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# ANALYSES

# Growth Stimulus from Tax Reform in 2005 to Overshadow Weaker Global Economic Momentum

## Economic Outlook for Austria from 2004 to 2006 (Fall 2004)

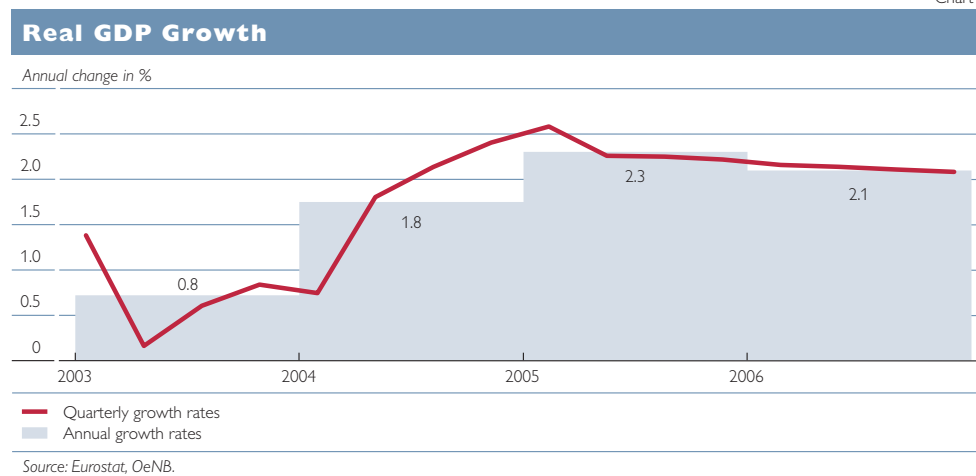
Gerhard Fenz,  
Martin Schneider

### 1 Summary

According to the fall 2004 economic outlook of the Oesterreichische Nationalbank (OeNB), Austria's real gross domestic product (GDP) is projected to increase to 1.8% in 2004. Economic growth of 2.3% and 2.1% is expected in 2005 and 2006, respectively. Fuelled by the rise in oil prices,

in particular, inflation as measured by the Harmonized Index of Consumer Prices (HICP) will be 1.9% in 2004, 2.0% in 2005 and 1.7% in 2006. The second stage of the tax reform will result in the budget deficit (Maastricht definition) deepening from 1.4% in 2004 to 2.0% in 2005 and to 1.8% in 2006.

Chart 1



In 2003 the Austrian economy grew by 0.8%,<sup>1</sup> driven by dynamic investment activity. In the first half of 2004, by contrast, exports were the engine of economic growth. Despite mildly dampening effects induced by the appreciation of the euro, Austrian exporters succeeded in boosting deliveries abroad significantly. For the second half of 2004, high export growth rates are also expected thanks to a healthy order book. From 2005 onward, economic growth momentum (led by U.S.A., in particular) is likely to slow worldwide. Exports, however, will remain a key pillar of economic activity over the entire forecast horizon.

According to the revised national accounts figures, growth in consumer demand was far more sluggish in 2003 than previously anticipated. In 2004, consumer demand growth is expected to have remained below average owing to the relatively small increase in disposable income. In 2005, however, the second stage of the tax reform will increase disposable household income by EUR 1.25 billion. Reflecting measures agreed under the renegotiated fiscal sharing act, this tax relief will be just under EUR 1 billion. At the same time, modest wage settlements and increased energy prices will have a dampening effect on disposable household income. Overall, however,

<sup>1</sup> This figure relates to publication of the annual national accounts by Statistics Austria of October 2004. In addition to the usual revisions, some major changes in methodology were introduced, such as using prices of the previous year (chaining) rather than of a fixed base year, a new calculation of imputed bank services and the elimination of unclassified transactions. The revised annual figures will therefore also reflect these changes, as well as the availability of fresh data.

