

MONETARY POLICY & THE ECONOMY

Quarterly Review of Economic Policy

Economic Crisis and Policymakers' Responses – Selected Issues

The OeNB's quarterly publication *Monetary Policy & the Economy* provides analyses of cyclical developments, macroeconomic forecasts, studies on central banking and economic policy topics as well as research findings from macroeconomic workshops and conferences organized by the OeNB.

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Opinions expressed by the authors of studies do not necessarily reflect the official viewpoint of the Oesterreichische Nationalbank or of the Eurosystem.

Editorial

Driven by international developments, the current economic crisis has suddenly and strongly deteriorated the outlook also for the Austrian economy. Given the sharp drop in world trade in 2009, also Austrian exporters are going to suffer massive setbacks. In a small, open and strongly export-oriented economy like Austria, a slowdown in external demand immediately passes through to investment activity – judging from current developments, the decline in gross fixed capital formation anticipated for 2009 may be substantial.

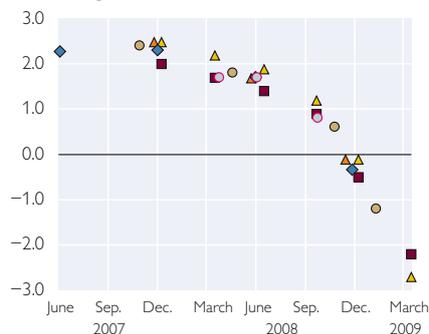
While up to mid-2007 the consensus view was that Austrian real GDP would grow by between 2% and 2½% in 2009, growth forecasts were subsequently revised downward over the next 12 months, to a level of 1½%. Yet the latest downward revisions – following the intensification of the financial turmoil after the collapse of Lehman Brothers in September 2008 – reached new dimensions by historic standards. At the end of March 2009, the OECD already expected world trade to shrink by more than 13% in 2009, and real

Peter Mooslechner,
Ernest Gnan¹

Development of Forecasts for Austria for 2009

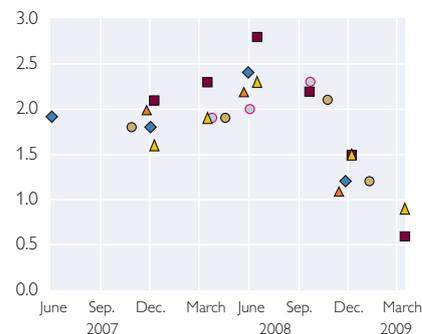
Real GDP

Annual change in %



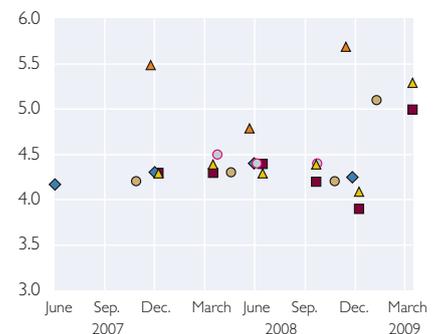
Inflation Rate

%



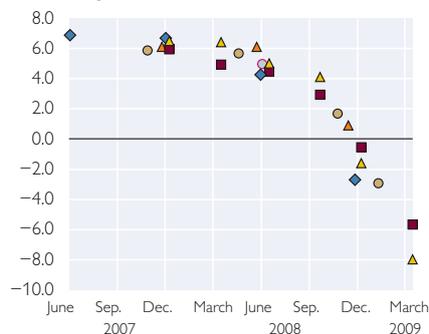
Unemployment Rate¹

%



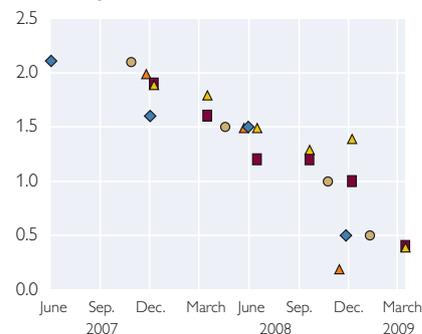
Real Exports

Annual change in %



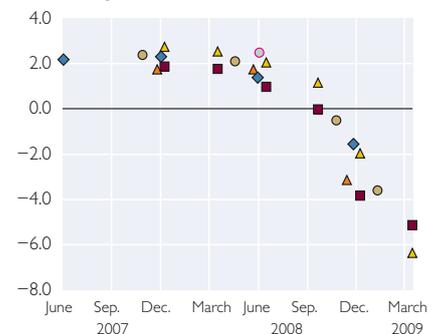
Real Private Consumption

Annual change in %



Real Gross Fixed Capital Formation²

Annual change in %



◆ OeNB ■ WIFO ▲ IHS ▲ OECD ● European Commission ○ IMF

Source: OeNB, WIFO, IHS, OECD, European Commission, IMF.

¹ Eurostat definition; OECD figures as defined by the OECD.

² IHS: Gross capital formation.

¹ The authors thank Beate Resch for compiling the charts.

economic output in the euro area to contract by approximately 4%. Regarding Austria, the two major national forecasters thus revised their latest economic growth expectations downward to -2.2% (Austrian Institute of Economic Research – WIFO) and -2.7% (Institute for Advanced Studies – IHS).

These developments provide unprecedented challenges for economic and monetary policymakers. The exceptional character of the developments also calls for exceptional responses, flexible action and creative solutions beyond the “standard repertoire” of economic policymakers. This holds true for measures aimed at stabilizing the financial system as well as for measures in the realm of monetary and fiscal policies. Against the backdrop of a rapidly changing economic environment, the usual time lags of one to three months with which macroeconomic data typically become available are being felt particularly strongly by policymakers. Readily available leading indicators – which provide meaningful information even under the exceptional crisis conditions – are particularly important for accurate assessments of growth dynamics. This special issue discusses the problems touched upon above from a range of perspectives in an attempt to raise understanding of the challenges that are facing economic policymakers at present.

The first three contributions analyze the latest developments of the Austrian and the global economy. *Breitenfellner, Schneider and Schreiner* provide a current overview of the international and European economy and present the latest short-term projection for the Austrian economy for the first half of 2009. They expect the first half of the year to be characterized by a deep, global recession. At the same time, a number of confidence indica-

tors have bottomed out at very low levels according to the latest observations, which nourishes hopes that the economy may likewise bottom out in the first half of 2009 and might even start to recover slowly in the second half – that is, provided the international environment will not deteriorate any further and provided we will not see any new shocks.

Based on the latest available export data of December 2008, *Ragacs and Vondra* explore the extent to which the global growth setback has already passed through to Austrian exports to Central, Eastern and Southeastern Europe (CESEE). In 2008, the CESEE countries that joined the EU in 2004 and 2007 accounted for 17.6% of all Austrian goods exports, and “Eastern Europe” at large (30 countries in CESEE and Central Asia) for as much as 24.6%. While the global crisis has cascaded through also to this region, the growth outlook continues to be brighter for many CESEE countries than for the euro area. Simulations with the OeNB’s macro model indicate that a growth setback in the region as anticipated by the most recent forecasts would imply a deterioration by 0.7 percentage points for Austria compared with the OeNB’s projections of December 2008.

Fenz and Schneider, finally, present a leading indicator for the Austrian economy that was newly developed by the OeNB and is based on freight performance. The underlying data are compiled by Austria’s highway operator (ASFINAG) and become available with a lag of only five working days after the end of each month – i.e. a full two months earlier than other data that would allow an assessment of developments in goods exports and industrial production. The new indicator shows that Austria’s exports continued to con-

tract sharply in February and March 2009, which implies that real exports will drop by another sizeable chunk in the first quarter of 2009.

Two additional contributions deal with the two major branches of macro-economic policy, namely monetary and fiscal policy: First, *Jobst* highlights the sweeping adjustments to the framework for implementing monetary policy with which the Eurosystem – but also many other central banks worldwide – have responded to challenges created by the financial and economic crisis. The monetary policy framework has proved highly effective in times of crisis. The Governing Council of the ECB was able to meet the new challenges in a remarkably flexible way, essentially by adjusting the allotment terms for the Eurosystem's main refinancing operations (by switching to fixed rate tenders with full allotment), by introducing supplementary longer-term refinancing operations, and by expanding the list of eligible collateral. In combination with a marked reduction in Eurosystem interest rates, these measures contributed to stabilizing the banking and financial system, and they helped sustain the flow of credit in the economy.

Second, *Köhler-Töglhofer and Reiss* discuss fiscal policy options in response to the economic contraction, i.e. essentially economic stimulus and growth packages, and assess the extent to which such measures may be reasonably expected to smooth the impact of the crisis on the real economy. As expected, decision-making and implementation lags as well as small fiscal multipliers limit the ability of discretionary fiscal policy to smooth economic developments in practice. Under the current circumstances, however, those constraints may be less relevant, given the large dimension and possible length as

well as the globally synchronized nature of both the current recession and the related expansionary countercyclical policy measures. According to simulations with the OeNB's macro model, the stabilization measures adopted by the Austrian government so far – inflation package, two economic stimulus packages, personal income tax reform brought forward – are expected to increase GDP growth by $\frac{3}{4}\%$ in 2009 and by $\frac{1}{2}\%$ in 2010 (i.e. the level of real GDP is raised by $\frac{1}{4}\%$ in total) and to facilitate the creation of about 12,000 jobs each year (roughly 25,000 in total). At the same time, the authors advise the Austrian government to make a commitment to rapidly consolidate the budget once the crisis is over.

The two studies that round out this special issue, while not specifically dealing with crisis-related topics, focus on issues that are upon closer inspection also relevant in the current economic situation. On the one hand, *Fritzer* looks into the diverging inflation experience of different population groups and finds that households with lower spending levels have suffered slightly higher (roughly 0.1 percentage points) inflation of their consumer basket than the average household during the period from 2000 to October 2008. The diverging inflation experience across household groups results from different consumption patterns, different expenditure budgets and relative price changes, rather than from the size of the inflation rate itself.

On the other hand, *Prammer* looks into the effects of public sector outsourcing. While typically motivated by the prospect of efficiency gains and enhanced public finances, public sector outsourcing may also have distributional implications and implications for the state's conjunctural stabilization function. With two case studies for

Austria, the author provides evidence that outsourcing may indeed influence the perception of fiscal sustainability, while in reality such an effect is not be expected.

The editors and contributors of this issue hope to add to the understanding of the current economic situation and that the evidence compiled here may support decision-makers in this time of exceptional challenges.

In Focus:

Economic Crisis and Policymakers'

Responses – Selected Issues

Global Recession Deepens

Financial Crisis Unleashes Global Economic Downturn

Andreas Breitenfellner,
Martin Schneider,
Josef Schreiner¹

The financial crisis, which has intensified since fall 2008, has led to deteriorated funding conditions, a decline in the confidence of economic players and a dramatic slump in world trade, thereby unleashing a global recession. Governments worldwide launched measures to stabilize the financial systems and stimulate economic activity, which helped prevent a further escalation of the financial crisis. Since economic stimulus measures require some time to take full effect, a deep recession must be anticipated for 2009.

In the U.S.A., an end to the recession is not in sight, despite comprehensive measures taken to support the economy. The Federal Reserve System (Fed) cut key interest rates to their lowest level historically and is now pursuing unconventional policies in a bid to revive lending.

In the euro area, recession also deepened in the fourth quarter of 2008, especially due to weakening export demand and investment; unemployment rose substantially. According to leading indicators and forecasts, the economic situation will continue to deteriorate in the first half of 2009. A glimmer of hope may be seen in the fact that a number of confidence indicators seem to have hit bottom at a low level in recent weeks, implying that the downturn may level out from the second half of 2009 and then come to an end. Driven particularly by falling energy, commodity and food prices, HICP inflation decelerated markedly in recent months and in both 2009 and 2010 is expected to remain significantly below the level of price stability as defined by the Eurosystem.

The past few months have also shown that the previously fast-growing emerging economies cannot escape the crisis. In particular, a number of Central, Eastern and Southeastern European countries have been hit severely. Other countries in the region, by contrast, are facing a worse, albeit still more upbeat outlook than the euro area average.

The global economic crisis also hit Austria in fall 2008, resulting in a steep slump in goods exports and industrial production in October 2008. The OeNB economic indicator currently predicts real GDP to contract by 1.5% in the first quarter of 2009 (seasonally and working-day adjusted, on a quarterly basis). The Austrian economy is expected to continue to shrink by 0.7% in the second quarter of 2009.

JEL classification: E2, E3, O1

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

1 Global Economy in Deep Recession

1.1 U.S.A.: Federal Reserve Implements Unconventional Policies

The most recently released data on economic developments in the U.S.A. do not indicate that the U.S. recession may soon come to an end. In the fourth quarter of 2008, real GDP contracted far more sharply – by 6.3% – than anticipated. In particular, past outlooks had not expected such a strong decline in net imports in the final quarter of 2008. As a consequence, the current

account deficit shrank to 3.7% of GDP, its lowest level in seven years (current account deficit at end-2005: 6.6% of GDP). At the same time, demand for capital goods and software declined notably, while government consumption remained the mainstay of economic activity.

In February 2009, industrial production was 11% below the comparative level a year ago. Auto production, which had slumped dramatically in previous months, recovered somewhat, but still trailed the level of February 2008 by 38%. GDP is generally

Cutoff date for data:
March 31, 2009

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expected to continue to shrink in the first quarter of 2009.

The labor market situation continued to deteriorate too. In February 2009, the rate of unemployment came to 8.1%; a total of 4.3 million jobs have been cut since the beginning of 2008. The layoffs resulted in a clear increase in the U.S. economy's productivity in the fourth quarter of 2008. Also, the high number of redundancies could indicate that businesses expect the recession to continue for some time. Private consumption is not likely to stabilize until the labor market situation improves and the U.S. real estate market bottoms out. The number of new home construction projects and permits, for instance, is continuing to slide, while the number of foreclosure sales contributes to the fall in real estate prices, which has even accelerated recently.

The leading indicators of economic growth do not lend much hope of an upcoming trend reversal. After a free fall in February 2009, the *Conference Board Consumer Confidence Index* stabilized somewhat in March. Although the present situation was perceived to be

even more severe than in the previous month, the forward-looking expectations brightened up. While in February the Purchasing Managers' Index (PMI) for the services sector, which accounts for 80% of U.S. GDP, slumped again after improving for two consecutive months, purchasing managers in manufacturing provided more upbeat assessments for the second time in a row. Both indicators were however still considerably below the 50% level, signaling the continued contraction of the economy. At the same time, however, there was an unforeseen increase in orders for consumer durables in February.

All in all, the U.S. economy is not expected to start recovering until the second half of 2009 at the earliest. The Fed anticipates the economy will shrink by between 0.5% and 1.25% in 2009 and expand by between 2.5% and 3.3% in 2010, before reaching boom levels from 2011 on. This outlook is subject to a high degree of uncertainty, however. The Fed considers this scenario to be realistic only if the measures adopted by the U.S. government, Congress and itself achieve their desired effects.

Chart 1

U.S.A.: Purchasing Managers' Index and GDP Growth



Source: Institute for Supply Management (ISM), Bureau of Economic Analysis (BEA).

Compared with the forecasts issued by the IMF, the European Commission and the World Bank at the turn of 2009, the OECD's outlook is more pessimistic, predicting a 4.0% contraction in GDP for 2009 and solely stagnation for 2010.

The new USD 787 billion stimulus package of the U.S. government has meanwhile been adopted by both houses of Congress. Two-thirds of the funds are to be invested in infrastructure, while one-third will be spent on tax cuts. The OECD expects the budget deficit will therefore widen to 10.2% in 2009 and continue to rise in 2010. U.S. President Barack Obama announced his intention to more than halve the budget shortfall by the end of his term of office, which would require both tax hikes and cuts in spending.

At its meeting on December 16, 2008, the *Federal Open Market Committee (FOMC)* for the first time established a target range for the *federal funds rate*, reducing it to a range of 0% to 0.25%, its lowest level in U.S. history. At the same time, the Fed announced that it would keep interest rates at this low level for some time. Apart from that, the U.S. central bank has pursued unconventional policies since autumn 2008 in a bid to ease the financial crisis, aiming to supply banks with liquidity and support specific market segments, e.g. by purchasing securitized real estate loans.

At its meeting in mid-March 2009, the FOMC decided to expand its unconventional policy measures, announcing the purchase of up to USD 300 billion long-term Treasury securities. The Fed thus followed the example of the Bank of England, which had successfully introduced a similar measure a few days earlier. As a consequence, the ten-year government bond yield in the United Kingdom dropped below the

yield on German Bunds for the first time in seven years. The Fed intends to bring down long-term interest rate levels, thereby helping improve the private lending situation since interest rates on loans are closely linked with government bond yields. The last time the Fed took similar action was in the 1960s.

1.2 Japan: Anti-Deflationary Fiscal and Monetary Measures

Japan has been particularly severely hit by the global economic and financial crisis. The economy has been in recession since the second quarter of 2008, and the situation further deteriorated in the fourth quarter of 2008. Real GDP shrank by 3.2%, which marked the steepest slump since the oil shock 35 years ago. This deterioration was above all due to tumbling exports (–13% in the fourth quarter of 2008), which suffered from the weakness of the global economy and the appreciation of the Japanese yen in the second half of 2008. The Japanese economy's strong reliance on exports is now putting a drag on the economy; formerly highly successful export products like cars and consumer electronic products are hardly in demand, and inventories are rising rapidly. However, domestic demand also declined in the fourth quarter of 2008.

All the latest economic data indicate that the recession will continue in the next few quarters. In February 2009, exports plummeted by 49% year on year, and, in January 2009, Japan recorded a current account deficit for the first time in 13 years. Business sentiment has hit the worst low since the deep banking crisis of 2002, while industrial production was down 30% (year on year) in January 2009. On the upside, unemployment was down slightly in January 2009. In its interim outlook

of end-March 2009, the OECD expects real GDP to shrink by 6.6% on the back of both the slump in exports and sluggish domestic demand and predicts a slight contraction by 0.5% in 2010.

In late 2008 and early 2009, nascent signs of deflation resurfaced: In February 2009, both CPI and core inflation were -0.1% , while consumer prices are projected to drop by 1.2% and 1.3% in 2009 and 2010 respectively, according to the OECD. The last time Japan experienced deflation was from 1999 to 2003, and to date the country has still not fully recovered from the repercussions of this period. It must be noted, nonetheless, that average annual deflation at the time did not exceed 0.9%.

However, the Japanese government and the Bank of Japan (BoJ) have both learned their lesson from this fairly recent period of deflation and recession and this time are taking decisive and far-reaching action to tackle the crisis. For the new financial year (starting from April 2009), the Japanese government has approved a record budget (6.6% higher than the previous fiscal year). For 2009, the OECD predicts a government deficit of 6.8%. As a consequence, the debt ratio – at 170% of GDP already the highest among major industrialized nations in 2007 – is set to deteriorate further.

At the same time, the BoJ eased its monetary stance, cutting the key interest rate to 0.1% in mid-December 2008. To strengthen financial institutions' capital base so as to improve their scope for lending, the BoJ is currently buying highly rated short-term debt securities as well as highly rated corporate bonds from commercial banks. In addition, since early March 2009, banks have had the opportunity to sell equity holdings to the BoJ but have not made much use of this option so far. The central bank is

therefore considering whether to also accept bonds and loans with poorer ratings, which are difficult to sell to other buyers. Furthermore, the government has announced that it will use part of the country's foreign currency reserves – Japan holds the second largest amount of foreign currency reserves worldwide after China – to support liquidity-constrained businesses.

1.3 China: Extensive Stimulus Measures

China has also been hit by the global economic crisis. With GDP of only 6.8% in the fourth quarter of 2008, China may in fact have entered what can be interpreted as *growth recession*. Exports have suffered particularly severely from the global economic crisis, and investment in the real estate sector (accounting for 10% of GDP) also plummeted. The inflation concerns of the first half of 2008 have now been replaced by deflation expectations. February 2009 witnessed a drop in consumer prices (by 1.6% year on year) for the first time since the Asian crisis of 2002.

The government aims to keep growth consistently above 8%; otherwise, the economy would not provide enough jobs for school graduates and rural migrant workers, which, in turn, could spark social unrest. The Chinese central bank has therefore cut its key interest rate five times by a total of 216 basis points since autumn 2008. The government's stimulus package amounts to some 15% of GDP (for 2009 and 2010) and would be expanded further if necessary. Support measures on such a large scale are feasible thanks to the large amount of currency reserves and the balanced budgets achieved in the past few years. Export-oriented businesses are set to benefit from tax rebates. At the same time, the appreci-

ation of the country's currency was stopped to fuel exports. Banks, the majority of which are government-controlled, have been requested to provide loans on generous terms.

The Chinese Purchasing Managers' Index seems to reflect the first effects of the government's comprehensive support measures, improving three times in a row to a level only slightly below the point at which economic recovery is signaled. China may recuperate from the global crisis more quickly than other countries. Over the medium term, however, the Chinese economy will depend on the export demand of major industrialized economies. Exports account for 20% of China's GDP and about half go to the EU, the U.S.A. and Japan. In February 2009, exports decreased by 27% (year on year).

1.4 Global Economy Set to Contract in 2009

After spilling over to industrialized countries and emerging economies, the global economic crisis is now also adversely affecting developing countries. Both the IMF and the World Bank assume that the global economy will shrink in 2009 for the first time since the end of World War II. The World Bank forecasts global growth of at least 5 percentage points below potential growth; by mid-2009, industrial production may be 15% below the previous year's level. Thanks to expansive monetary and economic policies, global growth of 2.5% may be achieved in 2010, which, however, would still be considered a global recession as defined by the IMF (below +3%).

World trade has shrunk since the fourth quarter of 2008 and, in 2009, could experience the worst setback in 80 years. According to the OECD, global trade will decrease by 13.2% on

the back of a slump in export demand and banks' increasing reluctance to provide trade credit.

2 Recession in the Euro Area

2.1 Economic Output Down Sharply

The recession that hit the euro area in the second quarter of 2008 deepened considerably in the fourth quarter as economic output contracted by 1.5% on the previous quarter. A decline of this magnitude has never been registered since the euro area came into being. The economies of the major EU Member States have never shrunk so sharply within a single quarter since 1990. Only a few smaller Member States (e.g. Finland) suffered a similar degree of economic contraction in the early 1990s.

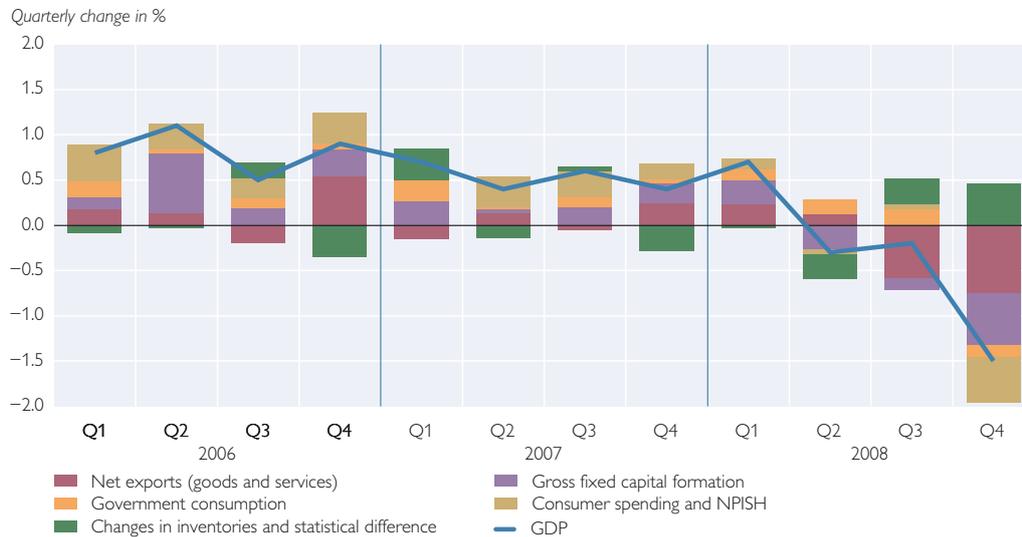
Almost all demand components – especially, net exports, gross fixed capital formation and private consumption – contributed to the contraction in the fourth quarter 2008. Even government consumption registered negative growth, as extensive economic stimulus programs had still not (fully) come into force. Only inventories made a positive contribution to growth. However, even this development is not a good sign in times of a steep decline in demand.

Sluggish investment activity is partly a reflection of shrinking use of existing production facilities. According to a survey conducted by the European Commission, industrial capacity utilization fell to 75.2% in January 2009. This level of industrial capacity utilization is not only the lowest ever registered in absolute terms but also marks the steepest decline within a single quarter in absolute terms.

Although every major euro area state is adversely affected by the recession, the extent to which this occurs is different in each case. In Germany and

Chart 2

Contribution to Real GDP Growth in the Euro Area



Source: Eurostat.

Italy, economic output shrank at a faster rate than the euro area average. In France and Spain, by contrast, it contracted somewhat less vigorously against this measure. The fall in German economic output (-2.1%) was almost solely attributable to exports. Clearly, the slump in export demand is hitting Germany particularly severely owing to its heavy reliance on its external sector, which is unusual for major economies (share of exports, including services: 47%).

2.2 Leading Indicators Slump to Record Lows

Current leading and confidence indicators, as well as the latest forecasts, suggest that the downturn will persist in the first half of 2009. Since September 2008, industrial production has been contracting sharply and at an increasingly rapid pace. In January 2009, euro area industrial production fell by 3.5% on the previous month and by 17.3% on an annual basis – several times the rate experienced in previous recessions. At

the same time, industrial order intake has been in steady decline since summer 2008.

The European Commission's *Economic Sentiment Indicator (ESI)* further deteriorated in March 2009, hitting another record low. This decline affected every component except retail confidence, which continued to recover modestly, and construction confidence, which stagnated. The decline in industrial components was particularly pronounced in March, as in February. By contrast, the PMI for industry improved slightly in March from the record low of February. Output and orders climbed, while the employment component as well as the assessment of purchasing and selling prices deteriorated significantly.

Despite generally gloomier prospects, a number of indicators currently suggest that the economy will stabilize in the near future. Business expectations, which are surveyed as a component of the *Ifo Business Climate Index*, rose for the third time in succession in

March 2009, although the all-items index reached a new historical low in the same period. The *ZEW Indicator of Economic Sentiment* for Germany has been improving since fall 2008, suggesting that the German economy is likely to bottom out in summer 2009. The PMI for manufacturing discontinued its downtrend and has been fluctuating at a low level since December 2008. Since early March 2009, the *Dow Jones EURO STOXX 50 Index* has climbed by almost 17%.

Private consumption was very sluggish in the fourth quarter of 2008. In January 2009, although retail sales volumes were up by 0.2% (month on month), they fell by 2.2% on an annual basis. January 2009 also saw new car registrations slump by 20.5% on the previous year. However, this figure was a slight improvement on December 2008. In January 2009, Germany, France and Spain witnessed more new car registrations than in December 2008 – evidently as a result of scrapping incentives. Consumer confidence surveyed by the European Commission continued to worsen in February 2009, reaching a new historical low. Likewise, consumers' willingness to make major purchases in the next 12 months, which is surveyed quarterly, stagnated at historical lows or slightly above this level in the first quarter of 2009. As a result, private consumption cannot be expected to improve quickly. Downbeat consumer sentiment is at odds with real income, which latterly developed positively thanks to easing price pressures and relatively high nominal wage growth. At the same time, however, labor market outlooks have turned gloomier.

In the fourth quarter of 2008, employment fell by 0.3%, shedding around 450,000 persons compared with the previous quarter. In January 2009, the

seasonally adjusted jobless rate rose to 8.2%, signifying that some 13 million people are presently unemployed. In Spain, the unemployment rate climbed by almost 5 percentage points within a single year to a current 14.8%. In almost all other EU Member States, unemployment has now started to trend up after having declined for many years. In many countries, labor policy measures are preventing unemployment from developing even more unfavorably. To avoid layoffs, many businesses are switching to short-time working. Under these schemes the performance of the workforce is reduced and the loss in earnings partly offset by government support. In Germany, more than 200,000 persons received partial unemployment compensation in December 2008.

The European Commission forecasts a euro area unemployment rate of 9.3% and 10.2% in 2009 and end-2010, respectively. In February 2009, employment expectations surveyed by the European Commission further deteriorated across all sectors of the economy.

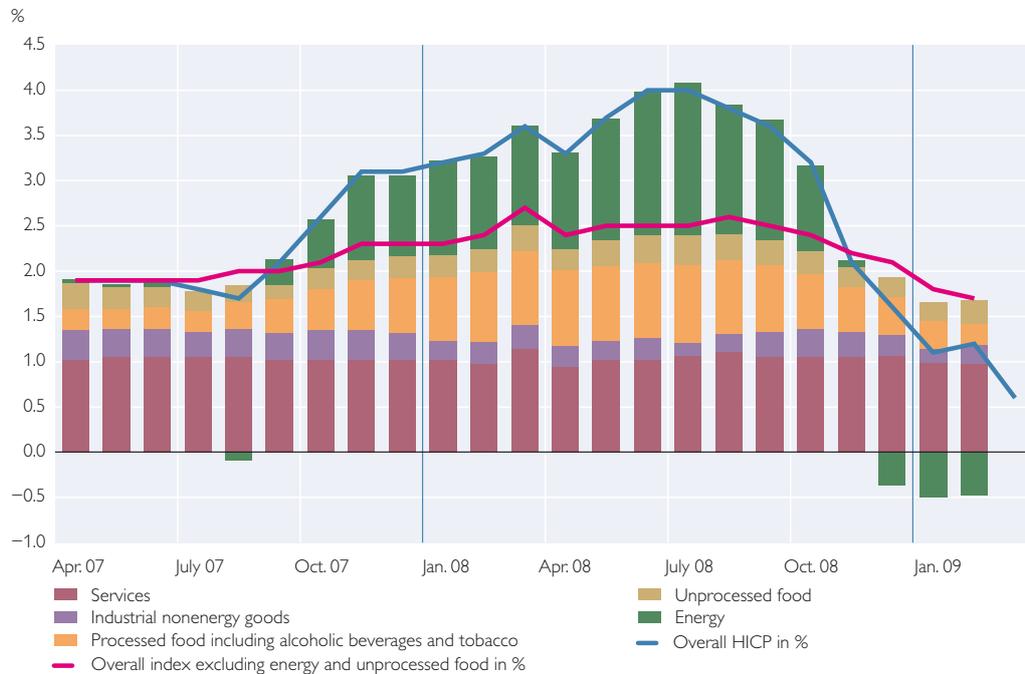
2.3 Very Low Inflation

With the bursting of the energy and commodity price bubbles, the problem of surging inflation dissolved more quickly than expected. After peaking at 4% in summer 2008, HICP inflation plummeted quickly on a monthly basis to reach 1.1% in January 2009, only to then edge up slightly to 1.2% in February 2009 before halving to 0.6% in March 2009 (preliminary first estimate).

The steep drop in inflation is attributable primarily to developments in commodity prices and, above all, crude oil prices. Since peaking at a record high of some USD 145 per barrel in mid-July 2008, the price of North Sea crude oil per barrel (*Brent*) fell to around

Chart 3

HICP Components



Quelle: Eurostat.

USD 45 by year-end. Crude prices hovered around this value in the weeks thereafter, but recently exhibited a slight uptrend, rising to more than USD 50 per barrel. The main reason for the overall relatively low level of energy and commodity prices is the global slump in demand for energy and commodities in the wake of the recession.

Since fall 2008, core inflation (HICP excluding energy and unprocessed food, the most volatile inflation components) has also been falling, albeit less sharply, and amounted to a mere 1.7% in February 2009. This inertia of core inflation attributable primarily to services prices, which – induced by the lagged effects of higher wage settlements in fall 2008 – rose by 2.4% in February 2009. In particular, the prices of transport services, travel, as well as food and beverages services climbed relatively steeply. Compared with services, industrial goods are more

exposed to international competition and increased price pressures. The inflation rate for nonenergy industrial goods is correspondingly low although, despite falling automotive prices, it edged up marginally to 0.7% in February 2009.

The EUR/USD exchange rate has been fluctuating strongly in recent months. From a peak of just under EUR/USD 1.60 in summer 2008, it fell to around EUR/USD 1.25 in the fall of that year – a level to which it returned after briefly rallying in early March 2009. Ever since then it has stabilized at above EUR/USD 1.30. As for the EUR/JPY exchange rate, it initially softened in fall 2008 and the winter months before, however, firming again in February 2009. In effective terms (i.e. relative to 21 trade-weighted currencies), the euro exchange rate has fluctuated as strongly. Its sudden plunge from summer to end-October 2008

was wholly offset by the index until year-end (+12%). In early February 2009, the index depreciated by almost 7%, which has however been largely offset since then.

2.4 Continuous Downward Revision of GDP Forecasts

GDP forecasts have been gradually corrected further down in recent months. In its macroeconomic projections for the euro area prepared in March 2009, the ECB expects annual real GDP growth to range between -3.2% and -2.2% in 2009 and between -0.7% and +0.7% in 2010. In both years, annual GDP growth will be dampened by negative carry-over effects from the preceding year. Internationally coordinated economic stimulus programs and measures to restore the functionality of the financial system are key to the gradual recovery projected for 2010. In addition, lower oil prices should boost disposable income and thus gradually bring consumer restraint to an end. However, uncertainty levels remain high. On the one hand, the internationally coordinated economic and financial stabilization measures could foster confidence in economic players. On the other, the financial crisis might make the recession worse, growing protectionism may further impede world trade and adjusting global current account imbalances could entail extreme exchange rate fluctuations.

Furthermore, the forecasts of the European Commission, the IMF or *Consensus Economics* all indicate that the euro area economy will contract by at least 2% in 2009. The OECD's interim forecasts are significantly more downbeat, expecting the euro area's economic output to shrink by 4.1% in 2009. Of the major euro area economies, Germany will be the hardest

hit (-5.3%), followed by Italy (-4.3%) and then France (-3.3%). In 2010, euro area GDP is predicted to decline by a further 0.3%.

Like GDP forecasts, inflation outlooks have also been continuously revised down. According to the ECB's forecast, HICP inflation will range between an unusually low 0.1% and 0.7% in 2009 and between an ever so slightly higher 0.6% and 1.4% in 2010. Basis effects induced by previous energy price developments may temporarily push annual aggregate inflation rates into negative territory until mid-2009. Current forecasts of international organizations confirm an outlook of extremely modest inflation in both forecast years.

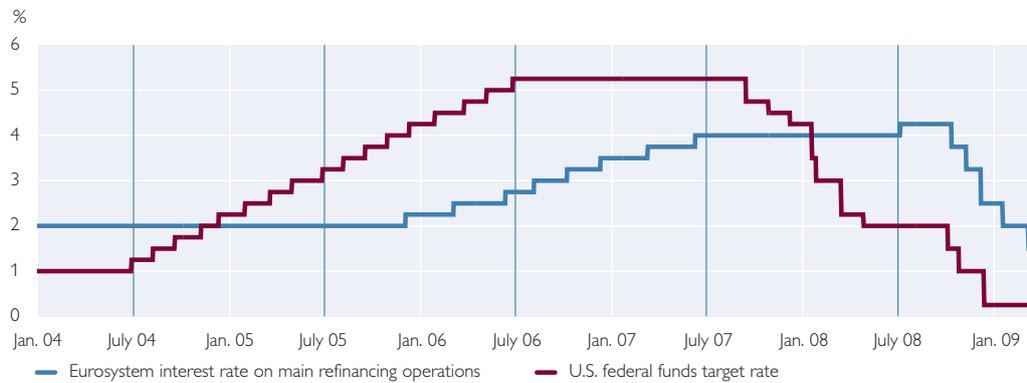
2.5 Governing Council of the ECB Cuts Policy Interest Rates Sharply

On March 5, 2009, the Governing Council of the ECB, on the basis of its regular economic and monetary analyses, decided to lower its interest rate on the main refinancing operations of the Eurosystem as well as its marginal lending rate and deposit rate by 50 basis points in each case to 1.5%, 2.5% and 0.5%, respectively. Thus, the interest rate on the main refinancing operations of the Eurosystem has been cut four times in all by a total of 275 basis points since October 8, 2008.

These moves were justified above all by the fact that inflation rates had markedly fallen and that they were expected to remain well below 2% in 2009 and 2010. The main reasons for these inflation prospects are the drop in commodity prices as well as the price effects from the slackening in overall economic activity. The latest economic data and survey findings provide further proof for the ECB Governing Council's assessment that both global and euro area demand are likely to be

Chart 4

Key Interest Rates in the Euro Area and the U.S.A.



Source: Thomson Reuters.

very sluggish in 2009. The economy is expected to recover gradually in 2010. At the same, current indicators of medium- to longer-term inflation expectations remain firmly anchored at a level that is in line with the ECB's aim of keeping inflation below, but close to 2% in the medium term. A cross-check with the outcome of the monetary analysis confirms that inflationary pressures have been diminishing.

The ECB Governing Council's decision reflects its expectation that price stability will be maintained in the medium term, supporting the purchasing power of euro area households. The Governing Council will continue to ensure that medium-term inflation expectations remain firmly anchored at a level that supports sustained GDP growth and employment and contributes to financial stability. Accordingly, the Governing Council of the ECB intends to monitor very closely all developments over the period ahead.

2.6 Economic Policy Measures to Stabilize Economy

Around the world, economic policy efforts have been reinforced in recent months to stabilize the financial system and the economy. In the EU, not only

took individual Member States measures but the EU itself assumed an important role in this endeavor. A comprehensive economic program was launched at the European level to ensure a coordinated approach to supporting the real economy, thereby enhancing the benefits of the national stimulus measures by triggering multiplier effects and supplementing monetary policy measures.

In mid-October 2008, the EU adopted a common strategy to combat the financial crisis. The bank support packages now in existence in 18 EU countries basically include an increase in guarantee limits within the framework of deposit insurance, the possibility of government guarantees for inter-bank loans as well as capital injections for banks provided by the government. This common framework has since been implemented by EU Member States in the form of national implementation measures.

One of the key components of this framework was a change in deposit insurance, which was proposed by the European Commission on October 15, 2008. The new provisions aim to improve depositor protection and maintain depositor confidence. It was speci-

fically agreed to increase the minimum deposit cover from EUR 20,000 to EUR 50,000 and, within a year, to raise this amount to at least EUR 100,000. Some Member States, including Austria, chose to set an even higher level of coverage. Similarly, the new provisions ensure that deposits are reimbursed up to the coverage level without a deductible, and the period within which depositors must be paid in the event that a bank fails was reduced to three days. Until then, the payout period had been three months with the option of extending it to nine months.

Another important measure was the European Economic Recovery Plan for Growth and Jobs, which was approved by the European Council on December 11 and 12, 2008. This program was designed as a targeted and temporary fiscal stimulus of some EUR 200 billion, i.e. 1.5% of the EU's GDP. These funds are to be mobilized from national budgets (around EUR 170 billion, i.e. 1.2% of the EU's GDP) and EU and European Investment Bank (EIB) budgets (some EUR 30 billion, i.e. 0.3% of the EU's GDP). The aim of this package is to finance both short-term measures to boost demand, save jobs and help restore confidence in the economy as well as other investment measures to promote long-term sustained growth.

The EU's contribution to this plan includes advanced payments of EUR 1.8 billion by the European Social Fund to support employment; another EUR 5 billion will be mobilized to improve energy interconnections and Internet broadband infrastructure. Furthermore, the EIB is to increase its annual interventions in the EU by some EUR 15 billion, and the European Cohesion Fund is to frontload investment of EUR 4.5 billion. The scope of the *European Globalization Adjustment Fund* is to be

expanded, enabling a faster drawdown of funds and focusing on support for labor market policies. In addition, the European Commission recommends reducing employers' social security contributions (for lower incomes) and permanently cutting VAT rates in labor-intensive services.

3 Central, Eastern and South-eastern European Countries Hit by the Crisis

3.1 Financial Crisis Reaches Eastern Europe in Fall 2008

In view of growing international risk aversion, the risk profile of Central, Eastern and Southeastern European (CESEE) EU Member States has undergone reassessment since the second half of 2008. Factors that have led to the economic situation being perceived in a considerably worse light are gloomy growth and export outlooks, dwindling capital inflows, high external financing requirements, currency and maturity mismatching as well as risks as regards common creditors of the region's banking sector.

Accordingly, the CESEE group of countries has been particularly severely hit by the aggravation of the financial crisis since mid-September 2008. Previously, these countries had appeared relatively resilient to global events since the outbreak of disruption in international financial markets in mid-2007. Now, every financial segment registered a marked deterioration, with especially certain equity and bond markets performing far worse than in comparable emerging economies. While share prices in European emerging economies have been falling since mid-September 2008 by an average 46%, the comparable value in Asian and Latin American emerging economies has been 23.6% and 22%, respectively. The spreads of euro-de-

Chart 5

Exchange Rates of Selected Currencies Relative to the Euro

(Uptrend signifies nominal depreciation)

January 1, 2008 = 100



Source: Thomson Reuters.

nominated Eurobonds showed similar developments. While European spreads widened by 453 basis points, they increased by merely 105 and 264 basis points in Asia and Latin America, respectively.

Furthermore, the currencies of countries with a flexible exchange rate regime suffered sharp depreciation relative to the euro. For instance, relative to the euro the Polish zloty has lost some 29% against the euro, the Hungarian forint more than 23% and the Romanian leu some 16% since September 2008. Nominal effective exchange rate depreciation was less pronounced, as the euro appreciated relative to the currencies of other trading partners of CESEE countries (e.g. the U.K. or Russia) in the same period.

