{t-n}}{P_{t-n}} = \sum_j \left[ \frac{P_{j,t} - P_{BC,j}}{P_{t-n}} \Delta \alpha_{j,t} \right] + \sum_j \alpha_{j,t-n} \left[ \frac{\Delta P_{j,t}}{P_{j,t-n}} \frac{P_{j,t-n}}{P_{t-n}} - \frac{\Delta P_{BC,t}}{P_{BC,t-n}} \frac{P_{BC,t-n}}{P_{t-n}} \right] + \frac{\Delta P_{BC,t}}{P_{BC,t-n}} \frac{P_{BC,t-n}}{P_{t-n}}$$

$j = \{\text{China, new Member States, rest of low-cost countries}\}$

The first term is the share effect. A rising share of a low-cost country will have a negative effect on overall import price inflation.

The second term is the price effect. If the change in the price level of a (low-cost) country is smaller than the change of the price level in the reference group (high-cost countries), the price effect for this (low-cost) country will be negative.

The third term represents the residual effects due to price changes in the high-cost countries.

A detailed description of the method can be found in Kamin et al. (2004).

## **Appendix 2: Data and Estimation Method Used in Section 4**

### *Data:*

Producer prices: Source MultiREG (WIFO, Joanneum Research).

Labor productivity: value-added at constant prices divided by total employment. This is an index with reference year 1995.

Source: STAN, OECD.

Import penetration: is the share of imports in total domestic demand; total domestic demand is production plus imports less exports.

Source: STAN, OECD.

Mark-up ratio: total costs divided by turnover. Source: BACH.

Inflation: HICP.

Source: Statistics Austria.

Bulkiness: Ratio of quantity to value of imports to Austria from the rest of the world; Source: STAN, OECD.

Size: total employment.

Source: BACH.

### *Estimation Method:*

The model was estimated using STATA Version 8. We estimate our model in a panel data framework using the methodology of Arellano and Bond (1991).<sup>25</sup> All variables are in natural logarithms. The model is estimated in first differences to remove industry specific fixed effects. We use generalized method of moments (GMM) methods due to the possibility that openness is endogenous<sup>26</sup> and due to the presence of a lagged dependent variable, which is unavoidable given the high autocorrelation of producer prices. Endogenous variables in levels lagged two or more periods will then be valid instruments, provided there is no autocorrelation in the time-varying component of the error term. This can be checked by performing tests for serial correlation in the first-differenced residuals. Additionally, we used bulkiness and size as instrument variables. The validity of the instruments can be tested by means of the Sargan test of overidentifying restrictions. The lag length in the GMM instruments is chosen to avoid overfitting, which would remove the effect of instrumental variables estimation.

<sup>25</sup> The estimation was performed using Roodman's (2005) "xtabond2" procedure in STATA, which implements the Windmeijer (2005) finite-sample correction to the two-step covariance matrix. This makes two-step estimation a viable alternative to one-step as it is robust even in such a small sample.

<sup>26</sup> Refer to Chen et al. (2004) for an extensive discussion of endogeneity problems and instrumentation.

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# Employment Protection Regulations and Their Impact on Employment

Wolfgang Pointner<sup>1</sup>

Employment protection legislation (EPL) forms part of the institutional framework governing labor market allocation processes. It increases the costs enterprises incur when terminating contracts, either directly via severance payments or indirectly via procedural costs (e.g. notice periods or court trials). EPL is often considered to be the main reason for the high unemployment level in several euro area countries. While the empirical evidence for this correlation is generally rather weak, more robust results are found for its adverse impact on the employment opportunities of certain sociodemographic groups – especially women and the young. Another means to reduce the income risk associated with job loss are unemployment insurance benefits, which – contrary to employment protection – do not affect the employment opportunities of specific sociodemographic groups.

An analysis of the effects of EPL on employment certainly needs to take into consideration other labor market institutions, too, as they are often highly correlated and their effects interact. Insofar as employment protection not only stabilizes the protected employees' income, but also serves as an incentive to acquire firm-specific human capital, a certain degree of employment protection can also contribute to gross domestic product (GDP) growth.

JEL classification: J08, J65

Keywords: employment protection, severance pay, flexicurity.

## 1 Introduction

After the oil price hikes of the 1970s, all industrialized countries reported higher unemployment levels. While in the U.S.A. the unemployment rate increased more strongly initially than in the European Union (EU), it shrank below the pre-1970s-level in the late 1980s and 1990s. In Europe, by contrast, unemployment has persisted on relatively high levels (see chart 1, left panel). These diverging trends have been pinpointed to several factors: productivity differentials, a different monetary and fiscal policy stance and, last but not least, differences in the realm of labor market institutions. In this context, institutions are the rules of the game of a society or the humanly devised constraints that structure political, economic and social interaction (North,

1991). As such, labor market institutions not only create a framework for matching labor supply and demand, but they also impact the transmission of monetary and fiscal policy measures and influence the adjustment processes of an economy after a shock. Important labor market institutions are the wage formation system, the unemployment insurance system, the regime for the taxation of labor and, last but not least, employment protection regulations; for a comprehensive overview of institutions, see the study by Stiglbauer in this issue.

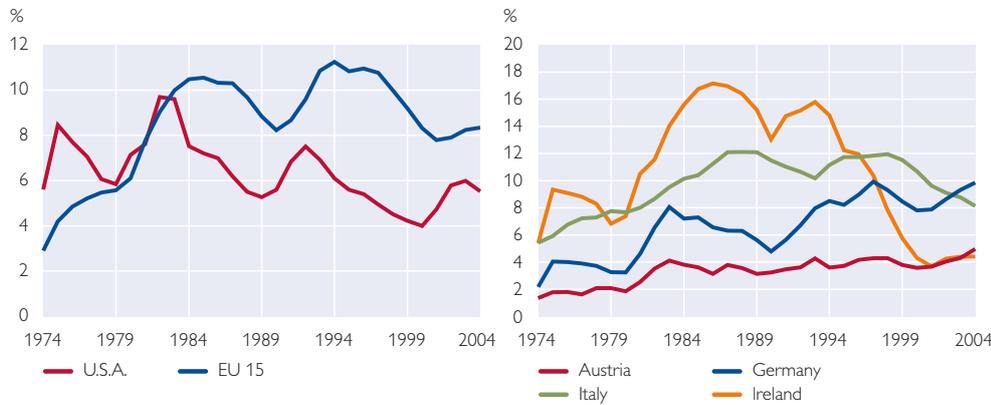
The European labor markets and their institutions have often been called inflexible compared with the deregulated labor market in the U.S.A. This is not correct, however, as there is no uniform European

Refereed by:  
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Chart 1

**Unemployment Rates – An International Comparison**



Source: OECD.

model of labor market regulation.<sup>2</sup> The EU labor markets are characterized by a high level of institutional heterogeneity, and some Member States seem to have adopted more effective labor market strategies than others (see chart 1, right panel, for the unemployment rates in four selected euro area Member States). Furthermore, it should be noted that the different developments in the period under review reflect more than just the institutional design; they are to a certain extent also attributable to idiosyncratic shocks or reform projects in the individual countries.

Employment protection legislation (EPL) and other labor market institutions have an influence on monetary policy insofar as they alter labor force participation and the patterns of employment in an economy, thus also impacting GDP. Furthermore, through their influence on wage setting, these institutions play a significant role for price stability, as wages and other labor costs are key deter-

minants of price developments. Given the absence of exchange rate autonomy for the Member States of a monetary union, they have to rely on other instruments in the event of an idiosyncratic shock; labor market institutions are of key importance in that they codetermine the labor markets' ability to absorb such shocks.

In this study, we focus on EPL to highlight the influence labor market institutions can have on employment and unemployment. Section 2 summarizes the various approaches to employment protection adopted in the euro area and describes the range of indicators selected to compare the respective regulations. Section 3 gives a brief overview of empirical surveys on employment protection, focusing especially on its effects on certain sociodemographic groups, and outlines how labor market institutions interact. Section 4 addresses the reasons why different types of institutions have emerged in different parts of the euro area.

<sup>2</sup> "In contrast to what is commonly perceived, European social systems display more diversity than uniformity, with differences within Europe often greater than those with other advanced countries." (IMF, 2006; p. 26).

## 2 Types of Employment Protection

Employment protection regulations comprise all institutions that impose costs on employers for terminating an employment contract, thus limiting the availability of labor in the production process. The Organisation for Economic Co-operation and Development (OECD, 2004) has categorized these costs as an “employer-borne tax on employment adjustment.” EPL institutions are typically established by law, but they may also be agreed by the social partners. In one of the first empirical comparative country studies examining the effects of EPL on employment, Lazear (1990) used two parameters to determine EPL strictness in 22 countries: (1) the size of the severance payment an employer has to make when laying off a worker after ten years of job tenure and (2) the period of notice required before employment termination. These two indicators, however, do not cover all aspects of EPL.

### 2.1 Indicators of EPL Strictness

The OECD attempted to bridge this gap by creating synthetic summary indicators of EPL strictness for its member countries,<sup>3</sup> distinguishing between (1) employment protection of regular workers against individual dismissal, (2) specific requirements for collective dismissals and (3) the regulation of temporary employment (specifically fixed-term contracts and temporary work agency employment), as employers increasingly use such arrangements to circumvent EPL for regular contracts. Chart 2 shows the current values of these indicators for the euro area Member

States (except Luxembourg) and for the U.S.A.

For regular contracts, the indicator takes into consideration the required length of the notice period, the size of the severance pay depending on the period of tenure as well as the required notification procedure (i.e., oral or written statement, notification of a third party, e.g. a works council, or authorization from a third party). Furthermore, the indicator reflects the conditions under which a dismissal is considered justified or unfair, the length of a trial period in which regular contracts are not or not fully covered by employment protection provisions as well as compensation following unfair dismissal.

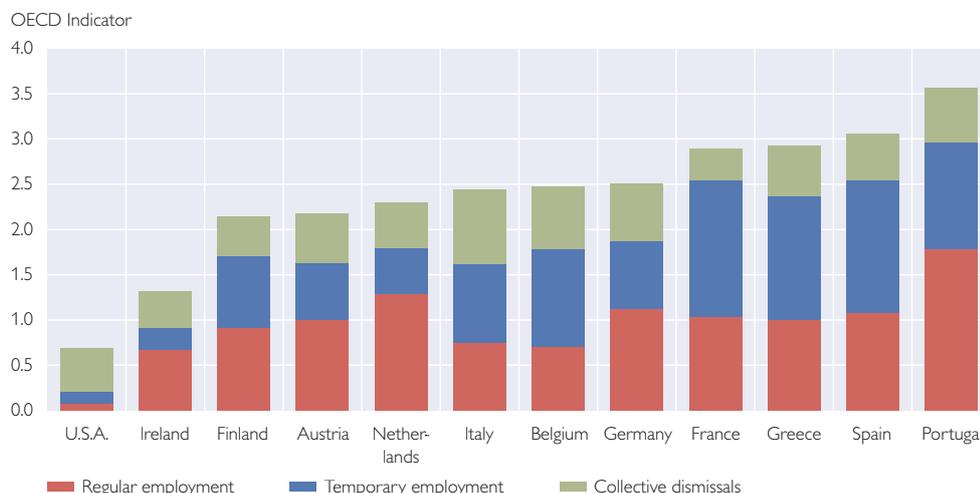
The indicator for collective dismissals considers the number of dismissals that invoke additional regulations, e.g. the notification of certain organizations (such as public employment offices) or higher severance pay requirements; some countries also require the employer to provide social compensation plans in case of collective dismissals. The indicator for temporary employment, finally, reflects restrictions on the use of fixed-term contracts and temporary work agency employment as well as restrictions on the maximum number and maximum cumulated duration of such contracts.

An essential weakness of the OECD’s summary indicators is that they do not consider one factor that seems to have a substantial impact on the effects EPL has on employment: the threshold value for the number of employees above which an enterprise is subject to national EPL. Such thresholds – which, at varying levels,

<sup>3</sup> See OECD *Employment Outlook 2004, Annex 2.A1* for a detailed description of these indicators.

Chart 2

**EPL Strictness in 2003**



Source: OECD Employment Outlook (2004), p.117.

apply in all euro area countries – are meant to take account of the fact that the labor adjustment costs resulting from unfair dismissal protection are a higher impediment for smaller enterprises. Yet awareness of these thresholds may be limited, as surveys among small enterprises in Germany<sup>4</sup> suggest that many respondents are uncertain as to whether or not EPL applies to them.

There are several other approaches to measuring the intensity of EPL in addition to the OECD’s summary indicators. In their data set on hiring and firing restrictions, Di Tella and MacCulloch (2005) rely on the results of surveys conducted for the World Competitiveness Report (WCR) in the period 1984–1990. In the context of the WCR, respondents were asked to indicate how flexible business leaders were in adjusting e.g. compensation and employment levels

to economic realities. The drawback of this method lies in the limited comparability of the replies, as the sample of respondents is not representative and their assessments do not refer to a common reference value. This notwithstanding, Di Tella and MacCulloch underline that the survey respondents (managing directors, economic experts, social partners) are particularly well placed to judge the impact of the applicable rules. At any rate, the survey results broadly match those obtained with the OECD indicators; the WCR’s flexibility measure is highly correlated with the EPL indicator for the late 1980s. The largest deviation in this period was found for Austria, which was the second-least regulated country in terms of employment protection after Ireland according to the OECD, while ranking seventh in the WCR’s classification.

<sup>4</sup> Bothfeld and Ullmann (2004) found in their survey that 66% of German enterprises with up to five employees in 2003 mistakenly believed that the national EPL was applicable to their employees.

## 2.2 Objectives of Employment Protection

The constraints imposed on employers, as reflected by the OECD indicators, mainly aim at securing existing jobs (by requiring employers to notify a third party or seek its authorization and by enabling dismissed employees to bring their case before a labor court) and at providing a certain degree of income security (through notice periods and severance pay). The differences in the mix of disincentives for employers and income support measures for employees are fairly big across the euro area, as are the effects of these measures. For instance, the average duration of legal proceedings in employment protection cases is three to four months in Germany, one year in France and two years in Italy according to the OECD (2004). While employees in Spain and Portugal are entitled to redundancy payments of one year or more after 20 years tenure, e.g. employees in Finland do not benefit from such provisions. The German EPL relies more on renewing employment relations than on compensating dismissed employees for income loss. In Belgium, finally, enterprises can choose between a three-month notice period and a severance payment.

In some ways, employment protection regulations can be seen as a substitute for unemployment benefits, as they help reduce the income uncertainty associated with job loss. Compared with the euro area average, the countries of the Mediterranean tend to have more restrictive EPL and lower unemployment insurance benefits, while the Scandinavian countries have a lower level of employment protection and higher unemployment replacement rates (see

chart 2). Arpaia and Mourre (2005) expand the scope of this substitutive relationship in the labor markets' institutional design to include also other instruments of income security and redistribution; the weaker a country's instruments are in this respect, the more restrictive its EPL.