Table 1

**OeNB Fall Outlook for 2004 – Key Results**

|  | 2003 | 2004 | 2005 | 2006 |
|--|------|------|------|------|
| <i>Annual change in % (real)</i>                       |      |      |      |      |
| <b>Economic activity<sup>1</sup></b>                   |      |      |      |      |
| Gross domestic product                                 | +0.8 | +1.8 | +2.3 | +2.1 |
| Private consumption                                    | +0.6 | +1.3 | +2.1 | +2.1 |
| Government consumption                                 | +0.4 | +0.3 | +0.2 | +0.2 |
| Gross fixed capital formation                          | +6.2 | +1.5 | +3.5 | +3.4 |
| Exports of goods and services                          | +1.4 | +8.0 | +7.4 | +7.3 |
| Imports of goods and services                          | +4.8 | +6.2 | +7.5 | +7.5 |
| <i>% of nominal GDP</i>                                |      |      |      |      |
| Current account balance                                | -0.5 | 0.1  | 0.2  | 0.2  |
| <i>Percentage points</i>                               |      |      |      |      |
| <b>Contribution to real GDP growth<sup>1</sup></b>     |      |      |      |      |
| Private consumption                                    | +0.4 | +0.8 | +1.2 | +1.2 |
| Government consumption                                 | +0.1 | +0.1 | +0.0 | +0.0 |
| Gross fixed capital formation                          | +1.3 | +0.4 | +0.8 | +0.8 |
| Domestic demand (excl. changes in inventories)         | +1.7 | +1.2 | +2.0 | +2.0 |
| Net exports  | -1.5 | +1.1 | +0.1 | +0.0 |
| Changes in inventories (incl. statistical discrepancy) | +0.5 | -0.5 | +0.2 | +0.1 |
| <i>Annual change in %</i>                              |      |      |      |      |
| <b>Prices</b>  |      |      |      |      |
| Harmonised Index of Consumer Prices (HICP)             | +1.3 | +1.9 | +2.0 | +1.7 |
| Private consumption expenditure (PCE) deflator         | +1.5 | +2.0 | +1.9 | +1.7 |
| GDP deflator   | +1.6 | +1.9 | +1.6 | +1.7 |
| Unit labor costs in the total economy                  | +1.4 | +0.8 | +0.7 | +1.3 |
| Compensation per employee (at current prices)          | +1.9 | +2.2 | +2.3 | +2.6 |
| Productivity (whole economy)                           | +0.9 | +1.4 | +1.7 | +1.3 |
| Compensation per employee (at 1995 prices)             | +0.4 | +0.2 | +0.4 | +0.8 |
| Import prices  | -0.9 | +1.1 | +1.4 | +1.1 |
| Export prices  | +0.1 | +0.9 | +0.9 | +1.1 |
| Terms of Trade   | +1.1 | -0.2 | -0.5 | +0.0 |
| <b>Income and savings<sup>2</sup></b>                  |      |      |      |      |
| Real disposable household income                       | +1.6 | +0.9 | +2.3 | +2.2 |
| <i>% of nominal disposable household income</i>        |      |      |      |      |
| Saving ratio   | 8.4  | 8.1  | 8.4  | 8.5  |
| <i>Annual change in %</i>                              |      |      |      |      |
| <b>Labor market</b>                                    |      |      |      |      |
| Payroll employment                                     | +0.3 | +0.7 | +0.9 | +1.0 |
| <i>%</i>   |      |      |      |      |
| Unemployment rate (Eurostat definition)                | 4.3  | 4.5  | 4.5  | 4.4  |
| <i>% of nominal GDP</i>                                |      |      |      |      |
| <b>Budget</b>  |      |      |      |      |
| Budget balance (Maastricht definition)                 | -1.1 | -1.4 | -2.0 | -1.8 |
| Government debt  | 64.5 | 64.2 | 63.7 | 63.2 |

Source: 2003: Eurostat, Statistics Austria, 2004 to 2006: OeNB fall 2004 outlook.

<sup>1</sup> 2003: Chained volume data (reference year = 2000), 2004 to 2006: at 1995 prices.

<sup>2</sup> 2003: OeNB estimate.

a sharp acceleration in consumption growth to 2.1% and a simultaneous rise in the saving rate are expected in 2005. The net growth stimulus to GDP in 2005 from the second stage of the tax reform (less the effects of the fiscal sharing package) is estimated at 0.2 percentage point.

The situation on the labor market will be determined primarily by the robust growth in labor supply due to two factors: the sharp increase in foreign labor supply and the pension reforms in 2000 and 2003. Projected employment growth will, therefore, not be enough to reduce unemploy-

ment appreciably. The OeNB predicts an unemployment rate (Eurostat definition) of 4.5% in both 2004 and 2005, and 4.4% in 2006.