The reasons for the tight situation in the foreign exchange markets were multiple. The rating of the CESEE region awarded by international rating agen-

cies was considerably more pessimistic. Fresh outlooks for 2009 for the first time anticipated a recession not only for individual countries but also for the entire region on average. Moreover, key interest rates were cut in every country in this region (although, in Hungary, only after a sharp hike at end-October 2008). In addition to these factors, which resulted in a generally worse perception of the situation in the region, developments in Poland were also partly attributable to the liquidation of foreign currency positions, which were created in economically better times to hedge against the zloty's possible further appreciation. In Hungary, there were also uncertainties about the country's high financing requirements.

Since the second half of February 2009, the situation has eased somewhat however. The Czech koruna staged a strong rally, and the Polish zloty and

Hungarian forint have appreciated since early March 2009.

The impact of currency depreciation in CESEE is twofold: On the one hand, it makes domestic production cheaper and as a result counters the slump in international demand, which tends to have particularly negative effects on the economy owing to the region's heavy reliance on exports. On the other hand, it increases the debt burden due to the high level of foreign currency loans, which in turn results in a dampening effect on private demand. This applies particularly to Hungary and Romania, whose share of (especially, euro-denominated) foreign currency loans accounts for considerably more than half of total lending.

In addition, the financial crisis is taking its toll on the real economy owing to difficulty in gaining access to debt financing. Widening spreads, asset losses triggered by tumbling stock markets, but partly also quantitative lending restrictions on the part of credit institutions, induced by a deterioration in the risk structure of bank assets, new risk assessments or the decrease in

intra-group capital flows in the banking sector are all impairing investment activity. In addition, a decline in lending growth, which fueled private consumption in many countries in recent years, is reflected in reduced consumer demand. These developments are reinforced by falling asset prices, in some countries due to the bursting of real estate bubbles, inter alia.

3.2 No Recovery in Sight in the Short Term

Against the background described above, the general economic situation in CESEE countries, after years of dynamic growth (in some countries, this situation even led to overheating), has significantly deteriorated particularly since the fourth quarter of 2008. Growth weakened markedly and slumped to just below an average 1% (third quarter of 2008: 4.8%). Besides the Baltic countries, Hungary and Slovenia registered a contraction in economic output in the fourth quarter of 2008.

The decline in the fourth quarter of 2008 covers all GDP components. Aver-

Table 1

GDP Growth in Central, Eastern and Southeastern European EU Member States

	2008	2009 ¹	Q1 08	Q2 08	Q3 08	Q4 08
<i>Real GDP growth rate (annual change in %)</i>						
Bulgaria	6.0	0.0	7.1	7.1	6.8	3.5
Estonia	-3.6	-7.0	0.2	-1.1	-3.5	-9.7
Latvia	-4.6	-8.0	0.5	-1.9	-5.2	-10.3
Lithuania	3.1	-5.0	7.0	5.2	2.9	-2.0
Poland	4.8	1.5	6.2	5.8	5.2	2.3
Romania	7.1	0.0	8.2	9.3	9.2	2.9
Slovakia	6.4	2.0	9.3	7.9	6.6	2.5
Slovenia	3.5	0.0	5.7	5.5	3.9	-0.8
Czech Republic	3.2	0.4	4.4	4.4	4.0	0.2
Hungary	0.5	-3.0	1.7	2.1	0.8	-2.3
Entire region	4.2	0.0	5.6	5.5	4.8	0.9
Euro area	0.9	-1.9	2.1	1.4	0.6	-1.3

Source: Eurostat, European Commission, Vienna Institute for International Economic Studies.

¹ Forecast; CESEE: Vienna Institute for International Economic Studies (February 2009), euro area: European Commission (January 2009).

age private consumption growth in the region is however slowing at a somewhat less vigorous pace than that of other GDP components and is frequently found in positive territory. This phenomenon is primarily attributable to the still relatively robust trend in Central European countries, where consumption growth slackened significantly only in Hungary but merely stagnated in the other countries. This situation is probably connected with two factors: first, still fairly favorable real wage growth (induced by falling inflation rates) in the fourth quarter of 2008 and, second, vigorous household lending growth in the same period. However, this growth is partly attributable to value adjustments to foreign currency loans, which account for a large share in total lending in the region, on the back of the latest exchange rate depreciations.

Of greater evidence was the decline in gross fixed capital formation. In almost all the countries in this region, this GDP component performed worse in the fourth quarter of 2008 than in the previous quarter and, in five countries, even shrank significantly. This development is primarily attributable to industry, which was hit by the crisis particularly severely. The decline in external demand and the general deterioration in economic conditions worldwide resulted in a steep decline in industrial production due to this sector's heavy reliance on exports. In December 2008, industrial production slumped by an average 13.8% and, in many countries, by more than 20%. Capacity utilization numbers are likewise pointing south, and surveys on export expectations for the coming months currently indicate an even more downbeat assessment of the situation. These factors have led to substantially lower investment demand, and deterio-

rating financing conditions have further aggravated this development. For instance, corporate lending growth in the region almost came to a standstill in December 2008 compared with the previous month.

The fourth quarter of 2008 witnessed a sharp slump in external demand. Average exports shrank by some 5%, with only Lithuania registering an increase. The average downturn in export growth amounted to some 10 percentage points, with Romania even suffering a decline in excess of 20 percentage points. Currency depreciation in some countries countered this development only to some extent, as it did not get into full swing until end-2008 or early 2009. As with exports, import growth also slowed, with average growth registering some 10 percentage points lower than in the previous quarter. As a result, a regional analysis showed that the contribution of net exports to growth was slightly positive and, in some cases, even rose to a certain degree. However, the situation in certain countries varied widely. While the contribution of net exports to growth was slightly negative in Central European countries, they made a strongly positive contribution to growth in the Baltic states and in Romania. Since the Baltic region, in particular, has so far been hardest hit by the economic crisis and domestic demand in these countries contracted significantly in the fourth quarter of 2008, imports have slowed at a faster pace than exports.

Current leading indicators suggest that the bleak economic situation will persist in the first half of 2009. Above all, both industrial and consumer confidence in the economy stand at historical lows. Current forecasts confirm the negative assessments of economic players. In its February outlook, the Vienna Institute for International Eco-

economic Studies predicted that the region as a whole would stagnate in 2009 (growth forecast in November 2008: +2.7%). It still stands that the countries of this region are or will be affected by the economic downturn to a varying extent. In 2009, the Czech Republic, Poland and Slovakia should continue to experience modest growth (ranging between 0.4% and 2.0%). In Bulgaria, Romania and Slovenia, the economy will stagnate; in Hungary and, especially, in the Baltic countries, it will contract. All in all, the CESEE EU Member States will however register better growth rates than the euro area in 2009 and 2010, with the growth differential likely to range between 1 and 2 percentage points in both years according to most of the latest forecasts.

3.3 International Institutions Extend Financial Assistance

Owing to the tight situation in international financial markets, CESEE countries found it considerably more difficult to cover current external financing requirements. To solve this problem, some countries were forced to turn to the IMF and conclude Stand-By Agreements.

For instance, on November 6, 2008, a 17-month Stand-By Agreement totaling EUR 12.5 billion was concluded between Hungary and the IMF. The IMF funds were part of a larger package of support measures, to which the EU and the World Bank contributed EUR 6.5 billion and EUR 1 billion, respectively. In return, Hungary undertook to carry out extensive fiscal consolidation, setting a government deficit target of 3.4% of GDP for 2008 and, what is more, attaining it according to preliminary estimates. In 2009, Hungary intends to reduce its government deficit to 2.5% of GDP. This agreement

also calls for the maintenance of sufficient liquidity and capital adequacy in the banking sector.

On December 23, 2008, the IMF approved a 27-month Stand-By Agreement totaling EUR 1.7 billion for Latvia to strengthen its ongoing program to consolidate the economy, restore confidence and support the pegging of its currency to the euro. In addition, the EU extended a loan of EUR 3.1 billion, and the World Bank, the EBRD and bilateral donor countries together provided a further EUR 7.5 billion. The agreement includes measures to restore confidence in the Latvian banking system, improve competitiveness and strengthen fiscal consolidation.

On March 25, 2009, a two-year Stand-By Agreement between Romania and the IMF totaling EUR 12.95 billion was negotiated but still awaits approval by the IMF Board. This agreement aims to mitigate the negative effects of rapidly dwindling private capital inflows, to support the implementation of measures countering current external and fiscal imbalances and to consolidate the financial sector. Furthermore, Romania will receive EUR 5 billion from the EU and EUR 1 billion apiece from the World Bank and from the EBRD and other multilateral donors.

At the same time, Stand-By Agreements were concluded with some other European countries, including Ukraine (USD 16.4 billion), Belarus (USD 2.46 billion) and Serbia (USD 500 million).

In light of these already approved packages, the European Council, after protracted debate, decided at its spring summit held on March 19 and 20, 2009, to increase the EU's support facility for balance of payments assistance for EU Member States outside the euro area. Where necessary, the countries in this group can now receive assistance of up to EUR 50 billion

(instead of EUR 25 billion) in individual cases. In line with this decision, it was noted that macrofinancial stability was a key factor for the resilience of the European economy as a whole and that solidarity between Member States represents a fundamental value of the EU.

3.4 Rapidly Falling Inflation

As in the euro area, inflation in CESEE EU Member States eased considerably in recent months. In addition to general economic gloom and some favorable basis effects arising from energy and food prices, falling commodity prices were primarily responsible for this situation. Accordingly, contributions to inflation from its energy and food components have fallen exceptionally steeply in almost all the countries in this region. As a result, services in some countries (primarily in Central Europe) now make up the largest component of inflation in relative terms.

Price pressures will continue to ease in 2009 as a whole and be mirrored in annual inflation rates for 2009, according to the latest forecast of the Vienna Institute of International Economic Studies. Average inflation in the region will fall from 6.4% (2008) to a mere 3.0% (2009).

4 Contraction of the Austrian Economy to Deepen

4.1 Economy Skidded Off the Tracks in October 2008

The global economic crisis hit Austria in fall 2008, resulting in a steep slump in goods exports and industrial production in October 2008. Exports collapsed by 7.1% against the previous month (seasonally and working-day adjusted) and continued to decrease in November. Industrial production trended in tandem with exports, contracting by 5.6% in October against the previous month. In none of the most recent economic crises has there been

Chart 6

Austria: Severe Slump in Goods Exports and Industrial Production

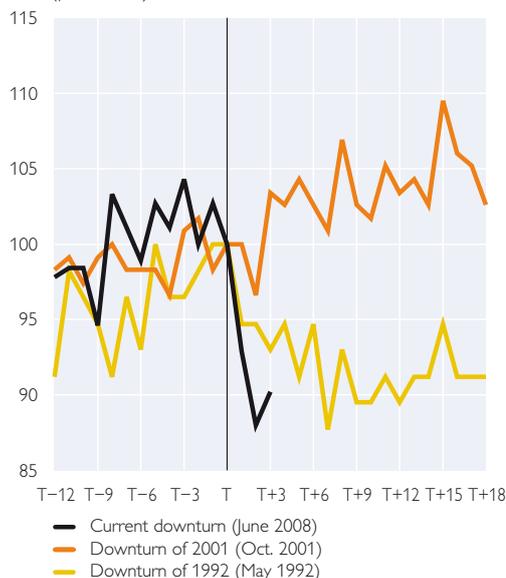
Goods Exports and Industrial Production

Index (seasonally and working-day adjusted; Jan. 2000 = 100)



Goods Exports during Various Downturns

Index (peak = 100)



Source: Statistics Austria, author's calculations.

such a sudden slump of this magnitude and speed (chart 6).

National accounts data for the fourth quarter of 2008 do not yet sufficiently reflect these developments, suggesting that goods exports in nominal terms declined by a mere 0.7% in the fourth quarter against the previous quarter, whereas the data published by Statistics Austria indicate a 13.1% decrease (seasonally and working-day adjusted) during the same period.² The 0.2% contraction of the Austrian economy calculated for the fourth quarter of 2008 (against the previous quarter) will also very likely have to be revised in the light of international developments.

The sharp downturn in external orders points to a further plunge in exports in the first quarter of 2009. The marked decline in freight transport on Austrian roads – which is highly correlated with goods exports – measured in January and February 2009 confirms this conclusion. Also, the recession is starting to spill over from export-oriented sectors to upstream sectors. In the light of uncertain sales prospects, businesses are downscaling investment.

While private consumption remained fairly robust in the fourth quarter of 2008 (+0.2% against the previous quarter), the sharp rise in unemployment as well as fears of job loss have

Results of the OeNB Economic Indicator of March 2009¹

Austria began to feel the full force of the global economic crisis in early 2009. The OeNB economic indicator predicts real GDP to contract by 1.5% in the first quarter of 2009 (seasonally and working-day adjusted, on a quarterly basis). The Austrian economy is expected to continue to shrink by 0.7% in the second quarter of 2009, which implies a considerable acceleration of the downturn against the fourth quarter of 2008 (–0.2% according to preliminary data released).

Short-Term Outlook for Austria's Real GDP in the First and Second Quarters of 2009 (seasonally and working-day adjusted)

2007				2008				2009	
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Year-on-year quarterly change (%)									
3.3	3.1	2.9	2.7	2.5	2.1	1.4	0.6	-1.4	-2.3
Quarterly change (%)									
0.7	0.6	0.7	0.7	0.5	0.2	0.0	-0.2	-1.5	-0.7
Annual change (%)									
3.0				1.6				x	

Source: OeNB – Results of the OeNB economic indicator of March 2009, Eurostat.

¹ The next publication of the OeNB economic indicator is scheduled for July 2009.

² Seasonal adjustment methods generally suffer from end-point problems, since they frequently use symmetrical filters. The observations missing at the end of the time series are forecast, which means that in the current situation, the slump in exports is reflected in three observations in the monthly seasonal adjustment and in only one observation in the quarterly seasonal adjustment. Therefore, monthly seasonal adjustment provides more reliable results.

more recently weighed on households' propensity to spend. Durable consumer goods, in particular, confirm this trend; new car registrations, for instance, have been falling sharply since November 2008.

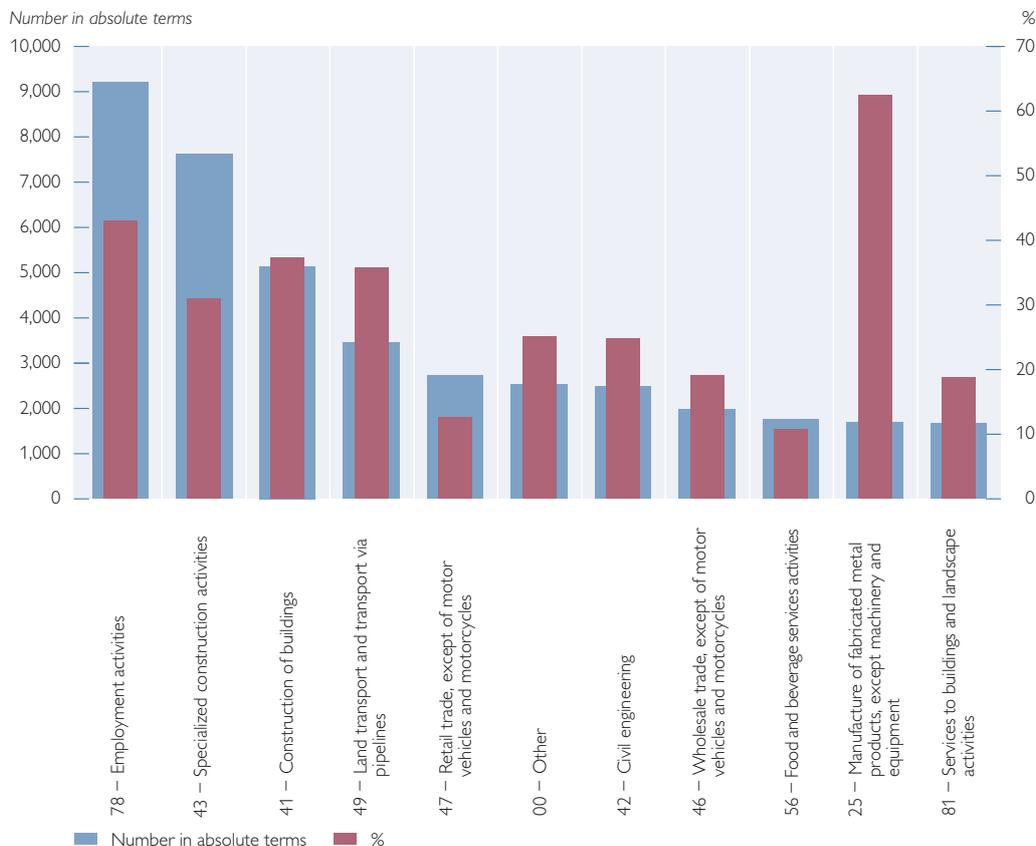
4.2 Downturn Reached Labor Market

The economic downturn has already had a deep impact on the labor market. In March 2009, the number of people out of work was by 61,000 higher than the comparable month a year earlier. Compared with previous downturns, the unemployment rate this time rose extraordinarily quickly, which can be attributed not only to the intensity of

the current crisis but also to the flexibilization of the labor market. The reduction in current employment overcapacity built up during the boom years from 2005 to early 2008 is taking place at a high pace. The decline in jobs is most severe in employee contracting, as in bad times businesses tend to lay off leased staff first. The construction sector too saw a marked increase in unemployment, much of which, however, is due primarily to the colder weather in early 2009 compared with 2008. Since manufacturing has been the sector hardest hit by the crisis so far, men are much more affected by layoffs than women. By federal provinces, the increase in joblessness was

Chart 7

Rise in Unemployment in February 2009 by Divisions¹ (year on year)



Source: AMS (Public Employment Service).

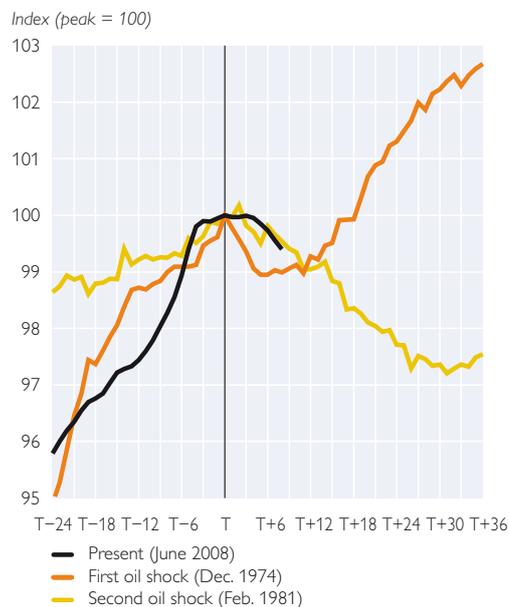
¹ According to the Austrian Statistical Classification of Economic Activities (ÖNACE 2008).

Current Decrease in Employment by Historical Comparison

Employment (seasonally adjusted)



Historical Comparison



Source: Statistics Austria.

steepest in those with the highest share of industrial enterprises (Upper Austria, Salzburg and Styria).

A historical comparison shows that the pace of the decline in employment since the peak recorded in June 2008 generally mirrors the developments during the second oil shock. Both before the current downturn and before the first oil shock, the labor market had seen an extremely steep increase in employment (chart 8).

The 29% decrease in reported vacancies as well as the 74% surge in the number of job seekers per vacancy recorded in February 2009 (both figures year on year) indicate a further deterioration of the labor market situation in the months to come.

4.3 Sharp Fall in Inflation

Price growth has decelerated visibly in recent months, with HICP inflation falling from its high of 4.0% in June

2008 to 1.2% in January 2009 and edging up only slightly to 1.4% in February. This decrease was mainly driven by the decline in the price of oil products. There were also counterbalancing movements, however. While prices of fuels and light heating oil plummeted by 20% and 24% respectively year on year in February 2009, household energy prices increased notably (gas: +15%, electricity: +5%, communal heating: +4%) due to the lagged effect of price adjustments. Core inflation (excluding energy and unprocessed food) remained broadly unchanged, however, at slightly above 2%. Wholesale prices, by contrast, declined sharply owing to their higher volatility compared with the HICP. The 6.3% fall recorded in February 2009 is therefore a rebound of the average 10% rise (year on year) in wholesale prices seen in the first half of 2008, which was driven by strong demand.

Austria's Exports to Eastern Europe: Facts and Forecasts

Likely Impact of Slowing Exports on Growth in Austria

In 2008, 72.1% of all Austrian goods exports went to the EU-27; thereof, 17.6% went to the Eastern European states that joined the EU in 2004 and 2007, and 24.6% to Eastern Europe at large. While export demand for Austrian goods has declined markedly since the end of 2008, in the context of the international economic crisis, exports to the “new” Member States declined somewhat less than those going to the “old EU.” This article offers a brief overview of the extent and development of Austrian exports to Eastern Europe, the latest growth forecasts for these countries, and their implications for Austria’s growth forecast. The latest forecasts for Eastern Europe, while pessimistic and mixed in line with the global trend, indicate that growth rates – especially in the “new” EU Member States – are still higher (or that recessions are still weaker) on average than in Western Europe. Simulations with the OeNB’s macro model show that the growth setbacks anticipated for Eastern Europe by the latest forecasts are likely to push the decline in Austria’s real GDP growth another 0.7 percentage points below the rate implied by the OeNB’s December 2008 forecast.

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JEL classification: E17, F15, F47

Keywords: Austria, forecast, Eastern Europe, exports

The current economic and political debate has honed in on the exposure of Austrian banks in Eastern Europe, largely decoupled from the issue of how important those Eastern European countries have come to be for the real economy. To refocus the debate, this article therefore presents an overview of the relative importance of Austrian exports to Eastern Europe and their development in recent decades, of current GDP forecasts for these countries, and of the resulting effects on growth in Austria.²

What makes this exercise rather complex is that there is no consistent definition for the region generally referred to as Eastern Europe. Furthermore, the growth forecasts published by various institutions often refer to

entire regions, for which definitions tend to differ, rather than to individual countries. This article uses the latest growth forecasts for Eastern Europe of the *European Bank for Reconstruction and Development (EBRD)*, *The Vienna Institute for International Economic Studies (wiiw)*, *Consensus Economics*, and the *IMF*. For the purpose of our exercise, we divide Eastern Europe into two groups of countries:³ into the EU-10 countries of Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia; and into the 30 Central, Eastern and Southeastern European (CESEE) as well as Central Asian countries (CESEE+CA) that the literature identifies as Eastern Europe at large.⁴ Exact definitions are found in the annex, in

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² For the growth of overall Austrian foreign trade, the annual yearbook of the Research Center for International Economics (FIW, 2008) is recommended.

³ We use the term Eastern Europe, despite its imprecision, for both Eastern Europe in the narrow and the wider sense.

⁴ This group of countries is based on the country sample of the EBRD and includes also Turkey, although this country is counted traditionally neither among the CESEE countries nor the CA countries.

Refereed by:
Julia Wörz, OeNB

which all regional definitions used in this report are listed.

The importance of Eastern Europe for the Austrian economy has been discussed extensively in economics publications. A broad range of studies have provided evidence on the positive growth and employment effects of the transformation of Eastern Europe (e.g. Breuss, 2006), the results of Austrian direct investments (e.g. Alzinger and Bellak, 2006; Hunya, 2008), and of the expansion of exports in these regions (e.g. Stankovsky, 1998; Fidrmuc, 2005).⁵ The focus of this article is on the longer-term development of goods exports to Eastern Europe, the current decline in exports, and the resulting effects on growth for Austria.

The article is structured as follows: Section 1 offers a brief, descriptive overview of the significance and development of exports to Eastern Europe and to individual Eastern European countries, including the decline in exports at the end of 2008 caused by the economic crisis. In section 2, after an overview of current growth forecasts for the CESEE countries we simulate the effects of the predicted growth decline on the Austrian economy with the OeNB's macro model; to establish, among other things, the extent by which the OeNB's December forecast would need to be revised. Section 3 provides a summary and draws conclusions.

1 Significance and Development of Exports to Eastern European Countries

1.1 Available Data

The national statistical office (Statistics Austria) publishes detailed nominal export data for domestic goods exports at

monthly intervals; the latest figures are from December 2008. Services exports are calculated by the OeNB on a quarterly basis; so far, the data have been calculated up to the third quarter of 2008. Thus, the only data available for the entire year of 2008 are those of goods exports. Since no deflators for exports to the various Eastern European countries or regions are available, it is not possible to determine corresponding real export figures. Moreover, the time series are too short to allow categorizing services exports to target countries.⁶

1.2 Significance and Development of Exports to Eastern Europe

The left panel in chart 1 shows the nominal growth of overall goods exports and of exports to Eastern Europe, according to the definition used by Statistics Austria (27 countries). While growth rates declined substantially indeed in 2008 for both total exports and exports to Eastern Europe, they still exceeded growth levels during the dot-com crisis on account of the relatively good performance during the first quarter of 2008. Another striking feature is that growth rates for goods exports to Eastern Europe were greater than those for overall exports from 1988 through, and including, 2008 (with the exception of 1998 and 1999).

The right panel (chart 1) shows the percentage of nominal overall exports and nominal exports to Eastern Europe in nominal GDP, that is, "goods export rates." The rate for all goods exports has risen markedly since the beginning of 1995, i.e. since Austria joined the EU. Access to the Single European Market has facilitated foreign trade, and the European Economic and Mone-

⁵ For the growth of all Austrian exports, see Bayerl et al. (2008).

⁶ Regionally itemized services data are available up to the first quarter of 1995.

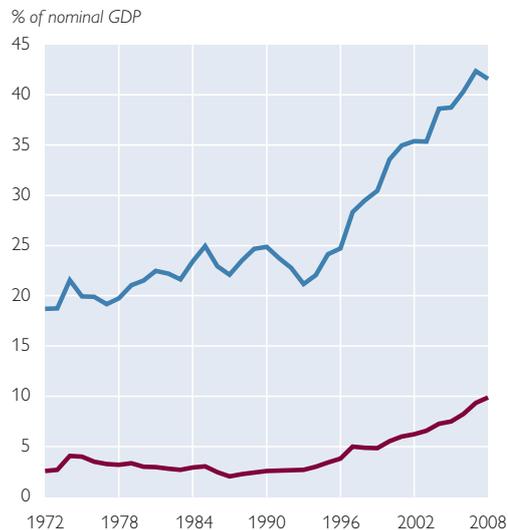
Chart 1

Development of Goods Exports

Annual Growth of Nominal Goods Exports



Goods Export Rate



Source: Statistics Austria, OeNB; Eastern Europe as defined by Statistics Austria (see annex).

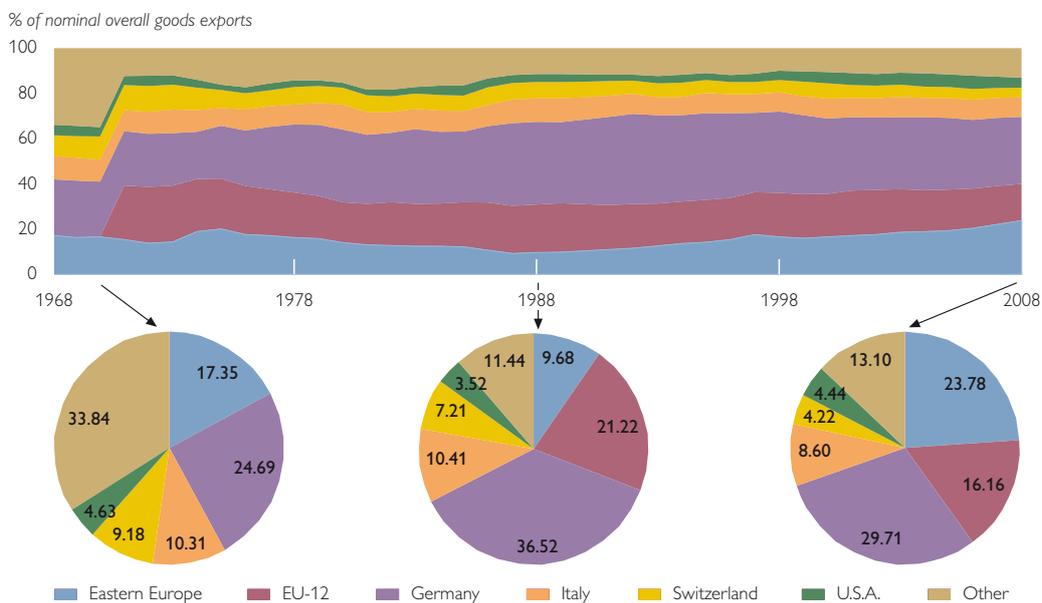
tary Union completed in 1999 has stabilized Austria's trade-weighted exchange rate, thereby creating favorable conditions for exports. However, in 2008, as a result of the crisis, the overall goods export rate declined again for the first time since 1993. The export rate for goods going to Eastern Europe has climbed steadily since 1997, continuing even in 2008.

In chart 2, goods exports are subdivided according to the relative importance of the most important target countries or target regions. Over time, exports to Italy and Switzerland have decrease relatively; those to the U.S.A. have increased slightly. Since the transformation of Eastern Europe, Germany's relative importance has declined markedly. The increase in the relative importance of Eastern Europe since its transformation is particularly striking. In 2008, as much as 24.6% of all Austrian goods exports were going to this region (by way of comparison: goods exports to Germany were just under 30%).

The expansion of goods exports to Eastern Europe was in no way a linear development. In the mid-1970s, the percentage of exports was clearly higher than before the Iron Curtain fell, and at 20.1% it had already reached a level that would not be exceeded again until 2006 (20.4%). The historical expansion of exports to Eastern Europe was influenced not only by economic factors but also by myriad economic and political factors. The development of Austrian exports to Eastern Europe since 1955 can be divided roughly into four different phases:

- The time from the end of World War II until the ratification of the Austrian Independence Treaty was influenced by reconstruction activities and, in part, by trade patterns evolving between the two world wars. While in 1937, 33.4% of Austrian exports were still going to the (Southeastern European) countries of the former Austro-Hungarian monarchy, this rate had declined to 19.6% by 1947 (Stankovsky, 1998,

Goods Exports to Target Countries or Regions



Source: Statistics Austria, OeNB; Eastern Europe as defined by Statistics Austria (see annex).

Note: Steep rise in 1970 due to adjustment of data basis (EU-12 = all "old" EU countries excluding Germany and Italy).

- p. 162). By 1955, the percentage had decreased even further to only 11.3%, though the exports of the Soviet-controlled businesses were not cited in some cases (Stankovsky, 1998, p. 155, for an estimate of the extent of those exports, see WIFO, 1955).
- From the ratification of the Austrian Independence Treaty until the mid-1970s, Austrian exports to Eastern Europe strengthened. Trade relations during this time were influenced by the demand monopoly of Eastern European governments and, as a result, by the political and economic environment. Due to the lack of currency convertibility, trade was essentially restricted to compensation transactions (barter trade), which were settled on a clearing basis. In addition, Austria benefited heavily from its position as a bridgehead between Eastern and Western European countries (Stankovsky, 1967).
 - From 1975 until 1989, when the transformation of Eastern European economies started, the share of Austrian exports to Eastern Europe diminished markedly to just 9.9%. The reason for this, more than anything else, was the financial unsustainability of the Eastern European strategy to debt-finance access to high-technology products (Fidrmuc et al., 2008, p. 469). The debt crisis of the Eastern European countries markedly decreased their demand for imports above all from the 1980s onward (Stankovsky, 1998).
 - The transformation phase after 1989 was characterized by a massive expansion of trade relationships with Eastern Europe, with Austrian exporters quickly turning historical ties and their geographic position into competitive advantages and benefiting from specific government support on top (see the program "Go International," Bhattacharya, 2007).

Currently, Austrian exporters are facing the strongest slump in demand for Austrian exports since the end of World War II – including demand for exports to Eastern Europe, as will be discussed in greater detail below. The degree to which the decline in growth will lead to a shift in the relative importance of the export regions cannot yet be determined.

1.3 Clear Shift of Austrian Exports toward Eastern Europe

In 2007, the growth of nominal *services exports* (overall) accelerated to 11%, compared to the previous year (table 1). At 19.7%, nominal services exports to the EU-10 grew at an above-average rate. Austria experienced double-digit growth rates across the board, excluding less robust exports to Latvia and Slovakia. Current account developments over time reflect a structural shift in services exports toward transportation services, knowledge-intensive services, as well as other services. During the last ten years, the importance of knowledge-intensive services doubled from 9% of overall exports (1997) to 18% (2007). The key drivers of growth were architectural, engineering, and other technical services; research and development; electronic data processing and information technologies; as well as legal consultation, auditing, and sales consulting. At the same time, patent-related cross-border trade is severely in deficit. This is bad news insofar that this position is often used as a benchmark for technological progress. In a regional comparison between the EU-15 and the remaining 12 EU countries, strong regional differences in exports become evident: to the EU-15, Austria exports mainly

transportation and tourism services, whereas the EU-10 attract mainly other business services. In the first three quarters of 2008, the growth of Austrian services exports remained positive; however, compared to the entire year of 2007, it declined markedly. Altogether, services grew by 5.6% in the first three quarters of 2008. Overall growth was sustained primarily by the growth of exports to the EU-10, which still amounted to a robust 12.6%. In seven of the ten countries, growth rates were still in the double-digit range. In contrast, growth of exports to the EU-15 slowed to 2.9%. The higher EU-10-related growth rates consequently led to a further shift of the export percentages from the EU-15 to the CESEE+CA countries.

As for Austrian *goods exports*, 72.1% went to the EU in 2008. In this area, the focus has been shifting for years from the “old” EU Member States to those states that became EU members in 2004 and 2007. Since Austria joined the EU, the export share to the “old” EU decreased by 10 percentage points to 54.5% (2008) whereas that of the 12 EU countries rose from 11.3% in 1995 to 17.6% in 2008. For the entire year of 2008, the following countries were among the top 10 target countries for Austrian goods exports: the Czech Republic (nominal export share of 3.7%; rank 5), Hungary (3.6%; rank 6) and Poland (2.8%, rank 8). In the ranking of the foreign trade report, the Czech Republic has advanced strongly in recent years (2007: 3.6%, rank 6; 2006: rank 8). Finally, the share of the Commonwealth of Independent States (CIS) which has grown particularly strongly over the last five years, doubled to almost 3.9% in 2008.

Table 1

Austrian Exports to Selected Regions in 2007 and 2008

	2007			Q1 to Q3 08			2008		November 2008		December 2008	
	Goods	Services	Goods and Services	Goods	Services	Goods and Services	Goods	Services	Goods	Services	Goods	Services
	Annual change in %	Share of overall exports in %	Annual change in %	Share of overall exports in %	Annual change in %	Share of overall exports in %	Annual change in %	Share of overall exports in %	Annual change in %	Share of overall exports in %	Annual change in %	Share of overall exports in %
Total exports	10.5	11.0	x	6.3	5.6	x	2.3	x	-14.3	x	-9.0	x
Europe, total	11.0	10.5	84.8	6.7	6.3	85.3	2.3	83.5	-15.8	82.7	-10.4	79.8
EU-27	11.0	10.0	73.3	6.2	4.4	73.4	1.8	72.1	-16.5	71.2	-12.1	68.1
EU-15	8.9	8.5	57.7	3.7	2.9	56.9	-0.3	54.5	-17.4	53.4	-12.9	51.0
New EU Member States	18.9	18.1	15.7	15.0	12.0	16.5	8.8	17.6	-13.5	17.8	-9.4	17.1
EU-10	20.2	19.7	15.5	15.0	12.6	16.4	8.8	17.5	-13.6	17.7	-9.4	17.0
Bulgaria	29.9	19.6	0.6	30.5	18.2	0.7	24.5	0.8	7.0	0.9	13.2	1.0
Estonia	36.3	124.2	0.1	9.2	1.8	0.1	1.4	0.1	-48.4	0.1	-36.1	0.1
Latvia	11.7	8.8	0.2	-17.9	6.3	0.1	-19.1	0.1	-32.5	0.1	-14.6	0.1
Lithuania	12.5	34.6	0.1	2.1	11.1	0.1	-4.6	0.1	-28.3	0.1	-16.6	0.1
Poland	25.9	28.0	2.4	12.3	7.5	2.5	8.0	2.8	-8.0	3.0	-7.4	2.6
Romania	17.6	20.3	1.8	23.7	13.1	2.0	13.6	2.1	-19.7	2.0	-9.5	2.0
Slovakia	16.3	6.6	1.7	21.9	17.3	1.9	15.3	2.0	-15.6	2.0	6.2	2.1
Slovenia	26.9	10.1	1.9	12.1	4.2	1.9	7.4	2.2	-11.4	2.2	-10.0	2.2
Czech Republic	20.8	14.8	3.2	16.4	14.4	3.4	7.5	3.7	-18.0	3.7	-20.1	3.3
Hungary	14.2	27.3	3.5	9.2	15.1	3.6	5.0	3.6	-11.5	3.7	-10.6	3.3
Malta	-78.2	-6.3	0.1	-10.5	-30.6	0.0	-8.9	0.0	7.3	0.0	-13.5	0.0
Cyprus	23.1	-19.3	0.1	22.4	4.5	0.1	19.6	0.1	26.8	0.1	-22.9	0.1
Albania	43.7	17.4	0.0	17.6	10.5	0.1	19.3	0.0	35.8	0.0	77.1	0.1
Croatia	12.0	0.5	1.2	5.8	-4.7	1.2	3.2	1.3	-13.4	1.3	-1.9	1.3
Bosnia-Herzegovina	33.0	5.8	0.3	16.9	6.7	0.3	9.1	0.3	-18.7	0.3	-19.8	0.3
Macedonia	17.2	0.0	0.1	41.3	75.0	0.1	26.1	0.1	-2.3	0.1	40.1	0.1
Serbia	18.5	x	x	12.5	x	x	7.6	0.5	-12.9	0.4	4.6	0.7
Montenegro	9.1	x	x	75.5	x	x	61.2	0.1	52.1	0.1	15.2	0.1
Belarus	32.5	-4.8	0.1	24.8	20.0	0.1	34.6	0.1	70.3	0.1	39.0	0.2
Russia	14.7	29.9	2.1	22.9	55.9	2.5	15.0	2.5	-6.9	2.8	-12.1	2.3
Ukraine	13.1	35.3	0.6	32.7	42.5	0.8	21.9	0.8	-3.2	0.7	-35.8	0.6
CIS-Europe	19.5	31.9	2.9	25.0	48.7	3.4	16.9	3.5	-4.7	3.6	-16.2	3.1
CIS-Asia	63.6	45.8	0.3	29.5	16.0	0.4	20.9	0.5	-15.9	0.4	1.3	0.5
Turkey	11.7	23.0	0.8	10.6	8.5	0.8	2.4	0.8	-20.6	0.7	-26.1	0.7
Mongolia	39.7	0.0	0.0	103.4	0.0	0.0	97.4	0.0	337.5	0.0	2,616.0	0.0
CESEE+CA ¹	19.4	14.7	21.7	16.1	16.0	23.2	9.7	24.6	-12.5	24.7	-9.7	24.0

Source: Statistics Austria, OeNB.

Note: For relation of countries to regions, see annex.

¹ Services, excluding Serbia and Montenegro. EU-15: "old" EU, excluding Austria.

Nominal goods export data are available monthly with a delay of roughly 2½ months. In December 2008, the latest month for which data were available at the time of writing, overall nominal exports were 9.0% be-

low their comparative value in December 2007. Exports had even declined by 14.3% in November 2008. This monthly stream of data, however, is not working day-adjusted and is therefore distorted by the different numbers of

working days in these two months.⁷ If one adjusts the data for this calendar effect, then a different trend is seen. Accordingly, nominal goods exports declined by 10% in November 2008 and by as much as 13.4% in December 2008. On this basis, the data tell a similar story for Austria as they do for most of Austria's trading partner countries: growth of exports slumped at the end of 2008. At the same time, the EU Member States that acceded in 2004 and 2007 continued to retain a – moderate – relative “growth advantage,” even during the downturn: Overall, nominal exports to the EU-27 declined in December 2008 by –12.1% (compared to December 2007). Yet while the growth of exports to the “old” EU (EU-15) declined by –12.9%, the growth of exports to the EU-10 declined by just –9.4%. The situation was much the same for exports to Eastern Europe at large, and for data based on November 2008.

2 Effects of Updated Growth Forecasts for Eastern Europe on the OeNB December Forecast for Austria

2.1 Significant Revisions in Recent Growth Forecasts

Until the end of 2008 – based on strong domestic demand – the growth prospects of the Eastern European region, with the exception of Estonia, Lithuania, and Hungary, were considered to be relatively robust, compared to the global downturn. However, rising spillovers of the financial and economic crisis to Eastern Europe since December 2008 have moved the topic closer to the top of the economic and political agenda; and since then, national and international forecasters (EBRD, IMF,

wiiw) have been revising their growth forecasts downward sharply.

Eastern Europe is anything but a unified economic zone. The economic fundamentals, the degree of involvement in international economic cooperation, as well as the economic interdependencies and impact of the international economic crisis are very different, depending on the country. What is common to most countries, however, is that they show similar symptoms of the economic downturn as Western Europe, such as lending restrictions, a significant drop in industrial output, and a sharp decline in exports. But depending on the fundamental situation (such as public and private debt, current account deficit, credit structure, currency reserves, and exchange rate regime) of the individual countries, the symptoms of the crisis have different consequences or become more intensified, through country-specific factors.

The *wiiw* emphasizes these differences in its latest forecast of March 5, 2009. In the forecast, the *wiiw* focuses on the EU Member States that acceded in 2004 and 2007 (differentiating between NMS-5 and NMS-10) and on actual and potential EU candidate states (see annex). Table 2 shows an overview of the current forecasts and forecast revisions for Eastern Europe. The *wiiw*'s forecast revisions are fairly substantial for 2009 compared to the November forecast, particularly for the EU candidate countries (–4.5 percentage points) and for the potential candidate countries (–4.1 percentage points). The forecast revisions for those EU Member States that acceded in 2004 and 2007 are relatively weaker (–2.5 (NMS-5)

⁷ In December 2008, there was one more working day than in December 2007, whereas in November 2008, there was one less working day than in November 2007.