Severance pay entitlement may negatively affect labor mobility as termination benefits are often based on the seniority principle (i.e. they increase in line with the period of tenure at a single employer) and withheld if an employee quits his or her job. In such case the cost of job mobility can rise considerably especially for older employees.

In Austria, this problem was solved with the 2003 reform of the severance pay legislation, which requires employers to contribute around 1.54% of employees' paychecks to individual savings accounts managed by severance funds starting on the first day of employment. Employees keep their entitlement to the amount regardless of who terminates the employment contract. In the case of dismissal by the employer, employees with a job tenure of more than three years can choose between receiving the accumulated amount at once and carrying the balance over to the next employer. The amount is not paid out if the employee quits the job or job tenure is shorter than three years. The new legislation, moreover, provides an incentive for employees to save the entitlements toward a future pension by levying taxes on interim payouts. While employees thus no longer lose out on severance pay when they decide to take a new job and the employer does not face additional costs in case of a dismissal, severance pay regulations can no longer be re-

garded as an instrument of employment protection.<sup>5</sup>

By way of conclusion, EPL aims at providing job and income security by imposing costs on enterprises that lay off employees. These costs can be direct (severance pay) or indirect (e.g. court costs), with the latter involving a high degree of uncertainty, as it is impossible to predict both the probability of a former employee taking legal action and the outcome of such a labor lawsuit. Ichino et al. (2003) show that Italian court rulings in such cases typically depend on the overall economic climate. What remains to be explored is the extent to which employers pass through the costs connected with EPL to their employees.

### 3 Effects on Employment and Joblessness

EPL restricts the ability of employers to reduce labor costs by laying off employees when demand for their products and services is decreasing; in times of full capacity utilization, employers will thus also be reluctant to hire new workers. Even though its effects on employment and joblessness are by no means uniform, EPL tends to reduce employment volatility over the business cycle – it can lead to labor hoarding. In theory, employers could cut wages to reduce labor costs without cutting staff, but this option conflicts with existing wage rigidities.

As mentioned above, EPL increases labor costs, which in turn decreases labor demand. In a static labor market model, the equilibrium

outcome of higher employment protection regulations is a decline in employment rates and a rise in unemployment rates. The size of these effects depends on EPL strictness, its interaction with other labor market institutions and its possible welfare-enhancing effects.

#### 3.1 EPL and Short-Time Working

Given the low flexibility of employment and wages, putting employees on short-time working is an option to adjust labor costs to entrepreneurial needs. The negative correlation between EPL and hours worked was already described by Lazear (1990). Houseman and Abraham (1993) show that, when confronted with negative demand shocks, enterprises in the U.S.A. tend to reduce the labor factor by cutting staff numbers, while German employers prefer cutting working hours. The total effect of dismissals and short-time working is only slightly higher in the U.S.A. than in Germany. Enterprises in Italy, Spain and Belgium also use short-time working to smooth cyclical fluctuations.<sup>6</sup> Bonin (2004) underscores that adjusting working hours is a suitable solution to buffer changes in capacity utilization levels especially if the qualification structure of employees is relatively homogenous. Thus, the workload can be distributed flexibly among the employees.

A number of studies – e.g. Addison and Teixeira (2003), Cahuc and Zylberberg (2004) and the OECD (2004) – have empirically explored the negative correlation between EPL

<sup>5</sup> Accordingly, the OECD has set to zero the 2003 value of the “severance pay” indicator of EPL strictness for Austria (OECD, 2004; p. 111). The new severance pay system is only binding for employment contracts concluded after December 31, 2002. For contracts concluded before that date, the employment protection effect of the old severance pay provisions continues to exist.

<sup>6</sup> See Lodovici (2000), p. 38.

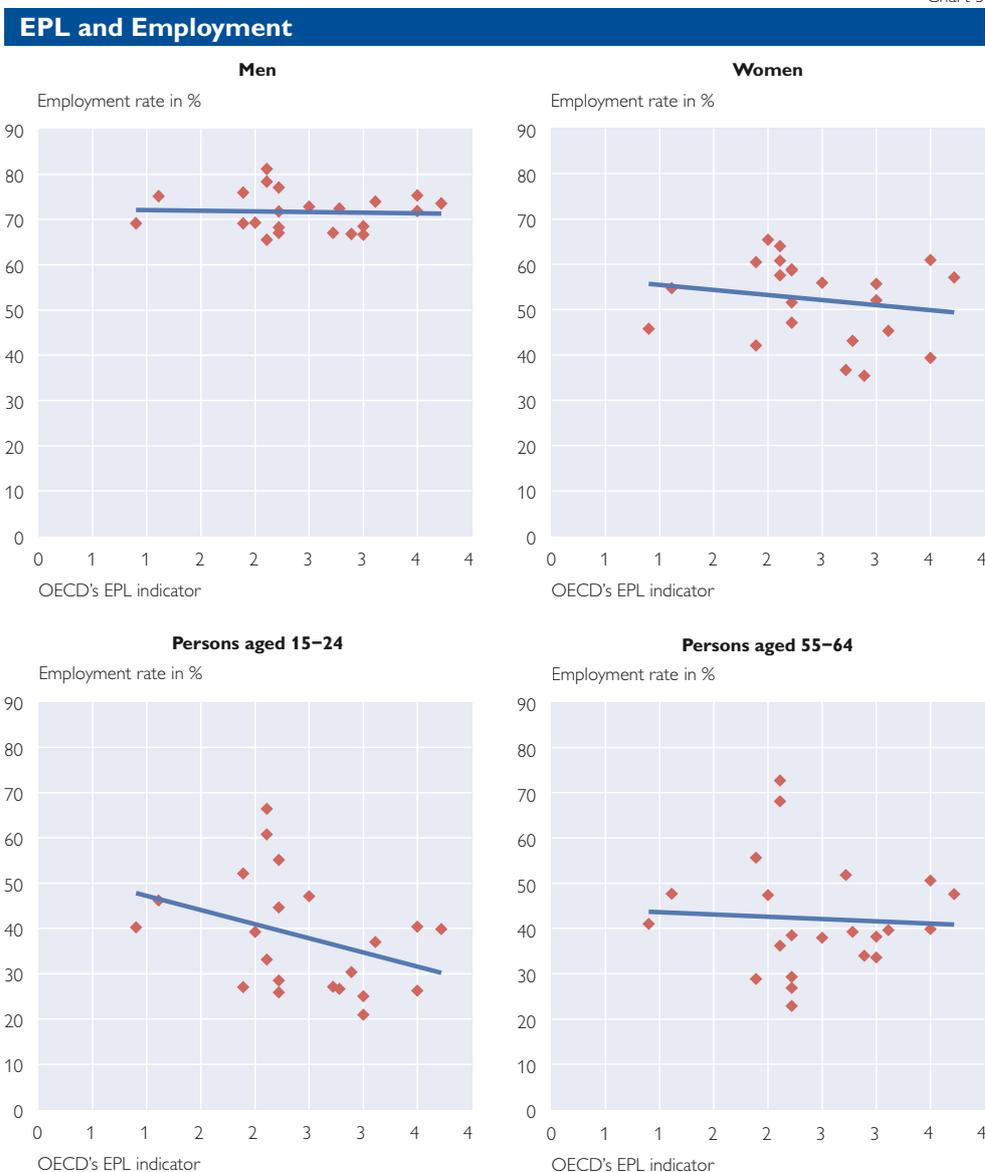
and unemployment without finding conclusive evidence.<sup>7</sup> Elmeskov et al. (1998), however, find a significant negative impact on the level of structural unemployment; several studies also suggest that the duration of unemployment may increase with stricter EPL, which is probably attributable to its dampening effect on hiring. The longer a jobless person

fails to reenter the labor market, the bigger the potential loss of human capital and the lower the chance of finding a job.

### 3.2 Age- and Gender-Related Effects

EPL increases the stability of existing employment relationships, while at the same time reducing hiring rates.

Chart 3



Source: OECD.

<sup>7</sup> Nickell and Layard (1999) conclude that “Time spent worrying about strict labor market regulations, employment protection and minimum wages is probably time largely wasted.”

The effects of EPL thus vary across labor market groups. Chart 3 shows the average employment rate (number of employed persons as a percentage of the labor force) and the indicator of EPL strictness for four socio-demographic groups (men, women, persons aged 15–24 and persons aged 55–64) in all euro area countries except Luxembourg in the periods 1995–1999 and 2000–2004. The correlation between the two variables is strongest for female employees and the young. The reason for this is that persons aged 15–24 are often just entering the workforce and thus do not benefit from EPL, while women have more spells of nonemployment in their employment history and face reentry problems associated with the dampening effects of strict EPL on hiring. By contrast, persons aged 55–64 are protected by EPL, especially by the fact that severance pay entitlement increases with tenure.

The national differences in employment rates and other labor market indicators are, however, not exclusively ascribable to the degree of EPL strictness. Other institutions such as the unemployment insurance system, the wage setting process or the taxation of wage income also play a key role in this context. The OECD (2004) conducted a regression analysis that reflects additional group-specific explanatory variables (e.g. childcare facilities and maternity leave for women or retirement regulations for older employees) in addition to the above-mentioned explanations. The analysis results still suggest that EPL has a significant negative impact on the employment of women and the young.

### 3.3 Interaction with Other Labor Market Institutions

Taking into account other relevant labor market institutions makes sense, given the possible interactions between the individual institutions and their effects on employment and joblessness. As mentioned before, there is a substitutive relationship between EPL on the one hand, and the unemployment insurance system and the redistribution effects of the tax system on the other hand. A complementary relationship between wage compression<sup>8</sup> and employment protection is found by Bertola and Rogerson (1997). The stronger wage compression is in a country, the harder it will be for enterprises to cut labor costs by lowering wages in the event of a shock to the extent warranted by the profit situation. Employers will therefore aim at lowering costs by reducing the labor force, and employees will try to protect themselves with stricter EPL. Bertola and Rogerson emphasize that the process of job creation and destruction in countries with high wage compression and high EPL is similar in scope to that in countries with low wage compression and low EPL.

It is difficult to produce econometrically significant evidence on the effects of EPL because, among other reasons, labor market institutions tend to change only little over time. The OECD's national indicators of EPL strictness for 2003, for instance, are highly correlated with those of the late 1990s; the variance is also quite low in a longer-term comparison. Blanchard and Wolfers (2000) therefore raise the question how these comparatively constant variables are

<sup>8</sup> *Wage compression is a matter of wage income distribution; wage compression is high when the wage gap between the lowest and the highest paid employee is narrow.*

supposed to explain the in part drastic increase in unemployment observed in Europe. They conclude that the different labor market developments are not so much attributable to the impact of institutions or their reforms, but to the combined effect of institutions and macroeconomic shocks (e.g. the productivity decline since the 1970s). Two factors determine the impact that a given shock has on the unemployment rate in a labor market: it will be stronger if wage setting reacts only with small adjustments to increasing unemployment and if the risk of long-term unemployment is high. Given the group-specific effects of EPL mentioned above, we may assume that shocks in a labor market with strict EPL will cause especially female and youth unemployment to rise in the event of a shock. Blanchard (2006) tests the hypothesis that employment protection regulations – that were just as strict as today some 30, 40 years ago, but had no binding effect on allocation processes in the labor market at the time – are causing unemployment to rise, as the pace of job allocation has increased in our globalized economy. However, he finds no empirical proof of an increase in the pace of allocation in the labor market: Blanchard shows that the speed at which jobs are created and destroyed has not increased in France since 1985; there are no reliable data available for earlier periods.

Another factor adds to the difficulty of empirically analyzing the effects of EPL on employment: the correlations between institutions are not restricted to labor market institu-

tions, but also involve product market regulations, which makes it virtually impossible to distinguish between the effects of individual institutions. Freeman (2005) underscores that it is not possible to single out institution-specific effects by country with econometric methods as long as specific combinations of institutions occur only in certain countries. Arpaia and Mourre (2005) point out that regression analyses that examine the impact of institutions on unemployment will produce insignificant results if they reflect period- and country-specific effects.

### 3.4 Flexibility and Security

The employees' perceived job security is another interesting aspect of EPL apart from its direct impact on job creation and destruction. Clark and Postel-Vinay (2005) use European Community Household Panel (ECHP) data to assess employees' perception of job security in a multivariate probit model. They regress data obtained in 12 EU Member States for the ECHP on variables such as the regional unemployment rate, previous spells of unemployment, education, marital status and age as well as indicators of national EPL strictness and unemployment insurance benefit generosity. The authors distinguish between permanent public sector jobs, permanent private sector jobs and temporary jobs. The employees' perceived job security is positively correlated with generous unemployment insurance benefits for all types of jobs. It is negatively correlated with strict EPL for private sector jobs, while no correlation was ob-

served for public sector jobs.<sup>9</sup> Clark and Postel-Vinay argue that for the majority of employees, employment protection does not lead to higher perceived job security; they suggest addressing the issue with different instruments.

In order to increase job security, Clark and Postel-Vinay propose the Scandinavian “flexicurity” model which combines high labor market flexibility (easy hiring and firing) with generous unemployment benefits and a proactive labor market policy. The OECD (2004) refers to this approach as the “golden triangle.” The concept of *flexicurity* has recently become the focus of policy discussions in Austria and in the EU; Denmark – which has a low unemployment rate also by international standards – is often cited as an example for this approach.<sup>10</sup> While enterprises in Denmark enjoy a relatively high degree of flexibility when cutting jobs, the associated income loss for the affected employees is comparatively small, as they receive high wage replacement rates also in case of longer-term unemployment and their chance of finding a new job quickly is high, given the proactive Danish labor market policy. The design of unemployment insurance benefits and the proactive labor market policy serve as incentives for unemployed persons to increase their employability; for instance, if they refuse to attend qualification courses, their unemployment benefits will be reduced. To avoid a segmentation of the labor market, the Council of the European

Union (2006) also recommends increasing labor market flexibility and promoting employment security for an improved implementation of the Lisbon strategy. In addition, it suggests that the European Commission establishes common principles of flexicurity in cooperation with the EU Member States and the social partners.

#### 4 Heterogeneity of Existing Institutions

In the following, we will explore possible reasons for the emergence of highly heterogeneous EPL in the euro area. A country’s institutional framework represents the outcome of political redistribution conflicts according to a number of economists. Saint-Paul (2002), for instance, develops a model in which EPL strictness is attributable to two factors: the productivity gap between employed and unemployed persons on the one hand, and the unions’ bargaining power on the other. Employees acquire firm-specific human capital that increases with job tenure, thus making their input in their current job more productive than with another employer. As they receive higher wages in return for their higher level of productivity, they will advocate strict EPL as this helps them keep their jobs. Assuming that trade unions primarily aim at maximizing the employees’ income and pay less attention to unemployed persons, they optimize the “rents” enjoyed by protected employees; in this context, rent denotes the amount an employee earns in

<sup>9</sup> The EPL coefficient on perceived job security for temporary employees is insignificant in the original specification. The result was only significant and negative on the assumption that workers actively self-select into one of the three job types according to their sentiment of job security.