Strong export growth in the first half of 2004 improved the current account considerably. After a current account deficit of 0.5% of GDP in 2003, an almost balanced current account is expected in 2004, 2005 and 2006.

Inflation rose markedly during 2004. After recording an increase of 1.3% in the HICP in 2003, the OeNB anticipates an inflation rate of 1.9% in 2004. This is primarily attributable to the steep rise in oil prices, which was only partially offset by the appreciation of the euro. Inflation is expected to accelerate at a measured pace to 2.0% in 2005. Only in 2006 will the expected fall in energy prices trigger a decline in inflation to 1.7%. Second-round effects in the form of wage increases are not anticipated. Prices will not be subject to demand pressures. The output gap will only close toward the end of the forecast horizon.

## 2 Technical Assumptions

The OeNB contributed this forecast as its input for the Eurosystem's fall 2004 staff projections for macroeconomic trends in the euro area. The forecast horizon ranges from the third quarter of 2004 to the fourth quarter of 2006. November 15, 2004 was the cutoff date for the underlying assumptions on global economic trends and for the technical assumptions on interest rates, exchange rates and crude oil prices. The OeNB used its macroeconomic quarterly model to prepare the projections for Austria.

This forecast is based on the assumption that the monetary policy framework will remain unchanged. It

therefore presupposes constant levels of both short-term nominal interest rates and the nominal effective exchange rate of the euro (euro area index) over the entire forecast horizon. The underlying short-term interest rate (three-month EURIBOR) is based on the two-week average prior to November 12, 2004 (2.16%).

Long-term interest rates, which are in tune with market expectations for ten-year government bonds, are set at 4.16% (2004), 4.13% (2005) and 4.49% (2006). A constant rate of USD/EUR 1.287 is assumed for future USD/EUR exchange rate trends. Taking exchange rate values to date into account, we arrive at an average rate for 2004 of USD/EUR 1.238. This implies an appreciation of the euro against the U.S. dollar of 9.4% in the current year. Since the average appreciation of the euro is weaker against other currencies, this means the nominal effective exchange rate used for the euro area projection will be 4.0% higher in 2004. For 2004 to 2006, we assume oil prices of USD 39.0, USD 44.4 and USD 40.8 per barrel (Brent) in each successive year. The projected future trend in crude oil prices is based on futures prices. As a result, oil prices for 2004 to 2006 are USD 4.4 (EUR 2.7), USD 12.5 (EUR 7.7) and USD 11.6 (EUR 7.2) higher than in the spring 2004 outlook.

## 3 Global Economic Growth Peaks in 2004

### 3.1 Growth in World Economy Outside Euro Area Slows During 2004

Global economic growth accelerated dramatically during 2003, peaking toward the end of the year. Although 2004 has so far seen a slowdown in momentum, annual growth is still higher than in 2003. According to



the Eurosystem's projection, the world economy outside the euro area will grow by 5.4% in real terms in 2004. This represents the highest rate of growth in the last 30 years. Growth will be led primarily by the U.S.A and by Asia (excluding Japan). The outlook for 2005 and 2006 indicates continued robust growth although growth rates are likely to be lower than in 2004.

The pace of growth in the *U.S.A.* has slowed somewhat since the start of 2004. Whereas export momentum, in particular, has declined, import growth has been far stronger. As a result, net exports are dampening growth, and steadily deepening the U.S. current account deficit. Private consumption recovered from a sluggish second quarter. Owing to the waning of stimuli from expansionary fiscal policies, the weakening of purchasing power (due to the rise in oil prices) and the Fed's switch to rising interest rates, significant impetus cannot be expected from private consumption in the near future. Moreover, the saving rate, which is already very low, does not suggest strong consumption growth. By contrast, investment growth, driven by continued buoyant domestic demand and still favorable financing conditions, is likely to remain robust in 2005. By 2006, however, investment momentum will lose steam, as growth in domestic demand is expected to decline and interest rates are anticipated to rise. Macroeconomic imbalances (budget deficit and external trade deficit) and high consumer debt levels represent risks for the U.S. economy.