Table 2

Key Results of Current Forecasts for Eastern Europe for 2009

	Designation of country group	Number of countries	Forecast				Difference
			Feb. 09	Jan. 09	Dec. 08	Nov. 08	
EBRD	Central Europe and the Baltic states	9		0.4		2.1	-1.7
	South-eastern Europe	7		1.5		3.4	-1.9
	Eastern Europe and Caucasus	6		-0.8		4.8	-5.6
	Central Asia	6		2.3		4.6	-2.3
	EU-10	10		0.5		2.3	-1.8
	CESEE+CA	29				2.5	
	CESEE+CA¹	30		0.1			
IMF	Central and eastern Europe	14		-0.4		2.2	-2.6
	Commonwealth of Independent States	13		-0.4		3.2	-3.6
wiiw	NMS-5	5	0.6			3.1	-2.5
	EU-10	10	0.0			2.7	-2.7
	Candidate countries	3	-2.4			2.1	-4.5
	Potential candidate countries	4	-0.9			3.2	-4.1
Consensus Economics ²	Central Europe	5	0.2	0.9	2.0	2.7	-2.5
	South-East Europe	7	0.2	1.3	2.5	3.5	-3.3
	Eastern Europe	27	-0.4	1.0	2.6	3.8	-4.2

Source: EBRD, IMF, wiiw, Consensus Economics; for region definitions, see annex.

¹ For the January forecast including Turkey.

² Column difference: Difference between February 2009 and November 2008.

and -2.7 (NMS-10) respectively), but they will nonetheless cause economic activity to stagnate in the EU-10 in 2009. The wiiw stressed that the forecasts for many countries could still be revised downward by 1 to 2 percentage points (Der Standard, 2009).

Consensus Economics publishes monthly forecasts for a large number of countries and groups of countries that are calculated as an average of other institutions' forecasts. The 2009 GDP growth rate forecast for "Eastern Europe" (27 CESEE+CA countries) has declined sharply over the course of recent months. From a growth rate of +3.8% forecast in November 2008, the growth forecasts declined by 1.4 percentage points on average, even turning negative, for the first time, in February 2009 (-0.4%). For the NMS-5 (Central Europe), Consensus Economics has cut its forecast to just a slight positive GDP growth (0.2%).

The EBRD had lowered its GDP forecasts for the CESEE+CA countries significantly already when publishing its latest Transition Report in November 2008 (EBRD, 2008). On January 27, 2009, the forecast was revised considerably downward yet again, however. After having predicted an average growth of 2.5% for the CESEE+CA countries in November 2008, the EBRD now expects GDP in the area to grow by just 0.1% in 2009. The "... EBRD region is feeling the full impact of the global slowdown, mainly because of the region's increased integration within the global economy" (EBRD, 2009). At the same time, the EBRD emphasizes that the situation is mixed; some countries in the region will still show positive GDP growth rates whereas other countries (Ukraine, Hungary, Estonia, and Lithuania) are already experiencing recession at the present time.

In the *IMF's* latest forecast update of January 28, 2009, growth prospects were revised markedly downward (IMF, 2009a). The IMF now forecasts an economic contraction of 0.4% for both the CIS and Central and Eastern European countries (14 states) for 2009. This necessitates a downward revision of the forecast for Central and Eastern Europe by 2.6 percentage points; and also for the CIS, by 3.6 percentage points. The IMF determined that a "sustained economic recovery will not be possible until the financial sector's functionality is restored and credit markets are unclogged. For this purpose, new policy initiatives are needed to produce credible loan loss recognition" (IMF, 2009b).

Altogether, all institutions forecast a much less severe economic downturn (and in some cases, still positive growth rates) for the EU-10 countries, which attract the bulk of Austrian exports to Eastern Europe, than for all CESEE+CA countries.

2.2 How Growth Forecast Revisions Affect the OeNB December 2008 Forecast

In the Austrian Quarterly Model (AQM)⁸ that the OeNB uses to prepare its forecast,⁹ the growth of real exports is determined by the trend of (price) competitiveness indicators and especially by the trend of foreign demand for Austrian products.¹⁰ With the benefit of hindsight, it has become clear that the OeNB's December 2008 forecast (anticipating GDP growth of -0.3% for

Austria in 2009) was based on too optimistic a forecast of the growth trends of Austrian export destinations and, and therefore of the rise in export demand (+1.4% for 2009).

Based on current growth estimates for Eastern Europe and associated lower demand for Austrian exports, the anticipated effects on Austrian export and GDP growth for 2009 were simulated for this article with the aid of the AQM, distinguishing between two scenarios. First, we simulate the effects on Austrian GDP growth of the forecast revisions only for the EU-10. For this purpose, we had to produce a corresponding country sample¹¹ enabling us to compare the effects of the different growth forecasts of the Eurosystem (staff projections of December 2008), the EBRD, and the wiiw. Second, we simulated the effects of the modified forecasts for Eastern Europe at large (CESEE+CA), allowing us to compare the growth forecasts of the Eurosystem, the EBRD, and Consensus Economics. The IMF forecast can unfortunately not be used for a simulation, because no compatible country sample is available.

Based on the average goods export data for 2008, an export share of 17% to the EU-10 and of 25% to the CESEE+CA countries is assumed for the simulation. The real GDP growth rates forecast by the different institutions for the respective region are already given in table 2. The simulations are based on the declines in growth from the underlying assumptions of the

⁸ *Schneider and Leibrecht (2006). The AQM is used for medium-term forecasts and simulation for a timeframe of one to 2½ years.*

⁹ *As a rule, the euro area NCBs produce macroeconomic growth projections for their respective countries in June and December. These projections, which are based on common assumptions that are agreed on with the European Central Bank (ECB), are aggregated and yield the projections for the euro area as a whole.*

¹⁰ *Foreign direct investment is not modeled in the AQM.*

¹¹ *The weighted GDP growth rates of Slovenia and Slovakia were taken from the ESCB staff projections of December 2008 and added to the GDP growth rate of the region "new EU Member States."*

OeNB's December 2008 forecast to the most recent forecast for the respective region. For the EU-10, this is the forecast of the wiiw (0.0%), and for the CESEE+CA countries, that of Consensus Economics (-0.4%). Given that the forecasts for these regions have been steadily revised downward in recent months, we lowered the latest growth forecasts by an extra 1.0 percentage point. Thus, *the simulation is based on the assumption of a decline in growth from 2.8% (own calculation, based on the OeNB's December forecast) to -1.0% for the EU-10, and from 3.3% to -1.4% for the CESEE+CA countries.* Based on this decline in growth, we calculated the effect on the growth of foreign demand for Austrian products for the entire year (the individual quarters, respectively) of 2009, and simulated the effects on export and GDP growth in Austria.

Additionally, we simulated the overall effect of the downturn in Eastern Europe caused by the economic crisis on the Austrian GDP-growth. For this purpose, we used the average growth of Eastern European countries since the turn of the millennium rather than the growth assumptions of the OeNB's December 2008 forecast for Eastern Europe, which had already predicted a downturn. In other words, this scenario represents a benchmark scenario that simulates the overall export-induced negative growth effect of the financial and economic crisis on Austria. The ceteris paribus simulation results are shown in table 3. Here it is to be emphasized again that the calculations cover only the trade channel effects; effects transmitted via the banking sector or through direct investment are not taken into account.

Table 3

Simulating the Effects of Deteriorating Growth Prospects for Eastern Europe for 2009, Compared to OeNB Forecast of December 2008 and to Average Eastern European Growth Rates from 2000 to 2007

Region	EU-10 ¹		CESEE+CA ¹	
Share of overall goods exports in % ²	17		25	
Baseline for regional growth in 2009 based on	OeNB forecast Dec. 08 (= Baseline 1)	Average growth 2000–2007 (= Baseline 2)	OeNB forecast Dec. 08 (= Baseline 1)	Average growth 2000–2007 (= Baseline 2)
(1) Real GDP growth ²	2.8	4.3	3.3	5.8
Simulation assumptions for Eastern Europe				
(2) Assumed real GDP growth for 2009 in %	-1.0		-1.4	
(3) = (2) - (1) Difference in percentage points	-3.8	-5.3	-4.7	-7.2
Simulation results: Effects on Austria in 2009				
Difference in growth compared to baseline in percentage points	Effects based on:			
	Baseline 1	Baseline 2	Baseline 1	Baseline 2
Real GDP growth	-0.4	-0.6	-0.7	-1.1

Source: OeNB.

¹ For region definitions see annex.

² Authors' calculations.

Compared with the OeNB December 2008 forecast, real GDP growth had to be revised downward by 3.8 percentage points for the EU-10, and by 4.7 percentage points for the CESEE+CA countries, according to the simulation with the AQM. Depending on the scenario, the growth of real GDP for Austria in 2009 thus stands to decline by 0.4 percentage points (when taking into account only the EU-10 countries) or by 0.7 percentage points (when taking into account all of the CESEE+CA countries). Likewise, the growth of Austria's real exports stands to decline by either 0.8 percentage points or 1.4 percentage points. Compared with the average growth of Eastern European countries, the negative effect on Austrian GDP growth might amount to -1.1 percentage points.

The assumed decline in growth is based on the current pessimistic forecasts for Eastern Europe, further lowered on the basis of expert judgment by another -1.0 percentage point. At the same time, it cannot be ruled out at present that economic performance might weaken even more. Thus, the simulation results establish, rather, a baseline for the anticipated effects. Finally, it is important to understand that the simulation occurred *ceteris paribus*; any other changes, such as the steep economic downturn in Germany and Italy, as well as all other modified general conditions (such as the decline in oil prices and interest rates) were not considered.

In order to put the impact of the economic decline in the Eastern European region on Austrian exports into perspective, we compared the above results with the effects of the economic decline anticipated for Germany. With an export share of roughly 30%, Germany is Austria's most important trading partner. Thus, we calculated the growth differential between the cur-

rent forecast (IWH, 2009) and the December 2008 forecast of the Deutsche Bundesbank (simulation 1), as well as the average growth between 2000 until 2007 (simulation 2), and the resulting effect on export demand, and thus on the real GDP growth of Austria. The simulations indicate that real GDP growth in Austria is likely to decline by 0.8 percentage points (simulation 1) and 1.1 percentage points (simulation 2) as a result of the economic downturn in Germany; in other words, those results are broadly similar to the downward revisions triggered by the economic downturn in the CESEE+CA countries.

3 Summary and Conclusions

The focus of Austrian exporters on Central, Eastern, and Southeastern Europe has been instrumental in increasing total exports, enabling Austria to profit substantially from Eastern Europe's strong, above-average growth as it turned much-cited historical ties into a first-mover advantage. At the end of 2008, however, Austrian exporters suddenly faced a marked decline in exports to Eastern Europe, against the backdrop of an even larger decline of exports to Western Europe, though.

Over the course of the past several months, economic forecasts for 2009 have been revised downward considerably for all countries and also for Eastern Europe. However, growth in individual Eastern European countries is very diverse. Whereas, in the meantime, deep recessions are expected in some countries, such as the Baltics, Ukraine, and Hungary, the various forecasting institutions anticipate stagnation for other countries (Slovenia, the Czech Republic, among others), while yet other countries (Slovakia, Poland, among others) still have positive growth prospects.

Due to the sharp decline in growth in Eastern Europe and the resulting decreased demand for Austrian exports, simulation calculations made with the OeNB's macroeconomic model show that GDP growth in Austria is likely to decline between 0.4 and 1.1 percentage points in 2009, depending on the scenario. What we did in the scenarios was replace (*ceteris paribus*) the assumptions underlying the OeNB's December 2008 forecast or the historical average growth rates from 2000 through 2007, as appropriate, with the latest growth forecasts for either the EU-10 countries alone or the entire CESEE+CA region, adjusted downward by an additional 1 percentage point for the ongoing recession in Eastern Europe. In comparison, the effects on Austrian GDP growth generated solely by the economic downturn in Germany, are very similar (−0.8% percentage points based on current forecast revisions, and −1.1 percentage points compared to average growth).

The negative effect on GDP growth in Austria, generated by the recession in Eastern Europe, is to be seen in a

wider perspective. Although the forecast revisions for the Eastern European countries have been heavier in recent months than those for Austria's most important trading partners (Germany, Italy, Switzerland), Eastern Europe and especially the EU-10 – the key destination of Austrian exports to Eastern Europe – have managed to retain a positive growth differential to Western Europe, according to the current forecasts in 2009. From 2004 to 2008, Eastern Europe had a growth advantage of roughly 3½ percentage points on average over the euro area. Based on the IMF forecast, this differential will be roughly half in 2009, amounting only to approximately 1½ percentage points. In spite of everything, this means that, from a present-day perspective, the CESEE countries will grow stronger, or will contract less sharply, than Western Europe, even during the 2009 economic crisis. Thus, the strong exposure of Austrian exporters to Eastern Europe in fact softens the external trade effects of the current recession.

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Annex

Regional Allocation of Countries

Designation of country group	Term Definitions					Statistics Austria	ECB			EBRD				
	Central and Eastern Europe (CEE)	New EU Member States (EU-10)	Central, Eastern and South-eastern Europe (CESEE)	Commonwealth of Independent States (CIS)	Central, Eastern, South-eastern Europe and Central Asia (CESEE+CA)	Eastern Europe	Acceding EU countries aggregate	CIS + other CEES	Listed separately	Central Europe and the Baltic states	South-eastern Europe	Eastern Europe and Caucasus	Central Asia	Listed separately and aggregate
Number of countries	8	10	20	12	30	27	8	18	8	9	8	6	6	30
Bulgaria		x	x		x	x	x				x			x
Estonia	x	x	x		x	x	x			x				x
Latvia	x	x	x		x	x	x			x				x
Lithuania	x	x	x		x	x	x			x				x
Poland	x	x	x		x	x	x		x	x				x
Romania		x	x		x	x	x		x		x			x
Slovakia	x	x	x		x	x			x	x				x
Slovenia	x	x	x		x	x			x	x				x
Czech Republic	x	x	x		x	x	x		x	x				x
Hungary	x	x	x		x	x	x		x	x				x
Cyprus														
Albania			x		x	x		x			x			x
Bosnia-Herzegovina			x		x	x		x			x			x
Croatia			x		x	x		x		x	x			x
Macedonia			x		x	x		x			x			x
Montenegro			x		x	x					x			x
Serbia			x		x	x		x			x			x
Armenia				x	x	x		x				x		x
Azerbaijan				x	x	x		x				x		x
Georgia				x	x	x		x				x		x
Kazakhstan				x	x	x		x					x	x
Kirghizistan				x	x	x		x					x	x
Moldova			x	x	x	x		x				x		x
Russia			x	x	x	x		x		x				x
Tajikistan				x	x	x		x					x	x
Turkmenistan				x	x	x		x					x	x
Ukraine			x	x	x	x		x				x		x
Uzbekistan				x	x	x		x					x	x
Belarus			x	x	x	x		x				x		x
Mongolia					x				x				x	x
Turkey					x				x					x

Source: Compiled according to the current forecast definitions of Statistics Austria, the ECB and the EBRD.

(Continuation)

Regional Allocation of Countries

Designation of country group	IMF			wiiw					Consensus Economics			
	Central and eastern Europe	Commonwealth of Independent States	Listed separately	New Member States NMS-5	New Member States NMS-10	Candidate countries	Potential candidate countries	Listed separately	Central Europe	South-East Europe	CIS	Eastern Europe and separately listed
Number of countries	14	13	1	5	10	3	4	20	5	7	10	27
Bulgaria	x				x			x		x		x
Estonia	x				x			x				x
Latvia	x				x			x				x
Lithuania	x				x			x				x
Poland	x			x	x			x	x			x
Romania	x				x			x		x		x
Slovakia	x			x	x			x	x			x
Slovenia				x	x			x	x			x
Czech Republic	x			x	x			x	x			x
Hungary	x			x	x			x	x			x
Cyprus												x
Albania	x						x	x		x		x
Bosnia-Herzegovina							x	x		x		x
Croatia	x					x		x		x		x
Macedonia	x					x		x		x		x
Montenegro							x	x				
Serbia	x						x	x		x		x
Armenia		x									x	x
Azerbaijan		x									x	x
Georgia		x									x	x
Kazakhstan		x						x			x	x
Kirghizistan		x										
Moldova		x									x	x
Russia		x	x					x			x	x
Tajikistan		x										
Turkmenistan		x									x	x
Ukraine		x						x			x	x
Uzbekistan		x									x	x
Belarus		x									x	x
Mongolia		x										
Turkey	x					x		x				x

Source: Compiled according to the current forecast definitions of the IMF, wiiw and Consensus Economics.

A Leading Indicator of Austrian Exports Based on Truck Mileage

Gerhard Fenz,
Martin Schneider¹

The close correlation between economic activity and freight performance is emphasized in numerous international studies. With regard to Austria, timely information on truck mileage has been available since 2004 when Austria introduced road pricing. In this study, truck road pricing data compiled by the Austrian highway authority (ASFINAG) are analyzed for the first time with respect to their adequacy as a leading indicator for various macroeconomic indicators. The results show that truck mileage is a good leading indicator above all for goods exports. The timely availability provides an information advantage in analyzing economic developments of two to three months relative to the first release of export data by Statistics Austria.

JEL classification: E32, E37, F17

Keywords: leading indicator, transport volume, export activity, business cycle, forecasting

Meaningful analysis of the latest economic developments depends on the timely availability of economic data – even more so in today’s turbulent times. However, most economic data are subject to significant publication lags – for instance delays of around 65 days following the end of the reporting month for external statistics and trade sales data for Austria, and delays of 55 days for data on industrial production.

Since the production and distribution of goods is highly dependent on freight services, freight data might be a good short-term indicator. To assess the validity of this assumption, we have analyzed the data on truck road pricing that Austria’s highway authority ASFINAG collects. These data have the advantage of being available within just a few days after the end of each month.

The goal of this study is to analyze the truck mileage data with respect to their adequacy as a proxy for various macroeconomic indicators. The results show a close correlation between truck mileage and goods exports and imports, retail sales, and industrial production. This correlation provides an information advantage of two to three

months over data published by Statistics Austria.

1 Correlation between Transport and Economic Activity

Business activity in an economy is closely related with freight performance. The high correlation between freight growth and economic growth has been emphasized in numerous international studies (OECD, 2003) and exists both in the short and long term. The dominant factors in the long term include globalization, changes in production structures (outsourcing, offshoring), the formation of regional trade blocs (EU, NAFTA, etc.), changes in consumer preferences, increases in efficiency, and investments in transportation infrastructure, whereas short-term changes basically reflect fluctuations in production and demand.

Brunel (2005) offers a good overview of the international literature on the correlation between economic activity and transport, differentiating between two bodies of literature. The first deals with long-term changes in transport intensity and whether there is a decoupling between freight perfor-

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Table 1

Freight Performance in Austria in 2005

	Road	Rail	Pipelines	Inland waterway	Total
<i>Freight performance in million ton kilometers</i>					
Inland transport	13,876	4,200	160	37	18,273
Exports and imports	10,760	8,428	3,807	1,275	24,270
Transit trade	10,707	5,162	11,517	1,284	28,670
Total	35,343	17,790	15,484	2,596	71,213
<i>Share in % (total freight performance per type of transport = 100)</i>					
Inland transport	75.9	23.0	0.9	0.2	100.0
Exports and imports	44.3	34.7	15.7	5.3	100.0
Transit trade	37.3	18.0	40.2	4.5	100.0
Total	49.6	25.0	21.7	3.6	100.0
<i>Share in % (total freight performance per means of transport = 100)</i>					
Inland transport	39.3	23.6	1.0	1.4	25.7
Exports and imports	30.4	47.4	24.6	49.1	34.1
Transit trade	30.3	29.0	74.4	49.5	40.3
Total	100.0	100.0	100.0	100.0	100.0

Source: Herry Consult GmbH (2007).

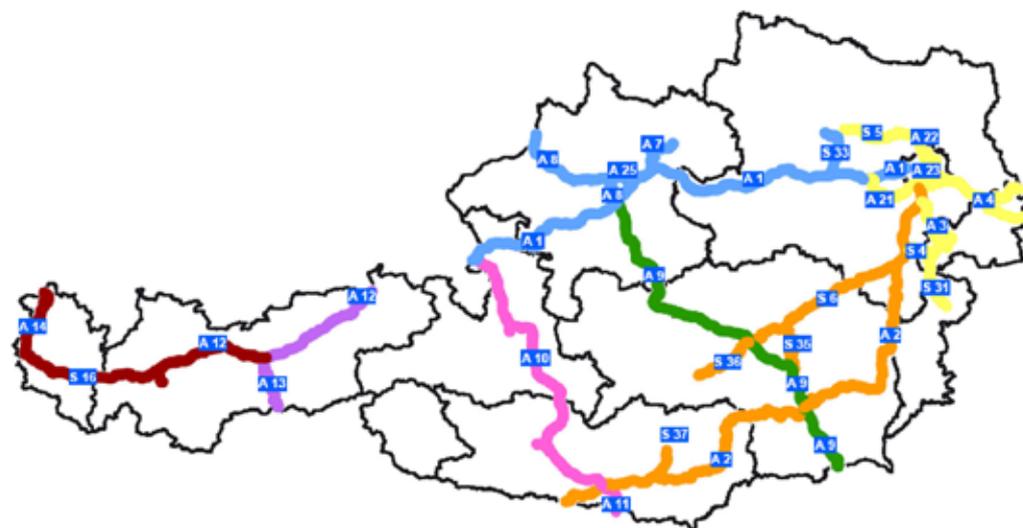
mance and economic growth (Baum and Kurte, 2002; Ahman, 2004). This is highly relevant in particular for environmental policy issues. The second strand, which is relevant for this study, analyzes the elasticity between freight performance and economic growth. Examples that document the close correlation between freight performance and economic growth based on error correction models include Meersman and Van de Voorde (1999) for Belgium, Lenormand (2002) for France, and Ramanathan (2001) for India. Lahiri and Yao (2004) and Lahiri et al. (2003) construct a transport index for the U.S.A. and show that it leads the economic turning points of the National Bureau of Economic Research (NBER) by five to six months. Andersson and Elger (2007) come to a similar conclusion in a study for Sweden. They differentiate between short-, medium-, and long-term fluctuations and find that medium-term fluctuations in freight performance precede the business cycle, i.e. they foreshadow the medium-term fluctuations in economic growth. However, the highest corre-

lation to be found is in the short term. Of the economic indicators used by Andersson and Elger (2007), export activity exhibits the highest correlation with freight performance in the short term. With 0.64, the correlation coefficient is significantly higher than the coefficient for GDP (0.41). Finally, Yao (2005) examines the correlation between freight performance and inventories, verifying the significant feedback effect between both variables using Granger causality tests. From an economic standpoint, even the value added through transport services is relevant. The transport sector contributes around 4% to overall value added in Austria.

2 Freight Performance in Austria

Goods are transported through Austria by road, rail, and water, through pipelines, and by air, but roads are the single most important means of transport by far. Roads accounted for 49.6% of total freight performance (measured in million ton kilometers – tkm) in 2005. Rails ranked second with a 25.0% share. A breakdown of trans-

Key Routes within the ASFINAG Network



- Route 1 – Arlberg (A14, S16, A12 Zams exit to Innsbruck intersection)
- Route 2 – Brenner (A12 Kiefersfelden to Innsbruck intersection, A13)
- Route 3 – Tauern (A10, A11)
- Route 4 – Phym (A9)
- Route 5 – Danube (A1, A7, A25, S33)
- Route 6 – South (A2, S6, S35, S36)
- Route 7 – Vienna area (A3, A4, A6, A21, A22, S1, S4, S5, S31)

Source: ASFINAG.

Note: A = Highway; S = Expressway.

port performance by means of transport shows a rather balanced relationship between intra-Austrian transport (39.3%), exports and imports (30.4%), and pure transit trade (30.3%).

Highways and expressways dominate within the category of roads. In 2006, they accounted for 63.9% of total trucking performance over 3.5 tons (Herry Consult GmbH, 2007). In total, one-third of all goods are transported by truck on highways and expressways in Austria.

3 Truck Road Pricing Data for Austria

As the road toll operator in Austria, the highway authority ASFINAG can provide timely data on truck traffic.² Austria implemented an electronic road

pricing scheme for trucks, buses and motorhomes maximum permissible weight of more than 3.5 tons on January 1, 2004. The appropriate charges are automatically deducted from vehicles entering restricted zones via in-vehicle units, with tolls amounts reflecting mileage as well as the number of axles. Trucks account for the overwhelming majority of tolling transactions (96%); buses and other vehicles over 3.5 tons, such as motorhomes, for the residual amount.

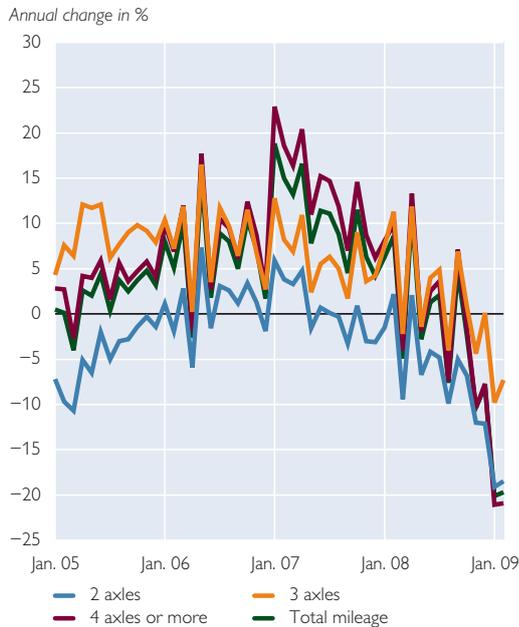
ASFINAG collects road-pricing data for a total of 855 tolling sections. To facilitate analysis, the data are aggregated to seven key routes (Route 1 – Arlberg; Route 2 – Brenner; Route 3 – Tauern; Route 4 – Phyrn; Route 5 – Danube; Route 6 – South; Route 7 –

² The ASFINAG traffic data are not generally available at this time, but ASFINAG has kindly agreed to make the data available to the OeNB shortly after the end of each month for the purpose of short-term economic analysis.

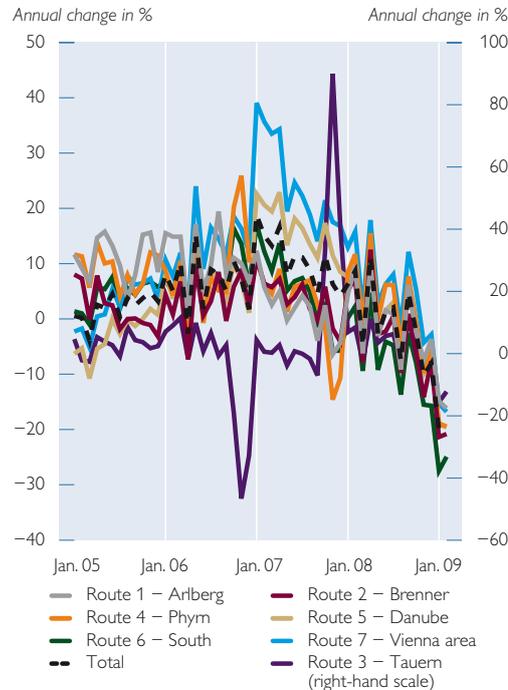
Chart 2

Total Truck Mileage on the ASFINAG Network

According to number of axles



According to tolling sections (key routes)



Source: ASFINAG.

Vienna area). Furthermore, data breakdowns are available for different numbers of axles – two, three, and four or more axles – and for tolling transactions at border crossings.

When analyzing the traffic data, it is important to remember that they can be distorted by special factors. These include temporary shifts in traffic between key routes, for instance as a result of roadblocks. For example, A10 was blocked for reconstruction work on the Altersberg bridge from October to December 2006, forcing through traffic between Germany and Italy to detour to other routes. In addition, highway expansions can cause traffic to shift between key routes and/or result in a general increase in traffic volume.³ Finally, (temporary) shifts in traffic can occur as a result of developments abroad. For example, Germany also in-

troduced a road pricing scheme on January 1, 2005, and the Czech Republic did so for trucks weighing more than 12 tons on since January 1, 2007.

4 Explanatory Value of Truck Mileage for Macroeconomic Variables

The explanatory value of data on truck mileage is analyzed using single equation models, since the length of the available time series does not permit the use of an error correction model, which is customary in international studies.

The analysis of the explanatory value for various macroeconomic variables is subject to a number of constraints, starting with the relatively short time span for which data are available. Monthly data on truck mileage have only been available since January

³ ASFINAG's network grows by an average of 2% annually.

2004, which adds up to 63 separate observations until March 2009. Since 12 observations are lost through the construction of annual growth rates, and since the corresponding macroeconomic series are only available up to December 2008 or January 2009, only 48 or 49 observations remain for the econometric estimates. Owing to the relatively short data sample, none of the otherwise common out-of-sample tests for assessing their predictive quality can be performed; neither can the tests for robustness of estimated parameters. In light of this, the estimation and forecast results must be interpreted with the requisite caution.

While the time series on truck mileage and macroeconomic variables can be controlled for seasonal fluctuations by using annual changes, working-day effects may produce spurious

correlations, since both truck mileage and the dependent macroeconomic variables are influenced by the number of working days per month. Therefore, the series are adjusted for working-day effects.⁴ The intensity of the working-day effect can be seen in the last row of table 2. A 1% increase in working days in one month leads to a 0.75% increase in truck mileage.⁵ The working-day effects are similarly high for exported and imported goods. Business-day effects (i.e. the effect of the various number of Monday-through-Saturday business days per month) were calculated for retail sales. These turned out to be considerably weaker than the working-day effects. This suggests that demand-side factors dominate in the retail industry, whereas supply-side factors are more likely to affect freight performance and exports. Industrial production figures

Table 2

Explanatory Value of Truck Mileage for Macroeconomic Variables

	Total truck mileage	Goods exports, real	Goods imports, real	Retail sales, real	Industrial production, NACE C–E, real
Data adjusted for working days					
Constants		1.42	1.60	−0.19	3.78
Total truck mileage	0.86	[0.000]	0.63	[0.000]	
Total truck mileage, 3 axles				0.09	[0.018]
Total truck mileage, 3 axles (−1)				0.12	[0.005]
Truck mileage, key southern route					0.30
Dummy December 2007		−15.10	[0.000]		[0.000]
Adjusted R ²		0.74	0.51	0.44	0.76
Durbin-Watson statistic		1.53	1.70	1.19	1.74
Working-day effect ¹	0.75	0.85	0.70	0.30	x ²

Source: Authors' calculations.

Note: Endogenous variables and regressors are annual growth rates (adjusted for working days). Values in square brackets are error probabilities (p-values).

¹ Calculated for January 2000 to December 2008, except for truck mileage figures, which have been available only since January 2004. Retail sales were adjusted for business days (incl. Saturdays).

² Series is already adjusted by Statistics Austria.

⁴ As a general rule, Eurostat recommends not to adjust series shorter than three years for seasonal and/or working-day effects, whereas it recommends to adjust time series that are three to seven years long, but to inform users that the estimated parameter values can exhibit instability if there are too many regressors (Eurostat, 2008). The time series adjusted in this study pass all Tramo/Seats tests. Please refer to Scheiblecker (2003) for more on adjusting Austria's quarterly GDP for working-day effects.

⁵ This econometric result coincides well with ASFINAG's data, according to which the average number of daily tolling transactions on Saturdays, Sundays, and holidays corresponds respectively to 35.8%, 15.4%, and 13.6% of the average number of weekday transactions.

as published by Statistics Austria are already adjusted for working days.

Whereas retail sales and industrial production are available in real terms, Statistics Austria publishes figures on exports and imports in nominal terms only. Export and import deflators are only available on a quarterly basis. Therefore, we estimated the monthly deflator series necessary to adjust for inflation with a state space model. For explanatory monthly variables, the HICP and bilateral exchange rate of the euro to the U.S. dollar were chosen on the export side, while the commodity

price index of the Hamburg Institute of International Economics (HWWI) was used additionally on the import side.

The dependent variables were regressed either on total truck mileage or on the mileage attributable to selected key routes or the number of axles. The estimation horizon runs from January 2005 to November/December 2008. The results all appear plausible; the respective equations all have high explanatory value and significant coefficients (table 2). With the exception of the equation for retail sales, the Durbin-Watson statistic shows only low serial

Chart 3

Actual and Explained Behavior of Macroeconomic Variables (adjusted for working days)

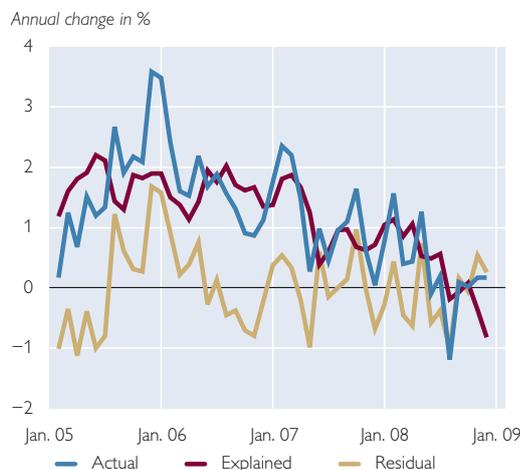
Goods exports, real



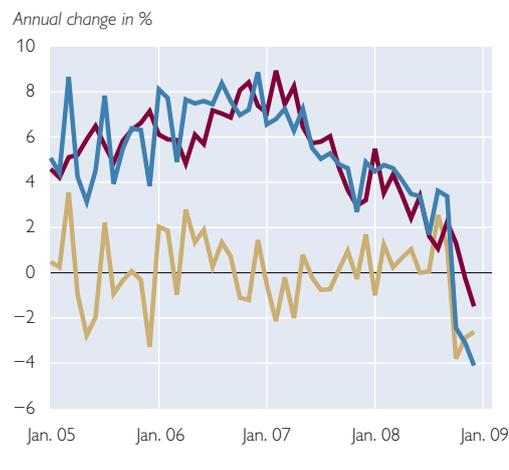
Goods imports, real



Retail sales, real



Industrial production, real



Source: Statistics Austria and authors' calculations.

correlation in the residuals. Exports and imports of goods are best explained by truck mileage across the entire network, with exports exhibiting both a higher explanatory value as well as a higher coefficient on truck mileage. The coefficient of determination of 0.7 for goods exports coincides with other results found in the empirical literature (Andersson and Elger, 2007). Retail sales are best explained by the aggregated mileage of trucks with three axles. This makes sense, because trucks with more than three axles are mostly used for long-distance transport. Truck mileage on the key southern route, finally, provides the best explanatory value for industrial production (NACE C–E). This result appears to be plausible, considering the concentration of important industries in Styria and the area's below-average share of through traffic.⁶

5 Decrease in Truck Mileage Implies Further Worsening of the Economic Downturn

Austrian economic output already declined in the fourth quarter of 2008 according to the flash estimate by the Austrian Institute of Economic Research (WIFO). The 0.2% quarter-on-quarter decrease in real GDP (adjusted for seasonal and working-day effects) was relatively moderate compared to other countries, though. In the same period, GDP fell by 1.5% in the euro area, while the decline in Germany was even worse (–2.1%). In particular, the decrease in exports and capital expenditures in Austria was considerably lower than expected. GDP was supported mainly by consumer spending (+0.4%) as well as government

spending (+0.2%). In contrast, exports (–1.0%) and capital expenditures (–0.2%) continued to decline as in the previous quarters.

A forecast of real goods exports adjusted for seasonal effects based on truck mileage data up to March 2009 (table 3) shows that the slowdown in export activity that began when the financial crisis intensified in fall 2008 continued in February (–19.5%) and March 2009 (–20.2%). Controlled for the different amount of working days in February (–1) and March (+2) 2009 compared to 2008, real goods exports are expected to have, in fact, decreased by an even higher rate in February (–23.6%) and by a somewhat lesser rate in March (–11.8%).⁷

As a result of temporary special factors at the end of the estimation period in the fourth quarter of 2008, the growth in exports was overestimated by an average of 5 percentage points (chart 3). These special factors include, on the one hand, the number of empty trips, which increased during the financial crisis according to industry sources. On the other hand, the share of truck exports and imports in total traffic volume may also have fallen, because the current economic crisis was caused in large part by decreasing demand in Austrian export markets, while domestic demand – in particular consumer spending – remained comparatively stable. These special factors have been accounted for in the projections for February and March 2009.

The forecast decreases for trade sales and industrial production may be weaker than for foreign trade, but the figures at the same time imply that sharper decreases will follow, and that the eco-

⁶ Statistical tests regarding the effect of special factors, such as temporary roadblocks or highway expansions, were not significant.

⁷ An evaluation of the number of tolling transactions according to border crossings suggests a regionally uniform decline in exports.

Table 3

Forecasts of Macroeconomic Variables

	Total truck mileage	Goods exports, real	Goods imports, real	Retail sales, real	Industrial production, NACE C–E, real
<i>Annual change in %</i>					
Adjusted for working days					
Sep. 08	-3.3	-2.0	-3.2	0.1	3.5
Oct. 08	-6.1	-9.6	-0.2	0.0	-1.9
Nov. 08	-8.9	-11.3	-9.1	0.1	-3.8
Dec. 08	-10.1	-14.0	-11.6	0.4	-4.1
Jan. 09	-12.9	-18.2	-14.4	-0.3	-2.9
Feb. 09	-14.5	-19.5	-15.4	-1.0	-3.0
Mar. 09	-15.3	-20.2	-15.9	-0.6	-2.6
Not adjusted for working days (historical data), or controlled for the number of working (business) days per month (forecast data)					
Sep. 08	4.7	8.1	1.7	1.3	×
Oct. 08	-2.4	-4.8	-0.1	1.2	×
Nov. 08	-10.3	-14.8	-9.4	-2.8	×
Dec. 08	-8.0	-9.3	-7.1	-2.1	×
Jan. 09	-20.1	-25.5	-18.7	-1.5	×
Feb. 09	-19.7	-23.6	-18.7	-2.2	×
Mar. 09	-11.0	-11.8	-8.9	0.6	×

Source: ASFINAG, Statistics Austria, and authors' calculations.

Note: values in bold print = forecast values.

conomic decline will be broad-based. The information currently available is inconclusive in determining whether these developments signal either a worsening or bottoming out of the recession in the first quarter of 2009.

However, the forecast results must be interpreted cautiously. As explained in section 4, the short time series preclude the application of otherwise common test methods. Thus, it is too early to provide a conclusive assessment of the forecast quality; this will not be possible until a correspondingly long time series of real time forecasts is available. Therefore, the early indicators for Austria on the basis of truck mileage can only supplement other methods and models of economic analysis and should by no means replace them.

6 Summary

The aggregate output of an economy is closely correlated with freight perfor-

mance. Numerous international studies document that there is a close correlation both in the long and short term. Since short-term changes in freight performance essentially reflect fluctuations in production and demand, timely freight data are good leading indicators for economic developments.

With regard to Austria, timely information on truck mileage on highways and expressways, which accounts for one-third of freight mileage in Austria, has been available since 2004 when Austria introduced road pricing. Empirical analysis of the truck road pricing data compiled the Austrian highway authority (ASFINAG) shows that truck mileage has a high explanatory value for goods exports and imports as well as for industrial production, enabling the precise “nowcasting” of these key macroeconomic variables. Truck mileage data have the advantage of being available two to three months ahead of other data, which represents a substantial in-

formation advantage. However, the econometric results have to be interpreted with due caution in light of the small data sample. As a result of their positive leading indicator properties and their time availability, road pricing data will continue to play an important role in the analysis of current economic developments.

Precise and timely economic information is extremely important, in particular in economically difficult and uncertain times such as at the current juncture. The forecasts for foreign trade and industrial production prepared on the basis of road pricing data point to a further worsening of the economic downturn. Accordingly, an economic turnaround is not yet in sight.

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Monetary Policy Implementation during the Crisis in 2007 to 2008

Clemens Jobst¹

Since the outbreak of turbulence in the financial markets in August 2007, the implementation of monetary policy – typically a peripheral aspect for observers of monetary policy – has attracted increased attention. The heightened attention was accompanied by uncertainty about how to interpret the liquidity measures taken and what to make of the new instruments introduced. This contribution provides the facts needed to properly understand central bank measures by focusing on the euro area and the U.S.A. Essentially, observers need to be aware that today, the main avenue of monetary policy implementation is interest rates rather than monetary aggregates such as the monetary base. Moreover, adjusting the liquidity implementation framework is not necessarily tantamount to changing the monetary policy stance. Finally, the specific institutional frameworks of individual central banks have a bearing on how they implement monetary policy. The contribution concludes with a description of possible techniques for implementing monetary policy under very low interest rates.¹

JEL classification: E43, E58

Keywords: monetary policy implementation, financial crisis, operating procedures, money market, quantitative easing

Since August 2007, the operational framework for the implementation of monetary policy, usually a peripheral aspect of monetary policy, has moved into the limelight, as central banks have among others provided large-scale liquidity injections, introduced new longer-term refinancing operations (LTROs), extended the list of assets eligible as collateral for monetary policy operations, bought mortgage-based securities and commercial paper, moved to a fixed rate tender procedure with full allotment for the main refinancing operations, and launched new lending programs. While the monetary policy stance – which is epitomized by the policy rate – has always been closely monitored, observers used to take little note of the instruments with which central banks keep market interest rates closely aligned with official interest

rates, at least as long as the times were tranquil. The actual implementation of monetary policy was considered a technical issue; accordingly, it was often not well understood.²

Consequently, there was frequent uncertainty about how to interpret central banks' measures when the financial crisis erupted. For instance, do operations providing liquidity on a large scale signify policy easing? Also, how do the monetary policy measures of the European Central Bank (ECB) compare with those of the Federal Reserve System (Fed)? Finally, what does “quantitative easing” mean?