<sup>10</sup> At 4.5% of GDP, the share of labor market expenditure is significantly higher in Denmark than in the other euro area countries (OECD, 2006; p. 271).

excess of alternative income, i.e. unemployment insurance benefits or the wages earned in a new job. According to Saint-Paul, this is the reason why EPL is stricter in countries with strong labor unions.

Efficiency considerations are another possible explanation for the origins of EPL. They concentrate mainly on employees' risk aversion in view of income uncertainty associated with job loss. While Saint-Paul's model postulates that employees hardly consider the possibility of losing their job and their demands even contribute to an increase in unemployment figures, Agell (2002) assumes that the fear of unemployment has been a key factor in the creation of labor market institutions such as EPL. From a historical perspective, the costs of unemployment were lower when the division of labor was less developed, as people had a better chance of finding a similarly well-paid job. With growing specialization, employees were forced to acquire firm- or sector-specific knowledge; this human capital is lost when the employee is laid off. As the private insurance industry does not accommodate the demand for insurance against the associated income risk, employees will try to minimize this risk with EPL. Belot et al. (2006) find that employment protection has welfare- and growth-enhancing effects, as it serves as an incentive for employees to acquire firm-specific human capital.<sup>11</sup> This is, however, only true for a low level of EPL strictness – the effect on GDP growth is not linear; the optimal degree of employment protection also depends on the employee's qualification level. Given the increasing international

division of labor, which requires a higher level of specialization in order to maintain and improve competitiveness, incentive systems in the euro area should aim at promoting the formation of firm- and sector-specific know-how also in the future.

Another approach to explaining the large differences in labor market institutions underscores the importance of national legal traditions. It postulates that the labor markets in Anglo-American countries mainly rely on private-law agreements and market mechanisms, while the legal systems in continental Europe tend to rely on direct government interventions and regulations such as EPL. Botero et al. (2004) test this hypothesis with a dataset of 85 countries and arrive at the conclusion that this factor contributes significantly to the heterogeneity of labor market institutions in addition to the factors mentioned above.

The open method of coordination, which is used for policy exchanges between EU Member States, makes it possible to learn from the experience of the other members. This does not imply, however, that best practice examples of institutions can simply be duplicated. Just like all other economic policy institutions, labor market institutions are the result of social developments and thus reflect the path of development realized so far. This path dependence can be attributable to positive feedback between existing regulations and individual routines on the one hand, and to a high level of compatibility of institutions from different areas on the other. Hence, reforms should be viewed within the entire institutional

<sup>11</sup> The authors also point out that this incentive to acquire firm-specific know-how may be partly offset, as severance pay cuts the costs connected with dismissals for employees.

context of a country.<sup>12</sup> Algan and Cahuc (2006) present an example of the feedback mentioned above: They maintain that the successful implementation of the flexicurity model requires a high level of public-spiritedness by all stakeholders, as the risk of moral hazard would be high otherwise; the authors believe that this attitude is present in the Scandinavian countries, but has no tradition in the Mediterranean and continental EU Member States. Accordingly, adopting the flexicurity model would only increase the cost of unemployment insurance benefits in these countries. Ochel (2004) challenges the concept of path dependence, citing the reforms of the labor market institutions in Denmark<sup>13</sup> and the United Kingdom. Still, he also concludes that reforming EPL will prove difficult if the losers of such reforms by far outnumber the beneficiaries.

## 5 Conclusions

Employment protection regulations aim at securing jobs and stabilizing wage income with a range of different instruments, e.g. regulations governing severance pay, notice periods or fixed-term contracts. While severance payments make sense in that they help compensate the income loss associated with spells of unemployment, the prospect of possible court trials tends to increase insecurity for both employer and employee. The effectiveness of strict EPL is even more doubtful if we consider that it does not raise the perceived level of job security for the majority of employees

according to survey results. Still, the costs resulting from EPL force enterprises to internalize a part of the negative macroeconomic effects of layoffs; merely dispensing with EPL might increase the incentive for enterprises to dismiss employees, as the associated costs would be carried by private and public households alone. In the U.S.A., this issue is addressed with an “experience rating” system, in which a company’s tax rate is linked to its layoff history. The OECD recommends implementing an analogous solution in Austria.<sup>14</sup>

Stringent EPL reduces employment volatility over the business cycle, as enterprises dismiss fewer employees in an economic downturn and hire fewer people in a cyclical upswing. While there is little empirical support for the assumption that strict EPL has a negative impact on aggregate employment or leads to an increase in unemployment, it seems to reduce the employment opportunities of two labor market groups: women, as they tend to have more interruptions in their employment history than men, and young people, who do not benefit from EPL when they are about to take up their first job. The Lisbon strategy aims at increasing the labor participation rate and at reducing gender-related differences in this rate. Therefore, countries with particularly strict EPL should consider reforming the system with the flexicurity approach, i.e., relaxing employment protection regulations while at the same time increasing the generosity of unemployment

<sup>12</sup> See Janger (2006) on the political economy of reforms especially in the context of the Lisbon strategy.

<sup>13</sup> While certain labor market reforms were implemented in Denmark (the maximum duration of benefit entitlement was reduced, among others), they do not necessarily qualify as drastic changes; unemployment insurance benefits are still very generous by EU standards.

<sup>14</sup> See OECD (2005), p. 101.

insurance benefits and adopting a proactive labor market policy. However, these measures alone are unlikely to increase the female labor participation rate; in the Scandinavian countries, where the flexicurity model was developed, they are complemented with a system of childcare facilities that is more comprehensive than the EU average.

Given the increasing specialization of production processes, the welfare-economic effects of EPL have gained importance, too, as a certain degree of employment protection increases the incentive for employees to acquire firm-specific human capital. Therefore, labor market reforms that aim at reducing EPL should be accompanied by measures that promote the qualification and training of staff.

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# The (New) OECD Jobs Study: Introduction and Assessment

Alfred Stiglbauer<sup>1</sup>

In 1994, the OECD presented the *Jobs Study* analyzing the causes of high unemployment in Europe. The study identified inappropriate labor market regulations and legislation as a key determinant of high unemployment. The OECD recommended deregulation and liberalization of labor market institutions as a remedy. Meanwhile, new empirical research has explored the influence of labor market institutions on unemployment and has only partly confirmed the recommendations of the *Jobs Study*. In a reevaluation, the OECD now concludes that different combinations of institutions may foster good labor market performance. Like the Scandinavian countries, Austria is a country with strong labor market institutions and low unemployment.

JEL classification: E24, J50, J60

Keywords: jobs study, unemployment, labor market institutions, labor market regulation.

## 1 Introduction

Persistently high unemployment in numerous European countries remains one of the most pressing economic policy issues. A number of economists and international organizations have argued in recent years that joblessness in (Continental) Europe is basically a structural phenomenon, caused by the institutional provisions governing labor markets (labor market institutions – LMIs). To eliminate unemployment would require LMI reform, such as easing labor dismissal provisions, reducing unemployment benefits and cutting taxes on labor.

This was also the central message of the *Jobs Study* that the Paris-based Organisation for Economic Co-operation and Development (OECD) published in 1994. The policies advocated by the OECD in this study had a great influence on policymakers' thinking. They have guided the policy recommendations adopted in the OECD's economic reports and are also mirrored by the recommendations that the European Union (EU) has made

on labor market policy (Aiginger, 2006).

While conventional wisdom has it that rigid LMIs are at the heart of high unemployment in several countries in Europe (Siebert, 1997), reforms of these institutions are often unpopular and meet with resistance from vested interests. The measures that need to be taken appear to be clear, only their implementation is difficult. Luxembourg's Prime Minister Jean-Claude Juncker may well have had labor market reform in mind when he said: "We all know what to do. We just don't know how to be re-elected once we've done it." (The Economist, 2006).

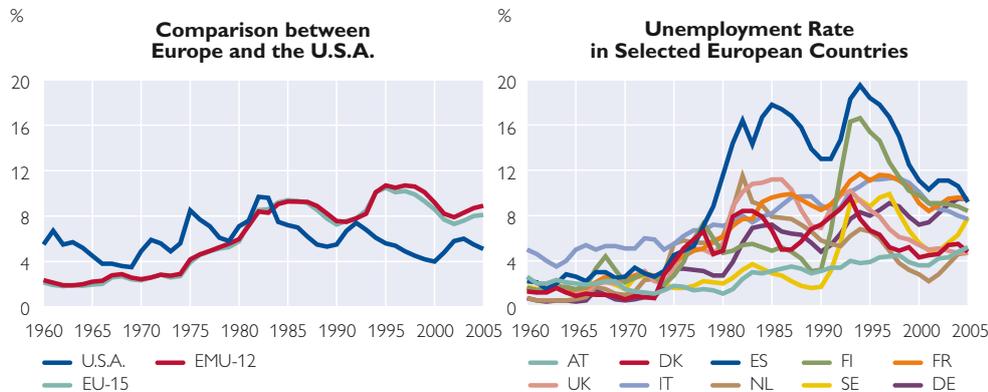
In June 2006, the OECD published a reassessment of the *Jobs Study*: The entire issue of its annual publication on the labor market, the *Employment Outlook*, is dedicated to this topic (OECD, 2006). In this reassessment, the OECD took the edge off some of its original recommendations or changed them: The labor markets do not necessarily need to be deregulated to reduce joblessness in

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Chart 1

## Unemployment since 1960



Source: AMECO database.

countries with high unemployment. Much rather, various combinations of LMIs appear to be suited to promoting employment and keeping unemployment low. This paper summarizes the results of the *Jobs Study* and the recent literature.

## 2 Some European Countries Suffer from High Unemployment

### 2.1 High and Persistent Unemployment

Chart 1 (left panel) shows a familiar problem: Until the 1980s, unemployment in Europe (the EU-15<sup>2</sup> countries or the member states of Economic and Monetary Union, EMU) was lower than in the U.S.A. Between the mid-1970s and mid-1980s, unemployment in the EU rose rapidly and has since remained persistently high, with cyclical fluctuations. The divergent development of unemployment is generally ascribed to the fact that the U.S. jobless rate fluctuates

around a stable equilibrium value. By contrast, in Europe the equilibrium unemployment rate itself is assessed to have risen in the course of time, preventing unemployment from sinking to a lower level in times of stronger economic growth.

### 2.2 Large Differences in Unemployment Rates among European Countries

Chart 1 (right panel) shows the development of unemployment rates in selected countries and reveals that there is no overall “European” unemployment problem. Some European countries – including the U.K. with its comparatively unregulated labor market as well as Austria, the Netherlands and Denmark – have posted jobless rates roughly as low as those in the U.S.A. The persistently high unemployment rates seem to be concentrated mainly in the large Continental European countries – Spain<sup>3</sup>, France, Italy and Germany.

<sup>2</sup> Unemployment rates were also high in some of the New Member States. However, this is probably because these economies were socialist and centrally planned until about 1990 and then underwent a massive systemic change to which they need a long time to adjust. Therefore, with the exception of former East Germany, which is included in the data series on the EU and Germany from 1991, they are not treated in this contribution.

<sup>3</sup> However, within the past decade Spanish unemployment roughly halved from an initial rate of nearly 20%, as chart 1 indicates.

The design of the individual European countries' LMIs (section 4) also differs. In its 1994 *Jobs Study*, the OECD had asserted that distinctive institutional features played a crucial role in the development and persistence of unemployment.

### 3 The Jobs Study: An Influential Report

In response to the rise in unemployment in its European member states, the OECD was commissioned to draw up an extensive study on the causes of unemployment and to compile a list of policy recommendations. This study was published in 1994 (OECD, 1994a and 1994b; followed by a number of related publications).

The policy recommendations were summarized in ten bullet points (see box below):

As the list indicates, the OECD did not find unemployment to be rooted exclusively in LMIs. Apart from its emphasis on macroeconomic policy (recommendation 1), the study stresses structural aspects such as innovation, research, entrepreneurial climate, education/training and competition policies (1, 2, 4, 8 and 10). Nonetheless, as many as five recommendations (3, 5, 6, 7, 9; emphasized in bold print in the box) apply to institutional arrangements on the labor market. A closer look at these recommendations follows.<sup>4</sup>

#### Empfehlungen der Jobs Study:

1. Set macroeconomic policy such that it will both encourage growth and, in conjunction with good structural policies, make it sustainable, i.e. non-inflationary.
2. Enhance the creation and diffusion of technological know-how by improving frameworks for its development.
3. **Increase flexibility of working-time** (both short-term and lifetime) voluntarily sought by workers and employers.
4. Nurture an entrepreneurial climate by eliminating impediments to, and restrictions on, the creation and expansion of enterprises.
5. **Make wage and labour costs more flexible** by removing restrictions that prevent wages from reflecting local conditions and individual skill levels, in particular of younger workers.
6. **Reform employment security provisions** that inhibit the expansion of employment in the private sector.
7. **Strengthen the emphasis on active labour market policies and reinforce their effectiveness.**
8. Improve labour force skills and competences through wide-ranging changes in education and training systems.
9. **Reform unemployment and related benefit systems** – and their interactions with the tax system – such that societies' fundamental equity goals are achieved in ways that impinge far less on the efficient functioning of labour markets.
10. Enhance product market competition so as to reduce monopolistic tendencies and weaken insider-outsider mechanisms while also contributing to a more innovative and dynamic economy.

Note: The original does not contain the emphasis in bold print highlighting recommendations with an immediate relevance for the labor market.

<sup>4</sup> Note that the literature reviewed for this paper does not accord increased flexibility of working time (recommendation 3) any importance.

The *Jobs Study* has exerted great influence on the economic policy discussion and on the issues discussed in the applied economics literature.<sup>5</sup> The same is true of the book *Unemployment* by Layard, Nickell and Jackman, which was first published in 1991 and which was reissued unchanged in 2005 except for an updated introduction with a longer literature survey (Layard et al., 2005). According to this book, LMIs also play a key role in understanding unemployment in Europe.

## 4 Labor Market Institutions: A First Overview

### 4.1 What Are Labor Market Institutions, and Why Do They Exist?

Following North (1991), LMIs may be seen as formal and informal rules that direct the actions of players on the labor market. Blau and Kahn (1999) consider LMIs the framework of laws, programs and conventions that influence labor market activity and that cause the labor market to function differently from a spot market.