The pace of *Japan's* economic recovery has slowed significantly since the second quarter of 2004. In the third quarter, export growth, which had hitherto been very strong, ground

to a virtual halt, as did investment growth. Private consumption, by contrast, looks very strong. However, the strength of economic growth is likely so far to have been overestimated. According to initial preliminary calculations based on a new method of calculation (using prices of the previous year rather than of a fixed base year), the Japanese economy has been stagnating since the second quarter of 2004. However, it is expected to recover from the fourth quarter onward. The protracted period of deflation is, nevertheless, likely to persist in 2004. Consumer prices are not expected to rise until 2005.

Since early 2004, growth in *Asia (excluding Japan)* has decelerated from an extremely dynamic rate to a somewhat more moderate pace. This is primarily attributable to measures taken in China to restrain economic growth, aiming to bring the overheated Chinese economy back on track to long-term sustainable growth. The role of exports for the region's growth is gradually decreasing in importance, and domestic demand is visibly growing in strength. Asia will, furthermore, continue to remain the fastest-growing region in the world.

Growth in the *United Kingdom* will slow to some extent during the forecast horizon. Interest rate hikes will curb both economic activity and the boom in real estate prices. Exports should benefit from the euro area's recovery and continue to grow dynamically as well.

Since the second half of 2003, *Switzerland's* economy has changed course and embarked on a relatively robust path of growth. Growth is now more broadly based, and investment activity has accelerated. The downturn in exports observed in the second quarter of 2004 is likely to

have been only temporary. Exports should strengthen in future in line with the global economic climate. The deflationary trends seen since the end of 2003 are likely to have come to an end. Growth in Switzerland will fall just short of 2% over the forecast horizon.

Growth in the *new EU Member States* largely ticked up during 2004, driven by investment and private consumption, in particular. It is expected to continue accelerating rapidly over the next two years. The catch-up process with Western European economies is making headway. Inflation, which rose recently, should recede over the forecast horizon.

### 3.2 Modest Recovery in the Euro Area

The pace of economic growth in the euro area has slowed in 2004 so far, as has the momentum of the world economy. Estimates currently available show that the third quarter, in par-

ticular, lagged behind expectations by a wide margin. Export momentum slowed in line with the world economy and was hit by the appreciation in the external value of the euro. For 2005 and 2006, however, exports are expected to continue growing strongly.

Domestic demand, not least supported by low interest rates, is starting to make a bigger contribution to growth. In the second half of 2004, private consumption is likely to grow at merely a modest pace owing to the continued low employment rate and to steep increases in energy prices. From 2005, consumption should be driven by two factors: an improved employment scenario and further declining inflation. However, debates (currently raging in many countries) about pension and health reforms will generate greater uncertainty and tend to boost the saving rate. Investment growth should accelerate from the

Table 2

| Underlying Global Economic Conditions             |                                  |         |         |         |
|---|----------------------------------|---------|---------|---------|
|   | 2003                             | 2004    | 2005    | 2006    |
|   | <i>Annual change in % (real)</i> |         |         |         |
| <b>Gross domestic product</b>                     |                                  |         |         |         |
| World GDP growth outside the euro area            | +4.7                             | +5.4    | +4.6    | +4.5    |
| U.S.A.  | +3.0                             | +4.4    | +3.4    | +2.9    |
| Japan   | +2.5                             | +3.9    | +2.0    | +2.3    |
| Asia excluding Japan                              | +7.4                             | +7.3    | +6.4    | +6.5    |
| Latin America                                     | +1.9                             | +4.0    | +4.4    | +4.2    |
| United Kingdom                                    | +2.2                             | +3.2    | +2.9    | +2.7    |
| New EU Member States                              | +3.6                             | +4.7    | +4.7    | +5.3    |
| Switzerland                                       | -0.3                             | +1.8    | +1.9    | +1.9    |
| Euro area <sup>1</sup>                            | +0.5                             | 1.6-2.0 | 1.4-2.4 | 1.7-2.7 |
| <b>World trade</b>                                |                                  |         |         |         |
| Imports of goods and services World economy       | +5.2                             | +8.3    | +7.6    | +7.0    |
| Non-euro area countries                           | +6.7                             | +9.7    | +7.8    | +7.1    |
| Real growth of euro-area export markets           | +6.0                             | +8.7    | +8.0    | +7.4    |
| Real growth of Austria's export markets           | +4.6                             | +7.4    | +7.5    | +7.2    |
| <b>Prices</b>                                     |                                  |         |         |         |
| Oil price (in USD/barrel of Brent)                | 28.9                             | 39.0    | 44.4    | 40.8    |
| Three-month interest rate in %                    | 2.3                              | 2.1     | 2.2     | 2.2     |
| Long-term interest rate in %                      | 4.1                              | 4.2     | 4.1     | 4.5     |
| USD/EUR exchange rate                             | 1.131                            | 1.238   | 1.287   | 1.287   |
| Nominal effective exchange rate (euro area index) | 100.03                           | 103.98  | 106.16  | 106.16  |