This contribution uses an explanatory overview of the general features of monetary policy implementation to provide a better understanding of the measures taken during the one-and-a-half years to February 2009. The pre-

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² This applies even to academic research on monetary policy, which is frequently based on a stylized presentation in which the monetary base is accorded a key role in the implementation of monetary policy that it does not actually have in practice. Among other things, such a perspective results in the misconception that reserve requirements serve to control money supply, or that the central bank steers interest rates by adjusting the monetary base (Borio, 1997, pp. 9–10). Using examples in the literature on liquidity effects, the bank lending channel and sterilized foreign exchange intervention, Disyatat (2008) demonstrates the problems inherent in models based on monetary aggregates.

Refereed by:
Ulrich Bindseil, ECB

sentation concentrates on the U.S.A. and the euro area as cases in point, but the policy of other central banks is easily understood by analogy.

Section 1 sketches out the main elements of monetary policy implementation and delineates some of the major differences between the approaches of the ECB and the Fed prior to the onset of the turmoil in the summer of 2007 as the basis for the interpretation of their measures after August 2007. These are then discussed in section 2. Section 3 deals with the worsening of the turmoil after the collapse of Lehman Brothers, the U.S. investment bank, in mid-September 2008. In retrospect, central banks were all faced with similar challenges to policy implementation, and, subject to differences in their operational frameworks, they reacted similarly to these challenges. The types of instruments and their use tended to converge.

Meanwhile, the interest rate cuts in the wake of the marked deterioration of the economic outlook since fall 2008 have raised new policy implementation issues, especially that of how to ease monetary policy further when interest rates are already very low. Currently, it is not clear to what extent individual central banks will take nonstandard measures, i.e. measures other than adjusting interest rates, and what measures these might be. Consequently, section 4 closes with some general considerations about monetary policy and policy implementation in a low-interest rate environment.

1 The Operational Framework for Implementing Monetary Policy

Before embarking on the discussion of monetary policy implementation, it is

appropriate to briefly clarify the difference between monetary policy strategy itself and its implementation.

1.1 Strategic and Operational Targets

As a rule, the tasks of central banks are laid down in their respective statutes. For example, the primary objective of the European System of Central Banks (ESCB) is “to maintain price stability”; moreover “without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Community” (Article 105(1) of the Treaty). The Bank of England Act 1998 also mandates price stability as the objective of the Bank of England (BoE), and, subject to that, calls on the BoE to support growth and employment. The mandate of the Fed is defined more broadly: In addition to the requirement of maintaining stable prices, it calls for monetary policy commensurate with long-run potential growth, maximum employment and moderate long-term interest rates.³

Whether a central bank targets low inflation or full employment, it cannot control these strategic targets directly; it can only attempt to reach these targets through the implementation of monetary policy measures. Policy implementation is done through an operational target that must comply with two criteria: First, the operational target must be such that the central bank is well equipped to control it, and second, the operational target must have a predictable causal relationship with strategic targets, allowing the central bank to control the strategic target by controlling the operational target.

There is a broad consensus among central banks that the best primary target is a very short-term interest rate

³ For a more detailed presentation of the differences, see e.g. Crespo Cuaresma and Gnan (2008).

(Borio, 1997).⁴ In most cases, this is the overnight rate – the interest rate at which banks lend immediately available funds, namely their deposits or balances with the central bank, to another bank. While such a very short-term rate does not play an immediate role for spending and investment decisions, the short-term interest rate and expectations about its future course determine the level of longer term rates, i.e. the yield curve. Long-term rates in turn are reflected in decisions taken in the real economy and thus in the end have an impact on central banks' strategic targets. The process by which changes in short-term interest rates are passed on to the economy in general is called the “monetary policy transmission mechanism.” Precise steering of short-term interest rates coupled with a stable transmission mechanism allows central banks to reach their strategic targets (ECB, 2004).

1.2 Supply and Demand for Central Bank Balances, Minimum Reserves, and Short-Term Interest Rates⁵

The market for central bank balances (bank deposits at the central bank), which determines short-term interest rates, has some special features. On the one hand, the central bank is the monopoly *supplier* of such balances and can create these at will. On the other hand, the central bank has a strong in-

fluence on the *demand* for central bank balances. This demand results from the reserve requirements, which the central bank determines, and the prominent role that central banks play in the payment system. Being able to control both supply and demand equips central banks to steer overnight rates very accurately.

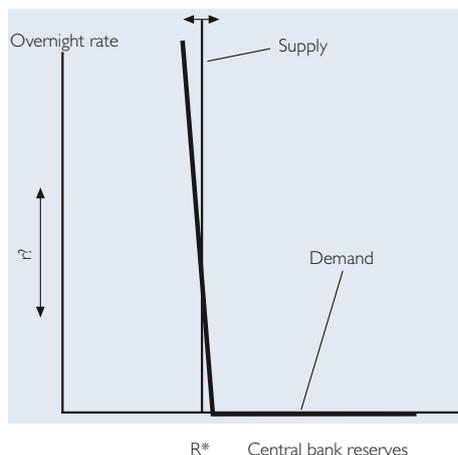
For banks, holding balances with the central bank is a necessity. These balances are as good as cash, and may be essential for achieving payment finality, as in some jurisdictions payments can only be settled with finality in central bank money. Central bank money also plays a pivotal role in electronic payment systems that transmit payments between banks. From a commercial bank's view, its balances with the central bank are comparable to cash in a consumer's pocketbook: The bank will try to have balances at a level that is high enough for it to execute all transactions, even ones that come as a surprise, just like a consumer tries to have enough cash on hand to buy things on a whim, if necessary. Like cash, reserves held at the central bank do not bear interest, or at least not an attractive amount of interest, however, so that banks, like consumers, will try to keep these holdings as small as possible. This means that demand for balances for transactions purposes will react very little to changes in price (in the overnight rate) and is therefore very inter-

⁴ An alternative target, previously used by the Fed among others, is the size of bank balances with central banks. While these aggregates can be easily controlled by central banks as well, this method is subject to constraints, which eventually prompted the Fed to return to steering the federal funds rate, the rate that banks charge each other for overnight loans. See Bindseil (2004) on the Fed and Bundesbank, and Tucker (2004) on the Bank of England.

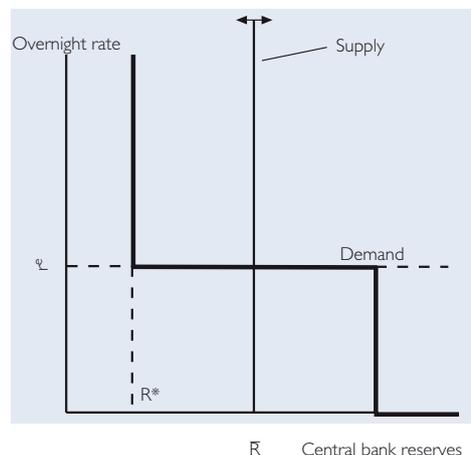
⁵ Most central banks have made available detailed descriptions of their operational frameworks. ECB (2004) gives an introductory overview of the ECB's framework; the related technical documentation is available in ECB (2008). Readers interested in policy implementation in the U.S.A. will find easily accessible information in Fed (2005). Whereas Bank of England (2008) is not targeted at a general readership, it does provide a useful introduction to the techniques used to control overnight rates that extends beyond the specific situation of the BoE. The fundamental similarities between central banks are more easily discernible in comparative works, however, like those regularly published by the Bank for International Settlements (BIS). Subsection 1.2 is heavily based on Borio (1997, 2001). The monograph by Bindseil (2004) includes a detailed, rather advanced-level discussion and in addition provides a description of the evolution of policy instruments over time.

Demand for Central Bank Balances

Market for Reserve Balances without Reserve Requirements



Market for Reserve Balances with Reserve Requirements



est-inelastic, as evidenced by the vertical curve of the demand function in Chart 1 (left panel): Demand for the transaction balance, or reserves, R is independent of, or hardly dependent on, interest rate r . Without intervention by the central bank, even tiny fluctuations in demand for balances would lead to very strong interest rate fluctuations, given fixed supply (with the central bank as the monopoly supplier). If the demand of all banks exceeds the supply of central bank money, the interest rate rises very sharply, as banks are hardly willing to forgo the reserves that they urgently need even if interest rates are high. Conversely, if demand is only slightly lower than central bank supply, many banks will try to shed excess balances, but will not find any takers: the price (interest rate) declines toward zero.

The best way to understand the supply of central bank balances is to study the central bank’s balance sheet. For easier reading, the items in the balance sheet can be rearranged under four categories:

1. Autonomous factors cover all balance sheet items other than those linked with monetary policy operations and central bank balances. Typically, these factors are not under the direct control of the central bank, or, at least, they are not managed within the operational framework of implementing monetary policy. The autonomous factors include banknotes in circulation, general government deposits and the long-term investments of the central bank, and they are found both on the liability side (e.g. banknotes in circulation) and on the asset side (e.g. gold holdings). In monetary policy implementation practice, the autonomous factors are considered a given.
2. Open market operations are part of a central bank’s operational framework. They are conducted on initiative of the central bank with the objective of managing the volume of central bank balances. In open market transactions, the central bank can, e.g., sell or buy assets outright or conclude repurchase agreements

(repos). Under such repos, the central bank buys (sells) securities and simultaneously obtains the right and obligation to resell (repurchase) them at a future date. Whenever open market transactions are conducted, central bank balances are either created or destroyed.

3. Standing facilities are also monetary policy operations, but they are conducted on initiative of banks, unlike in the case of open market operations. The central bank determines the conditions applicable to the standing facilities, whereas the degree of utilization is determined by the eligible counterparties. By way of example, in the euro area there is a liquidity-absorbing deposit facility under which banks can make overnight deposits, and there is a marginal lending facility under which banks can obtain additional liquidity overnight against collateral.
4. Current account holdings with the central bank.

From the central bank's perspective, current account holdings with the central bank represent the balance of the three above-mentioned components. Assuming that the autonomous factors are exogenous, the objective of mone-

tary policy implementation is to wield open market operations and the standing facilities such that the supply of deposits and banks' demand for deposits is in equilibrium at the desired interest rate (chart 1).

As mentioned, the demand for central bank money for transaction purposes is rather interest-inelastic. As a result, the central bank is faced with fairly large interest rate fluctuations. Various technical solutions to this problem are available: Many central banks, including e.g. the ECB and the Fed, operate a minimum reserve system based on averaging provisions.⁶ The idea is to give banks a second motivation for holding central bank balances above and beyond the transaction motive: this type of holding reacts more elastically to the interest rate and thus prevents overly large interest rate fluctuations. The reserve requirement in the euro area is such that banks have to hold minimum reserves in excess of the amounts they need for transaction purposes (chart 1, right panel: reserves for transaction purposes $R^* < \text{average reserve requirement } \bar{R}$) – but they do not need to do so every single day: compliance with reserve requirements is determined on the basis of the average

Chart 2

Stylized Central Bank Balance Sheet

Assets	Liabilities
Gold, foreign exchange	Capital and reserves
Investments	General government balances
Securities purchased under open market transactions	Banknotes in circulation
Liquidity-providing repurchase agreements	Liquidity-absorbing repurchase transactions
Lending facility	Deposit facility
Total assets =	Total liabilities
Central bank balances	
Autonomous factors	
Monetary policy operations	

⁶ Canada and Australia, e.g., have systems that do not use minimum reserves (Borio, 1997).

daily balances on the counterparties' accounts over the course of the maintenance period. As long as banks expect the interest rate to be unchanged over this period, it is not important when they hold the required reserves – today, tomorrow or in a week – as long as they hold at least the amount needed for transactions R^* every day. Averaging substantially increases demand elasticity: If the interest rate is only marginally higher than the expected future rate r^e , many banks will be willing to lend out their reserves in the expectation that they will be able to comply with the reserve requirement later in the period at lower interest. The reverse applies when the interest rate falls short of the expected future rate r^e . In fact, demand is perfectly elastic for the interest rate expected for the remainder of the period (chart 1, right panel). Hence, averaging periods act as a buffer. Thus, for central banks, supply management focuses on the last day of the minimum reserve maintenance period when banks have to boost holdings to reach the average or, alternatively, invest balances held in excess of the average. On this day, the market is once again in the same position as in chart 1 (left panel). Under these conditions, the ECB conducts fine-tuning operations that either provide or withdraw liquidity as needed. In the U.S.A., the reserve requirements are substantially lower than in the euro area, and the averaging period is shorter. The principle, though, is the same in both systems.⁷

1.3 Provision of Central Bank Money in the Euro Area and in the U.S.A. up to the Summer of 2007

The bulk of central bank money used to be supplied through open market operations in the euro area and in the U.S.A. The Fed resorted primarily to direct purchases and sales of securities and used repos mainly for fine-tuning, e.g. to offset seasonal fluctuations in currency in circulation. The ECB used repos both for structural liquidity-providing operations and to meet peak demand.⁸ Essentially, the maturities and frequencies of open market operations are set depending on how often a central bank wants to hold auctions and on how extensively it uses open market operations to manage liquidity. The Fed's approach was to manage central bank balances through daily operations. Thanks to high reserve requirements and the averaging period, the ECB got by on weekly operations plus the above-mentioned fine-tuning operations at the end of the maintenance period; in addition, three-month repos covered part of the structural liquidity need.

Central banks tend to use standing facilities to absorb shocks, e.g. end-of-day and end-of-period shocks when banks have a shortfall of liquidity or excess liquidity. As banks have unlimited access to standing facilities at all times, these instruments prevent market interest rates from fluctuating excessively. In the euro area, the overnight rate cannot rise above the rate on the lending facility (usually the official rate

⁷ The BoE applies an interesting variant of the minimum reserve regime: Based on banks' predictions of how volatile their demand for reserves will be, banks themselves determine the amount of minimum reserves prior to the beginning of the maintenance period. The BoE provides interest on reserve holdings if they are close to the reserve target. No interest is paid on excess reserves, and if reserve holdings are below target, the respective bank must pay interest (details in Clews, 2005; for a more basis discussion, see Tucker, 2004).

⁸ There are arguments supporting both variants: Direct purchases prevent regular auctions of large volumes of funds. On the other hand, repos should have less of an influence on relative prices; moreover, no decision is required on securities to be purchased.

+100 basis points); at the same time, the interest on the deposit facility (official rate – 100 basis points) prevents the overnight rate from falling too far. In line with their role among the different liquidity-providing operations, standing facilities generally have a maturity of no more than one day. In the U.S.A. reserves were not remunerated until the financial crisis intensified in 2008; the purpose of switching to remuneration was to create a lower limit for the overnight rate along the lines of the ECB deposit facility.

Chart 3 shows the main balance sheet components of the Eurosystem and of the Fed. Given the Fed's heavy reliance on outright purchases of U.S. Treasury securities, such securities predominate on the asset side of its balance sheet. In contrast, the volume of repo operations was insignificant, and the credit facility (discount window) was hardly accessed. Banknotes accounted for the lion's share of liabilities, whereas banks' holdings on current accounts with the Fed were fairly small.

Unlike the Fed, the ECB resorted heavily to repos for its monetary policy operations, whereas volumes under the credit and deposit facilities were insignificant. Banknotes (liabilities) and foreign exchange (assets) predominated among the autonomous factors. Corresponding to the Eurosystem's higher reserve requirements, banks' balances on current accounts with the Eurosystem accounted for a larger share of the balance sheet than in the case of the Fed.

Up to the summer of 2007, both the Eurosystem and the Fed controlled only the overall amount of liquidity available to the banking sector whereas the interbank market was responsible for the intermediation of funds from banks participating in the central bank's monetary policy operations to other banks as well as from banks with excess liquidity to those with a need for liquidity.

Different ranges of counterparties were eligible to participate in monetary policy operations with the ECB and

Chart 3

Consolidated Balance Sheet of the Fed and the Eurosystem (at the end of 2006)

Fed		Eurosystem	
USD billion		EUR billion	
Assets		Assets	Liabilities
Gold, foreign currency	33.7	Gold, foreign currency	319.0
Float	3.5	Other assets	380.5
Other assets	11.8	Long-term repurchase agreements	120.0
U.S. Treasury securities	783.6	Short-term repurchase agreements	330.5
Repurchase agreements	40.8	Lending facility	0.0
Discount window	0.0		
	873.4		1,150.0
Liabilities			
Capital, other liabilities	67.0		Other liabilities
Government balances	4.7		282.0
Banknotes	783.0		Capital
			66.2
Bank balances	18.7		Banknotes
			628.2
			Deposit facility
			0.1
			Bank balances
			173.5
			1,150.0

Central bank balances
Autonomous factors
Monetary policy operations

Sources: Annual reports of the Fed and the ECB.

with the Fed. In the euro area, in principle all institutions subject to reserve requirements were eligible to participate in open market operations and had access to the standing facilities. While all banks subject to reserve requirements were able to refinance themselves at the discount window in the U.S.A., the Fed conducted the regular open market operations only with 20 investment banks, the primary dealers, most of which in turn had no access to the discount window.

A similar distinction between open market operations and standing facilities was made with regard to the eligible securities. As a rule, central banks require counterparties to collateralize all credit transactions with them using e.g. government securities (Chailloux et al., 2008b; ECB, 2007). In defining which securities are eligible as collateral for regular repurchase agreements, the Fed was very restrictive and admitted only securities issued or guaranteed by the government or another public sector entity. By contrast, the list of securities admitted to the discount window was very long. Along the lines of its treatment of counterparties, the ECB did not apply different eligibility criteria to regular operations and to standing facilities. The eligibility criteria for collateral were broad for both types of operations.

2 Changes since the Summer of 2007

To sum up, before the summer of 2007, monetary policy instruments and operational frameworks in the industrialized countries of the West displayed important common features, but there were also some key differences: The

large majority of central banks, including the ECB and the Fed, used a very short-term rate in implementing their monetary policy. In both institutions, the implementation and the transmission of monetary policy impulses relied significantly on well-functioning money and capital markets. There were differences, however, in the composition of the balance sheet, the range of counterparties eligible for monetary policy operations, the eligible securities and the design of the individual monetary policy instruments. As long as the financial markets operated smoothly, these differences were largely irrelevant, though.

All this changed very rapidly when the tensions that had started in the U.S. mortgage lending markets in the spring of 2007 spread to the money markets at the beginning of August 2007. Concerns about the risks attached to subprime mortgage loans led to price losses of subprime-backed securities that quickly cascaded through to other risk-fraught segments of the securities market. Uncertainty about the extent and distribution of losses prompted investors to withdraw to safe-haven investment. When it became known at the end of July 2007 that IKB Deutsche Industriebank AG had sustained huge losses, the crisis spread to Europe as well. Concern about sudden liquidity needs caused banks' demand for funds to rise sharply, and the overnight rate surged to levels far above the official rate. The volume of funds traded declined, and there were signs of rationing. On August 9, 2007, the ECB took the first measures to enhance liquidity; the Fed and other central banks soon followed.⁹

⁹ Borio (2008) provides a synoptic account of the years preceding the crisis. For a chronology of the summer months of 2007, see BIS (2007) and the OeNB's Financial Stability Reports 14 and 15.

2.1 Tensions in Various Financial Market Segments Have Weakened Monetary Policy Transmission Channels

The key role of liquidity in banking results from the particular role banks play in modern economies.¹⁰ The structural discrepancy between short-term borrowing and long-term lending puts banks at the risk of bank runs.¹¹ While current and savings account deposits by nonbanks are frequently secured by deposit insurance, the risk of a run is also given in the unsecured segment of the money market, which has become increasingly important in recent years (Borio, 2007). Expectations play a major role, also in the banks' management of their own liquidity: If banks, for instance, anticipate difficulties in accessing short-term funding in the interbank market, they will hoard excess funds themselves and will extend less credit to other banks. Like a run, liquidity hoarding turns into a self-fulfilling prophecy and causes liquidity to dry up, even if concerns about other banks' solvency and creditworthiness are unfounded. Central banks consider a liquidity shortage in interbank markets a problem not just because they are specifically responsible for banking and financial stability, but also because a shortage represents a challenge to the stability of the short-term market rate and thus monetary policy implementation.¹²

In the summer of 2007, the first immediate challenge for central banks was to control the overnight rate. Controlling the short-term rate in an oper-

ational framework like the ECB's is based on stable expectations about the development of short-term rates over the reserve maintenance period and on the smooth distribution of liquidity among banks via the interbank market. When the crisis broke out, unstable demand for reserves caused short-term rates to fluctuate, which in turn reduced banks' willingness to lend money. Consequently, the overnight rate – the starting point of the monetary policy transmission mechanism – could no longer be kept in line with the official rate as envisaged (chart 4).

The turbulences had an impact not just on the overnight rate. Banks' worries about their future funding stress boosted their demand for longer-term funding in the interbank markets substantially, which caused the spread of three-month interest rates over expected overnight rates to shoot up (chart 5). This was compounded by concerns about counterparties' creditworthiness.¹³ The turmoil in long-term money and foreign exchange markets did not directly hamper the management of the overnight rate, but did affect the transmission from the policy rate through money market rates to the rates relevant for the real economy (IMF, 2008). Therefore, central banks took measures to calm these markets as well.

Additionally, the issue arose of how to adjust monetary policy in reaction to the effects of the financial turmoil on the real economy. This question, however, lies outside the scope of this contribution.

¹⁰ For an overview of the following issues, see e.g. Freixas and Rochet (1997).

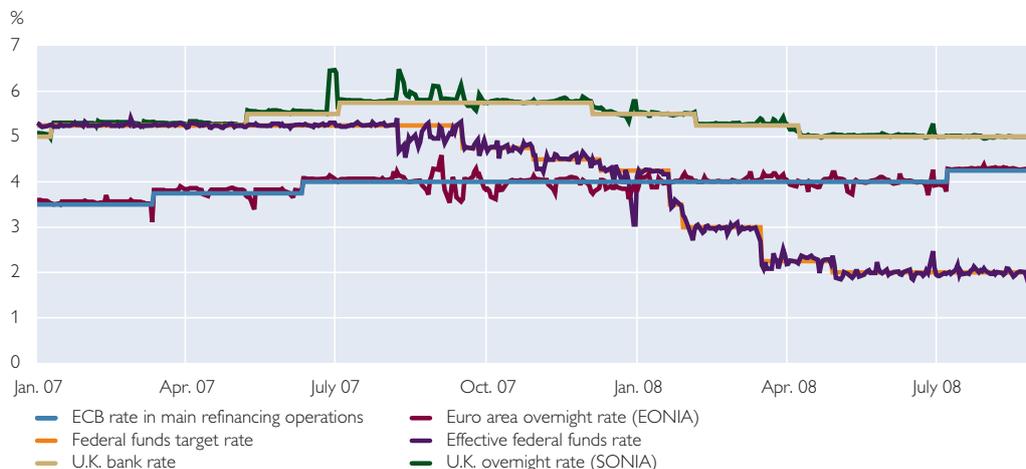
¹¹ Due to asymmetric information, loans extended by banks are hard to sell or only at a significant discount. Even if a bank could have covered all liabilities originally, illiquidity may turn into insolvency under such circumstances.

¹² Historically, monetary policy as practiced today is a recent central banking task. Liquidity management and the lender-of-last-resort role may thus be viewed as the original functions of central banks. See e.g. Goodhart (1988).

¹³ Distinguishing between credit and liquidity risk is difficult empirically; see Michaud and Upper (2008).

Chart 4

Overnight Rates and Policy Rates until September 2008



Sources: Thomson Reuters, NCBs.

Chart 5

Spread between Three-Month Collateralized and Uncollateralized Interbank Loans¹



Source: Thomson Reuters.

¹ In the markets for collateralized loans, borrowers provide collateral for funds, usually liquid securities, that the lender may sell upon maturity if the borrower fails to repay the loan.

2.2 Measures to Facilitate Banks' Liquidity Management¹⁴

In principle, monetary policy instruments are designed to ensure a stable supply of liquidity. In the summer of

2007, central banks expanded the set of monetary policy instruments and adjusted it to facilitate banks' liquidity management even further.¹⁵ Four of the dimensions of the policy framework

¹⁴ The ECB's Monthly Bulletin contains a chronology of the most recent monetary policy measures. A dedicated website of the Fed provides insights into the Fed's new instruments and programs (<http://www.federalreserve.gov/monetarypolicy/bst.htm>).

¹⁵ These measures are aimed at all banks eligible to participate in central banks operations. This study does not cover liquidity aid for individual banks (Emergency Liquidity Assistance – ELA – in the euro area).

discussed above are especially relevant to liquidity management (Bindseil, 2009):

1. Availability of securities eligible as collateral for monetary policy operations. The supply of liquidity is more stable if (1) many different types of securities are eligible, (2) a far larger volume of securities is available than is actually used for central bank operations, and (3) these securities are distributed evenly in the banking system.
2. Credit facility: The credit facility is used on individual banks' initiative; it thus provides practically guaranteed access to central bank liquidity.
3. Broad access to central bank operations: In the case of liquidity constraints triggered by distrust among banks, direct access to the central bank provides an alternative distribution mechanism.
4. Reserve averaging allows strong fluctuations in individual bank's daily balances in the short-term, thus helping to absorb liquidity shocks.

In all monetary areas, the central banks' measures followed a similar objective, namely to facilitate liquidity management. However, this objective was implemented in different ways that were contingent on the operational framework in place before the turmoil.

A simple measure employed to give banks more certainty that they would be allocated sufficient liquidity was to conduct more operations with larger volumes. To alleviate the uncertainties at the end of 2007, the ECB provided unlimited liquidity at the turn of the year for two weeks but then conducted

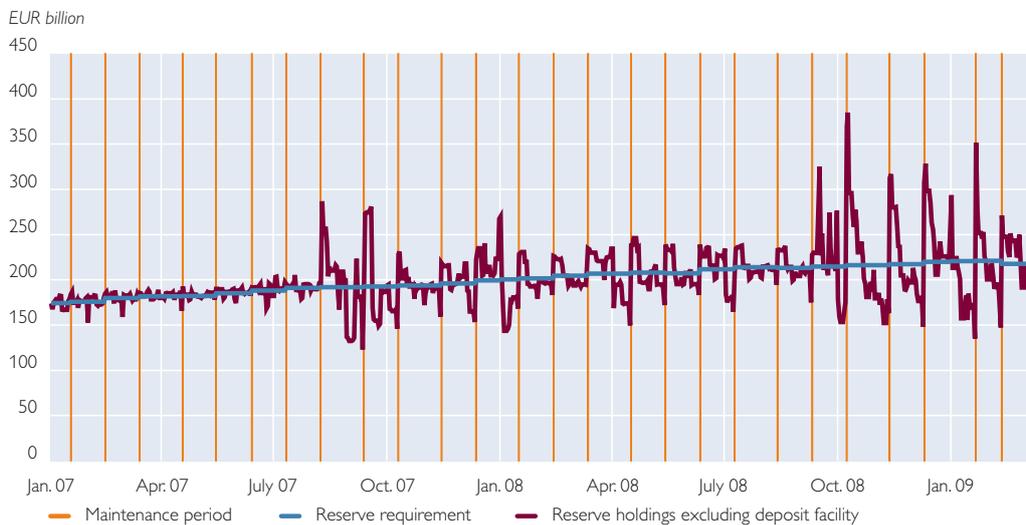
offsetting transactions to reabsorb the liquidity right away. The rationale was to provide every bank individually with sufficient liquidity while preventing excess liquidity that could have exerted pressure on the overnight rate.

In systems with high minimum reserve requirements subject to averaging provisions such as those of the ECB and the Swiss National Bank (SNB), banks could by construction let their daily balances fluctuate sharply. However, as banks were uncertain whether they would have continued access to sufficient liquidity, they had a strong interest in fulfilling their reserve requirements early in the period, which – given that the total supply of central bank liquidity is fixed – not all banks would have been able to do at the same time. Therefore, the ECB and the SNB increased liquidity allocation at the beginning of the period and reduced it by the same measure at the end of the period, a practice referred to as front-loading (chart 6).¹⁶

At the same time, the central banks had to ensure that liquidity was distributed properly among banks – i.e. that the intermediation of funds within the banking system, which normally occurs through the interbank market, did indeed work properly. A first option that circumvented the dysfunctional interbank market was to widen the range of banks admitted directly to central bank operations. The Fed in particular chose this tack. Traditionally, only a handful of banks were admitted to open market operations with the Fed; the establishment of the Term Auction Facility (TAF) created a similar instrument for a very large group of banks. In exchange, the primary dealers – previ-

¹⁶ The BoE, with its system in which banks choose their reserve targets and pay penalty interest for overshooting or undershooting their own target, reached a similar result by permitting significantly larger deviations around the reserve target.

Minimum Reserve Requirements and Fulfillment



Source: ECB.

ously eligible to participate only in open market operations – were given access to a credit facility, the Primary Dealers Credit Facility (PDCF).

A second option to facilitate access to central bank liquidity for banks was to expand the list of securities eligible for monetary policy operations. Furthermore, new facilities of the BoE – the Special Liquidity Scheme (SLS) – and the Fed – the Term Securities Lending Facility (TSLF) – allowed banks to swap previously ineligible securities, e.g. corporate bonds, against government securities (Fleming et al., 2009). The government securities acquired under these programs were then available either for private transactions, e.g. as collateral for interbank lending, or for operations with the central bank.

Conversely, the ECB widened neither the range of eligible counterparties nor did it fundamentally change the list of eligible securities,¹⁷ given its pre-crisis open system of counterparties

and comprehensive list of eligible securities. Thereby banks' new needs could be met within the existing framework.

By construction, credit facilities represent further reassurance for banks that they would, ultimately, receive liquidity directly from the central banks. As a rule, the premium that banks pay on the credit facility compared to the main refinancing operation is, however, designed to restrict the use of the credit facility to exceptional situations. To make the credit facility more attractive for banks, the Fed therefore gradually reduced this premium in response to the financial crisis. Yet both in the U.S.A. and in the U.K., recourse to the credit facility was taken as a signal that a bank was in distress. This stigma alienated banks that merely had a temporary liquidity management problem, such as a large end-of-day payment, and prevented them from using the facility. With this experience in mind, the BoE reformed

¹⁷ The ECB expanded the list of securities at the end of October 2008, but tightened the criteria for specific categories of asset-backed securities and uncovered bank bonds in January 2009.

the credit facility from the ground up (Bank of England, 2008). The euro area did not suffer from this stigma; the credit facility fulfilled the function assigned to it.

2.3 Measures to Support the Term Money Markets and Foreign Exchange Markets

As indicated previously, the banks' liquidity concerns produced tensions also in the longer-term money markets. While monetary policy implementation does not target these markets directly, they do play an important role in monetary policy transmission.

Indirectly, the term markets received support from the stabilization of overnight markets already. If banks are certain that they will receive overnight liquidity any time at acceptable terms, their willingness to lend excess liquidity for longer periods grows. However, overall, the crisis caused demand for long-term liquidity to rise in 2007 by relation to the supply available. Consequently, central banks provided relatively higher volumes of funds in long-term operations. The ECB acted first among central banks and started as early as August 2007 to reduce the volumes in the weekly refinancing operations and at the same time to increase the funds provided in three-month LTROs. Moreover, it offered an LTRO with a maturity of six months. Other central banks had to create longer-term refinancing operations from scratch, e.g. the SNB. The BoE also boosted the share of longer-term operations among its liquidity-providing operations.¹⁸

The constraints in the interbank market were not limited to a single monetary area, but also affected foreign exchange markets (Baba et al., 2008). European banks found it especially difficult to obtain U.S. dollar funding. In December 2007, reciprocal swap agreements (swap lines) between the Fed and the ECB, BoE and SNB, respectively, were concluded to provide European banks with U.S. dollar funding through their central bank. When the turmoil became stronger in September 2008, the tenders were expanded considerably.

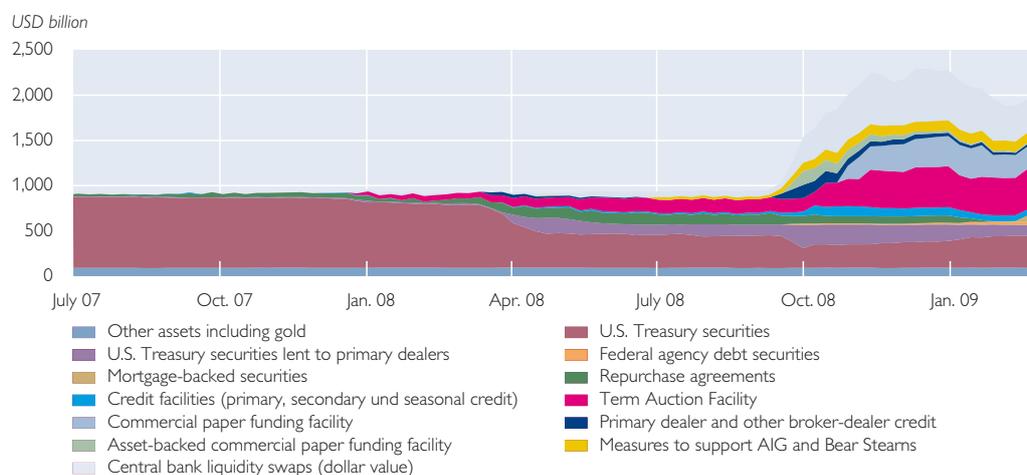
2.4 Assessment of the Impact of Liquidity Management Measures on Central Banks' Balance Sheets

At first glance, the expansion of funding under the existing facilities and the introduction of additional tenders and facilities appeared to create additional liquidity. Formulations such as "central banks flood the market with liquidity" suggested that central banks had expanded the volume of their operations sharply. In actual fact, the size of the large central banks' balance sheets remained unchanged – what did change was the composition of the balance sheets.

For example, as chart 7 shows, the Fed sold U.S. Treasury securities to the same extent as repo operations were extended and new facilities, such as the TAF, were introduced. The chart clearly indicates the operations conducted before the change of the year 2007 to 2008 and the bailout of the

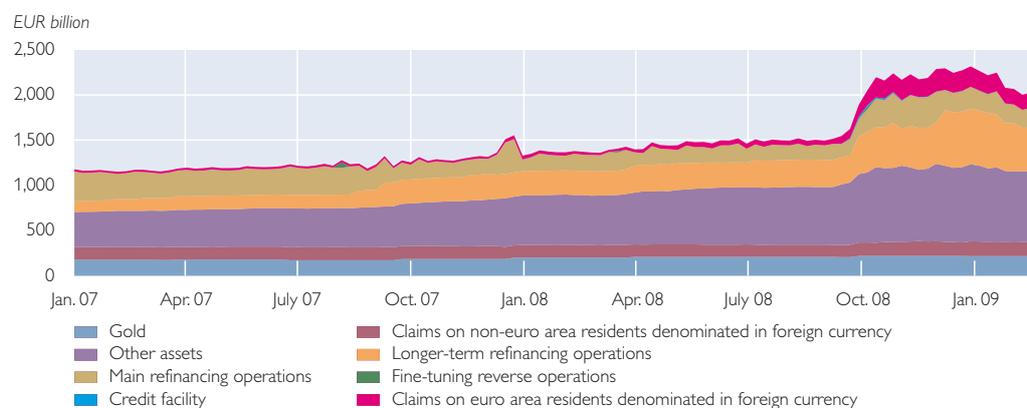
¹⁸ In the case of the Fed, these arrangements were complemented by special programs for specific markets, such as the Term Securities Lending Facility for collateralized money markets, the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility and the Commercial Paper Funding Facility for the commercial paper market, and the Term Asset-Backed Securities Loan Facility for particular segments of the market for collateralized loans. For details on the individual programs and further literature, see in particular <http://www.federalreserve.gov/monetarypolicy/bst.htm>

Chart 7

Consolidated Balance Sheet of the Fed – Assets


Source: Fed.

Chart 8

Consolidated Balance Sheet of the Eurosystem – Assets


Source: ECB.

U.S. investment bank Bear Stearns in spring 2008. Moreover, the Fed lent a growing share of government securities against less liquid eligible collateral to improve primary dealer's balance sheets. On balance, this adjustment did not have an effect on banks' reserve holdings with the Fed, nor did it have an effect on the Fed's total assets.

The expansion of longer-term repos of the BoE, the SNB and the ECB was offset by a reduction of the same size in

short-term repos. Chart 8 shows this shift for the balance sheet of the Eurosystem. The outbreak of the turmoil in summer 2007 did not affect the long-term growth trend of the balance sheet that is driven above all by rising demand for currency in circulation. The balance sheet also shows the temporary operations conducted around the turn of the year. Central banks that expanded the list of eligible securities or that accepted more risky securities

from banks were subject to higher risk; the total size of their balance sheets rose only minimally until fall 2008.¹⁹

3 Measures Taken after the Bankruptcy of Lehman Brothers

When Lehman Brothers, one of the major U.S. investment banks, filed for bankruptcy protection in September 2008, the financial crisis took a dramatic turn for the worse. As an issuer of short-term instruments bought by money market funds, of credit default swaps and as a broker, Lehman Brothers held a key position in important segments of the financial market. The threat that a systemically pivotal bank might not be able to fulfill its obligations weighed heavily on the interbank market. The total volume of trading in the interbank market declined, and banks became very concerned about refinancing. Massive outflows from money market funds unleashed a torrent of sales that extended to all but the safest types of investment. The turmoil spread to other banks, triggering a series of increasingly broader government support packages. From mid-October 2008, the financial markets were buffeted by growing concern about the course of the real economy. Central banks responded with liquidity measures and interest rate cuts (BIS, 2008).

3.1 New Measures

Up until then, the central banks' liquidity measures had supported the interbank market but had depended on a more or less proper functioning of that

market. Under the prevailing conditions, however, this strategy no longer worked. When Lehman Brothers filed for bankruptcy, banks lost all remaining confidence in other market participants, as the jump in risk premiums on uncollateralized loans depicted in chart 5 shows. Many banks with excess liquidity on their hands were no longer willing to lend to other banks with temporary liquidity needs, not even overnight, and the interbank market all but broke down. The option of choice for central banks was to take over the intermediation function.

This strategy was most clearly observable at the ECB. At weekly tenders, the Eurosystem's main refinancing operations, banks previously had to bid for a fixed amount of liquidity determined by the ECB. Although this volume was raised when the ECB front-loaded liquidity allocation to the beginning of the maintenance period, banks remained uncertain whether liquidity would be allotted to them and whether enough liquidity would be available in the interbank market. This uncertainty led to a rise in average bids in the course of September 2008. On October 8, 2008, the weekly main refinancing procedure was held with full allotment at a fixed interest rate, the interest rate on the main refinancing operation. This removed any vestiges of uncertainty about liquidity management for banks. Chart 8 shows the rise in the allotment amount in the main and longer-term refinancing operations.

The Fed provided banks and primary dealers with liquidity under the credit facility, the discount window

¹⁹ The BoE with its reserve targets set by banks represents an outlier. In the U.S.A. and in the euro area, minimum reserves are calculated on the basis of banks' balance sheets. As excess reserves attract no interest or only low interest, banks had little incentive to hold excess reserves, so that the liability side of the central banks' balance sheets remained unchanged. As banks in the U.K. can determine their reserve targets themselves, and as these reserves attract interest, the uncertainty after the summer of 2007 prompted banks to increase their reserve targets, expanding the BoE's balance sheet.

and new programs such as the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility and in conjunction with the government rescue package for the insurance company AIG. Chart 7 also clearly indicates the increase in allotment under the TAF and purchases of commercial paper. In February 2009, the Fed began to acquire mortgage-based securities.

Internationally coordinated measures were taken to supplement the individual central banks' measures. Apart from the joint interest rate move on October 8, 2008, which was aimed at strengthening confidence in the monetary policymakers' ability to act, these measures included efforts to prevent international liquidity bottlenecks. Intercentral bank swap lines were extended, and on October 13, 2008, the Fed, the ECB, the BoE and the SNB announced that they would conduct tenders of U.S. dollar funding at fixed interest rates for full allotment, just like the tenders of the ECB.²⁰ The financial statements of the Fed and the Eurosystem (charts 7 and 8) reflect the balances from the swap operations and U.S. dollar auctions.

3.2 Pressure on Overnight Rates and Liquidity Absorption

Purchases of securities without reductions of other portfolio items and the substantially higher allotments in repo operations resulted in a considerable increase in the size of the major central banks' balance sheets. In the euro area and in Switzerland, balance sheets expanded by some 30%; the Fed's and the BoE's balance sheet volume doubled. These increases occurred in just a few short weeks, and, while they are certainly evidence of the central banks' decisive action, they are not in themselves a measure of individual currency areas' problems or of central banks' activities. The rates of balance sheet growth are contingent not just on the needs of the banking sector, but also on the size of balance sheets before the crisis and on the degree to which government bailout packages were handled through central bank balance sheets.

In any event, a rise on the asset side is inevitably linked to a rise on the liability side. A look at the stylized central bank balance sheet in chart 9 shows that, given constant autonomous factors unchanged by the worsening of the

Chart 9

Impact of an Increase in the Asset Side of a Central Bank's Balance Sheet

Assets		Liabilities		Assets		Liabilities	
Gold, foreign currency		Capital and reserves		Gold, foreign currency		Capital and reserves	
Investments		Government balances		Investments		Government balances	
		Banknotes in circulation				Banknotes in circulation	
Liquidity-providing operations				Liquidity-providing operations			
		Bank balances				Bank balances	
Total assets =		Total liabilities		Total assets =		Total liabilities	

Central bank balances
Autonomous factors
Monetary policy operations

²⁰ At the regional level, similar arrangements were agreed for the euro and the Swiss franc. See box 3 in BIS (2008).

crisis, the additional liquidity had to increase bank deposits at the central bank. As explained in section 1, though, demand for central bank balances is interest-inelastic; the excess supply of central bank balances relative to the amount needed to fulfill reserve requirements exercises strong downward pressure on the overnight rate. In extreme cases, the overnight rate drops to zero.²¹ To keep market rates at the level of key interest rates, excess liquidity had to be absorbed.