The empirically oriented literature reviewed here is, actually, not based on formal definitions. Much rather, it uses a widely accepted list of LMIs. The discussion covers unemployment benefits, employment (dismissal) protection, labor unions and wage bargaining systems, active labor market programs and the amount of taxes due on labor income. The distinction between LMIs and other institutional rules is not clear-cut (Nickell and Layard, 1999): Product market regulation is frequently motivated by worker health and safety

considerations (e.g. shop opening hours), but is not conventionally considered an LMI, whereas specific aspects of the tax system whose importance extends far beyond the labor market are (e.g. income tax).

Why, indeed, do LMIs exist in the first place? They are typically seen as having evolved to offset market imperfections such as uncertainty and asymmetric information (Agell, 1999). According to Agell (2002) economic history shows that labor market problems led to the establishment of LMIs (unemployment insurance, labor unions) rather than vice versa. Yet more critical views of LMIs also exist, according to which labor market institutions basically serve vested interests (e.g. insiders versus outsiders, that is, employed persons versus the unemployed or those with precarious employment contracts) and help the given interest groups to secure economic rents (Blau and Kahn, 1999).

### 4.2 Institutional Diversity

LMIs are very prevalent in most countries in Europe. However, their relative importance differs from country to country:

- *Magnitude and duration of unemployment compensation:* Unemployment benefits tend to be generous in Scandinavian and Central European countries (among them Austria). By contrast, they are markedly lower in the U.S.A. and in the U.K., and are in fact quite low in some Southern European countries, such as Italy (OECD, 2006).
- *Employment protection:* Periods of notice differ among OECD mem-

<sup>5</sup> Consider the assessment by Blanchard (2006): “The [*Jobs Study*] was – and its general line still is – extremely influential.” (p. 26).

- ber states, as do unfair dismissal provisions. Employment security is very low in the U.S.A. and in the U.K., moderate in Denmark, Finland and Austria<sup>6</sup> and very high in France and Spain (OECD, 2004a).
- *Labor union coverage*: Labor unions negotiate collectively agreed (minimum) wages for more than 90% of all employees in some countries in Europe (e.g. Austria, Finland, France and Sweden). The corresponding share in the U.K. is around 30%, and only 14% in the U.S.A. A strong influence of the labor unions is linked to high membership figures in the Scandinavian countries, with the percentage of membership exceeding 70% (OECD, 2004b).
  - *Wage bargaining system*: Whereas wage setting is decentralized and is done at the enterprise level in the English-speaking countries, it is conducted at the sectoral and/or regional level in many others (e.g. in Austria or Germany.) Wage negotiation is highly centralized at the country level in some Scandinavian countries. Decentralized wage bargaining may nevertheless be coordinated, as is the case for Austria and Finland (OECD, 2004b).
  - The importance of *active labor market policies* also varies: Expenditure is minimal in the U.S.A. (2004: 0.16% of GDP), at a medium level in Austria and the U.K. (around 0.5%) and high in the Netherlands and in Denmark, meaning it is above 1% (OECD, 2006).
  - *Labor taxation*: Taxes on labor (income tax, social security contributions and other payroll taxes) are high in Italy, Finland and Sweden, at mid-level in Denmark and Austria, and low in the U.K. and the U.S.A. (OECD, 2006).

### 4.3 Institutions and Quantitative Institutional Variables

Institutional rules on the labor markets are complex. Academic researchers and in particular the OECD itself have invested much effort in the construction of indicators aiming at depicting the essential features of institutional provisions in the labor market.

These indicators have been steadily revised and improved over time. While they are often quite good at showing differences across countries today, past values are quite likely to be less accurate. In fact, many LMI variables exhibit low variation over time. They are difficult to determine and are thus not available for every single year, which is why many researchers resort e.g. to interpolations.

#### 4.3.1 Unemployment Insurance

The amount of unemployment insurance is regularly mapped by means of *replacement rates*, by the *duration* of payment of unemployment benefits or by a combination of both factors. The replacement rate in this case is the ratio of unemployment benefits to the last net wage payment in the first year of unemployment. Typically, an average is calculated for several wage levels and family types (sole wage earner; double income household;

<sup>6</sup> Employment protection has become much weaker in Austria since the introduction of the new severance payment scheme. The OECD highly commends this reform as exemplary (editorial in OECD, 2006).

with/without children). A combined measure of replacement rates and the duration may be calculated on the basis of the averages of the first, second, third and further years and by attaching lower weights to the values of the later years (Nickell et al., 2005).

#### 4.3.2 Employment Protection

Employment protection refers to the set of rules governing the hiring and firing process. These provisions include dismissal protection rules (notice periods, prohibition of dismissal, protection of individual workers against unfair dismissal, the obligation to notify the public employment service in advance of dismissals, requirements for collective dismissals) and the regulation of temporary forms of employment. This comprehensive framework is empirically implemented by the formation of aggregated indices (see contribution by Pointner in this issue).

#### 4.3.3 Labor Unions and Wage Bargaining Systems

In most OECD member countries, wages (frequently minimum wages for various sectors and professions) are not negotiated individually between employers and employees. Employees are usually represented by unions. By the same token, employers often do not negotiate wages individually; they are represented by employers' associations.

Empirical studies frequently use the union density rate (the ratio of union members to all employees) to represent the influence of labor

unions. An alternative variable, namely the union coverage rate (i.e. the share of employees to whom collective wage agreements apply), would be more meaningful, but it is much harder to determine.

Wage bargaining systems are also characterized by the level at which negotiation takes place and by the role employers' association play. According to the usual classification, wage negotiations may be conducted decentrally (at the enterprise level), at the sectoral level or at the national level. Alternative indicators capture whether individual wage negotiations are largely isolated from one another or whether they are coordinated.<sup>7</sup>

#### 4.3.4 Active Labor Market Policies

The 1994 *Jobs Study* advocated the wider use of active labor market policies to supplement the established passive measures (such as unemployment benefits). Following a conventional classification, such policies include the provision of job referrals and job search support, training measures, wage subsidies and programs for persons with disabilities. The first two categories – job referrals/search support and training measures – are the most important ones. Empirical research usually expresses the importance of active labor market policy programs by the size of expenditures relative to the extent of unemployment in a country.<sup>8</sup>

#### 4.3.5 Taxation of Labor

Usually, the degree of taxation is measured as the difference between

<sup>7</sup> Sometimes, wage bargaining systems are also characterized by their degree of corporatism, meaning the strength of political participation by employers' and employees' associations. As a rule, corporatist structures go hand in hand with centralized or coordinated wage bargaining systems (Flanagan, 1999; Aidt and Tzannatos, 2002).

<sup>8</sup> OECD (2006) uses the following measure: expenditure for activation measures per unemployed person as a percentage of per capita GDP.

total labor costs (gross wages plus employers' contributions to social security) and net wages (gross wages minus employers' contributions to social security and income tax plus transfer payments). Some economists also take indirect taxes into account (e.g. Nickell et al., 2005).

The OECD regularly publishes values indicating the size of the *tax wedge* between total labor costs and net wages, typically providing averages of the tax wedges for different types of employees.

## 5 Labor Market Institutions and Unemployment

### 5.1 Theoretical Considerations and Criticism of Indicators of Labor Market Institutions

The prevailing literature uses mostly static but also dynamic models to explain equilibrium unemployment (i.e. unemployment adjusted for cyclical fluctuations).<sup>9</sup> Static models of imperfect competition on labor and product markets explain unemployment in terms of the interaction between wage setting and price setting (NAIRU – nonaccelerating inflation rate of unemployment – models). All factors that raise prices (at a given wage level) and wages (at a given price level) result in higher unemployment.

Dynamic models see unemployment as a dynamic equilibrium between inflows and outflows. Such flow models take into account that time is needed to match the unemployed to vacancies, as both vacancies and unemployed workers are hetero-

geneous. Every institution or economic policy measure that accelerates this matching process leads to a decline in equilibrium unemployment.

The theoretical effects of various LMIs on unemployment are discussed below. It must be pointed out, however, that the variables used may not be suited to capturing the nature of the true impact of LMIs.

Certainly, the impact of an LMI on unemployment is not the only criterion to judge labor market performance. A more comprehensive evaluation must also include other aspects, such as welfare gains resulting from higher income security (Agell, 1999 and 2002; Pissarides, 2001). The impact of LMIs on longer-term economic growth is also relevant.<sup>10</sup>

So as not to exceed the scope of this paper, another target variable of economic policymaking, namely the employment rate (i.e. the percentage of employed persons in the entire working-age population), is not discussed either. Some economists consider the employment rate to be a better labor market indicator than the unemployment rate, because the latter masks unemployment hidden by active labor market policies and excludes discouraged workers (i.e. those who have given up looking for a job). What would weigh against choosing the employment rate as the primary target indicator of the labor market is the fact that it reflects different preferences for leisure, cultural differences (above all in female employment) and other special factors, such as the incidence of early retirement.

<sup>9</sup> See Carlin and Soskice (2006) for an introductory presentation, and Cahuc and Zylberberg (2004) for a more in-depth discussion.

<sup>10</sup> See Nickell and Layard (1999) for a general discussion of the growth impact of labor market institutions. Aidt and Tzannatos (2002) relate a comprehensive discussion of the effects of labor unions and wage bargaining systems on the economy.

A more detailed discussion of the impact of LMIs should also take the employment rate into account. In fact, OECD (2006) makes reference to this indicator more than the original *Jobs Study* did (see also European Commission, 2004). Moreover, it is commendable that the more recent OECD work analyzes unemployment and employment more in terms of different groups in the labor market – gender, age, qualification levels – than the older studies.

### 5.1.1 Unemployment Insurance

Higher unemployment benefits and longer benefit duration increase the time that unemployed persons take to search for a new job. Moral hazard becomes a problem, in particular if the search efforts are not constantly monitored (or because complete monitoring is not possible).

Under *ceteris paribus* conditions, the generosity of unemployment benefits (in terms of the replacement rate and the duration) raises the wage to which the jobless person is entitled, preventing the job market from being cleared. In fact, microstudies indicate that the likelihood of unemployed persons taking a job increases sharply just before their entitlement to unemployment benefits ends. At the same time, unemployment benefits allow people to seek a job that is a better match for their individual productivity (OECD, 2006; Arpaia and Mourre, 2005).

Basically, the meaningfulness of the indicators chosen to reflect the generosity of unemployment benefits should be critically questioned, as they fail to capture other important design elements of unemployment insurance. It has become widely accepted that the payment of unemployment benefits should be condi-

tional on the intensive search for a position. This requirement is implemented e.g. by close supervision, activation, individual case management and, in the event that an unemployed person does not cooperate, by various sanction mechanisms.

### 5.1.2 Employment Protection

In an economy in which it is difficult to fire jobholders, companies will be wary of new hires. In other words, unemployed persons have a harder time finding a job, as there will be fewer vacancies for a given number of jobless people. At the same time, fewer people will lose their jobs, which lowers the ratio of unemployed persons to a given number of vacancies. It is not clear *a priori* which of the two effects dominates.

Like unemployment insurance, employment protection reduces the risk of losing one's income in the event of dismissal. Hence, the two institutions should not be considered separately. As to the indicator itself, it is simply the sum total of the various aspects of employment protection – with the caveat that there is no established consensus as to the weight with which the individual elements (regular dismissals, temporary work options and the like) should enter the aggregate index of employment protection.

### 5.1.3 Labor Unions and Wage Bargaining Systems

Principally, more powerful labor unions make higher wages possible, which raises equilibrium unemployment under *ceteris paribus* conditions. That said, labor unions generally have an eye on the employment situation, and they also take the reaction of price setting to nominal wages into account. Calmfors and Driffill (1988)

show that low unemployment is compatible with both highly decentralized and centralized wage bargaining systems. In decentralized wage bargaining systems (e.g. in enterprise-level negotiations), union representatives will immediately see how (too) high wages affect the demand for labor. Wage bargainers who have the macroeconomic perspective in mind will also take into account the real purchasing power of the agreed nominal wages. In the Calmfors-Driffill model, mid-level wage bargaining systems – those at the sectoral or similar levels – perform worst. These systems do not adequately take into account the impact on labor demand (as all enterprises in the sector have to pay the same wages), nor do they adequately reflect the repercussion of higher prices on real wages.

Later studies argued that the formal characterization of the negotiation level was less important than the way in which the individual wage negotiations are coordinated. More coordinated wage bargaining systems will tend to be more capable of wage moderation and will thus help keep unemployment low. Stronger competition on the product markets also leads to greater wage moderation.

More powerful unions result in more equitably distributed incomes (OECD, 2004b). Frequently, economists argue that unions compress the wage distribution and thus reduce employment opportunities for low-productivity labor. Critics respond that there is no empirical confirmation of the wage compression hypothesis and that European countries with more equitably distributed incomes also display more balanced education levels (Nickell and Layard, 1999; Schettkat, 2003; Howell, 2006).

Here, again, it must be questioned whether the institutional variables used adequately reflect the impact of labor unions or wage bargaining systems. Comparing union behavior in the U.K. and in Germany, Freeman (2005) observes a lack of responsibility on the part of British unions in the 1970s but a heightened sensitivity to their enterprises' business situation in the 1990s. The opposite was true in Germany. It is improbable that aggregate indicators like union density rates could capture such effects. Blanchard (2006) presumes that the trust between employers and employees may have a decisive influence. He cites countries with a social partnership orientation, where labor relations are comparatively harmonious (e.g. few strikes). Other countries (such as Italy or France) have more contentious labor relations, leading to less wage moderation.

#### 5.1.4 Active Labor Market Policies

In principle, active labor market policies, especially job search assistance or reskilling programs for the unemployed, speed up the process of matching job seekers and vacancies. How successful the matching process is depends not just on the amount of expenditure but also on the effectiveness of the placement and retraining measures, which may take many forms (OECD, 2005). Empirically evaluating the effectiveness of such policy measures is particularly difficult. Therefore, it appears questionable whether the usual expenditure indicators can appropriately capture the effects of active labor market policies.

#### 5.1.5 Taxation of Labor

The labor supply and labor demand elasticities determine how strongly

labor supply and labor demand react when a tax is imposed. Even the direction of the effect is not clear a priori – both substitution and income effects are possible. Which side of the labor market is affected more strongly also depends on the respective relative strengths of labor and employer representation. Empirical evidence suggests that the wage elasticity of labor supply is merely slightly negative or even positive at times for male employees. Conversely, the wage elasticity of labor demand is found to be comparatively higher and clearly negative (Cahuc and Zylberberg, 2004).

Static labor market models represent higher tax wedges by causing changes in price-setting behavior to raise the equilibrium unemployment rate. However, using a search-theoretical approach, Blanchard (2006) illustrates that taxes raise labor cost only if they are levied exclusively on labor. By contrast, more broadly based taxes, such as income taxes or excise duties, do not increase wage costs. Also, it must not be forgotten that social contributions have direct benefits, such as health or pension insurance (Disney, 2004). Consequently, Blanchard considers the tax wedge data used in the empirical studies to have little informative value. Furthermore, Cahuc and Zylberberg (2004) note that these values only represent averages and that the theoretical effect of changes of average tax

rates must be distinguished from changes in *marginal* tax rates.