Source: ECB.

<sup>1</sup> Results of Eurosystem's fall 2004 projections. The ECB presents the results in ranges based upon average differences between actual outcomes and previous projections.

second half of 2004 onward. Preliminary data for the third quarter confirm these expectations. Compared with previous recoveries, however, investment is expected to grow at a slower pace. Whereas growth in plant and equipment investment should accelerate appreciably, growth in construction investment is expected to decelerate due to an anticipated slowing in the rise of real estate prices.

Inflation is likely to continue increasing until the end of 2004, owing to oil price developments. From 2005 onward, however, it is expected to edge back down. This is due to two factors: first, oil prices are expected to decline and, second, domestic prices are not forecast to come under significant pressure thanks to modest wage growth and continued low capacity utilization levels. In addition, the currently high external value of the euro will have a dampening effect on inflation.

*Germany*, Austria's main trading partner, is still suffering from sluggish growth. Growth in the third quarter of 2004 ground to a virtual halt. Exports were down on the previous quarter, with private consumption flagging too. By contrast, investment growth was healthy. As a result, the expected broadening of the solely export-led recovery in the first half of 2004 could have commenced. Expected global economic growth should continue to be a key driver of German economic growth as well. Private consumption is likely to grow only at a measured pace in 2005.

The economy in *France* is marked by strong domestic demand. Although the third quarter saw a deterioration in domestic demand, this decline is considered to be temporary. The French economy is expected to grow at a faster rate than the European

average in the near future. In the first three quarters of 2004, economic growth in *Italy* was driven by investment, in particular. As before, private consumption did not accelerate despite upbeat consumer sentiment. In addition, growth stimuli from net exports are currently almost entirely absent.

#### **4 Exports Remain Pillar of Economic Activity**

The external trade environment is marked by dynamic growth in world trade over the forecast horizon as a whole. However, economic growth in 2004 is likely to have already peaked in the U.S.A and in Asia (excluding Japan) – the world's two major engines of economic growth. Owing to the delayed recovery in the euro area (particularly, in both leading trading partners Germany and Italy), growth in Austria's export markets is not expected to peak until 2005.

Data for the first half of 2004 show that Austrian exporters increased their market share despite a deterioration in price competitiveness following the appreciation of the euro. Export growth rates, as seen in the second quarter of 2004 when exports surged on a quarterly basis, can no longer be expected in future. However, they will remain a key pillar of economic activity over the forecast horizon as a whole. The OeNB projects real exports to grow to 8.0% in 2004, thereafter weakening a tad to 7.4% in 2005 and to 7.3% in 2006.

The contribution of net exports to real GDP growth, which was deep in negative territory in 2003 (–1.5 percentage points), will climb to 1.1 percentage points in 2004. With burgeoning domestic demand, import growth will gather momentum in