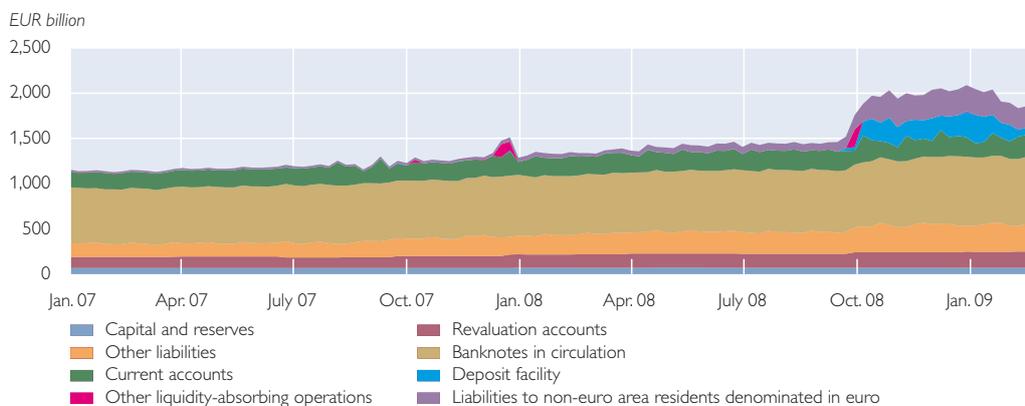
Faced with the same task, the ECB, the Fed and the BoE chose different approaches befitting their respective operational frameworks. In the case of the Eurosystem, the expansion of the balance sheet was limited; moreover, the Eurosystem's operational framework facilitated the automatic absorption of excess liquidity through the deposit facility. As the deposit facility gives banks the option of investing any given amount at fixed interest at the end of the day, the market rate cannot fall below the interest rate on the deposit facility. In recent years, the interest

rate on the deposit facility has always been 1 percentage point below the key interest rate. At the utmost, excess liquidity would have caused the market rate to sink to a level 1 percentage point below the key interest rate. To hold the market rate closer to the key interest rate, the ECB reduced the corridor between the rate on the marginal lending facility and the rate on the deposit facility to $\pm\frac{1}{2}$ percentage point around the rate on the main refinancing operation on October 8, 2008. As chart 10 evidences, apart from a marginal rise in currency in circulation, the liquidity not required to fulfill reserve requirements subsequently went into deposit holdings. To sum up, the ECB strengthened its intermediation role to offset the interbank market from seizing up: It accepted deposits of banks with excess liquidity on one side and provided banks in need of liquidity with funds against collateral on the other side.

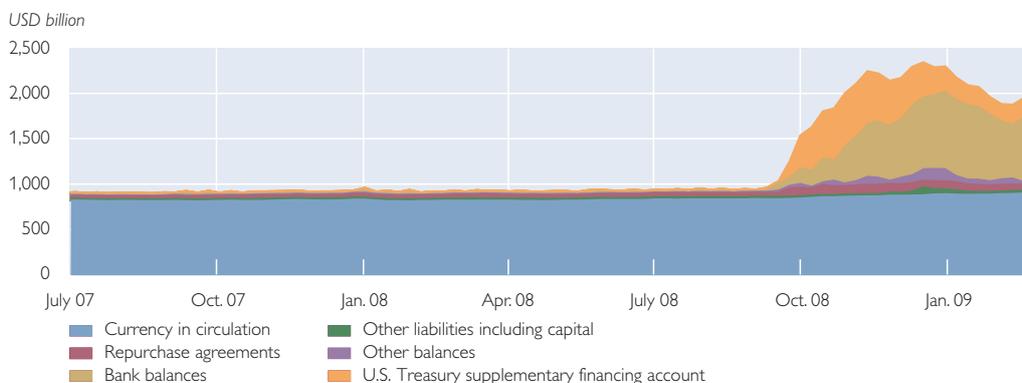
Before the crisis, the Fed did not have an instrument that corresponded to the ECB's deposit facility. Banks' deposits with the Fed were not conceived

Chart 10

Consolidated Balance Sheet of the Eurosystem – Liabilities



²¹ Depending on the distribution of reserves among banks and the assessment of risk for each bank, rationing can lead to a positive interest rate in equilibrium.

Consolidated Balance Sheet of the Fed – Liabilities

Source: Fed.

to bear interest.²² Therefore, an automatic lower limit on the short-term interest rate did not exist. Consequently, the Fed took two measures. To absorb liquidity, the U.S. Treasury issued Treasury bills of more than USD 500 billion and deposited the proceeds with the Fed (see the Treasury Supplementary Financing Account in chart 11). At the same time, the remuneration of reserves, scheduled for introduction in 2011, was brought forward, creating a mechanism similar to that of the ECB's deposit facility.²³ Consequently, the federal funds rate did not fall to zero even though banks had high excess funds, as shown in chart 11.

Central banks can also issue interest-bearing securities to absorb liquidity, an option chosen by the BoE,

Sveriges Riksbank and the SNB, among others.²⁴

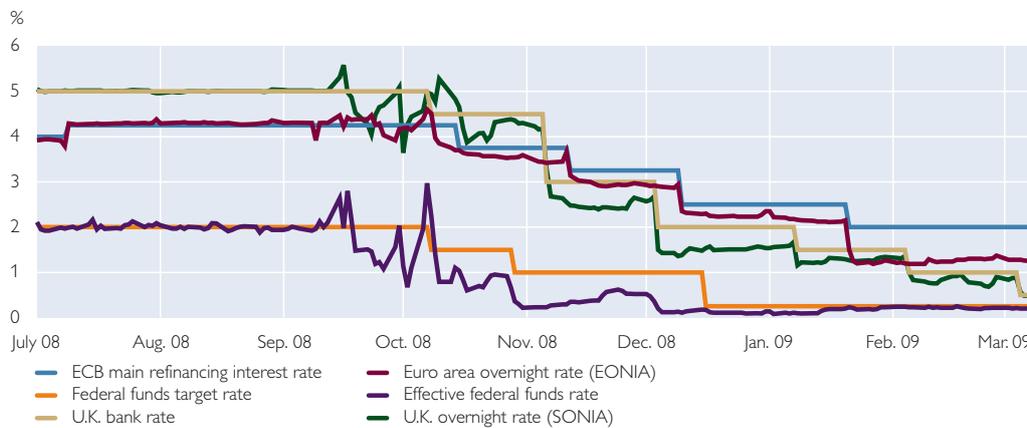
To sum it up, the central banks adjusted their policies in similar ways, though their approaches were informed by the differences in the respective operational frameworks. The interbank markets seized up almost completely in nearly all monetary areas. In response, central banks increased their balance sheets on the asset side. Central banks had to absorb the excess liquidity thus created so as not to lose control of the market interest rate. To this end, central banks wielded a mix of instruments comprising open market operations and interest-bearing facilities. Whereas the various measures stopped short-term rates from sinking below a certain level, they were not completely successful.

²² This was possible because the reserve requirements are very low by comparison to those in the euro area and the implicit tax resulting from the fact that these deposits did not bear interest was therefore negligible.

²³ At the outset, the Fed set the interest rate at below the federal funds target rate, by analogy to the ECB's interest rate corridor. To be able to control the federal funds rate better, the interest rate was increased gradually to the level of the federal funds target rate, meaning the lower part of the corridor was squeezed to zero. Despite this measure, the effective federal funds rate slipped below the federal funds target rate at times because some market participants cannot hold an interest-bearing account with the Fed. Under normal conditions, banks would close this gap by arbitraging, that is, by borrowing cheap on the federal fund market and depositing the funds with the Fed and receiving higher interest. Such operations, however, require a functioning money market.

²⁴ The U.K. is, once again, a special case on account of the reserve targets bank set themselves. When the crisis became more acute in October 2008, banks boosted their reserves and thus reduced excess liquidity, though only to a minimal degree.

Chart 12

Overnight Rates and Policy Rates since July 2008¹

Source: Thomson Reuters, NCBs.

¹ Since the interest rate cut in December 2008, the Fed has targeted a federal funds rate of between 0% and 0.25%. For the sake of simplicity, this corridor is represented by a uniform line at the 0.25% level.

But the gap between market and official rates was not very large and simply foreshadowed the stepwise cut in key rates a bit (chart 12).

3.3 Did These Measures Represent Quantitative Easing?

Was the expansion of central banks' balance sheets tantamount to monetary policy easing? As stated above, the volume of central banks' balance sheets does not in itself indicate whether monetary policy is restrictive or expansionary. Central bank's interest rates, not the size of their balance sheets, reflect the monetary policy stance. A specific key interest rate is compatible with many different balance sheet compositions – a balance sheet may be large or small, and may contain fewer or more risky investments.

Hence, observers need to distinguish between changes in central banks' policy and changes in the composition and size of their balance sheets since summer 2007. This distinction is the basis for the separation principle that the ECB has repeatedly cited in its public statements. According to this principle, monetary policy decisions and

decisions about key interest rates are independent of the implementation of these decisions, which impact e.g. on the size and composition of the balance sheet (ECB, 2008c). In practice, this means that the ECB can support liquidity and the functioning of key financial markets by adjusting its operational framework for implementing monetary policy – without changing the monetary policy stance. In actual fact, the monetary policy course of the major central banks developed differently in the first year of the crisis, in each case reflecting the economic circumstances and the mandate of the respective central bank. The Fed, for instance, cut rates already in September 2007; the BoE followed in December 2007, but kept rates above those of the euro area until November 2008. The fairly positive development of the economy until the summer of 2008 and concern about a persistent rise in inflation prompted the ECB to raise key interest rates marginally in July 2008. The SNB and Sveriges Riksbank also increased official rates in the year between summer 2007 and summer 2008. Even though the stance of monetary policy in the

various monetary areas differed, the central banks pursued very similar targets in supporting money, foreign exchange and other markets: Monetary policy and liquidity policy are two horses of a different color.²⁵

The central banks' measures of October 2008 are best viewed from the financial stability perspective. As expected in a moment of crisis, the central banks fulfilled their traditional role of ensuring the supply of liquidity to the banking and financial system.²⁶

The Lehman Brothers bankruptcy increased the demand for liquid investments; the expansion of the central bank's balance sheet and the respective asset-side adjustments gave the private sector a chance to exchange less liquid assets for perfectly liquid ones, i.e. central bank liquidity (central bank balances). Unlike in the first year of the

crisis, during this stage, liquidity measures and adjustments of the monetary policy stance developed in parallel. All major central banks slashed key interest rates in response to forecasts of declining inflation rates and the sharp slowdown in real economic activity. Monetary and liquidity policy were not independent of one another, as the worsening of the financial crisis spurred new liquidity measures and was also the cause of the economic slowdown and hence of the expansionary monetary policy. Nevertheless, the two policies did not have to move in parallel throughout this phase either. The enlargement of central bank balance sheets occurred largely during September and October 2008, whereas the interest rate cuts were taken in November 2008 and afterwards. And even though monetary policy was gradually

Chart 13

Total Assets of the Eurosystem and of the Fed



Source: ECB, Fed.

²⁵ Of course, monetary policy and liquidity policy are not independent of one another. Stable conditions in financial markets are necessary for a reliable and predictable transmission of monetary policy measures to the real economy. High and volatile risk premiums like those that have been observed in unsecured longer-term money markets change transmission. All liquidity measures were geared toward reestablishing the normal performance of the financial markets that are relevant for the monetary policy transmission mechanism. In this sense, liquidity policy serves the implementation of monetary policy. Crespo Cuaresma and Gnan (2008), however, list some problems that might crop up in times of crisis, when monetary policy instruments and the provision of liquidity to banks are changed very massively. Under such conditions, it becomes difficult to achieve a macroeconomically suitable monetary policy orientation, and it becomes hard to properly communicate the monetary policy stance. While there are of course manifold links between the monetary policy stance and its implementation, it is useful and appropriate to consider decisions about the monetary policy stance and liquidity policy measures taken to implement them as separate.

²⁶ For more on the provision of liquidity during times of crisis and potential interaction of central banks' crisis intervention role and the implementation of monetary policy, see Crespo Cuaresma and Gnan (2008).

eased, the size of central bank balance sheets, admittedly a very rough measure of liquidity policy, remained stable and in fact in January 2009 (Fed) and February 2009 (Eurosystem) shrank to levels well below those observed in October and November 2008 (chart 13).

4 Key Policy Rates Close to Zero and Nonstandard Measures – An Outlook

The decisive interest rate measures of the past few months have lowered official rates to a level that potentially creates new challenges for the operation of monetary policy as a result of the zero lower bound on nominal interest rates. As cash offers a risk-free nominal interest rate of zero, nobody is willing to invest money at negative interest rates (which would be equivalent to having to pay a fee for a deposit). If the central bank cuts the key interest rate to zero, it loses its traditional instrument to stimulate the economy, namely a (further) reduction of the short-term nominal interest rate (Svensson, 2003).

Under such conditions, the central bank's operational framework, which is geared toward managing the short-term interest rate – the issue discussed so far in this contribution – is rendered insufficient. However, the short-term interest rate is not the only lever with which central banks can influence the real economy. They may also resort to what the public debate refers to as nonstandard measures. All major central banks – the Fed, the BoE, the Bank of Japan (BoJ) and die ECB – have either taken nonstandard measures since the beginning of the crisis, or have at least not discounted their use. Little experience had as yet been made with such measures when this contribution was written at the end of February 2009, so presenting and evaluating them must wait until a later date. To facilitate the

understanding and interpretation of current developments, this study provides an overview of fundamental considerations and possible measures by way of conclusion (Clouse et al., 2003; Yates, 2002).

Reaching the zero lower bound does not mean that monetary policy cannot be loosened further. Central banks' leverage results from the fact that the interest rates relevant for economic decisions are not short-term nominal interest rates, but rather long-term real interest rates, i.e. retail interest rates adjusted for expected inflation. The short-term nominal interest rate is an important, albeit not the only determinant of real interest rates. As investment values are assessed over a longer period, expectations about future short-term nominal rates play an important role. Principally, central banks can influence all these components.

Two historical developments have produced a fairly recent, comprehensive literature on the issue of monetary policymaking at the zero lower bound. When inflation receded in the 1990s and 2000s, nominal interest rates also decreased. At the same time, the monetary policy discussion was oriented more on the inflation rate, and many central banks were obligated to reach a specific inflation target. When inflation targets were set, policymakers had to weigh the disadvantages of inflation against wage and price rigidities, which make adjustment to shocks increasingly harder at very low inflation rates. The zero lower bound represents one such rigidity. This literature makes mainly theoretical arguments and operates with simulations (e.g. ECB, 2003). Roughly at the same time, Japan, which slipped into deflation in 1998, became a textbook example of monetary policy at the zero lower bound (Baba et al., 2005; Ito, 2006). In historical terms,

Japan is a big exception, as periods with nominal interest rates of close to zero are very rare (Borio and Filardo, 2004).

Both the theoretical literature on the optimum inflation rate and advice derived from Japan's experience apply to the current situation only to a limited extent. The core scenario in both cases is deflation, which keeps the real interest rate too high. But deflation does not appear to represent the main problem of monetary policy now. The decline in inflation worldwide is the result of the drop in energy prices; inflation is expected to be consistently above zero in the next few years.

Accordingly, the Fed, which is generally considered to have taken the most unconventional of measures, underlines the differences between its case and that of Japan, both in diagnosing the issues and in policymaking. Especially at the beginning, the BoJ chose to influence the longer-term risk-free interest rate, first by committing to continued low short-term interest rates (zero interest rate policy – ZIRP) and later by systematically expanding commercial banks' central bank balances (quantitative easing). The Fed is now focusing less on the longer-term risk-free interest rate and more on risk premiums in specific market segments (commercial paper, money market funds, student loans, mortgage loans, etc.). Ben Bernanke, the chairman of Board of Governors of the Federal Re-

serve System, summarizes the different approaches under the term credit easing (qualitative easing) versus quantitative easing.²⁷ With its announcement of March 18, 2009, that it will purchase longer-term Treasury securities, the Fed has expanded its strategy and is now trying to influence both the risk-free interest rate and risk premiums. The BoE announced a similar policy move on March 5, 2009.

As credit easing is targeted at spreads, central banks can use this approach also for key interest rates above the zero mark if they believe that the objectives of monetary policy, such as price stability or full employment, can be attained better with methods other than interest rate cuts. In fact, the Fed, as well as other central banks, e.g. the BoE and the ECB, started to take measures to influence specific risk premiums long before they began to lower interest rates to the current level. As described above, in the case of the euro area, the ECB took such measures primarily to influence longer-term money markets by widening the longer-term tender operations and full allotment on the weekly main refinancing procedure since October 2008. Moreover, the enlargement of the list of eligible securities at the end of October 2008 indirectly supported financial market segments suffering from illiquidity, in addition to giving banks a bigger liquidity buffer.²⁸

²⁷ See Chairman Bernanke's speech at the National Press Club Luncheon, Washington D.C., on February 18, 2009 (<http://www.federalreserve.gov/newsevents/speech/bernanke20090218a.htm>).

²⁸ ECB President Trichet noted, for instance, in the press conference held February 5, 2009, when asked about the options for quantitative easing in the euro area: "[...] let me remind all of us that when we started to cope with the tensions on the markets in general – and it is already some time ago, in August 2007 – we were the central bank in the world that was the most open to eligibility of collateral in the form of private paper. And you know that other major central banks had to considerably change their own frameworks in order to be able to do more or less the same. [Our openness to such paper is] something which would have been described in other environments and other economies as close to non-standard easing. Or close to, I would say, credit easing perhaps, as you know is the term used on the other side of the Atlantic. And I would again mention the fact that we have to day the combination of, first, our unlimited supply of liquidity; second, very broad eligibility of collateral; and third, the fact that our balance sheet has considerably augmented in size."

Which instruments central banks choose in the future, and how similar or different their approaches will be, will depend on many factors. But most certainly, all measures are preceded by economic analysis in the different monetary areas. Even if the analysis results are similar, the measures may differ, depending on individual central banks'

options as given by their operational and legal frameworks. Coordination and the division of responsibilities with other economic policymakers will be just as important, in particular with fiscal policymakers and financial supervisors, who are also subject to frameworks specific to their monetary areas.

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The consolidated weekly financial statement of the Eurosystem is retrievable from the ECB's Statistical Data Warehouse under <http://sdw.ecb.europa.eu/browse.do?node=2018802>

Fed: Weekly historical averages tables:

<http://www.federalreserve.gov/releases/h41/hist/>

The *Bank of England* also has an interactive database.

Under <http://www.bankofengland.co.uk/mfsd/iadb/BankStats.asp?Travel=NIx>, the consolidated balance sheet of the BoE is to be found under "B Monetary financial institutions' balance sheets, income and expenditure/Central bank's balance sheet (Bank of England 'Bank return')/Consolidated statement"

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The Effectiveness of Fiscal Stimulus Packages in Times of Crisis

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This paper provides theoretical and empirical evidence on the effectiveness of discretionary fiscal policy in times of crisis. In “normal” times, a whole range of arguments speaks against the use of discretionary fiscal policy for stabilization purposes – yet amid the current sharp economic downturn, many of those arguments (such as implementation lags or low fiscal multipliers) have comparatively little weight.

The OeNB estimates that the measures the Austrian government has adopted so far – an inflation package, two economic stimulus packages, personal income tax reform brought forward – will increase GDP by roughly ¾% and will provide for 12,000 additional jobs in 2009. The effects of those measures are expected to continue into 2010. However, as Austria’s debt ratio stands to increase substantially at the same time, the government would be well-advised to commit itself to cutting the deficit and debt ratios when the crisis is over.

JEL classification: E32, E62, E65

Keywords: discretionary fiscal policy, effectiveness of fiscal policy, fiscal multipliers

The prevailing global financial crisis finally spilled over to the Austrian economy at the end of 2008. Following comparatively robust output growth in the first half of 2008, economic activity weakened considerably in the third quarter and entered a phase of contraction in the fourth quarter, which became even more pronounced at the beginning of 2009. As a result, annual growth is likely to be negative in 2009 as a whole. Alongside Austria, countries across Europe and beyond are suffering growth setbacks or even recessions and are feeling the sting of sharply rising unemployment.

The current economic crisis is a daunting challenge for economic policymakers – be it because of its global reach, the speed with which it is cascading through the economy, or its proportions, which exceed those of all crises since the end of World War II. The strong tensions in financial markets have, moreover, jammed the usual channels of monetary policy transmission, weakening the stabilizing effect of monetary policy on the real economy.

Should a credit crunch occur, which cannot be ruled out at present, it would seriously affect economic developments by imposing supply-side financial constraints on businesses. At the same time, substantial asset price losses for households as well as fears of rising unemployment have forced consumers to retrench. Last but not least, the global dimension of the economic slowdown has also caused export demand to plunge and may continue to do so for a protracted period, as the world’s major economies are expected to unwind their economic imbalances.

In view of the impaired stabilizing function of monetary policy, we must ask how much fiscal policy can and should contribute in such exceptional situations – without running the risk of undermining the long-term sustainability of public finances in Europe and worldwide.

At the European level, the EU’s fiscal policy framework adds further substance to the goal of fiscal sustainability. As fiscal policy as such has remained a national responsibility within the EU,

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fiscal stabilization measures are taken at the national level, but they must be in line with the Stability and Growth Pact (SGP) and the Treaty of Maastricht. According to the Treaty, the budget deficit should rise no higher than 3% of GDP in normal downturns, and the debt ratio should not exceed 60% of GDP (unless the ratio has declined substantially and continuously and reached a level that comes close to 60%). At the same time, the European fiscal framework allows EU members to temporarily deviate from the deficit objective in times of severe economic downturns. Episodes of severe economic downturns have been defined as periods of negative GDP growth or as protracted periods of very low growth relative to potential. Under such exceptional circumstances, deficits may temporarily deviate from the 3% of GDP reference value, provided they remain “close” to it – then deficits will not be deemed excessive. EU policymakers presumably considered a sharp and global economic contraction such as that we have witnessed in the past few months to be most unrealistic when they reformed the SGP in 2005 – after all, they even considered the negative growth rate of 2% of the original SGP to be unrealistic at the time. For the situation at hand, this gives rise to two conclusions: First, the degree of the current contraction would imply that deviations from the 3% threshold may be handled more flexibly. Second, the phrase “temporary deviations” from the 3% reference value will have to be interpreted more broadly, as the rapidly widening negative output gaps are unlikely to be closed in the near term. At the same time, given marked deviations from the 3% threshold and the increased sensitivity of financial markets, governments will have to increase their efforts to consolidate the budget in the years

ahead in order to contain negative debt-interest rate spirals and preserve the credibility of sustainable economic policies.

The European fiscal framework is designed to ensure that in normal cyclical downturns the automatic stabilizers – which smooth fluctuations in real GDP growth without explicit policy action – may operate freely without endangering compliance with the 3% deficit ceiling. Yet given insufficient room for maneuver, budget policy has often reacted procyclically in economic downturns in the past decades, thus even neutralizing the effect of the automatic stabilizers. At the same time, there is widespread consensus among institutional policymakers and economists that discretionary fiscal measures are a meaningful response to economic downturns only under exceptional circumstances. This rather skeptical take on active fiscal policy action aimed at stabilization also reflects the desire to offset the inherent deficit bias of fiscal policymaking and to safeguard the long-term sustainability of public finances. In contrast, the purpose of the automatic stabilizers is to reduce the deviations of actual from potential growth and thereby produce welfare-enhancing effects.

Section 1 below discusses fundamental problems of discretionary policy. In section 2, we argue that many of the objections raised in section 1 are in fact of secondary importance in the current situation. Section 2, moreover, discusses the requirements that economic policy measures should meet in view of the sharp and pronounced contraction we are witnessing. Section 3 analyzes the intended effects of the economic stimulus packages recently adopted by the Austrian government, and their likely impact on growth and employment. Section 4 concludes.

1 Effects and Problems of Discretionary Fiscal Policy

Following Musgrave (1959), government essentially performs three functions for society: it allocates resources; it redistributes income; it stabilizes economic performance. This being so, the question arises as to the relative importance of each of these three functions.

With regard to resource allocation, there is a consensus in the literature and a social consensus about the function as such, but less so about the degree of intervention (which is invariably a tradeoff between market failure and government failure). Likewise, there is a basic consensus about income redistribution, albeit a broad range of opinions about the adequate design of the system and about the degree of redistribution that is best for society. In contrast, there is a fundamental lack of consensus among both academics and policymakers about the stabilizing function of fiscal policy, i.e. about the role fiscal policy can and should play in smoothing out the cyclical nature of economic development by stimulating the economy during slumps and deflating the economy during booms.

The importance of employing fiscal measures to stabilize the economy was driven home forcefully by the lessons learned from the Great Depression in the 1930s and substantiated theoretically in the works of John Maynard Keynes. Discretionary fiscal policy was the stabilizing tool of choice in the decades following World War II, whereas monetary policy was relegated to the back seat, not least because of the fixed exchanged rate regimes prevailing under the Bretton Woods system. Yet since the mid-1970s, the use of fiscal policy as a stabilization instrument has been largely abandoned; since then, the key rationale of fiscal policy has been

seen in smoothing out short-term deviations of actual from potential output through the operation of automatic stabilizers. Instead, the task of adjusting economic performance has been essentially transferred to monetary policy-making (Taylor, 2000).

1.1 Does the Size of Multipliers Justify Discretionary Fiscal Policy at All?

1.1.1 Economic Theory Divided about the Size of Fiscal Policy Multipliers

The traditional Keynesian view is that fiscal policy has a comparatively high multiplier effect, in any case exceeding 1.

According to the Keynesian conceptual framework, additional government spending stimulates macroeconomic demand either directly (by increasing public consumption and/or public investment) or indirectly (by bolstering private income through higher transfers). The ensuing increase in the disposable income of households will, in turn, boost consumer demand, which will raise private disposable income further. The size of the fiscal multiplier, i.e. the accumulated effects of fiscal policy on output, depends on households' marginal propensity to consume (positively correlated) as well as on the degree of capacity utilization and the propensity to import (both negatively correlated). As a rule, the positive impact of higher deficit spending on real GDP growth will be higher than the original fiscal stimulus.

Thus, deficit-financed increases in spending and tax cuts open up an avenue for jumpstarting consumer demand and business investment during episodes of recession, for diminishing the deviation of current real GDP growth from the underlying long-term growth trend, and for stabilizing income and employment without stoking inflation.

“The idea of using fiscal policy to reduce the magnitude of economic fluctuations dates back at least to the Great Depression of the 1930s, and it was the centerpiece in discussions of short-term economic policy for a number of decades thereafter” (Elmendorf and Furman, 2008, p. 6). The emergence of stagflation amid the first oil crisis in the early 1970s undermined Keynesian theory (and the closely related neoclassical synthesis model) and cast doubts on the effectiveness of fiscal policy in stabilizing output and employment fluctuations in the short term, especially in the case of supply shocks.² Above all, new classical economics – including the Ricardian equivalence theorem, which postulates the ineffectiveness of deficit-financed tax cuts – was highly critical about the stabilizing function of fiscal policy. In line with

new classical economics, new-Keynesian theories emerging above all in the 1980s argued that households and businesses were not as myopic as Keynes had claimed. The new-Keynesian theories, moreover, postulated that households more or less expect deficit-financed tax cuts or spending increases to drive up the tax burden at some point in the future. In other words, even if the validity of strict Ricardian equivalence is drawn into doubt, the mere assumption of forward-looking or intertemporally optimizing households implies lower fiscal multipliers. See the box entitled “Effects of Fiscal Policy according to Different Macroeconomic Schools” for a more detailed overview of the effects various strands of economic thinking expect fiscal policy to have on the size of economic output.

Effects of Fiscal Policy according to Different Macroeconomic Schools

This overview focuses on current mainstream macroeconomic theories and on short-term (and medium-term) impacts; it disregards the effect of measures on technological progress and on the underlying growth trend (as in endogenous growth theory) and schools outside the mainstream (such as post-Keynesian theory).

Neoclassical Synthesis¹

Models of neoclassical synthesis combine Keynesian aspects (demand-side constraints: the volume of GDP depends on effective demand) in the short run with neoclassical elements (supply-side constraints: the volume of GDP depends on the supply of labor and capital) in the medium and long term. Examples include the IS-LM/AS-AD model and the Phillips curve. Neoclassical synthesis dominated economic thinking after World War II and is still the standard in introductory macroeconomic textbooks (e.g. Blanchard, 2008). Moreover, it is still the theoretical basis for the current generation of central banking projection models (e.g. for the OeNB’s Austrian Quarterly Model, AQM; see Schneider and Leibrecht, 2006). One of the key representatives of this school of thought was Paul Samuelson.

According to neoclassical synthesis, expansionary fiscal policies will boost consumption and output in the short run by raising effective demand. In this respect, raising government spending will have a higher impact than lowering taxes, as consumers will put aside, rather than spend, part of their tax savings (the Keynesian part). In the medium term, supply-side constraints will push up the level of prices and drive GDP back to its initial level (neoclassical part).

¹ For instance, Snowdon and Vane (2005, chapters 2 and 3).

² In the case of negative supply shocks, expansionary fiscal policies contribute to stabilizing output but stoke inflation at the same time.

New Classical Economics²

Unlike neoclassical synthesis, new classical models assume complete market clearing – which means that, much like in the neoclassical view, supply-side constraints operate even in the short term. Moreover, new classical economics argues that Keynesian economics and neoclassical synthesis insufficiently reflect the role of expectations and microlevel influences. In new classical models, households optimize their consumption choices in a forward-looking manner and have rational expectations, i.e. make knowledgeable and informed predictions of actual outcomes.³ Key advocates of new classicism include Robert Lucas and Edward Prescott (cofounder of the real business cycle school), as well as Robert Barro.

The latter is known, among other things, for the model he developed in 1974 and further elaborated into the Barro-Ricardo equivalence proposition, also known as Ricardian equivalence. The basic idea behind Ricardian equivalence is that, given a fixed path of government spending, the levels of welfare, consumption and GDP will remain unchanged irrespective of whether government spending is financed through debt or through taxes. The effect of debt-financed tax cuts would be nil, because the reduction in public saving would be offset by an equivalent increase in private saving by consumers anticipating future tax increases that government will have to resort eventually to pay back its debt, given a fixed path of government spending. Households would not act on the basis of their current income alone, but on the broader basis of their lifetime income. Therefore, the impact of deficit-financed cyclical policies on the real economy is comparatively limited (in the case of credit-financed increases of government spending) or nil (in the case of credit-financed tax cuts).

In order for this theorem to work, it takes rational individuals and perfect credit markets (which are both standard assumptions of new classical economics) as well as the following additional restrictive assumptions: All taxes are of the lump-sum variety; individuals act as if they had infinite lives; and all taxpayers have intergenerational links (Elmendorf and Mankiw, 1998). For those very restrictive assumptions, the Ricardian equivalence theorem has come under criticism and is rather controversial.⁴ Blinder (2004) cites evidence from quasi-experiments made in the U.S.A., which suggests that credit constraints do indeed matter for households. Moreover, he argues that the proposition of lump-sum taxes is flawed. For instance, a (debt-financed) temporary reduction in consumption taxes changes the relative prices of current and later consumption and will motivate forward-looking optimizing households to consume more now. Likewise, changes in income tax rates do not have a directly stimulating effect on demand in such a setting; they only have an indirect effect on GDP through changes in the supply of labor and/or through changes in capital accumulation (e.g. Trabandt and Uhlig, 2006).

Furthermore, the **Barro-Ricardo equivalence proposition** does not say anything about the effect of raising or lowering government expenditure, as public consumption and public investment essentially constitute an alternative use of resources by the state rather than by the private sector. When hours worked are assumed to be endogenous, a permanent (temporary) rise in public consumption will have a permanent (temporary) positive effect on GDP. However, this effect is smaller than in the Keynesian view, and the way public measures are transmitted to the real economy is also very different: A rise in public consumption is financed by raising taxes now or later, which causes expected lifetime income to shrink. As a result, both consumption and spare time drop, since they are both normal goods for which demand rises as income rises. The ensuing implied increase in hours worked causes the level of GDP to rise; yet as consumption declines, so does the level of welfare (for a more detailed explanation of this relationship, see e.g. chapter 15 in Heijdra and van der Ploeg, 2002).

² For instance, Snowdon and Vane (2005, chapters 5 and 6).

³ Rigorously applied, this means that households' expectations are fully in line with model forecasts (Snowdon and Vane, p. 225f). This excludes systematic deviations of expectations from actual outcomes.

⁴ For an in-depth discussion, see Seater (1993). Criticism has zeroed in above all on the assumptions, as it is difficult to test the implications of the theory in an empirical setting (Elmendorf and Mankiw, 1998).

New-Keynesian Economics⁵

New-Keynesian theory starts from assumptions on the behavior of households similar to those of new classical economics (forward-looking optimization, rational expectations). At the same time, new-Keynesian economics stresses the existence of nominal and real rigidities (nominal: rigid prices and nominal wages; real: e.g. imperfect competition) and thus does not postulate market clearing as a rule. This means that the demand side plays a comparatively bigger role and that, unlike in new classical economics, there is a role for public stabilization policy. Key advocates include Gregory Mankiw and Olivier Blanchard.

New-Keynesian dynamic-stochastic general equilibrium (DSGE) models such as the ECB's New Area Wide Model (Christoffel et al., 2008) or the European Commission's QUEST III model (Ratto et al., 2009) constitute the state of the art on analyzing the impact of different scenarios on macro variables. The bottom line is that new-Keynesian models produce very much the same qualitative results as the new classical models in determining the effects of changes in government consumption or tax cuts. The results of short-term effects, however, differ, owing to the respective assumed rigidities. As a case in point, Ratto et al. (2009) as well as Coenen et al. (2008) assume a certain share of households to be credit-constrained, as a result of which a rise in public transfers to households does have an impact on consumption in the short run.

Yet unlike original Keynesian economics, new-Keynesian economics essentially focuses on analyzing the impact of monetary policy and it is characterized by a very high degree of heterogeneity. Moreover, the concept of the hysteresis is also based on new-Keynesian thinking.

⁵ For instance Snowdon and Vane (chapter 7).

1.1.2 Growing External Trade and Market Liberalization Have Made Fiscal Stimulus Measures Less Effective

The rapid pace of integration within Europe (EU, EMU) and globalization trends as well as the spreading international division of labor have reduced the impact that national economic stimulus measures may have on national output and employment. The rising import propensity of individual economies resulting from intensified external trade implies a weakening of multiplier effects on domestic GDP, which means that built-in stabilizers also lose in effectiveness. Deregulating financial markets and easing access to credit markets may also have contributed to a decrease in the number of credit-constrained households, which will also have reduced multiplier effects.

1.1.3 Empirical Evidence on the Impact of Expansionary Fiscal Policy is Mixed

According to the European Commission (2001, p. 62), both empirical estimates and simulations of state-of-the-art macro models point to the existence of positive multipliers but at the same time indicate that those multipliers are relatively small compared with the traditional Keynesian view.³

A seminal work by Blanchard and Perotti (2002) finds positive expenditure and tax multipliers (around 1) for the U.S.A. and a strong crowding out of private investment following expenditure shocks. In a similar study for five OECD countries (U.S.A., United Kingdom, Canada, Australia and Germany), Perotti (2005) establishes low multipliers (and often negative multipliers for the post-1980 subsample) also for countries other than the U.S.A.

³ In recent years, fiscal multipliers have typically been calculated with structural vector auto-regressions (SVARs). Yet such tools allow for a certain degree of arbitrariness in identifying fiscal shocks (unexpected changes in fiscal policy). Furthermore, such studies are based on quarterly data, which are often not available for countries or are often fraught with quality problems. Apparently, this is the reason why the number of studies on the effectiveness of fiscal policies is so low for countries other than the U.S.A. (Afonso and Sousa, 2009).

Moreover, he finds evidence for a decline in multipliers over time. In a later analysis of four OECD countries (U.S.A., United Kingdom, Canada and Australia), Perotti (2007) shows the response of consumption and GDP to positive government spending shocks to be positive as a rule, but statistically not significantly different from zero in some instances; and to be generally higher in the U.S.A. than in the other three countries.

The IMF (2008a) finds mostly positive but very small multipliers for industrialized countries, whether the growth effects are higher for spending cuts or for tax increases depends on the method of calculation. The impact of discretionary fiscal policy measures on the real economy crucially depends on the long-term sustainability of public finances: The evidence shows the fiscal stimulus effects to be higher when the original debt ratios are low.

Moreover, a number of studies point to possible nonlinear effects of fiscal policies: Given certain conditions, such as excessive debt ratios, fiscal policies will not only be ineffective (multiplier of zero) but even contribute to destabilization (negative multiplier).⁴ The more recent literature thus even offers a further channel (in addition to the timing problem mentioned above) as an explanation why discretionary fiscal policies may have unintended destabilizing effects.

1.2 Economic Policy and Institutional Arguments Speak against Discretionary Stabilization Measures

Since the 1970s, the debate on the stabilizing function of fiscal policy has basi-

cally revolved around two issues: (1) Have discretionary policies indeed had a stabilizing effect in the past; and (2) how effective are the built-in automatic stabilizers when compared with discretionary policies? Both of those questions are closely related to institutional or political economy issues. The underlying questions are the relative lags with which fiscal and monetary policy measures become operative and effective, whether those measures are subject to political constraints (such as irreversibility) as well as the extent to which those measures may be biased by a “hidden agenda” of politicians seeking reelection (political election cycles) and by short-term orientation (time-inconsistency problems).

1.2.1 Implementation and Effectiveness Lags May Make Countercyclical Measures Procyclical

Fiscal measures have, as a rule, a more immediate effect on demand than key interest rate changes; in other words, fiscal policy has a shorter effectiveness lag than monetary policy. However, this only holds for projects that have been developed and adopted and simply need to be pulled out of the drawer, so to speak, as the design and decision-making or implementation lag is, in fact, longer for fiscal policy than for monetary policy. Yet more recent studies have established potentially long effectiveness lags also for fiscal policies (Blanchard and Perotti, 2002). The comparatively long implementation lag of fiscal policies alone would already imply that monetary policy is potentially “superior” to fiscal policy. Unlike monetary policy decisions, which are taken by the central bank, economic stimulus packages are

⁴ See Prammer (2004) for an overview of non-Keynesian effects, a description of the conceptual frameworks and an assessment of their empirical relevance.

adopted by parliament – a much slower process.⁵ This involves the inherent risk that fiscal measures taken in the course of “normal” economic downturns may not become effective until after the economy has started to rebound – causing countercyclical measures to be in fact procyclical as a result of decision-making and implementation lags. Consequently, in order to indeed have countercyclical effects, fiscal measures need to be implemented quickly and start operating right away. Above all, specific public investment projects, which may principally stimulate growth in the short run and enhance the long-term growth potential, may thus be unsuitable for short-term stimulation because of those lags. Given the long preparatory periods (planning, approval procedures, etc.) it does not come as a surprise that empirical studies often conclude that public investment projects have procyclical effects (Hallerberg and Strauch, 2002; Alberola, 2003). Yet the procyclicality of this spending category may also reflect the fact that such projects can be cut short without high political costs when governments needed to retrench.

The effectiveness of discretionary, stability-oriented fiscal policy depends above all on the precision with which the cyclical path can be assessed. Forecasting cyclical turning points is the most difficult task of cyclical analysis (Dynan and Elmendorf, 2001). In this respect, monetary policymakers are generally expected to be able to identify turning points more objectively, given central bank independence (e.g. Solow, 2005).

1.2.2 Deadweight Loss Effects of Fiscal Impulses

Every euro spent under discretionary fiscal measures needs to be well spent, i.e. should generate a strong (additional) impact on GDP, and should benefit above all those whom the economic slowdown or an economic crisis hits hardest. In other words, the measures need to be targeted. While expenditure measures are fraught with crowding-out problems and lead to implementation delays, incentive-based measures (such as investment subsidies) may be subject to large and unavoidable deadweight loss effects. Notwithstanding the aim of discretionary measures to create additional consumer and business demand, it is impossible to rule out that money will go into projects that would have been implemented even without stimulus measures. The special investment growth tax credit (“Investitionszuwachsprämie”) introduced temporarily under Austria’s economic stimulus and growth packages of 2002 is a case in point. Anecdotal evidence shows that firms were very resourceful in presenting their investment projects in such a way that they qualified for this special tax credit. Apart from that, more attention should be paid to the incentive effects underlying such measures, which – in the case of the above-mentioned special investment tax credit – might dampen investment demand in normal times in case firms expect policymakers to reintroduce such measures in times of future downturns.⁶

⁵ In this context, Solow (2005) has noted that some of those economic policy problems are more acute in the U.S.A. than in Europe, as party discipline is very low in U.S. Congress.

⁶ Moreover, such measures put at a disadvantage companies whose investment demand was high before economic activity shrank.