## 5.2 Empirical Findings

Table 1 provides an overview of the results of panel regression studies on the link between LMIs and unemployment. The top part of the table summarizes some recent work: a study by the International Monetary Fund (IMF, 2003), the study by Nickell et al. (2005), the empirical results of Baker et al. (2005) and the findings of an OECD working paper (Bassanini and Duval, 2006) on the reassessment of the *Jobs Study*.

Such a presentation masks many methodological details, as each team of authors used several specifications for its regressions. The authors use different indices, control variables for the business cycle and other macroeconomic shocks and other determinants, and they refer to different time periods and different groups of countries. In addition, the empirical studies use a multitude of variables to capture the interaction between different LMI variables,<sup>11</sup> and some studies use variables representing interactions between LMIs and macroeconomic shocks.<sup>12</sup> For reasons of space constraints, however, only the main effects of the respective variables are presented in table 1.

To highlight the trends of the results, the bottom part of table 1 shows whether the individual variables in

<sup>11</sup> Because labor market institutions are interlinked, it makes good sense to include interaction variables. However, it is often not quite clear at the outset which specifications should actually be included in the regressions. There are very many possible specifications for interactions between labor market institution variables, whereas the degrees of freedom are limited, especially considering that many of these variables exhibit only a small time variation (Freeman, 2005).

<sup>12</sup> Blanchard and Wolfers (2000) argue that it appears implausible that labor market institutions should be singlehandedly responsible for high unemployment in some countries. Much rather, the interaction between macroeconomic shocks and relatively stable labor market institutions could explain the development of unemployment. Conversely, Nickell et al. (2005) conclude that most (55%) of the change in unemployment could be explained by the change in labor market institutions themselves.

the studies in the literature survey in OECD (2006) increase (+) or decrease (–) unemployment.<sup>13</sup>

Table 1 demonstrates the mixed results in the empirical literature. Not all LMIs reviewed are found to cause unemployment to rise:

- A clear majority of studies concludes that more generous unemployment benefits are correlated with higher unemployment.
- The results are even clearer for labor taxation: *ceteris paribus* higher taxes on labor drive up unemployment.
- Also, the finding that centralized or coordinated wage bargaining systems correlate with lower unemployment is fairly robust.
- Furthermore, the result that active labor market policies reduce unemployment also appears to be clear. However, many studies – above all the more recent ones – do not take this explanatory variable into account.
- The evidence that higher labor union power results in higher unemployment is relatively weak.
- The same is true of employment protection: the number of studies that finds no influence on unemployment clearly outweighs the number of studies that finds that employment protection measures raise unemployment.

Table 1

### The Influence of Labor Market Institutions on Unemployment – Empirical Results

Source	Variable for labor market institutions						
	Period covered	Un-employment benefits	Active labor market policies	Labor union power	Centralization/coordination of wage bargaining	Labor tax wedges	Employment protection
<b>Individual studies:</b>							
IMF (2003) <sup>1</sup>	1960 to 1998	(+)	x	(+)	(–)	(+)	(+)
Baker et al. (2005) <sup>2</sup>	1960 to 1999	(–)	0	0	(–)	0	0
Nickell et al. (2005) <sup>3</sup>	1961 to 1995	(+)	x	(+)	(–)	(+)	0
Bassanini and Duval (2006) <sup>4</sup>	1982 to 2003	(+)	x	0	(–)	(+)	0
<b>Literature survey in OECD (2006):<sup>5</sup></b>							
● Number of studies in which the labor market institution variable...	...raises unemployment	9	0	5	2	12	6
	...lowers unemployment	1	6	1	10	0	1
● Number of studies in which the labor market institution variable has no (unambiguous) effect on unemployment		2	1	11	3	5	8

Note: (+): variable raises unemployment; (–): variable lowers unemployment; 0: no statistically significant effect; x: variable was not analyzed.

<sup>1</sup> Variant (4).

<sup>2</sup> Table 3.6, Specification (3).

<sup>3</sup> Table 5, Specification (1).

<sup>4</sup> Tables 1.2 and 7.A1.1, Baseline specification.

<sup>5</sup> Table 3.3, table 3.5, table 3.8, table 3.9, table 3.12 and table 3.13.

<sup>13</sup> The studies mentioned in the first four lines of table 1 are included in the OECD literature survey as well.

### 5.3 Discussion

#### 5.3.1 Empirical Results that Lack Robustness and Debatable Policy Conclusions

There is often a considerable gap between the rigorous theoretical models and empirical methods economists use and the way in which they derive policy conclusions (McCloskey, 1983). Frequently, economists tend to disregard the issue of how robust and how contradictory the results are (Baker et al., 2005; Freeman, 2005).<sup>14</sup>

Against this backdrop, what do the empirical findings summarized above mean for the recommendations of the *Jobs Study*?

- Recommendation 5 (“*Make wage and labour costs more flexible*”) may be interpreted as a recommendation to abandon centralized wage bargaining systems and to achieve more flexible wages e.g. by negotiation at the enterprise level. The unemployment reduction effect of coordinated wage bargaining systems would, however, contradict such a recommendation.
- Recommendation 6 (“*Reform employment security provisions*”) has also been interpreted as a recommendation to dilute employment protection provisions. Yet the empirical results would support this

recommendation only to a certain extent.

- Recommendation 7 (“*Strengthen the emphasis on active labour market policies*”) is corroborated by the empirical results.
- Recommendation 9 (“*Reform unemployment and related benefit system*”) is commonly interpreted as a recommendation to disburse unemployment benefits less generously. Generous unemployment benefits do in fact correlate with high unemployment.

Did the recommendations of the old *Jobs Study* contribute to reducing unemployment? Chart 2 represents a scatter plot of the change in trend unemployment and a collective indicator used in an OECD Working Paper (Brandt et al., 2005) to capture the intensity of labor market reforms made from 1993 to 2003 inspired by the *Jobs Study* (lower taxes on labor, more temporary work options, stricter rules for unemployment insurance and the like). To compile the collective indicator, steps taken to reform various LMIs were evaluated and the values were simply added up.<sup>15</sup>

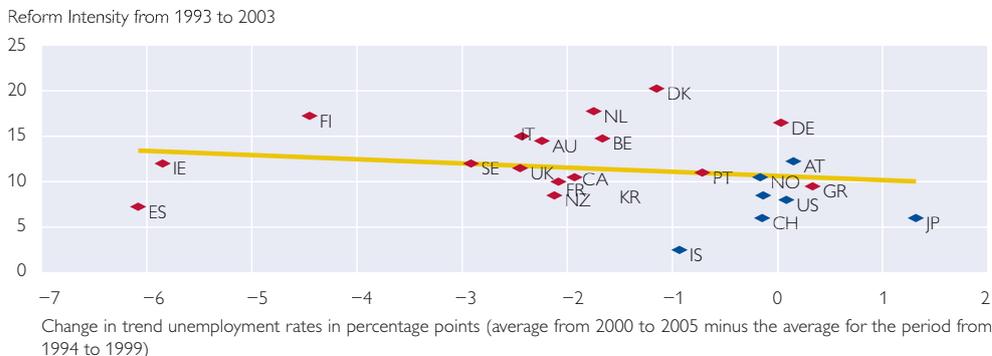
Chart 2 suggests that the reduction of unemployment does not correlate very strongly with reform intensity, in particular if one considers that the jobless rate is low in some

<sup>14</sup> The IMF (2003) uses a model simulation to argue that reductions of unemployment benefits, employment protection and labor taxes in the euro area to the U.S. level would cut unemployment by 3 ¼ percentage points in the long run (p. 141). However, in the underlying results of their panel regressions, the replacement rate of unemployment benefits has a significant impact in terms of raising unemployment in only one of four cases, and in another case it even has a significantly reducing influence. Coordination of wage bargaining – a variable that has a marked reducing effect on unemployment – is not taken into account in the simulation, though (p. 147). Layard et al. (2005) interpret an easing of employment protection as a good reform (p. xxxviii f.), even though in their literature survey (p. xvii) they conclude that there is no decisive evidence that employment protection increases unemployment.

<sup>15</sup> The authors are aware that such an approach does not, of course, take into account interactions or complementarities between labor market institutions.

Chart 2

**Intensity of Reforms Inspired by the Jobs Study and Change in Trend**



Source: AMECO database, Brandt et al. (2005).

Note: Red dots denote countries whose unemployment rates were higher from 1994 to 1999 than that of the U.S.A. Blue dots denote countries whose unemployment rates were lower from 1994 to 1999 than that of the U.S.A. and the U.S.A. itself.

countries, which probably had less of a need for reforms (blue symbols).<sup>16</sup>

## 6 Labor Market Institutions: Several Roads Lead to Rome

### 6.1 The OECD Has Adjusted Its Assessment

The empirical findings summarized above may be interpreted as follows: reduce unemployment benefits, increase funds for labor market activation measures, introduce coordination elements into wage bargaining and reduce taxes on labor. Yet considering the limited meaningfulness of LMI indicators and the complex relations between the individual LMIs, such a conclusion would be naive.

In fact, the reassessment of the *Jobs Study* takes fuller account of the complementary relations between various institutional provisions (Arpaia and Mourre, 2005; OECD, 2006).

Among other things, the reassessment shows that model combinations which sharply contradict the naive interpretation may in fact be quite successful: The Danish flexicurity model, for instance, effectively combines low employment protection and high unemployment compensation (and intensive active labor market policy measures) – running counter to the empirical findings summarized above that employment protection has barely any influence and that high unemployment benefits boost unemployment.

Whereas in its 1994 *Jobs Study* the OECD had broadly advocated deregulating the labor market, it concedes in its recent work that various institutional labor market models are consistent with successful labor market performance; in its 2006 *Employment Outlook*, the OECD states that “Experience shows that there is no single

<sup>16</sup> However, Brandt et al. (2005, chart 35) point out that there is a positive correlation between the rank of the intensity of reforms and the change in the rank of trend unemployment rates. The reassessment of the *Jobs Study* also contains the statement that labor market reform had contributed markedly to reducing unemployment in the past decade. Simulations based on the results of the OECD’s panel regressions confirm this finding (OECD, 2006, chart 7.3). But simulations do not support the validity of the policy recommendations of the *Jobs Study*; much rather, they are simply evidence of the joint statistical significance of the various labor market institution variables.

Table 2

**Institutional Regimes and Labor Market Performance**

Labor market institution	Country group		
	Group 1 (Australia, Canada, Japan, South Korea, New Zealand, Switzerland, U.K., U.S.A.)	Group 2 (Austria, Denmark, Ireland, the Netherlands, Norway, Sweden)	Group 3 (Belgium, Finland, France, Germany, Italy, Portugal, Spain)
Employment protection	low	average	high
Generosity of unemployment benefit system	low	high	high
Expenditure on active labor market policy	low	high	average
Labor taxes	low	average	high
Labor union coverage/coordination of wage negotiations	low	high	high
Product market regulation	low	low	high
Unemployment rate in % (average from 2000 to 2005)	5.3	4.8	9.0
Employment rate in % (average from 2000 to 2005)	70.9	71.9	62.5
Income inequality	high	low	average

Source: OECD (2006, table 6.3 - simplified presentation).

golden road to better labour market performance.”<sup>17</sup>

**6.2 Good Labor Market Performance of the “Anglo-American” and the “Scandinavian” Models**

The current view of the OECD has largely moved away from the analysis of individual LMIs and toward a more comprehensive analysis. Table 2 presents a key finding of the OECD’s reassessment of the *Jobs Study*. As a result of an empirical analysis, the OECD member states may be catego-

rized into several groups,<sup>18</sup> of which two country groups with highly disparate combinations of LMIs exhibit successful labor market performance (low unemployment, high employment).

The first of these groups covers countries with very little labor market regulation (the English-speaking and a few other countries), whereas the second group combines countries whose labor markets are more tightly regulated (most Scandinavian countries, Austria), in particular with regard to the generosity of unemploy-

<sup>17</sup> It is not easy to prove this change in recommendations. Both the old and the new *Jobs Study* are lengthy documents authored by teams of experts on individual topics. In the drafting process, the OECD member states may repeatedly submit comments, as a result of which the wording is often changed (usually diluted), especially in the introductory and concluding statements. Therefore, documents like the *Jobs Study* are not always fully coherent, leaving some ambiguity about what their message actually is. Nevertheless, there seems to be a consensus view that the OECD has indeed markedly changed its position on labor market institutions (see e.g. Freeman, 2005). Some economists regret that the OECD now considers some of the more regulated economies in Europe as just as successful as the U.S. economy, arguing that: “corporatist state labor markets are not as efficient as the U. S. labor market. They are just effective in disguising long term problems.” (Heckman et al., 2006). By contrast, labor union representatives welcome the change of heart in the argumentation: “These conclusions [...] require a significant shift in the policy focus [...] to allow a more pragmatic assessment of recommendations at the national level.” (TUAC, 2006).

<sup>18</sup> Results of a principal components analysis; see OECD (2006).

ment compensation, the importance of active labor market policies or labor union coverage, but which enjoy only moderate employment protection and which have average taxation. Product market regulation tends to be low on average in both of these “successful” country groups (high competition intensity). Additionally, incomes are much more evenly distributed in the second group than in the first.

A third group of countries displays a high degree of regulation paired with a low degree of active labor market policy measures; it is characterized by high employment protection and low competition intensity. This group includes the large Continental European countries with high unemployment – Germany, Italy, France and Spain.

These results indicate that there are different social organization forms<sup>19</sup> of labor markets that foster high employment and low unemployment. This viewpoint helps to explain the good labor market performance of the Scandinavian countries and Austria, which has often puzzled economists.

## 7 Conclusion

Hardly an author denies that LMIs play a key role in explaining persistent unemployment.<sup>20</sup> The findings of the literature and the evaluation of the *Jobs Study* suggest that there are many different ways to tackle unemployment, but that the given choices are not arbitrary: There is good reason to suppose that the LMI combi-

nations prevailing in the large Continental European countries make it hard for them to decrease unemployment.

In a social market economy, new answers must be found from time to time to the question of which LMIs are best suited to fostering high employment and low unemployment in a rapidly changing society and economy and in a globalized economic environment. Some elements of a consensus on labor market policy appear to be emerging: Strong competition and marked economic change require a labor market that does not hamper reallocation dynamics. As Blanchard (2006) succinctly puts it, “*Protect workers, not jobs.*” The Danish flexicurity model described above readily meets this requirement.