Table 3

| <b>Growth and Price Developments, Austrian External Trade</b> |                           |      |      |      |      |
|---|---------------------------|------|------|------|------|
|   | 2002                      | 2003 | 2004 | 2005 | 2006 |
|   | <i>Annual change in %</i> |      |      |      |      |
| <b>Exports</b>  |                           |      |      |      |      |
| Competitors' prices in Austria's export markets               | -2.2                      | -5.6 | -1.3 | +0.4 | +1.6 |
| Export deflator   | +0.6                      | +0.1 | +0.9 | +0.9 | +1.1 |
| Changes in price competitiveness                              | -2.8                      | -5.7 | -2.2 | -0.5 | +0.5 |
| Import demand in Austria's export markets (real)              | +1.1                      | +4.6 | +7.4 | +7.5 | +7.2 |
| Austrian exports of goods and services (real)                 | +3.8                      | +1.4 | +8.0 | +7.4 | +7.3 |
| Market share  | +2.7                      | -3.2 | +0.6 | -0.1 | +0.1 |
| <b>Imports</b>  |                           |      |      |      |      |
| International competitors' prices in the Austrian market      | -0.8                      | -3.3 | -0.5 | +0.7 | +1.5 |
| Import deflator   | -1.2                      | -0.9 | +1.1 | +1.4 | +1.1 |
| Austrian imports of goods and services (real)                 | -0.2                      | +4.8 | +6.2 | +7.5 | +7.5 |
| <b>Terms of Trade</b>   | +1.8                      | +1.1 | -0.2 | -0.5 | +0.0 |
|   | <i>Percentage points</i>  |      |      |      |      |
| <b>Contribution of net exports to GDP growth</b>              | +1.9                      | -1.5 | +1.1 | +0.1 | +0.0 |

Source: 2002 to 2003: Eurostat, 2004 to 2006: OeNB fall 2004 outlook, Eurosystem.

both 2005 and 2006, as a result of which the contribution of net exports to growth will approach zero.

Owing to the high percentage of imports in investment, buoyant investment activity in 2003 resulted in a current account deficit (-0.5% of GDP). This deficit is entirely attributable to the sharp reduction in the goods surplus.

The export boom in the first half of 2004 and the healthy order book for the rest of the year suggest a reversal of the previous year's trend. The results of the transactions account for the first half of 2004 show that the surplus in goods traded not only

exceeded the figure for the comparable period in 2003 by a wide margin but also topped the record set in 2002. Goods surpluses are expected to continue over the forecast horizon thanks to unit wage cost trends that are favorable by international standards. However, growing import demand in tandem with the economy's recovery will prevent any further improvement in 2005 and 2006. The services surplus has diminished steadily in the past few years. The OeNB projects this trend to taper off over the forecast horizon, and expects the services account balance to be in the red by a slight margin. The pattern

Table 4

| <b>Austria's Current Account</b>    |                         |      |      |      |      |
|-------------------------------------|-------------------------|------|------|------|------|
|                                     | 2002                    | 2003 | 2004 | 2005 | 2006 |
|                                     | <i>% of nominal GDP</i> |      |      |      |      |
| <b>Balance of trade</b>             | 2.0                     | 1.1  | 2.0  | 2.0  | 1.9  |
| Balance on goods                    | 1.7                     | 0.4  | 1.9  | 1.6  | 1.7  |
| Balance on services                 | 0.3                     | 0.7  | 0.1  | 0.3  | 0.2  |
| Euro area                           | -3.6                    | -4.3 | -4.5 | -4.8 | -5.0 |
| Non-euro area countries             | 5.5                     | 5.4  | 6.4  | 6.7  | 7.0  |
| <b>Balance on income</b>            | -0.8                    | -0.7 | -0.8 | -0.7 | -0.7 |
| <b>Balance on current transfers</b> | -0.9                    | -0.9 | -1.0 | -1.0 | -1.0 |
| <b>Current account</b>              | 0.3                     | -0.5 | 0.1  | 0.2  | 0.2  |

Source: 2002 to 2003: OeNB, 2004 to 2006: OeNB fall 2004 outlook.

of the trade balance's regional breakdown, namely a negative balance with euro area countries and a large surplus with non-euro area countries, will not change until 2006.

In the first half of 2004, the income subaccount posted a marginally bigger decrease than in the comparable period a year ago. For the forecast years, a stable balance of  $-0.7\%$  to  $-0.8\%$  of nominal GDP is expected. At  $-1.0\%$  of GDP, the current transfers balance – which is mainly influenced by EU transactions – will remain constant over the forecast horizon. The overall current account balance will be almost balanced over the forecast horizon.

## 5 Oil Price Rise Fuels Fresh Inflation

Following a very modest HICP inflation rate of  $1.3\%$  in 2003, price growth accelerated markedly in 2004, reaching  $2.3\%$  in November. The OeNB expects inflation to peak at almost  $2.5\%$  at the start of 2005. Thereafter, pricing pressures will ease noticeably and only strengthen slightly toward the end of the forecast

horizon. The HICP inflation rate is expected to accelerate from  $1.9\%$  in 2004 to  $2.0\%$  in 2005, only to slip back to  $1.7\%$  in 2006.