1.2.3 Irreversibility of Measures and Deficit Bias Threaten Long-Term Fiscal Stability

Another problem of anticyclical measures introduced in times of economic downturns is their irreversibility, even though they should be restricted to a limited period. However, expenditure measures (such as increasing the public service headcount or raising social transfers) that are not unwound or tax cuts that are not reversed when the economy recovers may create budget problems in the medium to long term, however effective they may have been in the short term. The negative effect on the sustainability of public finances will be weakened only if such short-term measures clearly raise potential long-term growth (as targeted investment in infrastructure, education or research does, or as is the case with tax reforms that stimulate capital accumulation as well as labor supply and demand). This negative effect evolves because budget deficits curb private investment demand as interest rates rise, which in turn causes the capital stock to shrink. At the same time, an increasing debt burden accompanied by growing long-term interest rates on government debt securities (especially when investors have sustainability concerns) reduces the leeway of fiscal policy. If fiscal policy does not succeed in keeping up investor confidence in the long-term sustainability of public finances, it ruins the chance of stimulating the economy during downturn periods.

The problem of the irreversibility of stability-oriented discretionary measures is closely linked with the problem of the asymmetric fiscal stance and the inherent deficit bias of fiscal policy⁷ –

i.e. the fact that fiscal policy tends to be expansionary during economic downturns but fails to be contractionary in recovery or boom periods.⁸

1.2.4 Numerous Tax Rate and Expenditure Changes Destabilize Expectations of Households and Businesses

While stability-oriented measures should be temporary as a rule, so as not to jeopardize the sustainability of public finances, raising and lowering spending levels or tax rates with a view to reinforcing stability too often in a row may in fact render those measures ineffective, as this will undermine the planning security for businesses and households and affect the process under which they form expectations.

Furthermore, if temporary adjustments in tax rates do not change the permanent income of households, only liquidity-constrained households will spend what they have temporarily gained in disposable income, which is one more reason why automatic stabilization was generally given priority.

1.2.5 Stability Measures Invariably Involve Distribution and Allocation Choices

Finally, stability measures are also controversial because of the distributive and allocation effects with which they ultimately come. “If choice is left to the democratic process, stabilization issues will tend to be fought out in terms of distribution and allocation, and the stabilization results will surely be delayed and may sometimes be perverse” (Solow, 2005, S. 512).

⁷ See Calmfors (2005) for different explanations for deficit bias.

⁸ Against this backdrop, it does not come as a surprise that the European Commission (2001, p. 63) concluded that “... empirical evidence indicates that countries in the last three decades have tended to behave pro-cyclically.”

2 The Effect of and Need for Discretionary Fiscal Policy in Times of Crisis

2.1 In Times of Crisis, Automatic Stabilizers Alone Will Not Do ...

For the economic and institutional reasons outlined above, discretionary fiscal policy as an instrument of stabilization has lost much of its luster in the past decade. The European fiscal framework has left little room for discretionary fiscal policy, even though this policy is considered to be a valuable tool – alongside income policy – for countering asymmetric shocks and permanent imbalances in a monetary union under the optimum currency area theory. In the case of symmetric demand shocks, monetary policy is considered the instrument of choice, provided it does not run counter to price stability considerations.

However, the advantages of (passive) stabilization through progressive tax systems and comprehensive unemployment insurance systems have been widely recognized.⁹ The same holds true for the size of government – subject to concerns that high expenditure/revenue ratios may have dampening effects on the long-term growth potential of economies.¹⁰ In the EU, the tax reforms of the past decades, which generally aimed at reducing marginal tax rates and softening tax progressivity, as well reforms of unemployment (and other transfer) systems have tended to reduce the effectiveness of automatic stabilizers.

The effectiveness of the automatic stabilizers generally depends on how sensitively the budget balance reacts to cyclical fluctuations. If such sensitivity

is high, i.e. if an economic contraction will strongly influence the budgetary situation given sharp increases in transfer expenditure or sharp declines in progressive income tax revenues, automatic stabilizers are likely to have a higher impact on the real economy. Grossmann and Prammer (2005) have found Austria to have an average budget sensitivity of 0.38. In other words, a 1% decline in GDP will cause the budget balance to decline by 0.38% of GDP on average; the actual effect will, however, also depend on the type of economic shock.

2.2 ... and (Discretionary) Fiscal Policy May Have Larger Effects in Times of Crisis than in “Normal” Times

In a period of economic contraction, as is currently emerging worldwide, the effectiveness of the automatic stabilizers appears to be low. Therefore, the European Commission (2008) has urged governments in its *European Economic Recovery Plan* to widely use discretionary fiscal measures. In addition, the weakening of the transmission mechanism as a result of the financial crisis and above all the possible emergence of supply-side credit constraints for businesses also justify the temporary use of discretionary fiscal measures. Moreover, concerns that private expenditure might be crowded out by higher government expenditure are currently unfounded – at least as long as there are no doubts about the sustainability of public finances. Rising unemployment and the sharpened risk perception of financial market participants has swelled the ranks of liquidity-

⁹ Conversely, letting the automatic stabilizers work has been questioned in the case of supply shocks.

¹⁰ Growing public sectors tend to have higher spending and revenue ratios. However, high labor taxation may dampen labor supply and demand. Moreover, capital taxation is likely to distort the saving and investment decisions of households and businesses.

constrained households.¹¹ All this would speak for the temporary use of discretionary fiscal measures.

Furthermore, medium- and long-term considerations also support the use of discretionary fiscal measures under the current circumstances. After all, the latest economic forecasts (e.g. the Interim Forecast of the European Commission, 2009) point to a sharp increase in unemployment. Unless countermeasures are taken, potential economic growth will be seriously dampened. The non-accelerating inflation rate of unemployment (NAIRU) might rise significantly given the loss of human capital as a result of protracted unemployment, insider-outsider effects (the possibility that wage negotiators neglect the marginalized jobless) and the loss of firm-specific know-how following business failures.^{12,13}

2.3 Reinforced Impact through (at Least) EU-Wide Coordination of Economic Policies in Line with the Lisbon Strategy

Given the potential pitfalls of discretionary fiscal stabilization measures outlined above, it is important to consider a number of aspects to ensure that such measures are effective. First, even under the current exceptional economic developments, policymakers should refrain from going it alone nationally in response to the economic

crisis, as the strong integration of individual economies reduces national multiplier effects given the high import propensity of consumers. Coordinated action within EU boundaries should both improve the effectiveness of national measures and prevent free-riding behavior (relying on trading partners taking fiscal measures and waiting for positive spillover effects to the national economy).

The fiscal stimulus resulting from the discretionary national reform measures announced by individual EU countries in the fall and winter of 2008 amounts to roughly 1% of GDP in 2009 and to 0.5% in 2010 (European Commission, 2009, p. 16). At the same time, automatic stabilizers are expected to drive up the EU-wide deficit by another 2½% of GDP. In the QUEST III model underlying the analysis of the European Commission, EU-wide fiscal multipliers are lower than 1 on average;¹⁴ overall, the European Commission expects the positive EU-wide growth impact of the fiscal measures to be 0.8 percentage points in 2009 and 0.3 percentage points in 2010.

In addition to being collective, the optimal fiscal package should be timely, large, lasting, diversified, contingent and sustainable, according to the IMF (2008b). A fiscal stimulus should be *timely* because there is an urgent need for action given the drastic pace of the

¹¹ In this context, an empirical study by Tagkalakis (2008) shows that unexpected changes in government spending and revenues have a stronger impact during cyclical downturns than during upswings. The author explains this phenomenon above all with the rise in the number of liquidity-constrained households in times of crisis.

¹² For a more detailed discussion of the concepts of NAIRU and of hysteresis, see chapter 7.9 in Snowdon and Vane (2005).

¹³ Models such as the New Area-Wide Model of the ECB (or the model of Barro, 1974) start from the assumption of a situation of almost full employment (or of an unemployment rate that is close to its "natural" level) and presume that, following negative shocks, market mechanisms or monetary policy will cause unemployment rates to bounce back to the old equilibrium after a certain period. The aforementioned hysteresis effects, however, prevent a reversion to the "old" market equilibrium.

¹⁴ Fiscal multipliers for transitory shocks range from 0.6 for tax reductions and transfer shocks to 1 for government consumption and slightly larger than 1 for government investment shocks (assuming a large degree of monetary accommodation and no implementation lags).

contraction and the need to offset negative confidence effects among consumers. As outlined in section 1, a timely implementation of measures is essential to ensure the intended anticyclical impact. At the present juncture there is, however, little risk that the measures might become effective too late, i.e. have a procyclical effect as a result of decision-making and implementation lags, as history shows that economic crises involving banking crises tend to last longer than “normal” recessions. Moreover, in view of the global dimension and the depth of the crisis and of the fact that all demand aggregates have been hit by the crisis, stimulus packages need to be sufficiently large to make a significant dent.

Another challenge is the need not to lose sight of the *sustainability* goal of fiscal policy in view of the need for large and timely action. In line with the objectives of the Stability and Growth Pact, national fiscal policies need to set corresponding consolidation measures when the economy bottoms out or begins to recover, especially given the budgetary implications of ageing. Therefore, stimulus packages need to come with a credible exit strategy to prevent concerns about the sustainability of public finances, which would lead to confidence losses among investors. Failure to do that would result in rising financing costs destroying the positive effects such measures may have had earlier. Dwindling public confidence would, in turn, make transfer increases

and tax cuts less effective – which makes the case for a strong emphasis on one-off measures (such as infrastructure projects) or measures that may be reversed easily.

Of course, *sustainability* also means that measures that have positive effects in the short run should not have adverse effects in the long run. While efficiency-increasing measures may not have top priority given the low degree of capacity utilization at the current juncture, it is essential to consider the implied long-term effects of measures aimed at producing short-run effects.¹⁵

Any protracted crisis principally conflicts with the requirement to take *temporary* action, i.e. to rapidly unwind those measures when no longer needed. Unwinding transitory measures – above all in case the negative output gap widens – would after all prolong the crisis. Given the dramatic dimension the crisis has reached, economic policymakers would thus be well advised to signal that they stand ready to take further action, *contingent* on a further deterioration of the crisis.

Finally, the fact that the demand setback affects all demand aggregates would call for implementing strongly *diversified* packages to boost consumer and business confidence through the fiscal stimulus measures. What also supports a diversified approach is that different measures come with different lags of effectiveness, and with different multiplier effects (the size of which is subject to uncertainty at present).

¹⁵ In its European Economic Recovery Plan, the European Commission therefore sorted its proposals for action in line with the priority areas of the Lisbon strategy: In the labor market context, the European Commission recommended, among other things, to permanently reduce VAT rates for labor-intensive services, and to increase unemployment entitlement periods and amounts. The latter would also contribute to reinforced passive stabilization. Moreover, the European Commission recommends enhancing access to financing for SMEs, stepping up investment in infrastructure (such as broadband infrastructure projects and trans-European transport projects) and energy efficiency measures, and increasing investment in research and innovation. These recommendations are broadly in line with the short- and medium-term objectives for fiscal measures outlined by the IMF (2008b).

3 Discretionary Fiscal Stabilization Measures in Austria

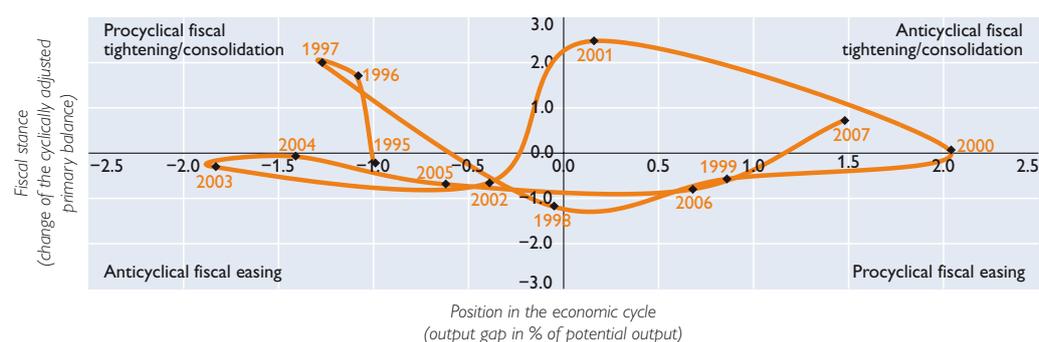
Judging from the fiscal stance, that is to say assessing the orientation of discretionary fiscal measures in conjunction with the development of the output gap, Austria's fiscal policy was procyclical throughout the 1990s, be it as a result of EU accession in 1995 or as a result of the consolidation required to meet the convergence criteria for introducing the euro (chart 1). The goal of meeting the fiscal convergence criteria laid down in the Maastricht Treaty by 1997 required extensive expenditure and revenue measures (Katterl and Köhler-Töglhofer, 2005). In the high-growth years following the introduction of the euro, fiscal consolidation was subsequently put on the back burner. In the current decade, however, policymakers have again resorted to fiscal stimulation and have already adopted a number of growth and employment packages,¹⁶ including incen-

tives for investment and research, labor market activation policies and infrastructure investment projects.¹⁷ As is evident from chart 1, discretionary fiscal measures have tended to be anticyclical in Austria since 2000.

The tax reforms of 2004 and 2005 have had positive growth effects, even though the reform of corporate taxation was basically aimed at enhancing medium- to long-term growth, while the reform of individual taxation was subject to some controversy, as it increased the degree of tax progressivity for middle-income earners. However, the tax reform was not primarily meant to stimulate the economy anticyclically but was motivated by medium- to long-term growth and structural policy objectives. Some reforms adopted earlier, in the late 1980s and in the 1990s, had been driven primarily by structural policy considerations and had happened to produce “economic stimulus wind-falls.”

Chart 1

Fiscal Stance in Austria from 1995 to 2007



Source: AMECO database, OeNB.

Note: The structural balance for 2004 has been adjusted for capital transfers made from the government to Austrian Railways (debt relief and capital injection).

¹⁶ For an overview of the string of reforms (stimulus packages of 2001 and 2002, growth and location package of 2004, tax reform of 2004/05), see Aiginger (2005), who also provides estimates of actual growth effects achieved. The year 2005 saw the adoption of additional stimulus measures, especially employment initiatives.

¹⁷ “Given the intention to consolidate the budget in the medium term and given the risk that the government measures might be nullified through imports or deadweight losses, the volume of measures was limited in the first place.” (translated from Aiginger, 2005, p. 14).

3.1 Composition of Current Fiscal Stabilization Measures

Given the comparatively strong increase in inflation starting in the fall of 2007 and continuing through the first half of 2008, compared with the level of the preceding years, the Austrian government adopted a number of measures aimed at softening the inflation effects on the disposable income of households. Those measures consisted above all in increasing transfer payments (such as pensions and family allowance) and in lowering unemployment insurance contributions for lower-income groups. As argued by Gnan (2009), many of the income-support measures originally intended to help curb inflation have turned out to be useful and adequate also in the entirely different environment of a sharp recession.

In response to the looming economic downturn, the government adopted a stimulus package designed to facilitate access to funding notably for Austrian businesses, and in particular for SMEs, through loans and guarantees. When it became clear that the downturn would turn into a pronounced contraction, the government followed suit with a second stimulus package and, moreover, brought forward the announced personal income tax reform. The two stimulus packages contain higher infrastructure spending by public companies classified to the private sector, such as ÖBB, the Austrian Railways and ASFINAG, the Austria's highway authority (first package) and BIG, the public facility management company (second package). To stimulate private investment demand, the second package also provides for the

transitory option to frontload depreciation (up to 30%; expires at the end of 2010) and transitory subsidies for energy efficiency renovation projects. In addition, the government has appropriated higher funds to research promotion and to regional job support initiatives (table 1); it has adopted a car subsidy as an incentive for car-owners to scrap old cars and buy new, fuel-efficient vehicles; and it has agreed to extend the short-term working rules.

The mix of measures is meant to stimulate both consumer expenditure and business investment, and it has been designed to balance short-term and medium-term goals. Stabilization measures invariably entail distribution and structural policy effects, as argued above. The measures to dampen inflation effects are cases in point as they also contain a major distributional component, resulting above all from the introduction of a 13th family allowance installment as well as increases in long-term care allowances, payment of a federal heating subsidy, and cuts in low-income workers' unemployment insurance contribution.¹⁸ In addition, the first stimulus package and parts of the second stimulus package reflect the intentions of the Lisbon strategy (investing more in infrastructure projects and facilitating research and job initiative projects) as well as the intention to make Austrian households less dependent on fuel so as to permanently reduce the pass-through of energy cost-driven inflation to the disposable income of households.

Below, readers will find a systematic assessment of the individual measures (see sections 3.1.1 through 3.1.4)

¹⁸ *The idea is to enhance the net wages of low-income workers and thereby generate a positive influence on the supply of labor.*

Table 1

Volume and Intention of Stimulus Measures Announced in 2008 and 2009

	Volume		Categorization
	2009	2010	
<i>EUR million</i>			
Measures to combat inflation			
Lower unemployment insurance contribution	300	300	strengthening consumption
Higher pensions ¹	300	110	strengthening consumption
Student tuition fee partly abolished	150	150	strengthening consumption
13 th family allowance installment	250	250	strengthening consumption
Lower VAT rate for medication ²	100	100	strengthening consumption
Higher long-term care allowance	120	120	strengthening consumption
Higher heating subsidy	30	0	strengthening consumption
Additional wage tax exemptions	150	150	strengthening consumption
First economic stimulus package			
Railway (ÖBB) and highway (ASFINAG) infrastructure projects ³	225	225	infrastructure investment ⁸
Higher credit line (EIB, KfW, ERP) ³	500	500	investment incentive
Higher guarantee line for AWS (Austria Wirtschaftsservice) funding ³	400	400	investment incentive
Higher government subsidy for savings plans with building and loan associations	20	20	investment incentive
SME fund for growth projects ³	40	40	investment incentive
Internationalization drive	25	25	export promotion
Broadband drive	10	0	investment incentive
Second economic stimulus package			
BIG public facility management projects ^{3,4}	355	520	infrastructure investment ⁸
Accelerated depreciation (temporary) ⁵	250	350	investment incentive
Energy-efficiency renovation	100	0	investment incentive
Research facilitation	50	50	investment incentive
Regional job support initiatives	75	75	saving jobs, strengthening consumption
Public funding for pre-school kindergarten year	30	70	strengthening consumption
Tax reform including family package⁶	2,910	3,210	strengthening consumption
Other measures			
Subsidies for short-term working	200	200	saving jobs, strengthening consumption
Government car subsidy	20		strengthening consumption
Total volume of measures	6,610	6,865	
of which having an impact on the deficit⁷	4,095	4,758	

Source: Austrian Ministry of Finance, OeNB.

Note: The volume of measures reflects the increase over the 2007 budget and has been prepared on an accrual basis.

¹ One-off payment in 2009, permanent increase above inflation rate by 0.2 percentage points; abolition of the one-year waiting period for pension adjustment entitlements.

² The main beneficiaries of the VAT reduction on medication are the cash-constrained social security funds.

³ Not relevant at all for the Maastricht-based deficit measure (or only to a minor extent).

⁴ In turn, BIG will receive an additional EUR 20 million per year in rental payments.

⁵ Delayed fiscal effect (tax collection lag).

⁶ Fiscal effect partly delayed (tax collection lag).

⁷ Adjusted for the tax collection lag.

⁸ Off-budget: not classified under the government sector under ESA 95 (and thus not relevant for the Maastricht deficit).

3.1.1 Boosting Consumption by Raising Disposable Personal Income

While the private saving ratio kept increasing, consumer demand was comparatively soft even in the last few (very good economic) years. Amid the pronounced contraction, which has been

accompanied by an exceptionally sharp decline in unemployment, consumer demand will at best stagnate in 2009 at the 2008 level (European Commission, 2009). Therefore, fiscal measures to raise household disposable income should thus help stabilize consumer de-

mand. This is the intention of most of the government's income tax reform measures, which have been brought forward by one year. Those measures include a reduction of tax rates (freeing up about EUR 2.3 billion¹⁹) and a family package (corresponding to about EUR 500 million, resulting among other things from higher child tax credits and the move to make child care partly tax deductible). Moreover, the government made donations to charity and aid organizations tax deductible (about EUR 100 million) and increased the tax deductibility cap for church tax payments. At the same time, the preferential tax treatment for stock options was abolished.²⁰ Moreover, the tax burden of self-employed persons will be reduced from 2010 by a broadening of the profit allowance (freeing up roughly EUR 300 million, already adjusted for the concomitant abolition of preferential treatment for profit carried forward).

In the short run, those parts of the reform that boost disposable income tend to increase consumer demand;²¹ in the medium term, the measures are expected to also have a slightly positive effect on labor supply and demand. Some parts of the tax reform of 2009 took up the thread of the tax rate changes implemented in 2004 and 2005 and the cuts in unemployment insurance contributions for lower income groups in 2008, which were specifically designed to boost smaller incomes. Those measures – such as the higher profit allowance applicable from

2010 – reflect distribution rather than growth intentions. Basically, this is also true for the rate reduction, from which the higher income groups tend to benefit more (in absolute figures). While this move is to be welcomed from a structural policy perspective (as it smooths out the bracket creep of recent years and provides incentives for accumulating human capital), it would have been more effective from a stability policy perspective to put a stronger focus on lowering the tax burden of low-income households, which have a comparatively larger marginal propensity to consume and/or are highly liquidity constrained.

On balance, some of the measures aimed at dampening the impact of inflation on disposable household income imply a sizeable increase in the disposable income of low-income groups, such as the (staggered) decrease of low-income groups' unemployment insurance contributions, the introduction of a 13th family allowance installment, the reduction of VAT on medication, the (partial) abolition of student tuition fees, the increase of long-term care allowances and the (frontloaded) increase of pensions above the inflation rate (plus a one-off payment). Thus, these measures can be expected to have a comparatively stronger stimulating effect on consumption in the short term, as lower-income households stand to benefit disproportionately more from those measures than from the tax reform. More or less the same holds true for parts of the family pack-

¹⁹ The figures listed here refer to the long-term effects of the respective measures, i.e. they include both measures that have an immediate effect on the budget (such as child tax credits, which are paid out), as well as lagged effects in the form of higher tax repayments following income tax assessments (reflecting for example the tax deductibility of donations).

²⁰ The – limited and offsetting – effects resulting from the higher deductibility cap for church tax payments and the abolition of preferential tax treatment for stock options are likely to cancel each other out.

²¹ However, given the current external macroeconomic developments, it cannot be ruled out that increased precautionary saving by households apprehensive about future developments may broadly nullify the stimulus effects.

age, above all for the increase of the child tax credit, which is not income-linked.

Another measure announced in the stimulus packages, namely government funding for the final preschool year, which will be compulsory, would appear to have a limited positive impact on the disposable income of households with small children, but will definitely increase public consumption given the need to hire more personnel.

Last but not least, the job support measures, such as short-term working rules and the regional job support initiatives, also have a consumption-boosting effect.

3.1.2 Measures to Fuel Business Investment Demand and Improve Corporate Financing Conditions

Business investment demand has been hit particularly hard by the current economic crisis. The successive tightening of financing conditions since the financial turmoil began in the fall of 2007, the sharply declining domestic and external order intake, dwindling export demand and the ensuing extremely bleak sales perspectives, together with a rapid drop in capacity utilization have caused corporate investment demand to contract sharply. As a result of the global crisis, companies will continue to retrench and cut back significantly on investment.

With a view to easing the ever tighter financing conditions ensuing from the financial crisis as well as to facilitate ongoing access to corporate loans, above all the first stimulus package provided support through a EUR 900 million expansion of credit lines (subsidized loans granted by the Kredit-

anstalt für Wiederaufbau (KfW) banking group, under the European Recovery Program (ERP) and by the European Investment Bank (EIB)) and of guarantee lines (provided by Austria Wirtschaftsservice (AWS)) for SMEs. In addition to those measures, a limited amount of funds was also appropriated for the establishment of an SME fund for growth projects and for continuing internationalization initiatives.

The second stimulus package facilitates accelerated depreciation (up to 2010), includes incentives for investing in energy-efficiency renovation and job-creation initiatives (subsidies for firms that create jobs, facilitation of regional job support programs) and provides additional funds for research and innovation (paying for state-of-the-art equipment at universities, etc.). Accelerated depreciation reduces the tax base initially, i.e. it makes a higher share of investment expenditure tax deductible in the year of investment while increasing the tax base in the following years.²² From a firm-level perspective, this measure is tantamount to an interest-free investment loan, subject to the limitation that firms need to achieve a profit in the first place to actually benefit from this measure. The underlying intention of this measure is to encourage companies to bring forward planned investment projects and thus help cushion the sharp drop in investment demand. From the government's point of view, this measure is comparatively cost-efficient, at least from an intertemporal perspective. From a firm-level perspective, the effect is broadly similar to the effect of government loans as well as guarantees, which lower the cost of (debt) financ-

²² Hence the loss in revenues expected by the finance ministry for the period from 2010 to 2012 is expected to be offset by revenue increases in the following years.

ing compared with private sector loans without state guarantees; however, the latter also benefit firms that do not achieve profits. Another alternative would be a special investment tax credit for new investment above previous-year levels, as offered by the Austrian government in the first half of the current decade, which is, however, somewhat controversial because of the resultant deadweight losses. What would make such tax credits attractive for companies, of course, is that they need not achieve a profit to actually benefit from this measure, because such tax credits are after all an investment subsidy.²³

Similar to the economic stimulus measures implemented in the first half of the current decade, some of the subsidies or funds have been appropriated for facilitating research, which means that those measures have been designed both to stimulate demand in the short term and to boost potential long-term growth. Yet those measures, too, are likely to come with nonnegligible deadweight losses. According to evidence compiled by Aiginger (2005, p. 20) for 2003, only 3% of manufacturing firms and 15% of service providers with R&D activities indicated to have tackled research projects they would not have implemented without the tax credit or investment subsidy. Furthermore, Austria features in the mid-ranks of international comparisons (Cincera et al., 2009) cross-tabulating public R&D expenditure and output indicators. Rather than implying the need to increase funding, those figures would

call for a more efficient use of public funds.

3.1.3 Stimulating the Economy by Reinforcing Public Investment Demand

In the current exceptional economic situation, it cannot be ruled out that the measures adopted so far to stimulate consumer and business demand may fail to create the expected positive demand effects – be it because of the precautionary saving bias of households mentioned above or because of the particularly pessimistic assessment of corporate sales perspectives. In this case, only demand impulses generated by the government will have stabilizing effects for the overall economy and for employment. Therefore, both stimulus packages also provide for higher “public” investment spending by state-owned companies that are classified to the private sector, such as the federal railways (ÖBB), the highway authority (ASFINAG) and the public facility management company (BIG). In the coming four years, ÖBB is going to invest an additional EUR 700 million, and ASFINAG another EUR 200 million, while BIG envisages increasing its investment spending by EUR 875 million in 2009 and 2010. As those companies statistically belong to the private sector, the higher investment spending does not have an impact on the Maastricht debt and deficit measures. At the same time, they do not qualify as public investment, but add to private sector investment.²⁴

²³ The fact that this measure was designed as a subsidy – plus nonnegligible deadweight losses – caused the impact on the budget balance to be much stronger than anticipated. Aiginger (2005) puts the loss in tax revenues at approximately EUR 1.7 billion.

²⁴ The statistical reclassification of public companies has increased the Austrian government’s cyclical policy leeway, above all since it has been committed to meet the Maastricht criteria and to comply with the Stability and Growth Pact. This is evident not only from the two latest economic stimulus packages, but has already been true for the earlier stimulation packages.

3.1.4 Stimulation of Exports

The current economic contraction reflects above all export setbacks. Given Austria's export structure, there is but limited room for public export stimulation, and it basically focuses on continuing export initiatives and expanding export guarantee schemes. In addition, short-term working rules contribute to retaining the specific know-how of export-oriented firms in the near future.

3.2 Quantitative Effects of Economic Stimulus Measures on Growth and Employment

On balance, the stabilization measures adopted in 2008 and discussed in this article, to the extent that they may be quantified, have been projected to push up GDP by more than $\frac{3}{4}\%$ of GDP in 2009, based on simulations with the OeNB's macro model. By 2010, GDP should have increased by about $1\frac{1}{3}\%$ compared to a baseline scenario without any such measures. At the same time, the measures are expected to translate into a sizeable positive effect

on employment, creating close to 25,000 jobs in more than two years (calculated cumulatively, not reflecting job support initiatives and not adjusted for short-term work schemes).

4 Summary

In "normal" times, a whole range of arguments would discount the use of discretionary fiscal policy for stabilization purposes. Yet amid the current contraction, supporting the automatic stabilizers by taking discretionary fiscal action would appear to be a useful countermeasure to soften the rapid setback in private demand and to dampen the sustained negative effects on the overall economy ensuing from a sharp increase in unemployment as well as the NAIRU.

That said, the adopted economic stimulus and tax reform measures will at best mitigate the contraction of the real economy triggered by the global financial crisis – but they must not be expected to prevent the recession from unfolding, even taking into account potential positive spillover effects from

Table 2

Estimated Growth and Employment Effects of Economic Stimulus and Tax Reform Measures

	Volume in EUR million		Employment ¹ in persons		GDP in % of baseline solution	
	2009	2010	2009	2010	2009	2010
Consumption-stimulating measures	4,360	4,460	9,312	17,840	0.57	0.89
excluding inflation-dampening measures	2,960	3,280	5,640	11,999	0.34	0.61
Investment incentives and export facilitation	1,395	1,385	590	1,079	0.05	0.07
Investment in infrastructure	580	745	2,698	6,299	0.16	0.33
Job support measures ¹	275	275	–	–	0.04	0.06
Measures adopted by the new cabinet (in office since December 2008)	5,210	5,685	8,927	19,378	0.59	1.08
Total (incl. inflation-dampening measures)	6,610	6,865	12,600	25,218	0.82	1.36

Source: Austrian Finance Ministry, OeNB.

¹ The job support effects of short-term working rules and of the job support initiatives cannot be quantified at present.

Note: Simulation with the OeNB's macro model (AQM). Volumes are annual totals (reflecting increases over the 2007 budget), effects on employment and GDP are cumulative. Underlying assumption: no tax reform anticipation effects.

stabilization measures undertaken by major trading partners and neighboring states.

Many of the adopted measures have been designed to improve long-term growth rather than stimulating short-term private demand. This is above all true for the tax reform, which is to be welcomed from a structural perspective, given the comparatively high tax burden on labor in Austria. Yet with a view to reinforcing stabilization effects, policymakers would have had to provide more support to low-income groups and to liquidity constrained households. At the same time, other measures boosting disposable income do reflect such intentions.

As in the other European countries, the measures adopted in Austria contribute to driving the general government deficit ratio beyond the 3% threshold – possibly by a sizeable margin. Together with the bank support

packages, these measures will push up the general government debt ratio as well as the ratio of interest expenditure to tax revenue, thus causing the government's fiscal policy leeway to shrink. Those effects would be even more pronounced should the individual governments, including Austria, fail to convince investors and financial agents that public households remain sustainable in the long run. What is thus essential is an explicit commitment to rapid consolidation when the economic crisis has ended, so as to preempt any loss of confidence on the part of potential investors. The latter would nullify any short-term economic stimulus, as the Austrian government would have to face much higher yield spreads and as the loss of confidence by the general public would become entrenched. Tax cuts and transfer increases would then be less effective.

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Analyses

Group-Specific Inflation Rates for Austrian Households

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The consumer price index commonly computed by national statistical agencies can be interpreted as a weighted average of price indices for individual households, with the weights proportional to the total consumption expenditure of each household. In other words, the aggregate consumer price index is usually not a perfect indicator of the inflation experience of individual households. The extent to which household-specific inflation rates diverge from headline inflation generally depends on three things: 1) the divergence of consumption patterns across consumer units; 2) the divergence of expenditure budgets across households; and 3) the divergence of price developments across expenditure items. To estimate the divergence of group-specific consumer price indices across Austrian households, we construct group-specific inflation rates for the period from 2000 to October 2008 and evaluate consumption patterns across household groups. Households were grouped using a mix of two characteristics: a) household composition (i.e. male/female singles; two adults; three or more adults; lone parents; three or more persons, including children); b) low, medium or high household income.

The study finds households with lower total spending to have experienced a higher inflation rate than the “average” consumer in the period under review. The average gap was about -0.1 percentage points annually. Second, the inflation contribution of housing and food (including nonalcoholic beverages) was higher for lower-income groups. Third, higher-income households usually have a higher inflation share of transport than lower-income households. Fourth, households with children and larger households do not necessarily suffer above-average inflation.

JEL classification: E31, C43, C81

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1 Introduction

The Harmonised Consumer Price Index (HICP) or other consumer price indices commonly computed by statistical agencies can be interpreted as aggregate weighted averages of price indices for individual households. The weight of individual households in the aggregate price index is determined by their consumption expenditures. Hence, inflation measured by an aggregate consumer price index is an imperfect indicator of inflation at the individual household level. Furthermore, the aggregate consumer price index might be a better reflection of price developments for households with higher consumption expenditures than for those with lower consumption expenditures.

Deaton (1998) reports that, at the beginning of the 1990s, the (“usual”) consumer price index weights were correct for households at the 75th percentile of the expenditure distribution (he refers to the U.S.A.). Although a similar bias towards the higher expenditure groups cannot be granted across countries and across time, it can be stated as a bottom line that the consumer price index is unable to correctly reflect the changes in the cost of living across households, i.e. that it will either overstate or understate their true inflation experiences.

An increasing number of studies have investigated differences of group-specific inflation rates. For the United States, the Bureau of Labor Statistics

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produces experimental consumer price indices for the elderly and the poor (Moulton and Stewart, 1999). Several studies have pointed to inflation differences among U.S. population groups, the most recent being Hobijn and Lagakos (2005), who report higher inflation rates in particular for the elderly and the poor from 1987 to 2001. However, group-specific inflation differentials do not seem to be persistent over time. For Austria, the national statistical office has recently constructed an index for retirees,² and Russinger (2004) derived group-specific inflation rates for different income groups and groups of households with different socio-economic characteristics – without mixing household characteristics, though. Put in another way, when singling out one characteristic (for instance, income) he neglects any other possibly interacting features (for instance, household composition or education). His results point to small divergences of group-specific inflation rates among Austrian households.

Our interest was to identify those Austrian household groups in terms of socio-economic characteristics for which the headline (harmonised) consumer price index is a good measure of inflation, as well as those for which the headline index over- or underestimates inflation.

To this end, section 2 describes the data we used and discusses some conceptual issues with respect to the construction of the group-specific price in-

indices. Section 3 provides an empirical estimate of the heterogeneity of group-specific inflation rates, the so-called plutocratic bias. Section 4 discusses those results, and section 5 concludes.

2 Data and Conceptual Issues

The construction of our group-specific consumer price indices is based on data from two Austrian consumer expenditure surveys (CEX 1999/2000 and CEX 2004/2005) and the price indices constructed by the national statistical office.

The level of disaggregation we were able to consider is the 4-digit COICOP level.³ Hence, we are dealing with in total 95 subindices.⁴

To calculate group-specific price indices, we use the formula

$$I^{hg,t} = \sum_{i=1}^N w_i^{hg,t} I_i^t, \quad \sum_{i=1}^N w_i^{hg,t} = 1 \quad (2.1)$$

where hg denotes the household group, i the COICOP subclass and t the time period. Hence $I^{hg,t}$ is the overall HICP of household group hg in period t , and I_i^t denotes the HICP for COICOP subclass i in period t . Finally $w_i^{hg,t}$ are the weights for subclass i of household group hg in period t .

In equation (2.1) we assume – as is commonly done – that every household group faces the same price indices I_i^t . This assumption has to be made due to data constraints.⁵

To construct the weights $w_i^{hg,t}$, we used the consumer expenditure survey (CEX) data referred to above as well as

² The price index for the elderly (*Preisindex für Pensionistenhaushalte, PIPH*) was constructed on behalf of the legal lobby of retirees in Austria (*Österreichischer Seniorenrat*) with financial support from the Federal Ministry for Social Security, Generations and Consumer Protection.

³ COICOP = Classification Of Individual Consumption by Purpose. For instance, the COICOP 4-digit level 01.1.1 is bread and cereals.

⁴ For comparison: the lowest level of aggregation in the Austrian national CPI 2005 consists of 770 elementary price indices, and the harmonised CPI 2005 of 759 elementary price indices (Statistics Austria, 2006).

⁵ Prices paid by consumers for the same good/service can differ. For instance, price differences may reflect discounts for specific consumer groups; services and goods may also sell at different prices in rural and urban areas.

the official HICP weights for the total population as published by Statistics Austria (see also equation 2.3).

The latter was used to correct for over-/underreporting in the consumer expenditure surveys. To achieve this we require the aggregated group weights calculated from (adjusted) CEX data to match the officially published HICP weights. Using the CEX data, we can calculate preliminary weights for the commodities

$$\hat{w}_i = \frac{x_i}{\sum_{i=1}^N x_i} \quad (2.2)$$

where x_i reflects the total expenditure of all Austrians on subclass i . These weights diverge from the official HICP weights w_i^t . Next we calculate the ratios between the (average) HICP weights and the preliminary weights $f_i^t = w_i^t / \hat{w}_i^t$ and correct the expenditure of each household group on i (x_i^{hg}) with these factors to get adjusted expenditures $\tilde{x}_i^{hg,t} = x_i^{hg} \cdot f_i^t$. With the adjusted expenditures we get our final weights for the commodities

$$w_i^{hg,t} = \frac{\tilde{x}_i^{hg,t}}{\sum_{i=1}^N \tilde{x}_i^{hg,t}} \quad (2.3)$$

In cases where the average correction factor for the period from 1999 to 2008, i.e. $1/10 \sum_i f_i^t$, is so extreme that it would lead to heavy distortions we exclude the corresponding commodities from further analysis. The boundaries for exclusion are set arbitrarily at $1/3$ and 3 . Thus the sum of the weights of the excluded commodities (17 COICOP groups) remain below 10% of the total weights.

3 The Plutocratic Bias – A Measure of Heterogeneous Group-Specific Inflation Rates

National statistical offices calculate the consumer price indices as weighted averages of prices for goods and services,⁶ with the price weights reflecting the importance of the corresponding expenditure items. Like other national CPIs, the Austrian CPI is based on a so-called “plutocratic weighting scheme,”⁷ which means that household expenditures are not treated equally in the weighting scheme: The price index of expenditure category i is weighted by the share of expenditure subclass i in the expenditures of the entire population: $w_i = x_i / X$. This implies that the importance of households in the construction of the consumer price index is proportional to their expenditure share in aggregate expenditures. In other words, even if households were to spend equal shares on good i , those with higher total expenditures count more in the consumer price index. This is evident from the following reformulation of the weights:

$$\begin{aligned} w_i &= \frac{x_i}{X} = \frac{1}{X} \sum_{h=1}^H x_i^h = \frac{1}{X} \sum_{h=1}^H x_i^h \frac{x^h}{x^h} = \\ &= \sum_{h=1}^H \left(\frac{x^h}{X} \right) \frac{x_i^h}{x^h} \end{aligned} \quad (3.1)$$

i.e. individual households’ expenditures are incorporated into the CPI weights proportional to household h ’s total expenditures: x^h / X .

An alternative weighting scheme would be to assign equal (“democratic”) weights to all households. Households

⁶ With prices for goods and services we mean elementary aggregates, i.e. the lowest-level aggregates for which detailed quantity and price information is available (see also footnote 4).

⁷ The terms “plutocratic” and “democratic” in the context of index number weighting schemes were coined by Prais (1959) and are now commonly used.

have equal weights in the overall consumer price index if the share of their expenditures on good i x_i^h/x^h is averaged over all households H , i.e.:

$$w_i^D = \frac{1}{H} \sum_{h=1}^H \frac{x_i^h}{x^h} \quad (3.2)$$

Because a plutocratic index attaches a higher weight to households with higher consumer expenditures than a democratic index, the difference between a CPI based on plutocratic weights w_i (equation 3.1) and a CPI based on democratic weights w_i^D (equation 3.2) is a good indicator of the heterogeneity of inflation rates across households. The difference

$CPI_t - CPI_t^D = \sum_{i=1}^N w_i^D I_i^t - \sum_{i=1}^N w_i I_i^t$ is also called the plutocratic bias. Ley (2005) has shown⁸ that this difference can be expressed with a single scalar, namely

$$CPI_t - CPI_t^D = \sum_{i=1}^N w_i^D I_i^t - \sum_{i=1}^N w_i I_i^t = \xi N \widehat{\beta}_i (I_i^t) \quad (3.3)$$

where $\widehat{\beta}_i = Cov(x^h, x_i^h/x^h)/Var(x^h)$, $\xi = Var(x^h)/\bar{X}$ and $\bar{X} = \sum_{h=1}^H x^h/H$ is the mean of the population's aggregate expenditures. As ξ (the scaled variance of household's total expenditures) and N (the number of goods and services) are positive, the sign of the gap in period t depends on the sign of the covariance of (an estimate of) expenditure elasticities $\widehat{\beta}_i$ with price indices I_i^t .

Hence, the components which contribute to the heterogeneity of inflation rates across households are:

First, a measure of inequality of household expenditure given by

$$\xi = \frac{Var(x^h)}{\bar{X}} \quad (3.4)$$

Equation (3.3) implies that the plutocratic gap increases with the variation of expenditures across households (ξ).

Second, the consumption pattern of consumers must differ. A measure of how much the expenditure share of good i varies across households in line with a household's total expenditure is given by

$$\widehat{\beta}_i = \frac{Cov(x^h, x_i^h/x^h)}{Var(x^h)} \quad (3.5)$$

where $\widehat{\beta}_i$ may be interpreted as the ordinary least squares (OLS) estimate of β_i in the following regression

$$\frac{x_i^h}{x^h} - \bar{x}_i = \beta_i \left(\frac{x^h - \bar{X}}{\bar{X}} \right) + \varepsilon_i^h \quad (3.6)$$

$\bar{x}_i = 1/H \sum_{h=1}^H x_i^h/x^h$ denotes the sample mean of the budget share of good i across all households. \bar{X} is, as defined, above the mean of total population expenditures.