But institutional arrangements should be judged not just on the strength of labor market performance. Other economic indicators, such as productivity and growth, are also crucial. U.S. performance on these indicators in recent years has outpaced the European average. Here, too, there is considerable heterogeneity among European countries. Whether various institutional combinations also lead to high productivity and high economic growth would merit research. After all, Economic and Monetary Union has placed new demands on labor markets to be flexible and adaptable, which is a fairly new situation in which labor market institutions need to prove themselves (Blau and Kahn, 1999; Bertola, 2000).

<sup>19</sup> These organization forms reflect different legal traditions (Botero et al., 2004) and different preferences for security, income equality, state influence and public goods. Hence, a country’s choice of LMIs is also a political choice.

<sup>20</sup> See Blanchard (2006) for a discussion of other explanations. Some authors also point out, though, that countries frequently have similar LMIs but that labor market developments diverge sharply, Germany and the Netherlands being a case in point (Schettkat, 2003).

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# How Do Austrians Pay for Online Purchases?

The Internet has become an integral part of everyday life for many people: More than 60% of Austrians have access to the World Wide Web at their workplace or at home. The rapidly growing possibilities to access and use the Internet have also given rise to new forms of payment specifically designed for goods and services ordered online. Against this background, this study presents the results of a survey commissioned by the Oesterreichische Nationalbank on the payment methods Austrians choose when shopping on the Internet. The results showed that the vast majority of online payments (52%) are made via bank-based payment services (payment slips, preauthorized debit, etc.). Credit cards are used for 30% of transactions, and payment by COD (cash on delivery) accounts for a share of 13%. This study compares and complements these findings with the results of other surveys and also looks into the reasons respondents cited in favor of or against online shopping.

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## 1 Introduction

The importance of the Internet has increased strongly over the past few years. The World Wide Web has become an integral part of many people's lives, both at the workplace and at home. The substantial rise in online shopping, i.e. the purchase of goods or services over the Internet, is a by-product of this development. This study investigates how this trend has evolved in Austria and what payment methods Austrians use when shopping on the Internet.

The expansion of online shopping has been accompanied by the emergence of new forms of payment. Only a few years ago, when the dotcom boom had reached its climax, some market observers predicted that electronic money would soon completely replace traditional means of payment, which would limit central banks' possibilities to control monetary growth and inflation.

Today we know, of course, that this was an exaggerated assumption; still, it is particularly important for

central banks to know which means of payment are used for online shopping. Therefore, this study presents the results of a survey conducted in fall 2005 which the Oesterreichische Nationalbank (OeNB) commissioned to learn more about the methods of payment Austrians use when shopping on the Internet.

## 2 Strong Rise in Internet Use and Online Shopping

A vast range of data on Internet access and use in Austria is available, the majority of which is based on survey results. As the questions in these surveys differ, data comparability is often limited.<sup>1</sup> There are also comparative data from the European Commission, which, however, were already compiled in the second quarter of 2005.

### 2.1 Access and Use

According to survey data provided by Online Monitor (OM) and Austrian Internet Monitor (AIM) for the second quarter of 2006, around 66% to

<sup>1</sup> Table 6 in the annex contains a list of all surveys referred to in this study.

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Table 1

EU-Wide Data for Comparison (2005)			
%			
Share of households with Internet access at home		Share of persons who have used the Internet over the previous three months	
Netherlands	78	Sweden	81
Denmark	75	Netherlands	79
Sweden	73	Denmark	77
Luxembourg	65	Finland	73
Germany	62	Luxembourg	69
United Kingdom	60	United Kingdom	66
Finland	54	Germany	65
EU-15	53	Estonia	59
Euro area	50	Belgium	58
Belgium	50	EU-15	55
EU-25	48	<b>Austria</b>	<b>55</b>
Slovenia	48	EU-25	51
Ireland	47	Euro area	51
<b>Austria</b>	<b>47</b>	Slovak Republic	50
Estonia	39	Slovenia	47
Italy	39	Spain	44
Spain	36	Latvia	42
Cyprus	32	Ireland	37
Latvia	31	Hungary	37
Portugal	31	Poland	35
Poland	30	Italy	34
Slovak Republic	23	Lithuania	34
Greece	22	Czech Republic	32
Hungary	22	Portugal	32
Czech Republic	19	Cyprus	31
Lithuania	16	Greece	22

Source: European Commission.

68% of Austrians aged 14 years and over have access to the Internet. Internet market penetration surged in the 1990s: in 1996 only 14% of Austrian had online access, by 2000 this share had climbed to 46%, by 2003 to even 64%; more recently, it has been increasing at a slower pace. In an OeNB payment card survey, some 54% of respondents said in the second quarter of 2006 that they had Internet access at home. Broken down by provinces, Internet connectivity is highest in Vienna (70%), followed by Salzburg, Tyrol and Vorarlberg (between 55% and 60%) as well as Carinthia, Burgenland and Lower

Austria, where 1 out of 2 respondents said that they had access to the Internet at home. The share is somewhat lower in Upper Austria and Styria (45% each).<sup>2</sup>

Table 1 provides comparative data on Internet availability across Europe as a percentage of households (Information Society Benchmarking Report). These data are based on an EU-wide harmonized survey conducted in the second quarter of 2005. The questions asked in this survey differed from those of the OeNB survey mentioned above; therefore the surveys' absolute figures are comparable only to a limited extent. Home Internet

<sup>2</sup> These figures refer to Austrians aged 14 and over and not to households. Apart from the technical infrastructure, the structure of households also seems to influence the results; it is likely, for instance, that in Vienna the number of young single-person households is larger than in Burgenland.

connectivity still varied greatly across Europe in 2005, with slightly less than 20% of households having online access in Lithuania and the Czech Republic, whereas the Netherlands, Denmark and Sweden reported shares of above 70%. At 47%, Internet market penetration in Austria is in the EU-25 average, lower than in Slovenia, but considerably higher than in the Mediterranean countries Spain, Italy, Portugal and Greece. In Germany, 62% of households are hooked up to the Internet. Hence, among the EU Member States, Austria ranks only tenth as regards household Internet connectivity.

Of course Internet accessibility is not equal to actual Internet use. On the basis of Online Monitor data provided by FESSEL-GfK, chart 1 illustrates how the share of the population who at least occasionally uses the Internet has developed over time (left illustration, red line).<sup>3</sup> The green line shows the change in the number of those who use the Internet at least several times a month. The last few quarters include results from the Austrian Internet Monitor, the OeNB survey, the Media-Analyse survey as well as the Safer Internet report and Information Society Benchmarking Report by the European Commission. While the Austrian Internet Monitor (blue line) and the Online Monitor provide quite similar results (differing by only 2 percentage points), they deviate more strongly from the other surveys. The Safer Internet survey by the European Com-

mission refers to Internet use during the previous four weeks, whereas the OeNB and the Media-Analyse surveys investigated general Internet use without referring to a certain period of time. All three surveys showed that in the fourth quarter of 2005, some 50% of Austrians used the Internet, which was more than 10 percentage points below the share indicated by the Austrian Internet Monitor and the Online Monitor surveys. These results show that the rates of Internet use differ substantially. It may be assumed that the results strongly depend on the type of sampling, the formulation of questions and the timeframe the questions refer to.<sup>4</sup>

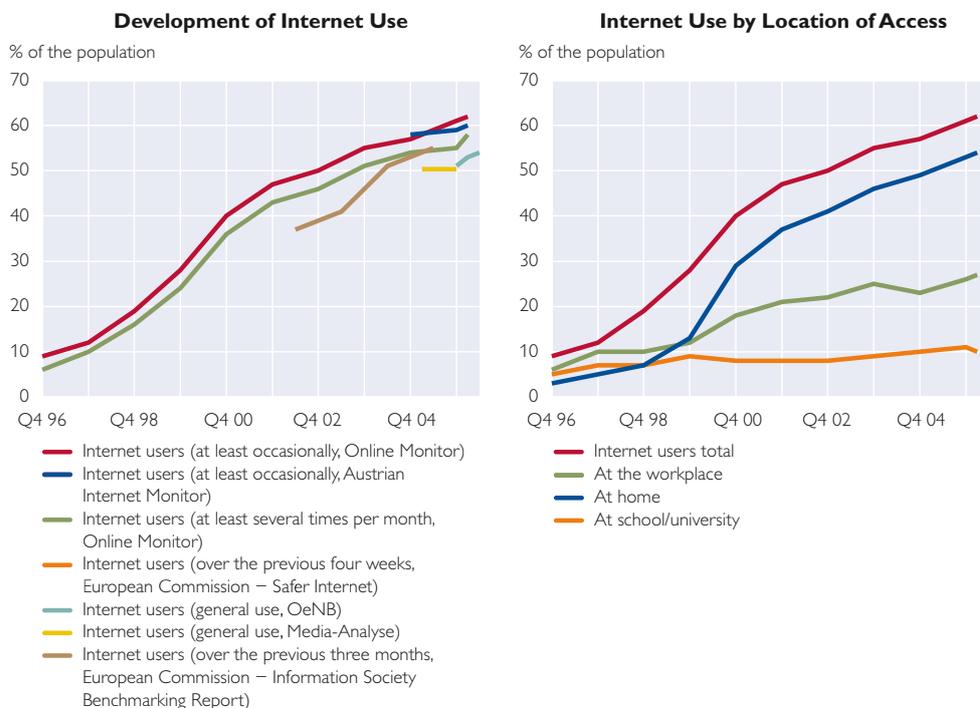
These variations notwithstanding, the data show that first, Internet use has increased sharply over time (six-fold since 1997, as illustrated by chart 1) and continues to do so, and second, the rate of Internet use in Austria most likely ranges between 55% and 62%. According to comparative data by the European Commission taken from the year 2005 (table 1, right column), this rate corresponds to the EU-15 average and is slightly above average among the EU-25.

The right illustration of chart 1 shows where people access the Internet. About 10% browse the Web at school or university, 27% at work and 54% at home. Internet use at home has increased most markedly over time, whereas the share of those accessing the Web at school or university has hardly grown.

<sup>3</sup> Up to 2003, these figures were published in the Austrian Internet Monitor by FESSEL-GfK and Integral.

<sup>4</sup> The European Commission's sample comprises all persons aged 15 and over, whereas the Online Monitor, Austrian Internet Monitor and OeNB surveys cover all Austrians aged 14 and over. This, however, most probably does not account for the different results.

**Internet Use in Austria**



Source: FESSEL-GfK, Integral, Eurostat, Media-Analyse, OeNB (left illustration), FESSEL-GfK (right illustration).  
 Note: The data provided by the European Commission refer to the population aged 15 and over. All other data presented refer to the population aged 14 and over. Media-Analyse data refer to the entire year 2005.

**2.2 Internet Banking and Online Shopping Are Expanding Vigorously**

The various surveys also provide information on the type of activities the Internet is used for, the relevant results depending strongly on the predetermined response categories. However, all results show that almost 90% of Internet users write and/or read e-mails. A large majority searches the Web for specific information on products, services or other issues. 38% (Information Society Benchmarking Report) or 48% (Media-Analyse) of users read newspapers and magazines online. In the context of this study, two areas are of particular interest: online banking and shopping.

Current data for the second quarter of 2006 provided by the OeNB's payment card survey show that more than 26% of the total population and 47% of Internet users already do online banking.<sup>5</sup> The fact that at the end of 1999, only 5% of the population were Internet banking customers clearly highlights the structural changes that have taken place within a few years owing to the growing importance of the Internet. These figures refer to the Austrian average, however. In the age group below 44 years, the share is 37%; in the age group over 60, as low as 6%. Also, online banking services are used by some 50% of Austrians who have completed upper secondary education as well as 50% of self-

<sup>5</sup> The results of this survey are very similar to the results of the Media-Analyse poll.

Table 2

**Development of Online Shopping**

%	Q1 97	Q1 02	Q1 05	Q1 06	Q2 06
Ordered goods and services over the Internet					
At least once					
% of the population aged 14 and over	1	13	25	31	34
% of Internet users	6	35	49	58	61
Several times in the past three months					
% of Internet users	x	6	27	37	43

Source: OeNB (payment card survey), IFES.

Note: The formulation of the question has been changed slightly over time: First quarter of 1997: "Have you ever purchased goods or services over the Internet?"; from the first quarter of 2002 onward: "Have you ordered goods for dispatch (e.g. books, CDs, software) over the Internet in the past three months?"

employed persons or high income earners.

The popularity of online shopping has increased equally dramatically. Table 2 provides a summary of the results of the OeNB survey for selected points in time. In 1997, a mere 1% of the entire population or 6% of Internet users said that they had ordered goods or services over the Internet. By 2002, these shares had increased to 13% and 35%, respectively. Afterwards, online shopping soared: in the second quarter of 2006, 6 out of 10 internet users said they had ordered goods or services online.<sup>6</sup> The rise in the share of users who buy on the Internet was accompanied by an increase in the frequency of their online purchases. In 2002, 35% of Internet users had already bought goods or services online, and only one-sixth of those (or 6% of all Internet users) did so several times in the three months preceding the survey. By

comparison, in the second quarter of 2006, 43% of online shoppers polled said they had made several purchases on the Internet within the past three months.

### 3 How Do Austrians Pay for Goods and Services Ordered over the Internet? – Survey Results

#### 3.1 Some Remarks on the Applied Methodology

In fall 2005 a survey commissioned by the OeNB (conducted by IFES) investigated what payment methods Austrian households use for online purchases. The respondents were asked to record the payments they had made for goods and services ordered over the Internet in the four weeks preceding the survey. This so-called Internet diary included the payment amounts and the means of payment used<sup>7</sup> as well as the sector to which the goods or services purchased

<sup>6</sup> By comparison, the Austrian Internet Monitor data of the third quarter of 2005 indicate that 36% of Austrians have shopped online. According to the OeNB payment card survey, by contrast, this rate was between 25% (first quarter of 2005) and 31% (first quarter of 2006). The figures provided by the Austrian Internet Monitor survey are thus somewhat higher than the survey results shown in table 2

([http://www.integral.co.at/dImages/Presstext\\_AIM-C\\_3.Quartal05.pdf](http://www.integral.co.at/dImages/Presstext_AIM-C_3.Quartal05.pdf)). The results of the European Commission's survey of the second quarter of 2005 are slightly lower: 42% of Internet users or 23% of respondents have shopped on the Internet in the 12 months preceding the date of the survey.

<sup>7</sup> The range of payment means comprised: COD, credit card, bank transfer (payment slip, preauthorized debit, eps), mobile phone (paybox or through mobile phone bills), PayPal, paysafecard and "other."

could be assigned. This questionnaire was part of a more comprehensive survey on household's payment behavior, in which respondents were asked to record in a payment diary<sup>8</sup> all transactions made in the course of one week, including online orders.