The inflation trend projected is influenced quite strongly by the energy subcomponent. According to futures prices, the price of oil will gradually fall from USD 46.9 in the fourth quarter of 2004 to USD 39.9 in the fourth quarter of 2006. Driven by high oil prices, the energy subcomponent (weighted at approximately  $7\%$  of the HICP) will explain only a third of overall inflation in 2004 and 2005. By 2006, however, the contribution of the energy subcomponent to inflation will have dropped to almost nil. The risk of significant second-round effects induced by the oil price rise is still considered as being very low. Current wage settlements suggest that the path of wage moderation will not be abandoned in 2005 either. Since the unemployment rate will barely decline over the forecast horizon as a whole, wage inflation is not forecast to accelerate noticeably in 2006. Neither are prices expected to be subject to significant demand pressures. The output gap

Table 5

### Price and Cost Indicators for Austria

|  | 2003               | 2004 | 2005 | 2006 |
|--|--------------------|------|------|------|
|  | Annual change in % |      |      |      |
| Harmonised Index of Consumer Prices (HICP)     | +1.3               | +1.9 | +2.0 | +1.7 |
| HICP energy                                    | +1.0               | +7.0 | +8.0 | +0.8 |
| HICP excl. energy                              | +1.3               | +1.6 | +1.5 | +1.8 |
| Private consumption expenditure (PCE) deflator | +1.5               | +2.0 | +1.9 | +1.7 |
| Investment deflator                            | -0.3               | +1.6 | +1.7 | +1.4 |
| Import deflator                                | -0.9               | +1.1 | +1.4 | +1.1 |
| Export deflator                                | +0.1               | +0.9 | +0.9 | +1.1 |
| Terms of Trade                                 | +1.1               | -0.2 | -0.5 | +0.0 |
| GDP deflator                                   | +1.6               | +1.9 | +1.6 | +1.7 |
| Unit labor costs                               | +1.4               | +0.8 | +0.7 | +1.3 |
| Compensation per employee                      | +1.9               | +2.2 | +2.3 | +2.6 |
| Labor productivity                             | +0.9               | +1.4 | +1.7 | +1.3 |
| Collectively agreed wage settlements           | +2.2               | +2.1 | +2.3 | +2.5 |
| Profit margins <sup>1</sup>                    | +0.3               | +1.1 | +0.9 | +0.4 |

Source: 2003: Eurostat, Statistics Austria, 2004 to 2006: OeNB fall 2004 outlook.

<sup>1</sup> GDP deflator divided by unit labor costs.

will close toward the end of 2006. At 1.5% in 2004 and 1.6% in 2005, HICP core inflation (excluding energy) will therefore remain relatively stable and only accelerate slightly to 1.8% in 2006.

Both exchange rate and oil price trends are key determinants of the terms of trade. In the past, the appreciation of the euro against the U.S. dollar generally resulted in improved terms of trade for Austria, with oil price hikes leading to a deterioration thereof. In 2004 and 2005 the oil price effect is expected to dominate the exchange rate effect, and the terms of trade are anticipated to deteriorate slightly by 0.2% and 0.5%, respectively. The terms of trade are likely to remain basically unchanged in 2006.

Productivity growth (real GDP per employee) will peak in 2005. In 2006 an expected slight deterioration in growth and the fact that employment growth follows economic recovery with a time lag will lead to a modest decline in productivity growth. Wage settlements saw an increase of 2.1% in 2004, and are likely to remain modest in 2005 (+2.3%). In 2006, somewhat higher wage settlements are on the cards in view of the antici-

pated economic recovery. Payments in excess of the minimum wage will also rise slightly in the wake of economic recovery. After three below-average years, corporate profit margins will rebound in 2004 and 2005, supported by favorable unit wage cost trends. In 2006, by contrast, more moderate growth is indicated by somewhat higher and faster-growing unit wage costs.