β_i is a measure of a household's demand behavior, i.e. β_i is the expenditure elasticity of good i . If households do not differ in their demand behavior, household-specific price indices would not differ, even if some households spend more than others. Put another way: if the expenditure share of good i is x across households and hence constant, irrespective of how much households spend overall, then the weight of good i will also equal x in both the plutocratic and democratic index.⁹

⁸ A similar result – however based on more restrictive assumptions (constant expenditure elasticity of goods and a log-normal expenditure distribution in the population) – was already derived in Prais (1959).

⁹ In case each household, irrespective of what it spends in total (x^h), spends the same percentage share on each good i , i.e. $x_i^h/x^h = x_i$ for all households h , then the weights for the plutocratic index are $w_i = \sum (x^h/X) x_i^h/x^h = \sum (x^h/X) x_i = x_i$. For the democratic index we get $w_i^D = 1/H \sum x_i^h/x^h = 1/HH x_i = x_i$. Hence, the weights in both indices are the same and consequently price indices cannot differ, provided – as is commonly assumed – households pay the same prices for the same expenditure categories.

Third, prices must vary for (some) consumer goods and services.

To sum it up, expenditure inequality as measured in equation (3.4), and higher expenditure elasticity as measured in equation (3.5) plus the variation of prices across expenditure categories determine the degree of heterogeneity of inflation rates across households.

For the purpose of this paper, we calculated the plutocratic bias for Austria for the period from 2000 to 2008:

always negative except in 2000. Hence, in all years except 2000 households with lower total spending experienced a higher inflation rate than the “average” as measured by the headline consumer price index. Third, the negative gap widened slightly after 2005, i.e. the underestimation of headline inflation for households with comparatively lower spending was higher after 2005. Fourth, the plutocratic bias did not increase significantly when inflation rates increased in 2007 and 2008.

The most recent empirical evidence on the plutocratic bias for other European countries is from Chelli and Mattioli (2007). They measure the plutocratic bias for a number of Italian household groups during the period from 1995 to 2002 and find an average bias of about 0.3 percentage points. Another fairly recent empirical estimate for Spain can be found in Izquierdo et al. (2003). They estimate that from 1992 to 1997 the plutocratic bias for Spain averaged 0.055 percentage points a year. However, the Spanish CPI during that period was markedly higher (between 2.5% and 7%) than the Austrian CPI for the period from 2000 to 2008 for which we estimated the Austrian plutocratic bias, and stronger price developments tend to widen the plutocratic bias. For instance, Ley (2005) reports that empirical estimates of the plutocratic bias in the U.K. during the period from 1975 to 1976 – when annual inflation rates recorded almost 15% – the plutocratic bias amounted to –2 percentage points per year. See Ley (2005) for a compilation of further empirical estimates of the plutocratic bias.¹⁰

Table 1

The Plutocratic Bias in Austria

Period	Pluto- cratic inflation rate (= HICP- Inflation)	Demo- cratic inflation rate	Pluto- cratic bias	Bias as share of pluto- cratic inflation
	%	%	percent- age points	%
2000	1.9	1.8	0.09	4.6
2001	2.2	2.3	–0.11	–4.9
2002	1.6	1.7	–0.03	–2.2
2003	1.3	1.4	–0.08	–6.1
2004	1.8	2.0	–0.13	–7.0
2005	2.0	2.3	–0.28	–13.4
2006	1.7	1.8	–0.18	–10.8
2007	2.5	2.7	–0.17	–6.9
2008	3.6	3.8	–0.20	–5.6
Average	2.1	2.2	–0.12	–5.8

Source: Author's calculation.

Note: The HICP inflation does not include all expenditure categories (see explanations in section 2). Hence the plutocratic inflation rates do not necessarily match the official data releases.

The main findings are the following. First, in the period from 2000 to 2008 the annual bias ranged from –0.28 to 0.09 percentage points and averaged about –0.12 percentage points. Second, the plutocratic bias was

¹⁰ For instance, according to references in Ley (2005) empirical estimates of the plutocratic bias for Argentina during the period from 1989 to 1991 recorded a plutocratic bias between +2.3 and +663.4 percentage points per year (hence inflation was “anti-rich,” i.e. more detrimental to households with higher spending). During that time the annual inflation rates fluctuated between about 10% and more than 200%.

4 Group-Specific Price Indices

Which socio-economic characteristics are relevant for grouping households? Should we construct price indices for the elderly or the young, the rich or the poor, urban or rural households? Our approach was to group households across several dimensions that are likely to go hand in hand with different consumption patterns. At the same time, the sample size of the groups should be large enough to keep the sampling error of the CEX results reliable. Therefore we selected two socio-economic characteristics,¹¹ i.e. we combined family types in terms of household composition with income (see table 2 for an overview of household groups and sample sizes). Other characteristics thought to be important for the question of inflation inequality, like for instance age or rural/urban residence or education, were not considered either because of (partly) already existing work for Austria (the price index for pensioners), lack of information (information on regional prices is not available to the authors) or practical reasons mentioned in footnote 11.

4.1 Household Groups and Group-Specific Inflation Rates

The two household groups with the lowest numbers of consumer units surveyed are low-income households with three or more adults, as well as lone parents with high income, for which 40 to 48 consumer units were interviewed

during the CEX 1999/2000 and the CEX 2004/2005 (table 2). Whereas the results for these two household groups should thus be interpreted with caution, the results of the experimental price indices for all other groups can be considered as reliable, given that their sample size amounts to at least 100 units.¹²

Income categorization of households: Household welfare depends on income and size as well as composition. Hence we equalize total household net income (including imputed rents) by the internationally recommended EU scales, i.e. we adjust income with the following parameters: 1 (for the first adult), 0.5 (for every additional person above 14 years of age) and 0.3 (for persons below 14 years of age). The largest variation of total expenditure of households arises between the 1st and 2nd as well as the 9th and 10th income decile.¹³ Such a division of households along income scales might be more promising given our objective to identify inflation inequality (section 3). However, to keep group sizes large enough we decided to categorize households as follows:

- Low-income households: 1st to 3rd of (equalized) income deciles.
- Medium-income households: 4th to 7th of (equalized) income deciles.
- High-income households: 8th to 10th of (equalized) income deciles.

Table 3 provides the inflation rates and table 4 the difference of group-specific inflation rates to headline HICP inflation.

¹¹ A larger mix of characteristics would also rapidly increase the number of household groups. In a first version of the paper we considered six types of household composition, three types of education of the reference person and three types of household income. However, as a complete grouping would have implied considering 54 household groups we had to consolidate groups (Fritzer and Glatzer, 2007).

¹² Statistics Austria as a rule does not publish CEX data on items where the sample size of surveyed consumer units is less than 50. We took this sample size as a benchmark for reliability.

¹³ According to the Austrian consumer expenditure survey 2004/2005 the expenditures reported by households in the 1st income decile amounted to about one quarter of the expenditures of households in the 10th income decile. Furthermore, along the income scale the largest expenditure increments happen between the 1st and 2nd income deciles (+30% additional consumption expenditure) and the 9th and 10th income deciles (+23% additional consumption expenditure).

Table 2

List of Household Groups

	Number of households	
	1999/2000	2004/2005
Total number of consumer units surveyed	7,092	8,400
Households not classified	6	1,517
Estimated number of classified households	3,235,036	2,921,291
1. Lone parents with low income	212 (89,232)	205 (61,877)
2. Lone parents with medium income	111 (35,563)	132 (42,990)
3. Lone parents with high income	43 (10,731)	40 (11,684)
4. Three or more persons, including children, with low income	898 (288,810)	633 (199,553)
5. Three or more persons, including children, with medium income	1,402 (455,608)	1,092 (345,620)
6. Three or more persons, including children, with high income	666 (218,067)	573 (186,789)
7. Three or more adults with low income	42 (23,576)	48 (20,578)
8. Three or more adults with medium income	212 (104,620)	189 (87,527)
9. Three or more adults with high income	308 (148,532)	257 (128,582)
10. Male singles with low income	121 (102,793)	167 (109,212)
11. Male singles with medium income	144 (139,757)	255 (169,558)
12. Male singles with high income	158 (138,702)	274 (162,968)
13. Female singles with low income	478 (304,878)	397 (243,109)
14. Female singles with medium income	311 (193,753)	403 (248,617)
15. Female singles with high income	177 (96,508)	268 (139,464)
16. Two adults with low income	378 (170,436)	321 (123,380)
17. Two adults with medium income	657 (319,366)	717 (289,440)
18. Two adults with high income	774 (394,105)	912 (350,344)

Source: Author's calculation based on consumer expenditure surveys of Statistics Austria.

Note: Households not classified are those households that did not provide any information on income. The figures in brackets are the estimated numbers of total households, as derived from the weight of each household group.

Table 3

Group-Specific Inflation Rates

	2004	2005	2006	2007	2008 ¹	2000 to 2008 ¹
	%					
Headline HICP	1.8	2.0	1.7	2.5	3.6	19.9 (2.1)
1. Lone parents with low income	1.9	2.1	1.8	3.0	2.8	19.9 (2.1)
2. Lone parents with medium income	1.8	1.6	1.8	2.3	3.3	18.8 (2.0)
3. Lone parents with high income	1.8	1.8	1.9	2.5	3.4	20.7 (2.1)
4. Three or more persons, including children, with low income	1.8	2.0	1.6	2.6	3.6	19.6 (2.1)
5. Three or more persons, including children, with medium income	1.7	1.9	1.6	2.5	3.7	19.7 (2.1)
6. Three or more persons, including children, with high income	1.6	1.8	1.4	2.4	3.4	18.3 (1.9)
7. Three or more adults with low income	2.2	2.2	2.0	2.7	4.2	21.0 (2.2)
8. Three or more adults with medium income	2.0	2.1	1.8	2.5	4.2	21.0 (2.2)
9. Three or more adults with high income	1.9	1.9	1.7	2.5	4.1	20.4 (2.1)
10. Male singles with low income	2.2	2.5	2.1	2.6	3.5	20.7 (2.2)
11. Male singles with medium income	2.1	2.3	1.9	2.4	3.7	21.1 (2.2)
12. Male singles with high income	1.7	2.3	1.9	2.5	3.7	19.9 (2.1)
13. Female singles with low income	2.2	2.3	2.0	2.9	3.3	21.9 (2.3)
14. Female singles with medium income	1.8	2.0	1.6	2.5	2.8	18.4 (1.9)
15. Female singles with high income	2.1	2.0	1.7	2.5	3.1	20.3 (2.1)
16. Two adults with low income	2.1	2.3	2.0	2.9	3.8	22.0 (2.3)
17. Two adults with medium income	2.1	2.5	1.8	2.5	4.0	22.0 (2.3)
18. Two adults with high income	1.6	2.0	1.5	2.5	3.4	19.3 (2.0)

Source: Author's calculation based on consumer expenditure surveys of Statistics Austria.

¹ The figures for 2008 have been compounded from January to October. The figures in brackets indicate the annual compound inflation rates from 2000 to October 2008.

The general picture that emerges from table 3 is the following:

With some exceptions there is evidence that households with low to medium income face higher inflation rates than high-income households. Lone parents do not fit into this picture, yet the results for lone parents with high income might be affected by the small sample size as mentioned above. Additionally household composition also plays an important role. Larger households or households with children are not in general in a disadvantaged position, i.e. prone to suffer from more inflation. In contrast, the HICP seems to be a fairly good inflation measure for households with three or more persons, including children.

Going into more detail, the HICP for all households¹⁴ increased by 19.9% during the period from 1999 to October 2008, which is equivalent to a compound annual growth rate of 2.1% (table 3). The households most affected by inflation were the two-adult households with low to medium income (household groups 16 and 17) as well as female singles with low income (household group 13). Their consumption basket recorded a cumulative inflation rate of 22.0% from 2000 to October 2008, which is equivalent to a compound annual growth rate of 2.3% and exceeds annual inflation as measured

by headline HICP by 0.2 percentage points on average (see table 4 for the differences to headline inflation).

There are five other groups with a higher-than-average inflation experience (against the benchmark of headline HICP inflation): Male singles with low to medium income (household groups 10 and 11), three or more adult persons and low to medium income (household groups 7 and 8) and finally lone parents with high income (household group 3).¹⁵

Low-income lone parents (household group 1) as well as households with three or more persons, including children, in the low- to medium-income spectrum (household groups 4 and 5) experienced group-specific inflation rates similar to overall HICP inflation – as do high-income households with three or more adults as well as high-income male and female singles (household groups 9, 12 and 15).

Below-average inflation is recorded by three or more persons, including children, with high income (household group 6), medium-income lone parents and medium-income female singles (household groups 2 and 14) as well as two-adult households with high income (household group 18). HICP inflation was on average 0.1 to 0.2 percentage points below headline HICP inflation over the considered period.

¹⁴ As mentioned in section 2 we excluded 17 COICOP items. As a consequence the numbers reported for headline inflation do not always coincide with the official HICP releases.

¹⁵ As mentioned before the results for low-income households with three or more adults as well as lone parents with high income should be considered with caution due to the small sample size.

Table 4

Difference between Group-Specific Inflation Rates and Headline HICP Inflation

	2004	2005	2006	2007	2008 ¹	Annual average 2000 to 2008 ¹
	Percentage points					
1. Lone parents with low income	0.1	0.0	0.1	0.5	-0.7	0.0
2. Lone parents with medium income	-0.1	-0.4	0.2	-0.2	-0.3	-0.1
3. Lone parents with high income	0.0	-0.3	0.2	0.0	-0.2	0.1
4. Three or more persons, including children, with low income	0.0	0.0	-0.1	0.1	0.0	0.0
5. Three or more persons, including children, with medium income	-0.1	-0.1	-0.1	0.0	0.2	0.0
6. Three or more persons, including children, with high income	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2
7. Three or more adults with low income	0.4	0.1	0.3	0.2	0.6	0.1
8. Three or more adults with medium income	0.1	0.0	0.1	0.0	0.6	0.1
9. Three or more adults with high income	0.1	-0.1	0.0	0.0	0.5	0.0
10. Male singles with low income	0.4	0.4	0.4	0.1	-0.1	0.1
11. Male singles with medium income	0.3	0.2	0.2	-0.1	0.1	0.1
12. Male singles with high income	-0.1	0.2	0.2	0.0	0.1	0.0
13. Female singles with low income	0.3	0.2	0.4	0.3	-0.3	0.2
14. Female singles with medium income	-0.1	-0.1	-0.1	0.0	-0.7	-0.1
15. Female singles with high income	0.3	0.0	0.0	-0.1	-0.5	0.0
16. Two adults with low income	0.3	0.3	0.3	0.4	0.2	0.2
17. Two adults with medium income	0.2	0.4	0.1	0.0	0.4	0.2
18. Two adults with high income	-0.2	0.0	-0.2	-0.1	-0.1	-0.1

Source: Author's calculation based on consumer expenditure surveys of Statistics Austria.

¹ The figures for 2008 have been compounded from January to October. The annual average 2000 to 2008 indicates the difference between the average HICP inflation rate and the group-specific annual compound inflation rates for that period. A positive sign indicates a rate above headline inflation; a negative sign a rate below headline inflation.

Given the divergence of inflation experience across groups, the next step is to identify the expenditure categories responsible for inflation inequality, and to evaluate consumption patterns for any obvious relation with inflation.

4.2 Consumption Patterns – The Twelve Expenditure Groups

The inflation contribution of the twelve COICOP expenditure groups reveals some noteworthy features (see also chart 1). The four expenditure groups with the highest inflation contribution across household groups in the observation period are housing, food (including nonalcoholic beverages), transport services and restaurant services. The average inflation contribution of these

expenditure groups amounts to about 80% of the group-specific average inflation rate (continuous line in chart 1), but there are two outliers: high-income male singles, for whom the inflation contribution of the mentioned expenditure items is much higher (about 94%); and high-income female singles, for whom this contribution is much lower (about 72%).

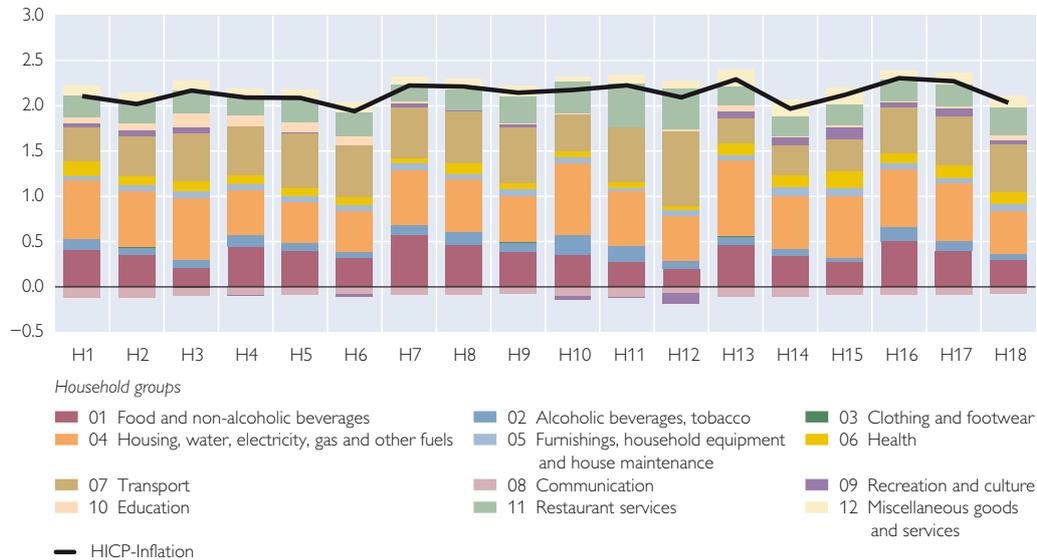
Furthermore, expenditure groups show considerable variation across households. In particular it seems that the contribution of housing and food broadly moves in synch with group-specific inflation rates. Additionally food in general contributes more to inflation for lower-income groups. For instance the inflation contribution of

Chart 1

Inflation Contribution of Expenditure Groups across Households

Average from 2000 to 2008

Percentage points



Source: Author's calculation based on consumer expenditure surveys of Statistics Austria.

Note: Household groups are defined as follows:

H1: Lone parents with low income
 H2: Lone parents with medium income
 H3: Lone parents with high income
 H4: Three or more persons, including children, with low income
 H5: Three or more persons, including children, with medium income
 H6: Three or more persons, including children, with high income
 H7: Three or more adults with low income
 H8: Three or more adults with medium income
 H9: Three or more adults with high income

H10: Male singles with low income
 H11: Male singles with medium income
 H12: Male singles with high income
 H13: Female singles with low income
 H14: Female singles with medium income
 H15: Female singles with high income
 H16: Two adults with low income
 H17: Two adults with medium income
 H18: Two adults with high income

food for lone parents in the low-income spectrum is the highest among lone parents whereas it is the lowest for those in the high-income spectrum. A similar pattern can be observed for housing. The lower the household income, the higher is the inflation contribution of housing.¹⁶ Conversely, the inflation contribution of transport moves along with income, which implies that for higher-income groups we observe a higher inflation contribution of transport services.

Another noteworthy feature, which is similar across households, is the fact that the inflation contribution of communication services is on average negative over the whole period.

4.3 Going beyond the Twelve Expenditure Categories

Disaggregating expenditures to the COICOP 4-digit level, also known as COICOP subclasses, reveals additional noteworthy features of group-specific inflation rates.

Specifically, we identified the five COICOP 4-digit-level expenditure items with the biggest inflation contribution for each household group, and added up the inflation contributions of all other subclasses (charts 2 to 4).

Furthermore, we arranged the 18 household groups into the three broad categories discussed in section 4.1: those with an average annual inflation burden of at least 0.1 percentage points

¹⁶ Lone parents and female single households are exceptions from this pattern.

above the total population (chart 2), a group whose inflation burden broadly matches the headline HICP inflation (chart 3) and a below-average inflation group (chart 4) whose average annual inflation is at least 0.1 percentage points below the headline HICP inflation.

From 2000 to 2008 the consumption baskets of eight household groups generated average annual inflation rates that exceeded the average headline rate of 2.1%. For readers' convenience we repeat the household groups mentioned in section 4.1:

- two adults with medium or low income (H17, H16),
- female singles with low income (H13),
- male singles with medium or low income (H11, H10),
- three or more adults with low or medium income (H7, H8) and
- lone parents with high income (H3).

Comparing the expenditure patterns of the two-adult households across income ranges, we observe that those with low to medium income suffer from a higher inflation contribution of liquid fuels (for housing) and tobacco than the households in the high-income spectrum (compare H17 and H16 of chart 2 with H18 of chart 4).

The inflation burden of singles strongly reflects the inflation contribution of restaurant services, fuels for personal transport as well as tobacco. Unlike male singles, female singles experience a lower inflation contribution of fuels for personal transport, restaurants and tobacco. Comparing the consumption pattern of singles and two adults, one outstanding feature is the expenditure share of rentals, which is considerably higher for singles.

The group whose inflation experience basically reflects the rise in the headline HICP comprises

- three or more adults with high income (H9),
- three or more persons, including children, with low to medium income (H4, H5),
- female and male singles with high income (H15, H12) and
- lone parents with low income (H1).

When comparing the consumption basket of low-income households with three or more persons, including children, (group 4) with that of high-income households with three or more adults (group 9) – the two groups with the largest inflation gap in this segment – one can note the following: the inflation burden of the latter was higher on average from 2000 to 2008 because in their case fuels for transport, restaurant services and liquid fuels (for housing) accounted for a higher share of inflation. A further difference in the consumption pattern is – not surprisingly – that three or more persons including children and low income spend more on educational services.

Comparing female and male singles with high income we can observe that the latter spend more on restaurant services as well as fuels for transport while we record a higher inflation contribution of dwelling-related services and liquid fuels for female singles.

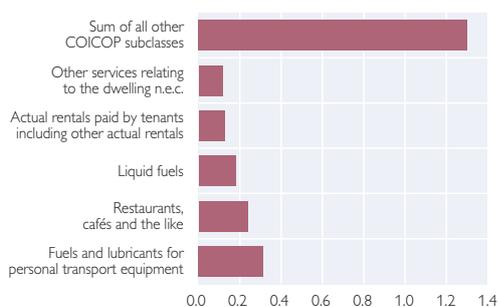
Comparing high-income lone parents in the above-average inflation group with low-income lone parents in the average-inflation group reveals: restaurant services, the maintenance and repair of personal transport equipment, dwelling-related services, fuels for transport and educational services are mainly responsible for the higher inflation burden of the high-income lone parents group.

Chart 2

Inflation Contributions of the Most Important Expenditure Categories: Above-Average Inflation Group

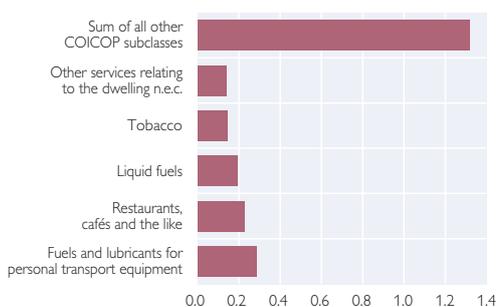
H17: Two adults with medium income

Percentage points



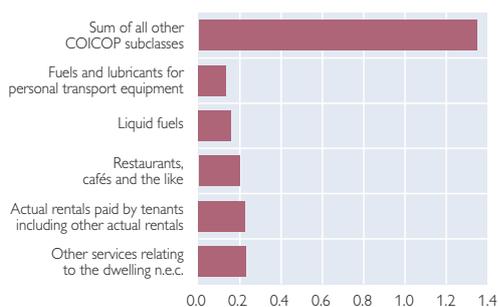
H16: Two adults with low income

Percentage points



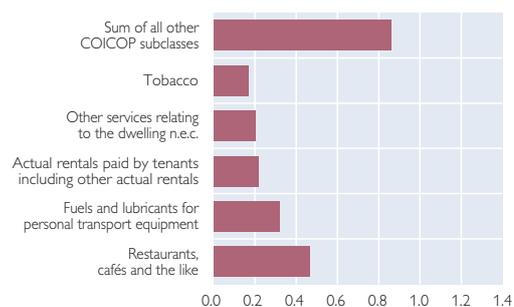
H13: Female singles with low income

Percentage points



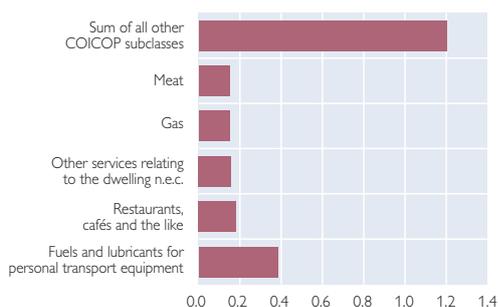
H11: Male singles with medium income

Percentage points



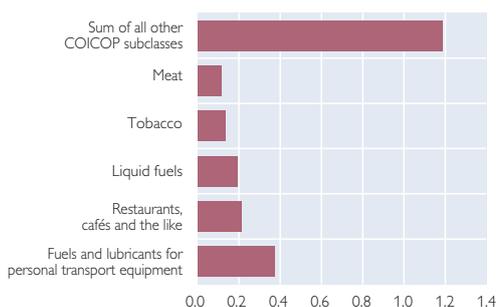
H7: Three or more adults with low income

Percentage points



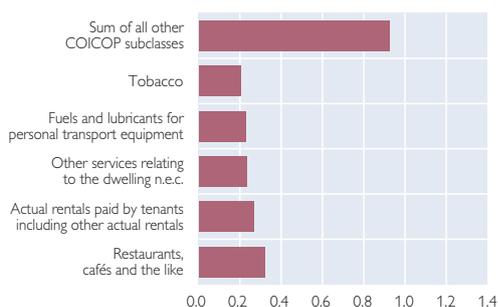
H8: Three or more adults with medium income

Percentage points



H10: Male singles with low income

Percentage points



H3: Lone parents with high income

Percentage points

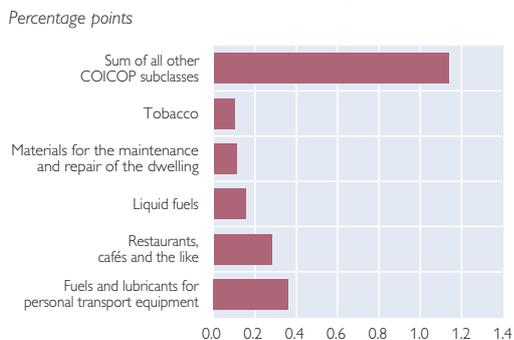


Source: Author's calculation based on consumer expenditure surveys of Statistics Austria.

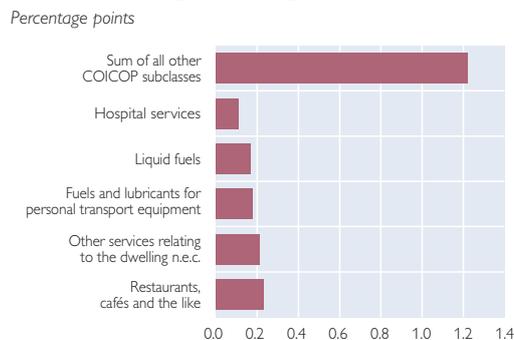
Note: The charts show the average inflation contributions the five most important 4-digit COICOP items had in the period from 2000 to 2008. The largest bar reflects the inflation contributions of the remaining 72 COICOP items.

Inflation Contributions of the Most Important Expenditure Categories: Broadly Similar to Total Population

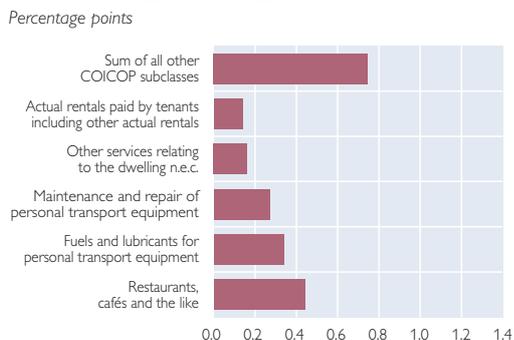
H9: Three or more adults with high income



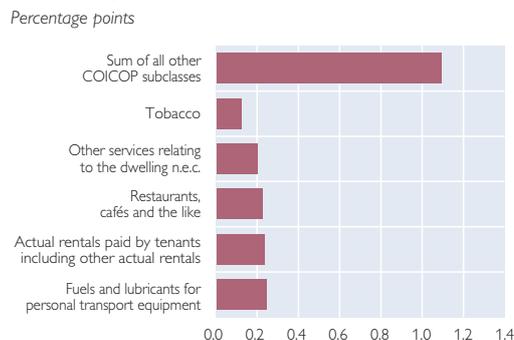
H15: Female singles with high income



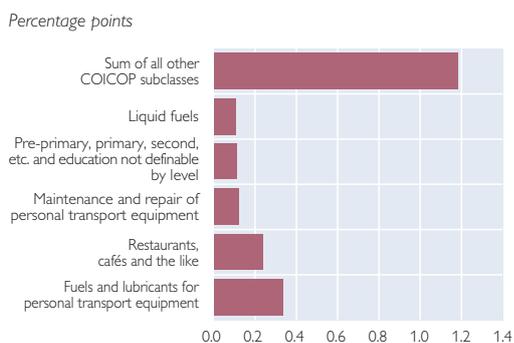
H12: Male singles with high income



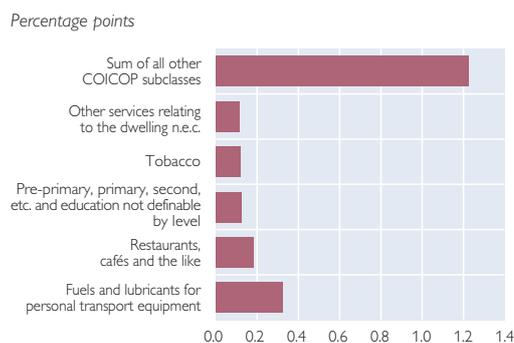
H1: Lone parents with low income



H5: Three or more persons, including children, with medium income



H4: Three or more persons, including children, with low income



Source: Author's calculation based on consumer expenditure surveys of Statistics Austria.

Note: The charts show the average inflation contributions the five most important 4-digit COICOP items had in the period from 2000 to 2008. The largest bar reflects the inflation contributions of the remaining 72 COICOP items.

Finally, the households experiencing below-average inflation comprise

- two adults with high income (H18),
- lone parents with medium income (H2),
- female singles with medium income (H14) and

- three or more persons, including children, with high income (H6).

Among the high-income households, three or more persons including children record a higher inflation contribution than two adults alone from fuels (for transport and housing) and educational services. In contrast, the latter ex-

perience a slightly higher inflation contribution from restaurants, and other dwelling-related services as well as maintenance and repair of personal transport equipment.

With regard to two-adult households in the low- and medium-income range versus those in the high-income segment, the former bear a higher inflation contribution from liquid fuels (for housing) while the latter have a higher inflation contribution from restaurant services.

Finally, we find female singles in the medium-income spectrum (below-average inflation group; chart 4) to have a lower inflation contribution of rentals and other dwelling-related ser-

vices than female singles with low income (above-average inflation group; chart 2).

5 Conclusions

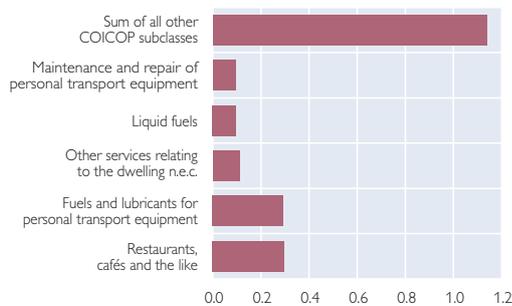
The origin of the present paper was the conjecture that headline inflation is not necessarily a good indicator of the inflation experience of specific household groups. The Austrian national statistical office recently published a price index for pensioners that does indeed diverge from the headline consumer price index at times. Our interest was to identify the household groups defined in terms of size and income for which the headline (harmonised) consumer price index is a good measure of inflation, those for

Chart 4

Inflation Contributions of the Most Important Expenditure Categories: Below-Average Inflation Group

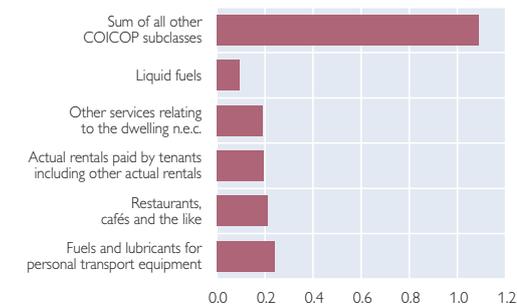
H18: Two adults with high income

Percentage points



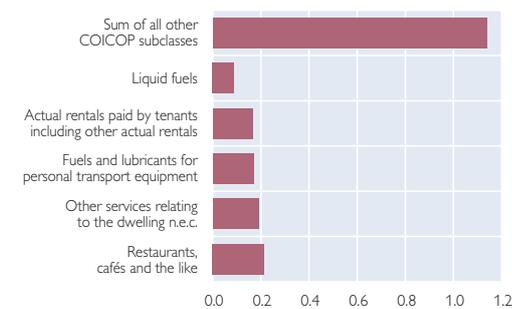
H2: Lone parents with medium income

Percentage points



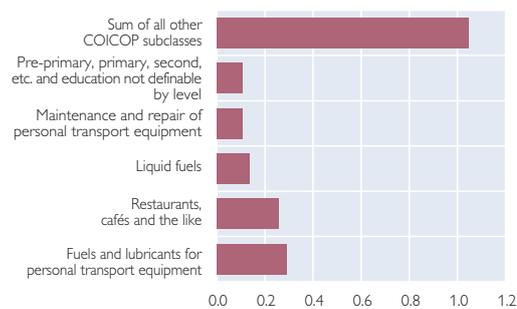
H14: Female singles with medium income

Percentage points



H6: Three or more persons, including children, with high income

Percentage points



Source: Author's calculation based on consumer expenditure surveys of Statistics Austria.

Note: The charts show the average inflation contributions the five most important 4-digit COICOP items had in the period from 2000 to 2008. The largest bar reflects the inflation contributions of the remaining 72 COICOP items.

whom the headline index overestimates and those for whom the headline index underestimates inflationary developments. For this reason we constructed price indices for a total of 18 household groups which differ in composition and income. Furthermore we estimated an empirical indicator for the heterogeneity of inflation across households, called the plutocratic bias in the literature.

The main findings are the following: First, during the period from 2000 to October 2008 the plutocratic bias is negative except for 2000. Hence, households with lower total spending experienced a higher inflation rate than the “average” as measured by the headline (harmonised) consumer price index except in 2000. From 2000 to October 2008 the gap was on average about -0.1 percentage points annually.

Second, there is some evidence that households with lower income (1st to 3rd income decile) face higher inflation

rates. Additionally households with children and bigger households did not necessarily suffer above-average inflation in the review period.

Third, the inflation contribution of housing and food (including nonalcoholic beverages) was in general higher for lower income groups. At the same time, higher-income households usually had a higher inflation share of transport than lower-income households.

Fourth, during the period from 2000 to October 2008 the four expenditure groups housing, food (including nonalcoholic beverages), transport and restaurant services made up about 80% of the group-specific inflation rates. At the most detailed level for which price indices are published (4-digit COICOP level), fuels for transport, liquid fuels, restaurant services, rentals and meat¹⁷ appear to be the most important inflation drivers across households.

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¹⁷ The food expenditure group is composed of comparatively many 4-digit COICOP items. Hence, with the exception of meat, food items at the 4-digit COICOP level are not among the four items with the highest inflation contribution.

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Public Sector Outsourcing: Creative Accounting or a Sustainable Improvement? – A Case Study for Austria

Doris Prammer¹

The key rationale for public sector outsourcing is normally to improve public sector delivery as well as the state of public finances as defined by the Maastricht criteria. Like the underlying motives, the ensuing effects may also be diverse, however: increased business efficiency is generally accompanied by redistribution effects, and public sector outsourcing can affect the state's role as a service provider and may have implications for the state's stabilizing function. By the same token, the fiscal effects of such outsourcing are not always clear-cut. While the fiscal balance can typically be "improved" in the short term, the common fiscal indicators tend to become less meaningful as a result. The long-term fiscal effects of public sector outsourcing – especially, on long-term fiscal sustainability – have barely been researched. As a review of two Austrian outsourcing cases – BIG (federal facility management company) and ÖBB (Austrian Federal Railways) – shows, public sector outsourcing has a major impact on the assessment of fiscal sustainability without actually improving fiscal sustainability itself.

JEL classification: E62, H62, H63

Keywords: sustainability of public finances, effects of public-sector outsourcing, creative accounting

In 1993, five criteria, including two fiscal criteria, were set out in the Treaty of Maastricht to ensure the macroeconomic stability necessary for a stable monetary policy in the euro area. The fiscal Maastricht criteria stipulate that annual government deficits must not exceed 3% of GDP and that government debt ratios must be less than 60% of GDP, or that they must be sufficiently diminishing and approach the reference value at a satisfactory pace. These two target values were regarded as ensuring sustainability and having a stabilizing effect in the sense that, given GDP growth rates at the time, government deficits not exceeding 3% of GDP might guarantee the stabilization of government debt ratios at 60% of GDP.

The Maastricht criteria, which also constitute the entry condition required for membership of the euro area, gave rise to increased consolidation efforts in most European countries. Thus, the euro area countries witnessed a sharp

decrease in both government deficits and debt ratios, with the latter shrinking from 74% of GDP (1996) to 66.5% of GDP (2007). Against this backdrop, a number of studies have concluded that the Maastricht criteria were instrumental in improving fiscal sustainability somewhat.

However, these studies have failed to reveal the true causes of the (apparent) improvement in long-term fiscal sustainability as measured by the Maastricht criteria. Oftentimes, the fiscal constraints prompted governments to seek alternative solutions, such as outsourcing, to finance public sector functions. By outsourcing public sector functions to the private sector, governments may concentrate on fulfilling – and financing – their core functions. In addition to strengthening service delivery, public sector outsourcing has typically been aimed at improving the fiscal situation within the meaning of the Maastricht criteria.

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This transfer of public sector delivery to the private sector begs the question about the economic and statistical meaningfulness of the Maastricht indicators, i. e. about the integrity of public deficit statistics and, above all, of public debt statistics. After all, how meaningful is the fiscal sustainability information provided by the official general government accounts (based on the framework of the European System of Accounts (ESA) 95) if they fail to reflect a pronounced share of the government's long-term liabilities because the underlying services have been outsourced? Furthermore, it is difficult to assess the actual size of the general government sector, just as it is difficult to analyze the importance of this sector as an employer and infrastructure provider.

This makes it obvious that a discussion focusing only on the subject of "Improving the fiscal balance by outsourcing from the public to the private sector" will not do justice to a question of such complexity. This study will therefore attempt a more in-depth analysis of public sector outsourcing. Sections 1 and 2 introduce the subject of public sector outsourcing (reclassifications under ESA 95) by way of defining key concepts. Section 3 examines the motives for and the effects of such outsourcing/reclassifying, as achieving a healthy balance of multiple objectives, e.g. improving the efficiency of public sector delivery without retrenching public welfare, is not that easy. Furthermore, the analysis of the fiscal effects of reclassifications to the private sector takes into account their multidimensionality by breaking them down into short-term and long-term fiscal effects. Section 4 describes the impact of reclassifications on common fiscal indicators and provides an assessment

of fiscal sustainability. Section 5 exemplifies the practice of reclassifying with two prime Austrian cases and analyzes its impact on both the fiscal balance and fiscal sustainability. Finally, section 6 presents the conclusions.

1 Public Sector Outsourcing and Privatization – Some Definitions

When it comes to transferring sovereign functions to the private sector or to contracting out public services to private providers, public economics makes a distinction between privatization and outsourcing. Both solutions generally diminish public sector influence in, or encourage private sector solutions for, public sector delivery.

1.1 Privatization

Privatization entails corporate conversion from public to private ownership. In most cases, this happens by selling a publicly owned enterprise to private investors. The government does not retain any operational risk or direct power of intervention in the enterprise's business operations. However, the government does retain the option to regulate some privatized enterprises – usually natural monopolies – through a regulatory authority. For instance, Austria's telecommunications sector is regulated by Telekom-Control.

1.2 Public Sector Outsourcing

In respect of public sector outsourcing, functions previously performed by government bodies (central, regional and local government authorities or other competent authorities) are transferred to an external organization. Public sector outsourcing in the legal meaning of the term is the conversion of government entities into enterprises that have a separate legal personality

under public or private law.² Unlike in the case of privatization, the general government in some form or other retains influence over outsourced entities, be it by specifying services, through financial ties or in its function as a (majority) owner. Depending on the articles of incorporation, the general government retains more or less distinct rights to give instructions that are exercised in day-to-day management and, in particular, in the (re)appointment of the supervisory and management boards. By way of outsourcing, it is possible to hand over direct responsibility for the areas concerned to the managers of these institutions without – as in the privatization of ownership – having to relinquish any influence in the future.

From an economic and institutional perspective, public sector outsourcing represents a middle way between delivering public sector functions directly and taking administrative reform so far as to privatize ownership. Key candidates for outsourcing are “activities of a business nature” (Gantner and Schneider, 1994). In these cases, the key rationale for outsourcing is to achieve greater organizational, financing and staffing flexibility in order to better implement given performance goals.

2 Reclassification as Defined by ESA 95

Reclassifications from the public to the private sector within the meaning of the European System of Accounts gained in importance particularly in connection with compliance with the Maastricht criteria requirements. The

beauty of reclassification lies in the fact that the proceeds, costs and accumulated liabilities of reclassified units are not reflected in government deficit or government debt. Reclassifying activities to the private sector thus allows governments to realize quantitatively defined consolidation targets within the meaning of the Maastricht Treaty with relatively low political costs.