The analysis in this study is limited to Internet diary data, leaving out altogether the transactions recorded in the payment diary. The latter, however, provide some indication of the scale of Internet retail trade. It should be noted that payment diary data do not include bank transfers, only households' direct payment transactions. The online payment transactions recorded in one week account for roughly 1.1% of all direct payment transactions or 2.3% of the value of all payments recorded in the payment diary. Obviously, the share of online payment transactions is not very high.

18.3% of 1,204 respondents for whom data are available ordered goods or services over the Internet at least once within one month, conducting a total of 372 transactions and spending EUR 52,337. Thus, the average number of Internet payment transactions per person per month is 0.3 for all respondents and 1.6 for Internet shoppers. The average amount spent per purchase is EUR 141, the median is EUR 43. The highest single payment amount recorded in the survey was EUR 10,312.

Among the group of online shoppers, some 57% bought goods and services once, 26% twice and 17% three times or more.

While the results for all payment transactions covered in the survey as presented in Mooslechner et al. (2006) are at least adequately representative, it is difficult to assess representativeness as regards online payment transactions due to a lack of comparable data. In addition, the number of cases is relatively small, which implies that larger random fluctuations are likely. The data may also be influenced by seasonal effects. For these reasons, the results should be interpreted with caution and compared with other results, where possible. In addition, it would be advisable to interpret the results only indicatively, e.g. to ascertain which means of payment is used more frequently, etc.

These limitations notwithstanding, the data presented here provide essential primary statistical information on the use of payment means in Internet transactions.

### 3.2 Results

Of all payment methods for online purchases (chart 2), bank transfers (by payment slip, preauthorized debit, etc.) are used most often (roughly 52% of transactions). As credit cards account for around 30% of payments, it becomes evident that only two means of payment are used for more than 80% of transactions. Payment by COD is the third most frequently used payment method for Internet purchases, accounting for 13% of transactions. Other means of payment, i.e. those specifically designed for online shopping, play a negligible role.

<sup>8</sup> An analysis of the results of this large-scale survey was published in *Monetary Policy & the Economy Q2/06* (Mooslechner et al., 2006).

Chart 2

### Breakdown of Total Number of Online Payment Transactions by Payment Method

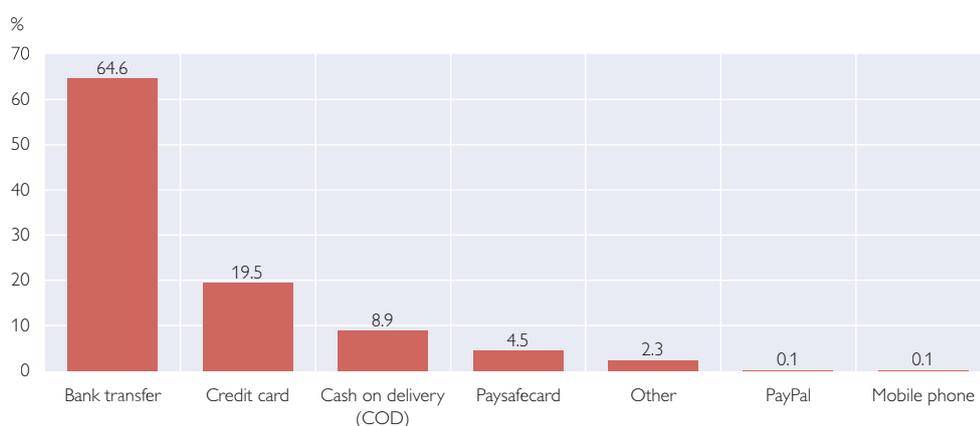


Source: OeNB (Internet diary).

Note: The chart shows the share of payment means in the total number of online payment transactions.

Chart 3

### Breakdown of Total Value of Online Payment Transactions by Payment Method



Source: OeNB (Internet diary).

Note: The chart shows the share of payment means in the total value of online payment transactions.

The shares of payment methods are similarly distributed in a breakdown by payment amounts (chart 3), although, at 64%, bank transfers account for an even higher share here. Credit card payments, by contrast, only make up 20% (10 percentage points less than in the breakdown of the number of transactions). This difference suggests that though credit cards are used relatively frequently, the individual amounts settled by credit card are not very high. The

same may hold true for payment by COD; an analysis of payments by amount confirms this conclusion.

A cross table of the payment methods used and payment amount ranges highlights the direct relation between these two factors (table 3). Small-value payments are made primarily by bank transfer (50% of payments up to EUR 10 and around 58% of payments up to EUR 25). The new payment instruments specifically designed for online purchases enable

Table 3

Breakdown of Payment Methods by Amount of Payment					
% of transactions	Cash on delivery (COD)	Credit card	Bank transfer	Other	Total
Up to EUR 10	4.5	31.8	50.0	13.6	100
EUR 10 to EUR 25	9.5	29.5	57.9	3.2	100
EUR 25 to EUR 100	17.7	30.6	47.6	4.1	100
EUR 100 to EUR 500	12.0	30.7	50.7	6.7	100
From EUR 500	6.3	12.5	62.5	18.8	100
<b>Total</b>	<b>13.0</b>	<b>29.6</b>	<b>51.8</b>	<b>5.6</b>	<b>100</b>

Source: Own calculations on the basis of an OeNB survey (Internet diary).

Note: The table summarizes the share of the respective payment method in Internet transactions in several payment amount ranges (e.g. credit cards were used for 31.8% of payments below EUR 10).

payments of small amounts. This is reflected in the data, which show that these payment methods are used for around 14% of very low amounts of up to EUR 10. Interestingly, consumers use credit cards also for small payments; they amount to approximately 30% of payments of up to EUR 500. In the case of payments of over EUR 500, the share of credit cards drops to one-third (some 13%), quite in contrast to bank transfers, whose share rises to roughly 63% in the category of payments over EUR 500.

Due to the small number of transactions, a more detailed breakdown of payment amounts does not seem useful.

The respondents were also asked to record in the Internet diary the sector to which the respective good or service they ordered over the Internet may be assigned. An evaluation of data by sector makes sense only if a category accounts for a share of at least 10% of transactions. Four sectors meet this criterion: “CDs, DVDs, other audio media” (13.7%), “electrical equipment and computers” (11.6%), “books and stationery” (19.9%) as well as “culture, recreation and sport” (9.9%). All other sectors had shares of less than 10%.

The data reveal sector-related differences as regards the method of payment (chart 4).

In all sectors shown, except for online orders in “culture, recreation, sport,” more than half of all payment transactions are settled by bank transfer. Credit cards rank second, with an average of around one-third of Internet purchases across sectors being paid for by credit card. In the area “culture, recreation, sport,” shoppers use their credit cards to settle even 46% of transactions. All in all, bank transfers and credit card payments taken together account for more than 85% of payment transactions across these four sectors. Payment by COD seems to be fairly popular for purchases of CDs, DVDs and other audio media, making up 16% of all transactions in this sector, but plays a subordinate role in the other sectors (below 10%).

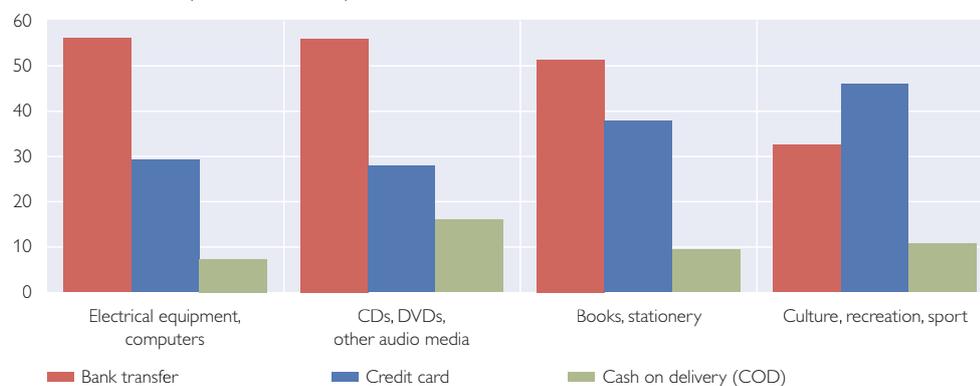
### 3.3 Comparison with Other Results

Owing to the small size of the sample it is crucial to compare these results with those from other sources, like, for instance, the quarterly OeNB payment card survey, in which respondents are asked at irregular intervals about their choice of payment

Chart 4

### Internet Payments

Breakdown of Online Payment Transactions by Sector, %



Source: OeNB.

Table 4

### Use of Various Payment Methods on the Internet

% of respondents

	Bank transfer	Credit card	Cash on delivery (COD)	Mobile phone	Other
2002 (Q1 + Q2)	43	32	23	0.5	8
2005 (Q3 + Q4)	46	38	21	0.3	6
2006 (Q1 + Q2)	42	40	24	0.3	6

Source: OeNB (payment card survey).

Note: Percentages of users who have ordered goods or services over the Internet at least once. In 2006, for instance, 42% of respondents said that they had paid for online orders by bank transfer. Due to multiple answers, the totals are higher than 100%. For 2002, 2005 and 2006, the data are based on 438, 1,131 and 1,304 persons, respectively.

method when buying online. The results are summarized in table 4; it should be borne in mind that in the survey multiple responses are allowed. Also, the values displayed are percentages of respondents and not percentages of transactions, therefore they are not directly comparable with the values mentioned above.<sup>9</sup>

Turning to the results which refer to the same period as the survey presented earlier, i.e. the third and fourth quarters of 2005, it can be observed that the ranking of the most frequently used payment methods exactly matches the Internet diary data: 46% of respondents said they paid by bank transfer, 38% by credit card,

and payments by COD ranked third, way behind the other two methods.

Apparently, bank transfers have remained the most popular means of payment for online purchases since the first data were compiled in 2002. Credit cards seem to be catching up, though: in the first half of 2006, credit card payments and bank transfers accounted for an almost equal share of transactions. No particular changes have been recorded for other forms of payment.

In fall 2005 Krüger et al. (2006) conducted an online survey in Germany on the payment methods used for purchases of immaterial and material goods. The results corre-

<sup>9</sup> To obtain a sufficient number of observations, two quarters are aggregated for each reference period in table 4.

sponded to those of the OeNB survey in so far as bank-based payment (bank transfers, preauthorized debit), credit card and COD were the most widely used payment methods for material goods. As regards immaterial goods, it turned out that credit cards are the most frequently used means of payment. Krüger and Leibold (2006) estimated the shares of different payment methods in transactions for the same survey of 2004 and concluded that 66% of payments (for material goods) were made by bank transfer or preauthorized debit in 2004, 18% by credit card and 10% by COD. Hence, the results of the surveys from 2004 and 2005 suggest that the payment habits of German online shoppers are similar to those of Austrians.

Thus, all in all, the results described in section 3 are consistent with results based on other surveys, at least as regards the ranking of payment methods.

Interestingly, though, Austrians' payment behavior seems to deviate from the European average. According to an international survey by ACNielsen (2005), across Europe, credit cards are used much more frequently than bank transfers.<sup>10</sup> The fact that Austrians do not use credit cards more frequently for online purchases may be attributable to the relatively small role credit cards generally play in Austria (and this may also be the case in Germany). According to a recent OeNB survey, apparently only some 20% of Austrians (aged 14 and over) own a credit card. Mooslechner et al. (2006) show that only about

1 in 80 direct payment transactions is carried out by credit card. Those Austrians who own a credit card, however, use it to settle more than half (55%) of their payments for Internet purchases, which suggests that in countries with a higher diffusion of credit cards, this payment method is also used more frequently in Internet transactions. In addition, the ACNielsen (2005) survey shows that payments by COD, PayPal and debit card are roughly equally common. This is another result differing greatly from the survey which is the focus of this study, as PayPal and debit cards have so far played a subordinate role in Austria.

#### 4 Who Shops Online and Why?

Whether people shop online largely depends on their overall Internet use.

An evaluation of Internet usage rates by sociodemographic criteria shows that – as expected – the shares of people browsing the Web varies widely across the population. The most important determining factors seem to be age, education level and gender; usage rates are lower in the higher age groups, and women use the Internet significantly less frequently than men. Also, Internet usage among people with higher education levels is much more widespread than among the rest of the population. Furthermore, people's place of residence seems to play a key role: the Internet usage rate among residents of communities with less than 2,000 inhabitants is 42%, whereas in cities

<sup>10</sup> ACNielsen (2005) does not provide any details on the compilation of data. Therefore it is not possible to ascertain the comparability of this survey with the survey discussed in this paper. Also, the ACNielsen survey does not present separate results for Austria.

Table 5

**Internet Orders by Sociodemographic Characteristics**

	Do you use the Internet?	Have you ordered goods or services over the Internet in the past three months?
	yes	yes
	% of respondents	% of Internet users
<b>Age</b>		
14 to 29 years	81	51
30 to 44 years	72	50
45 to 59 years	53	40
Over 60 years	15	29
<b>Education</b>		
Compulsory education	32	34
Secondary education	43	42
Higher secondary education	55	35
University	85	58
<b>Gender</b>		
Women	49	42
Men	61	50
<b>Community size</b>		
Up to 2,000 residents	42	39
Up to 5,000 residents	50	40
Up to 50,000 residents	48	43
Up to 300,000 residents	68	49
Vienna	71	57

Source: OeNB (payment card survey), first and second quarters of 2006.

Note: % of the respective group.

with up to 300,000 inhabitants, more than two-thirds of residents are Internet users (table 5, left column).

Also the rates of those Internet users who shop online differ across sociodemographic groups (table 5, right column), albeit not as markedly as Internet usage rates. Again, age plays a crucial role: the older the Internet users, the lower the share of online shoppers, which comes to only 29% in the age group 60 and over (more than 20 percentage points below the rate in the age group under 30). In the youngest age group – those under 30, who record the highest Internet usage share (more than 80%) – 51% ordered goods or services online in the three months preceding the survey. Similarly, the level of education has an impact: the higher the education level, the higher the share of those Internet users who

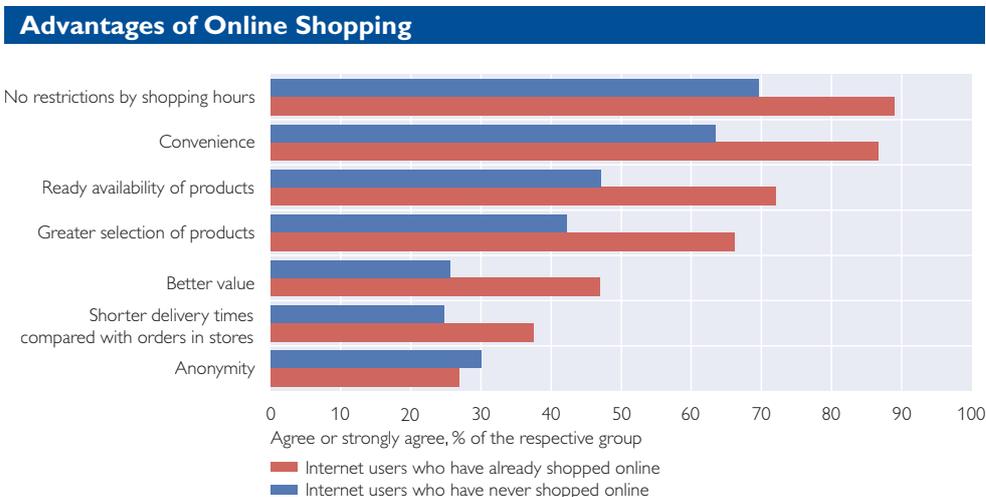
shop online (e.g. 58% among respondents with an university degree). Women Internet users shop less frequently online than men.

The breakdown by the size of the place of residence reveals an interesting fact: People in communities of up to 50,000 residents order fewer goods and services over the Internet than residents of large cities, even though the larger range of products available online should be particularly attractive to residents of smaller communities.

All considered, the survey demonstrates that people who use the Internet are also very likely to shop online.

What are the reasons why people buy or do not buy goods and services over the Internet? Chart 5 lists the advantages respondents see in shopping online. A differentiation is made

Chart 5



Source: OeNB.

Note: Figures of the second quarter of 2006.

between respondents who have already shopped online and those who use the Internet but have never bought goods or services over the Web.

In the group of online shoppers, the majority said that not being restricted by shopping hours, convenience and time saving were their main motivations for shopping online. In addition, a broader selection of goods and services and the opportunity to buy products that are hard to find anywhere else are considered to be advantages.

There is no agreement among online shoppers as to whether buying online saves money, which slightly less than 50% believe; the rest feels that this is not the case or is undecided. Short delivery times and the anonymity of online transactions were the arguments considered least important.

What do those who use the Internet but have never shopped online think of these issues? Interestingly, the advantages identified by this group and their ranking broadly correspond

to the assessment made by online shoppers; the percentages of those who believe in the various advantages are, however, substantially smaller among those who do not shop online.<sup>11</sup> The only factor to which these potential online shoppers seem to attach more importance is the anonymity of Internet shopping. At the same time, these respondents expressed bigger doubts than those who have already shopped online as to whether buying on the Internet saves money.

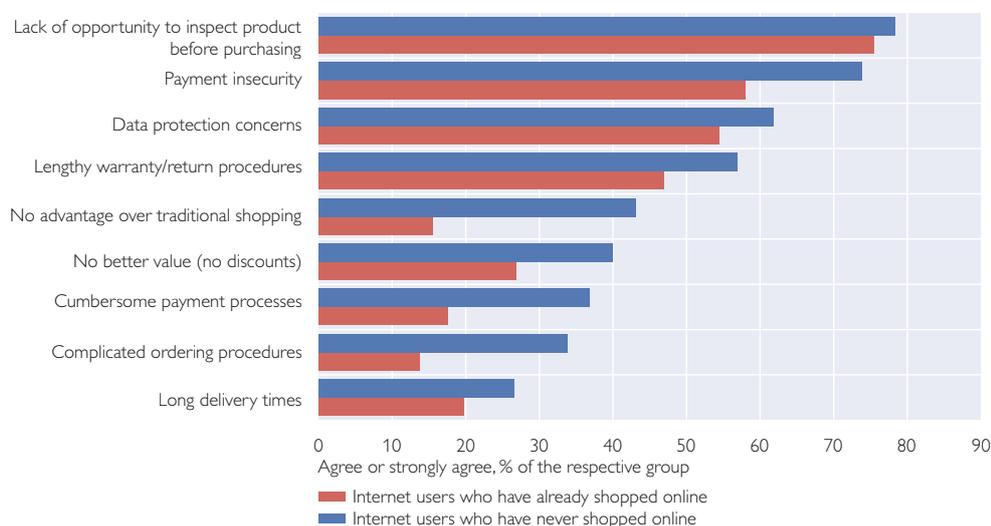
What are the arguments against buying goods and services over the Internet? Those who use the Internet but have not shopped online yet are particularly critical of the lacking opportunity to see or try a product before purchasing and potential problems when claiming warranty or returning the product. In addition, they are concerned about payment security and consumer privacy issues.

These objections are more or less shared by the group of online shoppers. By contrast, difficulties in placing orders, delivery or payment are

<sup>11</sup> As expected, the share of respondents indifferent to this issue is higher in this group.

Chart 6

### Disadvantages of Online Shopping



Source: OeNB.

Note: Figures of the second quarter of 2006 in % of the respective group, including "no answer" responses.

apparently not considered to be big issues.

These results show that, interestingly, the arguments against Internet shopping have not changed markedly since 2000. In a survey in late 1999 and early 2000, Latzer and Schmitz (2000) found that uncertainty about consumer and data protection, the limited opportunity to inspect products and lacking payment security were the main reasons that may keep people from shopping online. The results of 2006 exactly match the results of 2000 as regards the argument "payment insecurity" and are only slightly lower for "consumer and data protection." This suggests that there is still substantial room for improvement in these two areas. The absence of the opportunity to inspect products in advance is of course a structural disadvantage of the Internet that

cannot be remedied. The importance attached to this motive by respondents has decreased only slightly since 2000.<sup>12</sup>

## 5 Summary and Conclusions

Both Internet accessibility and Internet use increased markedly in Austria in the 1990s, which resulted, among other things, in a substantial rise in online shopping. One side-effect of this development has been the emergence of new forms of payment. Since this aspect is of crucial importance to a central bank, this study focuses on the structure of payment methods used in Internet transactions. Also, it looks into the arguments in favor of and against ordering goods or services online.

The analyses are primarily based on two surveys: the first was commissioned by the OeNB and carried

<sup>12</sup> It is not possible to carry out an exact comparison of the arguments against online shopping as questions and response categories are defined differently. The change over time mentioned here is based on the authors' own assessment.

out in fall 2005. It explored Austrian households' payment behavior in Internet transactions. Respondents were asked to record the type of payments they made for goods and services ordered over the Internet over the four weeks preceding the start of the survey (Internet diary).<sup>13</sup> These records included the payment amount, the payment method and the sector to which the goods and services ordered could be assigned. The other survey used is the quarterly payment card survey, which makes it possible to verify the records of the Internet diary and put the results of both surveys in relation to each other.

What does the Internet diary reveal? At approximately 52%, bank transfers (payment slip, preauthorized debit) account for the largest share in payment transactions by far. Credit cards are used for 30% of payments. In other words, only two – rather traditional – means of payment, are used for more than 80% of all transactions on the Internet. Payment by COD is the third most frequently used payment method for Internet purchases, accounting for 13% of transactions. Other means of payment, that is instruments that have been developed specifically for Internet use, are not (yet) very popular in Austria. The analysis of payment value yields a similar picture. The share of payment amounts that are settled by bank transfers in the overall payment value spent for online

purchases is more than 64%; the share of credit cards in this analysis is only 20%, i.e. 10 percentage points lower than in the analysis by number of transactions. This difference suggests that though credit cards are used also for small payments frequently, the individual amounts settled by credit card are not very high. Among payments below EUR 500 they have a share of 30%, for higher amounts this share declines to 13%.

As expected, the share of Internet users varies greatly across sociodemographic groups. Age, education level and gender seem to have a substantial impact. The variations in percentages are significantly larger with regard to Internet use than with regard to online shopping by Internet users. The inhabitants of large cities use the Internet more extensively, also for ordering goods and services online, than people who live in smaller communities. As a rule, people also tend to shop online when they are general Internet users.

When asked about the advantages of Internet shopping, most respondents (both online shoppers and non-shoppers) said that not being restricted by shopping hours and the availability of a larger selection of products was most important to them. Arguments cited against online shopping include the fact that products cannot be inspected in advance, payment insecurity and data protection concerns.

<sup>13</sup> This questionnaire was part of a larger survey on households' payment behavior, in the course of which all transactions of the involved households within a week were recorded (Mooslechner et al., 2006).

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<http://www.media-analyse.at/frmdata2005.html>

**Annex**

Table 6

**Surveys Used in the Study**

Retrieved on August 23, 2006

Survey and source	Data refer to
European Commission – Information Society Benchmarking Report <a href="http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/051222%20Final%20Benchmarking%20Report.pdf">http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/051222%20Final%20Benchmarking%20Report.pdf</a>	2 <sup>nd</sup> quarter of 2005
European Commission – Safer Internet (SI) <a href="http://europa.eu.int/information_society/activities/sip/docs/eurobarometer/eurobarometer_2005_25_ms.pdf">http://europa.eu.int/information_society/activities/sip/docs/eurobarometer/eurobarometer_2005_25_ms.pdf</a>	4 <sup>th</sup> quarter of 2005
FESSEL-GfK – Online Monitor (OM) <a href="http://www.gfk.at/de/download/PRESS/GfK_Online_Monitor_2_Qu_06.pdf">http://www.gfk.at/de/download/PRESS/GfK_Online_Monitor_2_Qu_06.pdf</a>	up to the 2 <sup>nd</sup> quarter of 2006
Integral – Austrian Internet Monitor (AIM) <a href="http://www.integral.co.at/dlimages/AIM-C_1.Quartal_2006.pdf">http://www.integral.co.at/dlimages/AIM-C_1.Quartal_2006.pdf</a>	up to the 1 <sup>st</sup> quarter of 2006
Media-Analyse (MA) <a href="http://www.media-analyse.at/frmdata2005.html">http://www.media-analyse.at/frmdata2005.html</a>	average for 2005
OeNB payment card survey (conducted by IFES)	up to the 2 <sup>nd</sup> quarter of 2006

# NOTES

## Abbreviations

ARTIS	Austrian Real Time Interbank Settlement (the Austrian RTGS system)	IHS	Institut für Höhere Studien und Wissenschaftliche Forschung – Institute for Advanced Studies, Vienna
A-SIT	Secure Information Technology Center – Austria	IIF	Institute of International Finance
ASVG	Allgemeines Sozialversicherungsgesetz – General Social Security Act	IIP	international investment position
A-Trust	A-Trust Gesellschaft für Sicherheitssysteme im elektronischen Datenverkehr GmbH	IMF	International Monetary Fund
ATX	Austrian Traded Index	ISO	International Organization for Standardization
BCBS	Basel Committee on Banking Supervision (BIS)	IWI	Industriewissenschaftliches Institut – Austrian Institute for Industrial Research
BIC	Bank Identifier Code	JVI	Joint Vienna Institute
BIS	Bank for International Settlements	LIBOR	London Interbank Offered Rate
BOP	balance of payments	M3	broad monetary aggregate M3
BSC	Banking Supervision Committee (ESCB)	MFI	monetary financial institution
CACs	collective action clauses	MRO	main refinancing operation
CEBS	Committee of European Banking Supervisors (EU)	MoU	memorandum of understanding
CEE	Central and Eastern Europe	NACE	Statistical Classification of Economic Activities in the European Community
CEECs	Central and Eastern European countries	NCB	national central bank
CESR	Committee of European Securities Regulators	OeBS	Oesterreichische Banknoten- und Sicherheitsdruck GmbH – Austrian Banknote and Security Printing Works
CIS	Commonwealth of Independent States	OECD	Organisation for Economic Co-operation and Development
CPI	consumer price index	OeKB	Oesterreichische Kontrollbank (Austria's main financial and information service provider for the export industry and the capital market)
EBA	Euro Banking Association	OeNB	Oesterreichische Nationalbank (Austria's central bank)
EBRD	European Bank for Reconstruction and Development	OPEC	Organization of the Petroleum Exporting Countries
EC	European Community	ÖBFA	Austrian Federal Financing Agency
ECB	European Central Bank	ÖNACE	Austrian Statistical Classification of Economic Activities
Ecofin	Council of Economic and Finance Ministers (EU)	POS	point of sale
EEA	European Economic Area	PRGF	Poverty Reduction and Growth Facility (IMF)
EFC	Economic and Financial Committee (EU)	RTGS	Real-Time Gross Settlement
EIB	European Investment Bank	SDR	Special Drawing Right (IMF)
EMS	European Monetary System	SDRM	Sovereign Debt Restructuring Mechanism (IMF)
EMU	Economic and Monetary Union	SEPA	Single Euro Payments Area
EONIA	Euro OverNight Index Average	SPF	Survey of Professional Forecasters
ERM II	Exchange Rate Mechanism II (EU)	STEP2	Straight-Through Euro Processing system offered by the Euro Banking Association
ERP	European Recovery Program	STUZZA	Studiengesellschaft für Zusammenarbeit im Zahlungsverkehr G.m.b.H. – Austrian Research Association for Payment Cooperation
ESA	European System of Accounts	S.W.I.F.T.	Society for Worldwide Interbank Financial Telecommunication
ESAF	Enhanced Structural Adjustment Facility (IMF)	TARGET	Trans-European Automated Real-time Gross settlement Express Transfer
ESCB	European System of Central Banks	Treaty	refers to the Treaty establishing the European Community
ESRI	Economic and Social Research Institute	UNCTAD	United Nations Conference on Trade and Development
EU	European Union	UNO	United Nations Organization
EURIBOR	Euro Interbank Offered Rate	VaR	Value at Risk
Eurostat	Statistical Office of the European Communities	WBI	Wiener Börse Index
FATF	Financial Action Task Force on Money Laundering	WEF	World Economic Forum
Fed	Federal Reserve System	WIFO	Österreichisches Institut für Wirtschaftsforschung – Austrian Institute of Economic Research
FMA	Financial Market Authority (for Austria)	WIIW	Wiener Institut für internationale Wirtschaftsvergleiche – The Vienna Institute for International Economic Studies
FOMC	Federal Open Market Committee (U.S.A.)	WKO	Wirtschaftskammer Österreich – Austrian Federal Economic Chamber
FSAP	Financial Sector Assessment Program (IMF)	WTO	World Trade Organization
FWF	Fonds zur Förderung der wirtschaftlichen Forschung – Austrian Science Fund		
GAB	General Arrangements to Borrow		
GATS	General Agreement on Trade in Services		
GDP	gross domestic product		
GNP	gross national product		
GSA	GELDSERVICE AUSTRIA Logistik für Wertgestionierung und Transportkoordination GmbH (Austrian cash services company)		
HICP	Harmonized Index of Consumer Prices		
HIPC	Heavily Indebted Poor Countries		
IBAN	International Bank Account Number		
IBRD	International Bank for Reconstruction and Development		
ICT	information and communication technology		
IDB	Inter-American Development Bank		
IFES	Institut für empirische Sozialforschung GesmbH (Institute for Empirical Social Research, Vienna)		
ifo	ifo Institute for Economic Research, Munich		

## Legend

- x = No data can be indicated for technical reasons
- .. = Data not available at the reporting date
- 0 = The numerical value is zero or smaller than half of the unit indicated

Discrepancies may arise from rounding.

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