Reclassification pursuant to ESA 95 refers to the reclassification of institutional units – units having both autonomy of economic decision-making and their own accounting framework but not necessarily separate legal personality (which would be a condition for legal reclassifications) – between institutional sectors.

According to Stübler (2004), reclassifications from the general government sector pursuant to ESA 95 may, from a statistical point of view, qualify as either “true” reclassifications or as instances of regrouping.

2.1 “True” Reclassification

To determine whether an outsourced entity qualifies as having been reclassified to the private sector within the meaning of the ESA 95 definition, the following criteria must be reviewed:

1. First, it should be checked whether the reclassified unit is an institutional unit within the meaning of ESA 95. Pursuant to ESA 95 (Article 2.12), “an institutional unit is an elementary economic decision-making centre characterized by uniformity of behavior and decision-making autonomy in the exercise of its principal functions. A resident unit is regarded as constituting an institutional unit if it

² “Public sector outsourcing, as defined here, requires outsourcing to legal personalities (under public or private law) other than central, regional or local government authorities. In the absence of separate legal personality, public sector outsourcing does not legally exist even if the entity concerned has decision-making autonomy in business matters.” (Funk, 1994, p. 24). Reclassifications from the public to the private sector in the economic/ESA 95 meaning of the term are explained in section 2.

has decision-making autonomy in respect of its principal function and either keeps a complete set of accounts or it would be possible and meaningful, from both an economic and legal viewpoint, to compile a complete set of accounts if they were required. [...]” To qualify as an institutional unit it need not have a separate legal personality, but there must be a management layer with autonomy of decision in place, and this requirement must have been laid down in the unit’s statutes (Mazegger and Stübler, 2002, p. 30).

2. Subject to the existence of an institutional unit, the next step is to establish whether this unit is a “market producer” or an “other nonmarket producer.” In other words, the important thing³ is whether sales cover more than 50% of production costs (intermediate consumption, compensation of employees, consumption of fixed capital, other taxes on production), or less. The prices for the goods and services of this enterprise must, moreover, be commercially significant (i.e. in line with the market).

The bottom line is that institutional units which are market producers are not classified in the general government sector.

2.2 Regrouping of Units

A unit is said to be regrouped if the outsourcing candidate remains integrated in the relevant government bodies’ budget but otherwise fulfills the requirements for reclassification from the public to the private sector. Such units are called quasi-corpora-

tions.⁴ Although it keeps a complete set of accounts and its economic and financial behavior corresponds to that of corporations, it does not have a separate legal personality.

In contrast to reclassifications in the legal meaning, reclassifications (or regroupings) from the general government sector (ESA 95 definition) do not depend on the condition of a separate legal personality. Examples of quasi-corporations are municipal water supply, sewerage and waste disposal businesses. However, outsourced units that qualify as instances of reclassification in the legal sense may remain an integral part of the general government sector (ESA 95 definition) if they do not satisfy the above criteria for reclassifications.

The rationale behind this sectoral framework is to exclude institutions or areas from the general government sector which pursue business interests, are largely cost-effective, and provide market services. In this way, a distinction is made between core public sector functions on one hand and the state’s economic functions on the other hand, i.e. the market activities of general government (Fleischmann, 2002).

3 Effects of Reclassification

Reclassifications from the public to the private sector are by no means a recent invention of fiscal policy inspired by the Maastricht criteria. In particular, the federal government had resorted to off-budget solutions already in the four previous decades for a myriad of reasons. After the establishment of more widely known off-budget financing institutions such as the Austrian highway

³ See Articles 3.17 to 3.19, 3.32 and 3.33 of the ESA 95, as well as the “ESA 95 Manual on Government Deficit and Debt”, 2nd edition, section I.1.

⁴ According to the Budgeting and Accounts Regulation (VRV), quasi-corporations are the units cited in paragraphs 85 to 89 of the VRV.

authority (ASFINAG), which was created in 1982, and prefinancing deals for the Austrian state holding company (ÖIAG) in the mid-1980s, the federal government outsourced a number of administrative functions to entities with a separate legal personality above all in the previous 1½ decades.⁵ From the very onset, reclassifications to the private sector have sparked economic and social debates (Smekal, 1977; Van der Bellen, 1977). Although political analysis basically established that reclassifications to the private sector made economic sense in individual cases, a major drawback was noted nonetheless: that the enterprises in question would be largely removed from parliamentary oversight as a result.

3.1 Business Effects

The business rationale for public sector outsourcing and privatization will, as a rule, be the objective of remedying weaknesses imputed to the public sector such as inflexibility, inefficiency and the lack of transparency.

According to Schauer (1994), outsourcing offers the opportunity of implementing business strategies and running operations for profit. Outsourced units can reduce inefficiencies using modern tools of management and optimally manage (human, physical and financial) resources, thereby helping to improve allocative efficiency. In the

area of staffing, public sector outsourcing opens up greater staffing flexibility and offers the opportunity to introduce performance-based remuneration and career development concepts. Furthermore, financing conditions change for outsourced entities: No longer having to abide by the annuality rule ensures continuity of financing in line with business requirements and increases or even facilitates internal and external financing possibilities.

According to an evaluation report prepared by the capital guarantee institution FG (Strasser, 2003), all enterprises surveyed were able to raise their performance substantially in terms of per capita productivity following outsourcing. Moreover, most enterprises had good financial and net worth positions and a solid capital base. Leitsmüller and Rossmann (2001) attribute increased efficiency after outsourcing primarily to cost measures, which are mainly generated by cutting staff costs and boosting productivity. Leitsmüller and Rossmann, too, found the outsourced enterprises surveyed to be on a solid path in terms of their profit situation and resilience to crises.⁶

Furthermore, consumers of publicly delivered services should benefit from outsourcing as well. The transition from tax financing to schemes reflecting actual prices of services rendered or cost-covering rates normally weakens the fiscal illusion.⁷ The oppor-

⁵ Fleischmann (2002) presented the following list of enterprises which were outsourced in the 1990s: Schönbrunn Zoo, Schönbrunn Palace, BIG, the Austrian Federal Financing Agency, ÖBB (1992 sui generis), Austro Control, the Austrian Environment and Water Management Fund, the Diplomatic Academy of Vienna, Post und Telekom Austria AG, the Austrian Securities Authority, Bundesrechenzentrum GmbH, Österreichische Bundesforste AG, Landwirtschaftliche Bundesversuchswirtschaften GmbH, the Austrian Rail Infrastructure Financing Enterprise (SCHIG), Bundestheater-Holding-GmbH, Österreichisches Forschungs- und Prüfzentrum Arsenal GmbH, Börse-beteiligungs-GmbH, Austrian State Museums, Bundessporteinrichtungen GmbH, the Federal Environment Agency Austria, Statistics Austria, the Spanish Riding School and the Piber Federal Stud. These enterprises were reclassified into legal persons governed by public or private law. Only a handful of those companies actually qualify as reclassifications within the meaning of ESA 95.

⁶ In terms of capital adequacy and financial developments.

⁷ Inaccurate representation of the fiscal burden with taxes and other general government revenues, and of the benefits from public sector functions/provision of services.

tunity to bring costs in line with prices should result in an improved and more efficient match of supply and demand, as well as of costs and benefits. This is why cost transparency is of the essence. The calculation of cost-covering rates must be transparent and backed up by adequate data. Only then can cost-covering rates – unlike taxes – exert greater pressure on the cost structure of outsourced units, thereby contributing to a more efficient use of funds. If enhanced efficiency lowers costs and hence prices, the consumer's surplus would rise. Likewise, a competitive entrepreneurial environment should lead to more innovations being expedited to enhance product quality and boost efficiency.

3.2 Political and Economic Effects

To arrive at a balanced assessment of the effectiveness of outsourcing, it is necessary to evaluate not only the business side but also public welfare aspects and effects on economic stabilization activities. The switch from tax financing to cost coverage inherent in outsourcing will, as a rule, have distributional effects, affect the state's role as a service provider, and have implications for the state's stabilizing function.

As tax financing becomes less important than cost-coverage, the ability-to-pay principle⁸ becomes less important than the benefit theory⁹ of taxation. In outsourcing functions, the government should therefore prevent the financial exclusion of low income groups on account of cost-covering yet excessively high prices (Lehner, 2003). This is of the essence above all if outsourced units perform services of

general economic interest. If such services are rendered by a body governed by public law, the conflict of goals between the provision of a service with profit-making intentions and the provision of a public service is resolved by the political process. For outsourced units, the loss of direct political influence on balancing interests must be offset by effective regulatory measures. If the aim of outsourcing is to create a commercial enterprise based on a private sector model, government subsidies must cover additional justified social policy functions. For reasons of transparency, the responsibility to provide services in the general economic interest should be clearly assigned and properly reimbursed.

Specific legal aspects pertaining to public sector outsourcing arise in relation to oversight by “public” administration. While public sector delivery is generally subject to parliamentary supervision, the management of outsourced public entities is not. In this respect, only the management of government stakes and the performance of public supervisory functions is still in the hands of the state. In contrast, the Austrian Court of Audit has much broader powers, extending to the bulk of outsourced entities namely to those entities which are considered to be in the public realm owing to the state's capital interests, influence and organizational integration (Funk, 1994, p. 38). Furthermore, the annual reports of outsourced units offer an opportunity for auditing that is beyond the purview of the democratic bodies of oversight.

Public sector outsourcing can also have a considerable impact on the gov-

⁸ In the case of the ability-to-pay principle, the tax amount is based solely on how much the individual person liable to tax is able to contribute to the public balance.

⁹ In the case of benefit theory, tax is regarded as the price for public services that is derived from costs and individual benefits.

ernment's function of stabilizing the economy. If, owing to outsourcing, the government loses its power of influence over enterprises – and, in particular, over their investment projects – its ability to stabilize the economy must be assumed to have weakened. However, the outsourcing body generally retains ties with the outsourced entity; the government usually remains the (sole) owner of outsourced enterprises and can thus continue to intervene – at least indirectly – in order to stabilize the economy.

Although public sector outsourcing does not necessarily reduce the scale of public sector investment, the number of investors and the coordination of investment activity do change however. The provision of public infrastructure in the widest sense is fragmented. For instance, most public works are now carried out by a variety of outsourced units. Building construction is under the remit of the public facility management company, BIG; road works and road maintenance (particularly highways) are carried out by ASFINAG; railway infrastructure investment by the also reclassified ÖBB; and hospital investment by the reclassified Austrian Hospital Fund. As a result, any investment that continues to be financed by the general government (federal government, state and local governments, social security funds) and thus affects the fiscal balance is very limited.

Although economic measures no longer show up (completely) in the general government's fiscal balance, investment by outsourced units remains a key

instrument of economic policy. The government does retain a say in setting priorities in respect of infrastructure projects to be implemented, and in respect of their volumes. This is evident from the growth and location packages, the master transportation plan and, latterly, especially from the most recent government programs and the growth packages adopted in 2008 and 2009 to stabilize the economy in response to the financial crisis.¹⁰

3.3 Fiscal Effects

Since the introduction of the Maastricht criteria, the traditional aim of public sector outsourcing – to ensure a more efficient delivery – has been expanded to include the “desire for (at least, short-term) fiscal consolidation” and “fiscal cosmetics” (Stübler, 2003, p. 67). In order to facilitate Austria's entry to the euro area, the government deficit had to be reduced from almost 6% of GDP (in 1995) to less than 3% of GDP in 1997.

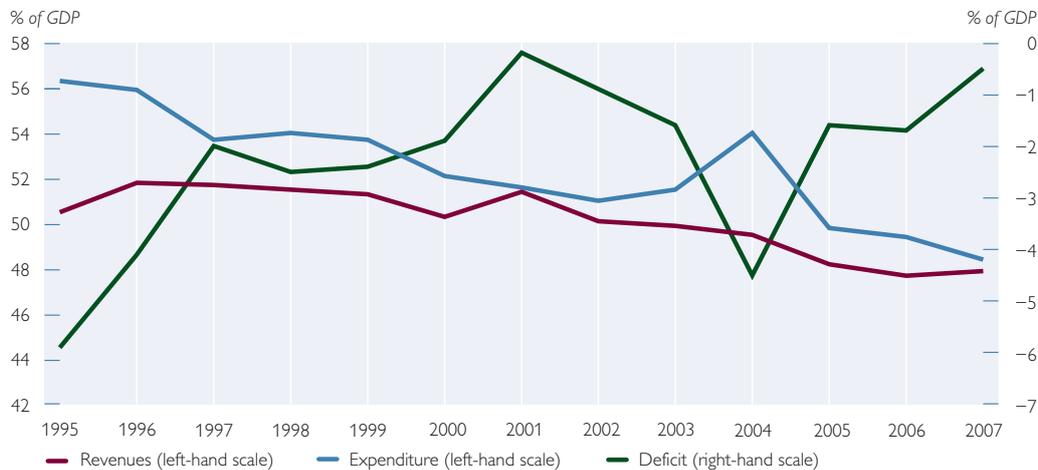
While state governments outsourced their hospitals in particular, local governments reclassified primarily their fee-based municipal services (water supply, sewerage, waste disposal, municipal real estate activities) into market establishments (quasi-corporations) (Fleischmann, 2002, p. 22f). Facility management has been outsourced at the federal and state level and, increasingly, also at the local level.¹¹ The federal government also outsourced highway works (to ASFINAG) and radically restructured the Austrian Federal Railways (ÖBB). Although these mea-

¹⁰ See *Federal Chancellery (2008)*, p. 9 and p. 256.

¹¹ While the federal and state facility management companies are currently not classified in the general government sector, the municipal facility management companies qualify for this sector owing to the 50% criterion. In the case of hospitals, state governments resorted to granting hospitals loans to cover their deficits period from 2001 to 2007, under the presumption that, in line with ESA rules, such loans affected their debt ratio, but not their deficit. However, a Eurostat ruling of 2007 stipulated that those loans were understood to have increased the deficit as well.

Chart 1

Development of the General Government Deficit Ratio, the Expenditure-to-GDP Ratio and the Government Revenue-to-GDP Ratio



Source: Eurostat.

asures influenced the fiscal indicators from the mid-1990s, they did so particularly in 1997, 2001 and 2004.

3.3.1 Short-Term Effects of Reclassifications

However, reclassifying public sector enterprises from the general government sector within the meaning of ESA 95 to the private sector does not per se have positive effects on either the government deficit or government debt. Reclassifying does not improve the fiscal balance if a reclassified unit's financing deficit continues to be offset by subsidies or capital transfers, which do affect the general government's fiscal balance.¹² However, if the reclassified unit finances any deficits it may incur itself (borrowing on the capital market, credit), then this deficit will not affect the general government fiscal balance, and the fiscal balance will improve thanks to the reclassification.¹³

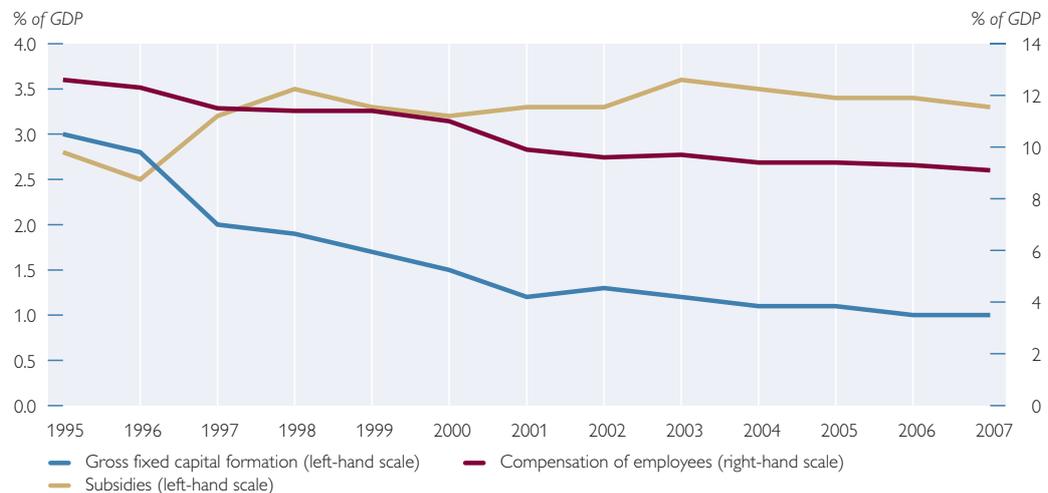
Stübler (2005) calculates reclassifications made in 2001 to have improved the fiscal balance by some EUR 1 billion (0.5% of GDP), of which 50% is accounted for by the privatization of public hospitals (through the establishment of commercial hospital operators) and 50% by the creation of quasi-corporations providing fee-based municipal services. However, this calculation is incomplete, as data on reclassified public undertakings other than quasi-corporations – for which ASFINAG is a prime example – are not available according to the ESA 95 concept, because these undertakings have, by definition, been removed from the budget of public entity that outsourced them. It is thus difficult to quantify what public expenditure (in a few cases, also revenues) these undertakings would have generated if they had still been classified in the general government sector. The annual reports (if available) of

¹² In such case, the general government's fiscal balance reflects state subsidies provided to the reclassified unit, rather than the actual expenditure financing e.g. investment by the reclassified unit.

¹³ These funds for self-financing can also come from the general government in the form of a loan or capital increase.

Chart 2

Development of Gross Fixed Capital Formation, Staff Costs Including Imputed Wages and Subsidies



Source: Eurostat.

reclassified enterprises may give at best an approximate idea of the fiscal effects of these reclassifications pursuant to ESA 95.

Reclassification effects can be identified not only from the fiscal balance but from the individual balance items themselves. Even if reclassifications and regroupings are carried out such that the related transactions do not enter the budget result, they can cause time series breaks in individual expenditure and revenue positions.

The downward breaks in the time series for general government gross fixed capital formation and staff costs,¹⁴ as well as the upward breaks for subsidies, are particularly evident. Based on ESA 95 figures, direct general government expenditure for gross fixed capital formation has been on a declining trend for years, dropping most sharply in 1997 (–0.8% of GDP, or –31%) and 2001 (–0.4% of GDP, or –21%). Likewise, general government staff costs fell by 0.8 percentage points in 1997 and by a further 1.1 percentage points in

2001. By contrast, general government subsidies rose by 0.7 percentage points in 1997. The dramatic changes in these fiscal components in 1997 and 2001 are explained by the reclassifications that were carried out. 1997 saw the reclassification of the highway authority (ASFINAG), of municipal market producers and of the regional hospital operators of those provinces that had already installed hospital operators. In 2000, the federal facility manager, BIG, was reclassified, and those provinces that had not already done so installed hospital operators in 2001. Since these companies are enterprises that are heavy investors and major employers, their reclassification made a significant dent in the respective ESA 95 time series.

The short-term effect of reclassifications (within the meaning of ESA 95) on debt is not always clear, either. If a unit is reclassified with its own debt, the level of general government debt drops accordingly. This alleviating effect was particularly substantial in

¹⁴ Compensation of employees according to ESA 95.

1997, when ASFINAG's reclassification alone reduced the government's debt burden by some 3.1% of GDP. If, however, the government resorts to intermediate funding, i.e. issues bonds in its

own name to provide financing for the outsourced units and thus remains the counterparty of the creditors who also bears the liability, such debt will continue to qualify as public debt.

Intermediary Funding Provided by the Central Government

Under an intermediary funding program running from 1998 to 2003, Austria's Federal Financing Agency used to borrow in financial markets by issuing bonds and relend the proceeds to enterprises reclassified to the private sector but still fully owned by the federal government, such as the highway authority, ASFINAG; the Austrian Federal Railways, ÖBB; the state holding company, ÖIAG; the rail infrastructure financing company, SCHIG) and Austro Control. This procedure was designed to benefit from Austria's AAA rating and ensured high liquidity for investors while offering them positive interest rate differentials ranging between 0.42 and 0.69 basis points from 1998 to 2002. At the same time, investors were duly informed with reference to Article 65c of the Federal Budget Act that the funds were raised for the benefit of federal enterprises, which undertook to pay the interest and principal to the Republic of Austria, which in turn met its corresponding obligations to its creditors. Since the increase in liabilities was offset by an increase in assets and the general government considered its role limited to that of an intermediary, this transaction was not seen to have had a debt-creating effect and hence not reflected in the government's debt level. However, a ruling by Eurostat (February 2003) suspended this practice, and any debt accumulated under the intermediary funding program had to be retrospectively included in the general government debt. The refinancing of such debt in the capital market has since continued – without the general government's intermediation –, thus leading to a gradual reduction of the public debt ratio.

3.3.2 Long-Term Effects of Reclassifications

Reclassifications from the public to the private sector can radically change fiscal volumes and the budget structure, which reduces the transparency of the fiscal balance in the medium to long term. Owing to reclassifications, most government investment is now carried out by businesses outside the general government sector. As a result, the government investment ratio pursuant to ESA 95 decreased from more than 3% of GDP in the early 1990s to a current 1.0% of GDP. Owing to absent data, however, it cannot be stated how high public investment (by the general government sector and government-controlled reclassified units) is. In the medium to long term, public sector outsourcing thus weakens the informative value of common fiscal indicators. In

view of the inadequate data situation (Stübler, 2005), alternative fiscal indicators may be generated with only some difficulty. As a result, it will be increasingly more difficult to quantitatively assess the public sector's economic activities. At any rate, macroeconomic transparency will deteriorate although business transparency may be enhanced.

Furthermore, the debt ratio, which is used for assessing long-term fiscal sustainability, has only limited informative value. If reclassified businesses borrow themselves to finance their deficits, the debt incurred is not included in government debt pursuant to ESA 95. In the long term, such off-budget financing could incur liabilities for the general government if public guarantees exist for the underlying principal and interest expenses. Even if an explicit cover agreement does not exist and the

general government has assumed only the liability to obtain better financing terms, the general government could be forced to assume “gray financial debt” in the event of the reclassified unit’s insolvency. In other words, in addition to its explicit liabilities, which are shown in the government debt, the general government also has implicit liabilities.

According to calculations of the Government Debt Committee (2008, p. 111), the minimum long-term liabilities held by the reclassified enterprises of central, regional and local government authorities in 2007 amounted to EUR 32 billion, i.e. some 13% of GDP. The bulk of this amount stems from entities reclassified from the federal government, such as ASFINAG (EUR 9.2 billion), ÖBB (EUR 9.3 billion) and BIG (EUR 3.3 billion). In contrast, the long-term liabilities of the hospital operators installed by the provincial governments are relatively low at around EUR 1 billion.¹⁵ At end-2007, the minimum long-term liabilities of quasi-corporations amounted to EUR 10 billion.

4 Reclassifications, Fiscal Indicators and Sustainability

In principle, ESA 95 should be the ideal framework to compare fiscal indicators such as deficit, debt and individual revenue and expenditure categories. Reclassifications, which are by no means peculiar to Austria, significantly erode the informative value of fiscal indicators and their international comparability, however. The government’s

gross investment share of GDP is a case in point. In Austria, this share stands at around 1% of GDP, which is relatively low compared with other European countries (euro area average: 2.6% of GDP). However, if the investment of reclassified units (data situation permitting) is included for international comparison, total government investment is doubled.¹⁶ The resulting increased government gross investment of 2% of GDP corresponds to international levels.

Similarly, assessing fiscal sustainability and its international comparability is rendered more complex through reclassification, as it is difficult to say whether reclassifying improves fiscal sustainability.¹⁷ First, the effects of reclassifications are extremely multiple and varied. Second, assessment of budgetary effects as such requires careful judgment owing to the data situation and the web of ties between reclassified enterprises and their parent authorities.

Starting with Bohn (1998), studies on fiscal sustainability have investigated whether the primary balance reacts sufficiently¹⁸ to an increase in government debt. According to Wierds (2008), these studies conclude that fiscal policy makes a sufficient contribution to debt stabilization and fiscal sustainability. This means that increased debt prompts greater consolidation efforts. However, the literature notes only a small improvement in fiscal sustainability owing to the Maastricht criteria.

¹⁵ The Carinthian hospital operator (KABEG) reported debt of around EUR 800 million alone.

¹⁶ The investment expenditure of the ÖBB and Post und Telekom Austria AG is not included in this “increased gross investment expenditure” (Government Debt Committee, 2008).

¹⁷ Long-term fiscal sustainability is defined in different ways by economic literature. A fiscal policy stance can be described purely intuitively as sustainable if there is no need for action in the sense of correcting this stance, i.e. the intertemporal fiscal constraint is respected.

¹⁸ These studies regard as “sufficient” an increase in the primary surplus, which can offset the effects of the interest-growth differential on government debt, i.e. the intertemporal fiscal constraint is respected.

Wierds (2008), however, criticizes these studies, as they use inaccurate and incompatible measures for both deficit and debt. In order to make the deficit and debt measures compatible, Wierds includes stock-flow adjustments (SFAs), which are defined as the difference between the government deficit and the change in government debt. These adjustments are frequently a sign of “creative fiscal accounting.”¹⁹ For studies on fiscal sustainability, SFAs are important insofar as it is possible to decrease the gross debt ratio without reducing the deficit through the disposal of assets. However, such transactions improve neither the net debt position of a state, nor its long-term fiscal sustainability.

Employing the net debt concept (gross liabilities less assets) and SFAs, Wierds attests that fiscal policy in EU countries was sustainable both before and after the Maastricht rules were introduced. However, fiscal policy following the introduction of these rules was less strongly focused on sustainability than before. In light of this finding, Wierds advocates widening the fiscal rules’ current focus on the government deficit and gross debt to encompass an analysis of net debt.

Although Wierds’ study takes the in-depth analysis of fiscal sustainability one step further, it fails to include the effects of public sector outsourcing on long-term fiscal sustainability. His study recognizes these effects only if they are reflected in SFAs. This is the case – if at all – only at the time of outsourcing. What is not considered are the transactions undertaken by the outsourced units following outsourcing.

The study does not take into account how public sector outsourcing changes long-term fiscal sustainability by possible debt accumulation, which is an implicit government liability. Outsourced units’ debt could burden the federal budget if the government is forced (owing to public guarantees or to insourcing) to service this debt.

The revised Stability and Growth Pact stipulates that a Member State’s implicit liabilities should also be taken into account in future when calculating its medium-term fiscal target. This should help to safeguard long-term fiscal sustainability and to focus not only on short-term compliance with the fiscal rules. While the key concern in this respect used to be the implicit liabilities created by aging populations, on which considerable evidence has been gathered, little effort has been made to quantify the impact of public sector outsourcing on fiscal sustainability.

This situation may be attributable to the lack of an EU-wide database based on harmonized concepts. But comparability between EU countries is not the only problem. An in-depth assessment of fiscal sustainability is difficult even in individual cases (Leitsmüller and Rossmann, 2001). This predicament will now be illustrated by way of two prime case studies for the federal government. The first case study outlines the reclassification of the federal facility manager, BIG. The second analyzes the fiscal effects of restructuring the Federal Railways, ÖBB, a company which has already been classified outside the government sector.

¹⁹ Von Hagen and Wolff (2006) identified an incidence for the increased use of SFAs following the introduction of the EU’s fiscal rules.

5 Case Studies

5.1 Austria's Federal Facility Management Company (BIG)

Under the Federal Real Estate Act²⁰ of December 29, 2000, ownership of federal real estate of some 7.2 million m² of floor area²¹ was transferred to BIG (founded in 1992) against payment of a basic fee of EUR 2.4 billion. It was agreed that BIG would pay this fee to the federal government in four tranches from 2000 to 2003 and that it would be financed by bonds issued by BIG. The transfer of ownership did not bring any changes to BIG's activities; it remained responsible for managing federal facilities. BIG's revenues were to be generated from economically significant, market-based (rental) fees of users (federal ministries, universities, schools). The rationale of the Federal Real Estate Act was to reorganize federal facility equipment and requirements within a reclassified unit on the basis of economic and market-based principles and to promote cost awareness among users. As before the transfer of ownership, BIG remains linked to the federal government by a close web of ties. It is, for instance, fully owned by the federal government, which appoints management and exerts its influence over its business operations. Owing to these close ties and the high probability that the general government would support BIG should it become insolvent, Moody's rating for BIG bonds is generally Aaa (Moody's BIG rating).

In a Eurostat ruling²² of January 31, 2002, BIG was found to be a separate institutional unit, which must not be classified in the general government sector. BIG's liabilities therefore do not add to government debt. However, the

government's proceeds from the sale of real estate to BIG were – owing to the specific structure of the transaction – booked “*not as a market sale but as a restructuring in the context of improved management of state-owned real estate*” (as explained in footnote 12). As a result, although the payments of the basic fee did not affect the fiscal balance, these revenues had a positive impact on government debt. The specific structure of BIG's reclassification, which was determined by Eurostat, is also reflected in SFAs of the period from 2000 to 2003.

Although BIG's gross debt has risen to EUR 3.3 billion since it was created, this debt is offset by considerable assets. In the medium term (until end-2010), a further rise to EUR 3.5 billion is expected even though new construction investment is subsidized. However, BIG's revenue stream is easily forecast owing to the enterprise's special user structure (98% are public sector tenants). In the long term, BIG intends to refinance funds borrowed to cover expenditure by charging fully cost-covering rents.

If BIG's rental revenues were to dry up for some reason or another (e.g. if the public sector were no longer to require BIG's premises), BIG would no longer be in a position to cover at least 50% of its operating costs by revenues. Under ESA 95 rules, BIG would then have to be reclassified to the general government sector. This means BIG's debt would then become government debt – to the order of its accumulated debt (some 1.2 % of GDP). However, such a scenario is not realistic owing to BIG's special ownership and user structure.

²⁰ Federal Law Gazette No. 141/2000; Federal Real Estate Act.

²¹ BIG annual report for 2000.

²² Eurostat press release 15/2002 of January 31, 2002.

Since BIG's reclassification has not changed the general government's net debt position (sale of real estate – debt reduction), fiscal sustainability should be assumed not to have changed either. However, a measure of fiscal sustainability reflecting only the current gross debt ratio could produce an inaccurate assessment of fiscal sustainability, as the gross debt ratio was positively impacted by BIG's reclassification. The fact that this reclassification has not significantly changed fiscal sustainability becomes all the clearer if one considers that the general government sector will reduce BIG's debt via rental payments and investment contributions in the long term.²³

5.2 Austrian Federal Railways (ÖBB)

Unlike the two aforementioned federal entities BIG and ASFINAG, the ÖBB was outsourced already in the 1990s. This means it has generally influenced the fiscal balance (Maastricht definition) only indirectly owing to payments of federal government subsidies. This case study of its restructuring in 2004 (138th Federal Railways Structure Act 2003) reveals the implicit liabilities lying dormant in reclassified units.

As of the demerger reference date of January 1, 2005, the ÖBB was extinct in its previous form and transferred to the ÖBB Group under company law; and its employees, plants and functions were transferred to operational subsidiaries of the ÖBB Group. The ÖBB Group is fully owned by the federal government and holds shares in the subordinated companies belonging

to the Group. These subgroups are: ÖBB-Personenverkehr (rail passenger company), Rail Cargo Austria, ÖBB-Infrastruktur Betrieb and ÖBB-Infrastruktur Bau (rail infrastructure development and maintenance). This ownership structure permits the federal government to appoint management and intervene in business operations. The federal government, therefore, still has the opportunity to pursue public stabilization and economic policies by stepping up investment, for instance.²⁴

In the wake of this restructuring, the general government assumed the debt of the predecessor companies (ÖBB, SCHIG) to the tune of EUR 6.1 billion. In addition, the new ÖBB holding was provided with capital of EUR 1.4 billion by its owner, the federal government. In assuming said debt (EUR 2.9 billion attributable to ÖBB, EUR 3.2 billion attributable to SCHIG – which had been raised through intermediary funding by the central government) the general government waived the right to receive future interest and principal payments. Since, as this debt has – as intermediary funding – been regarded as government debt pursuant to ESA 95 since 2003, this transaction was accounted for in a way such that neither the government debt nor the government deficit changed. This accounting procedure was chosen owing to a preliminary assessment made by Eurostat. (*“Preliminary assessment: based upon the limited information given by Austrian officials in all likelihood the liquidation of the current rail infrastructure enterprise SCHIG and the related*

²³ The increase in BIG's rents is found in the government's program for the XXIVth legislative period under the heading “Growth Package” (p. 256).

²⁴ The government's program for the XXIVth legislative period deals with the ÖBB in the chapter entitled “Economic Policy”.

transfer of its debt to the Federal Government will not have an effect on Austria's budget deficit, nor on debt.)²⁵

Statistics Austria booked the transfer of EUR 1.4 billion as a capital injection (i.e. equity participation and hence as a financial transaction), which did not increase the government deficit. This approach is acceptable as a rule, provided the investor can expect (improved) profitability and future dividend earnings from the enterprise or from the holding in the enterprise.

At first sight, the economic situation of the newly created holding does not look bad at all. The infrastructure development unit looks profitable in the period from 2005 to 2007, as it generated revenues from user charges for infrastructure and from its possession of power stations and real estate. However, the infrastructure maintenance unit closed 2006 with a loss. The transport units look essentially profitable, with only the passenger transport unit reporting minor losses.

However, a second glance at the ÖBB Group's key figures reveals that some of these positive results are attributable to payments made by the government. For instance, some EUR 1.6 billion of total sales revenues (around EUR 4.5 billion) comes from the federal government (approximately 36%). Of this amount, some EUR 580 million is allocated to transport units as compensation for social pricing (EUR 470 million to passenger transport) and environmental measures (EUR 110 million to goods transport). EUR 1.06 billion is allocated to the infrastructure maintenance unit, more than half of the latter's revenues (some EUR 2 billion). Furthermore, the re-

turn on equity was only around 3%, a level at which owners cannot generally expect a dividend.

Perhaps owing to this substantial government support, Eurostat announced in September 2008 that the ÖBB's capital increase in 2004 of EUR 1.4 billion would have to be reclassified as an investment grant, and that the cancellation of debt as part of the restructuring would have to be reclassified as debt write-off – i.e. as transactions affecting the government deficit. This accounting recommendation was made in line with accounting practice in other countries (Spain, Belgium, Italy), which had also cancelled debt during the restructuring of their railway companies. This ruling by Eurostat enhanced the international comparability and informative value of the Maastricht indicators. For Austria, this new accounting procedure pushes up the fiscal deficit for 2004 by EUR 7.5 billion from 1.2% to 4.5% of GDP, well beyond the European deficit limit of 3% of GDP.

In addition to these direct effects of restructuring remains the question about the extent to which the restructuring improved long-term fiscal sustainability. The Austrian Court of Audit (2007, p. 25) considers *“the declared key objective of railway reform to stabilize in the short term the need for funds of the ÖBB as a whole by improving efficiency and increasing its self-financing ratio and to reduce these requirements substantially by 2010”* as not having been achieved to date. Both federal payments (in the form of infrastructure contributions and payments for public service orders) and the ÖBB Group's liabilities have steadily risen since 2004. By 2010

²⁵ Cited from Statistics Austria (2008): *Public Finances and Maastricht Deficit National Accounts Revision 2008 Also Partly Concerns the Implementation of the ÖBB Reform in 2004.*
www.statistik.at/web_de/static/oebb-reform_2004_-_ausgaben_des_bundes_gemaess_esvg95_033333.pdf

liabilities are expected to reach EUR 17 billion. While the payments made by federal government show up in the government deficit, the government debt ratio is not affected by the ÖBB's debt. If, however, the ÖBB holding or one or more of its units no longer meet the ESA 95 criteria for reclassified units because of growing general government contributions, they would be reclassified to the general government sector, thus increasing the general government debt (Maastricht definition). As a result, the assessment of fiscal sustainability based on common measures would most probably change, albeit not materially.

6 Conclusions

ESA 95-related reclassifications from the public to the private sector generally imply a downsizing of the general government sector or a reduction in general government revenue and expenditure ratios to GDP, and they affect fiscal indicators. However, since the ties between the general government and outsourced units are usually very close, the latter essentially remain an integral part of the public sector in the economic and functional sense, and often even in the legal meaning.

Adequately considering these ties is particularly important in assessing the general government's actual fiscal, staffing and economic commitments. For instance, in recent years the Austrian government has repeatedly implemented growth and employment packages by boosting investment at units reclassified to the private sector, such as ÖBB, ASFINAG or BIG. Owing to the statistical reclassification of these units, however, the expenditure in-

curred is no longer directly reflected in the fiscal indicators of the general government sector. As a result, it is becoming more and more important to watch activities of reclassified enterprises. First, to assess public sector activities in terms of their economic and growth effects and, second, to analyze the extent to which allocation and stabilization functions are maintained. Since the transparency of macroeconomic results is deteriorating owing to reclassifications, the assessment of such activities is becoming more problematic.

At the same time, the Maastricht indicators are losing in informative value, and they are becoming harder to compare internationally. As the fiscal implications of public sector outsourcing can only be established in individual studies, it would be important to conduct more such studies in order to be able to accurately assess fiscal indicators in general, and indicators of fiscal sustainability in particular. This paper contributes two case studies to the literature: one on the federal facilities management company, BIG, and one on the Austrian Federal Railways, ÖBB. The evidence thus compiled illustrates how reclassifications from the public to the private sector can influence fiscal indicators and fiscal sustainability or, at very least, their measurement. It is therefore desirable that, with plans to include implicit liabilities in the calculation of a Member State's medium-term fiscal targets (as stipulated by the revised Stability and Growth Pact), adequate account is taken of implicit liabilities resulting from reclassifications to the private sector.

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Notes

Abbreviations

A-SIT	Secure Information Technology Center – Austria	IHS	Institut für Höhere Studien und Wissenschaftliche Forschung – Institute for Advanced Studies, Vienna
ASVG	Allgemeines Sozialversicherungsgesetz – General Social Security Act	IIF	Institute of International Finance
A-Trust	A-Trust Gesellschaft für Sicherheitssysteme im elektronischen Datenverkehr GmbH (accredited certification service provider)	IIP	international investment position
ATX	Austrian Traded Index	IMF	International Monetary Fund
BCBS	Basel Committee on Banking Supervision (BIS)	ISO	International Organization for Standardization
BIC	Bank Identifier Code	IWI	Industriewissenschaftliches Institut – Austrian Institute for Industrial Research, Vienna
BIS	Bank for International Settlements	JVI	Joint Vienna Institute
BOP	balance of payments	LIBOR	London Interbank Offered Rate
BSC	Banking Supervision Committee (ESCB)	M3	broad monetary aggregate M3
CACs	collective action clauses	MFI	monetary financial institution
CEBS	Committee of European Banking Supervisors (EU)	MRO	main refinancing operation
CEE	Central and Eastern Europe	MoU	memorandum of understanding
CEEC(s)	Central and Eastern European country (countries)	NACE	Statistical Classification of Economic Activities in the European Community
CESEE	Central, Eastern and Southeastern Europe	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	Österreichische Bundesfinanzierungsagentur – Austrian Federal Financing Agency
ECB	European Central Bank	ÖNACE	Austrian Statistical Classification of Economic Activities
Ecofin	Economic and Financial Affairs Council (EU)	POS	point of sale
EEA	European Economic Area	PRGF	Poverty Reduction and Growth Facility (IMF)
EFC	Economic and Financial Committee (EU)	R&D	Research & Development
EIB	European Investment Bank	RTGS	Real-Time Gross Settlement
EMS	European Monetary System	SDR	Special Drawing Right (IMF)
EMU	Economic and Monetary Union	SDRM	Sovereign Debt Restructuring Mechanism (IMF)
EONIA	Euro OverNight Index Average	SEPA	Single Euro Payments Area
ERM II	exchange rate mechanism II (EU)	SPF	Survey of Professional Forecasters
ERP	European Recovery Program	STEP2	Straight-Through Euro Processing system provided by the Euro Banking Association
ESA	European System of Accounts	STUZZA	Studiengesellschaft für Zusammenarbeit im Zahlungsverkehr G.m.b.H. – Austrian Society for Payment System Research and Cooperation
ESAF	Enhanced Structural Adjustment Facility (IMF)	S.W.I.F.T.	Society for Worldwide Interbank Financial Telecommunication
ESCB	European System of Central Banks	TARGET	Trans-European Automated Real-time Gross settlement Express Transfer
ESRI	Economic and Social Research Institute, Dublin	Treaty	Treaty establishing the European Community
EU	European Union	UCIT(s)	undertaking(s) for collective investment in transferable securities
EURIBOR	Euro Interbank Offered Rate	ULC	unit labor cost
Eurostat	Statistical Office of the European Communities	UN	United Nations Organization
FATF	Financial Action Task Force on Money Laundering	UNCTAD	United Nations Conference on Trade and Development
FDI	foreign direct investment	VaR	value at risk
Fed	Federal Reserve System (U.S.A.)	WBI	Wiener Börse Index (all-share index of the Vienna stock exchange)
FMA	Austrian Financial Market Authority	WEF	World Economic Forum
FOMC	Federal Open Market Committee (U.S.A.)	WIFO	Österreichisches Institut für Wirtschaftsforschung – Austrian Institute of Economic Research
FSAP	Financial Sector Assessment Program (IMF/World Bank)	wiiw	Wiener Institut für internationale Wirtschaftsvergleiche – The Vienna Institute for International Economic Studies
FWF	Fonds zur Förderung der wissenschaftlichen Forschung – Austrian Science Fund	WKÖ	Wirtschaftskammer Österreich – Austrian Federal Economic Chamber
GAB	General Arrangements to Borrow	WTO	World Trade Organization
GATS	General Agreement on Trade in Services		
GDP	gross domestic product		
GNP	gross national product		
GSA	GELDSERVICE AUSTRIA Logistik für Wertgestaltung und Transportkoordination GmbH (Austrian cash logistics company)		
HICP	Harmonised Index of Consumer Prices		
HIPC	Heavily Indebted Poor Countries		
HOAM.AT	Home Accounting Module Austria		
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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