## 6 Domestic Economy Gathers Steam in 2004

### 6.1 Growth Stimulus from Tax Reform Dampened by Higher Inflation, Modest Wage Settlements and Fiscal Sharing Agreement

In 2003 and the first half of 2004, sluggish growth in real disposable income strongly influenced private consumption growth. For the second half of 2004, the European Commission's confidence indicators suggest stable consumption growth for Austria. After several months, both consumer confidence and retail confidence remain close to their long-term average. Although retail sales have grown modestly in real terms in the last few months, clear signs of a notable pick-up in real consumption growth still remain absent. This should

Table 6

#### Determinants of Nominal Household Income in Austria

|   | 2003 | 2004 | 2005 | 2006 |
|---|------|------|------|------|
| <i>Annual change in %</i>   |      |      |      |      |
| Compensation of employees   | +2.2 | +2.9 | +3.2 | +3.6 |
| Employees   | +0.3 | +0.7 | +0.9 | +1.0 |
| Wages per employee  | +2.4 | +2.2 | +2.3 | +2.6 |
| Mixed income (net) of the self-employed and property income             | +2.2 | +4.1 | +5.4 | +5.7 |
| Net transfers minus direct taxes <sup>1</sup>                           | +1.8 | -5.4 | -0.5 | -6.0 |
| <i>Contribution to disposable household income in percentage points</i> |      |      |      |      |
| Compensation of employees   | +2.2 | +2.4 | +2.7 | +3.0 |
| Mixed income (net) of the self-employed and property income             | +0.7 | +1.2 | +1.7 | +1.8 |
| Net transfers minus direct taxes <sup>1</sup>                           | +0.3 | -0.7 | -0.1 | -0.8 |
| Disposable household income (nominal)                                   | +3.1 | +2.9 | +4.3 | +4.0 |

Source: 2003: Statistics Austria, 2004 to 2006: OeNB fall 2004 outlook.

<sup>1</sup> Negative values indicate an increase in (negative) net transfers minus direct taxes, positive values indicate a decrease.

not be expected in the second half of 2004 either.

Owing to the rise in oil prices, the current inflation rate is outpacing wage growth, forcing employees to suffer wage losses in real terms. Until oil price effects begin to fade, wages cannot be expected to increase in real terms. At 0.2% in 2004 and 0.4% in 2005, growth in real wages will fall well short of the long-term average. Average wages cannot be expected to grow in real terms until 2006 (+0.8%).

Despite weak real wage growth, disposable household income will soar in 2005 thanks to the second stage of tax reform and to growing employment. The second stage of tax reform will generate tax relief worth EUR 1,250 million for households, or 0.8% of disposable household income. However, the expansionary effect of

the tax reform on private consumption and economic growth will be partially offset by hospital financing measures under the fiscal sharing agreement. These come to some EUR 250 million, or 0.15% of disposable household income. The OeNB expects approximately half of the remaining net relief – worth almost EUR 1 billion – to generate a higher saving rate, which will therefore rise by 0.35 percentage point in 2005. At +2.3%, disposable household income in 2005 will grow on the whole much faster in real terms than in 2004 (0.9%). In addition to increasing consumption by 2.1%, this means households can sharply boost their saving. In 2006 consumption expenditure is also expected to grow by 2.1%, owing to stronger real wage growth and to the acceleration in employment growth.

Table 7

### Private Consumption in Austria

|   | 2003 | 2004 | 2005 | 2006 |
|---|------|------|------|------|
| <i>Annual change in %</i>                       |      |      |      |      |
| Disposable household income (nominal)           | +3.1 | +2.9 | +4.3 | +4.0 |
| Private consumption deflator                    | +1.5 | +2.0 | +1.9 | +1.7 |
| Disposable household income (real)              | +1.6 | +0.9 | +2.3 | +2.2 |
| Private consumption (real)                      | +0.6 | +1.3 | +2.1 | +2.1 |
| <i>% of nominal disposable household income</i> |      |      |      |      |
| Saving ratio                                    | 8.4  | 8.1  | 8.4  | 8.5  |

Source: 2003: Eurostat, 2004 to 2006: OeNB fall 2004 outlook.

## 6.2 Recovery Fuels Investment

In view of subdued economic growth, investment activity was unexpectedly vigorous in 2003. As growth was essentially concentrated in the first quarter, high demand for replacement investment (after two years of shrinking investment) can only partially explain this recovery in investment activity. Two special factors must also be considered: First, distortions in both investment and external trade statistics are likely to recur in connec-

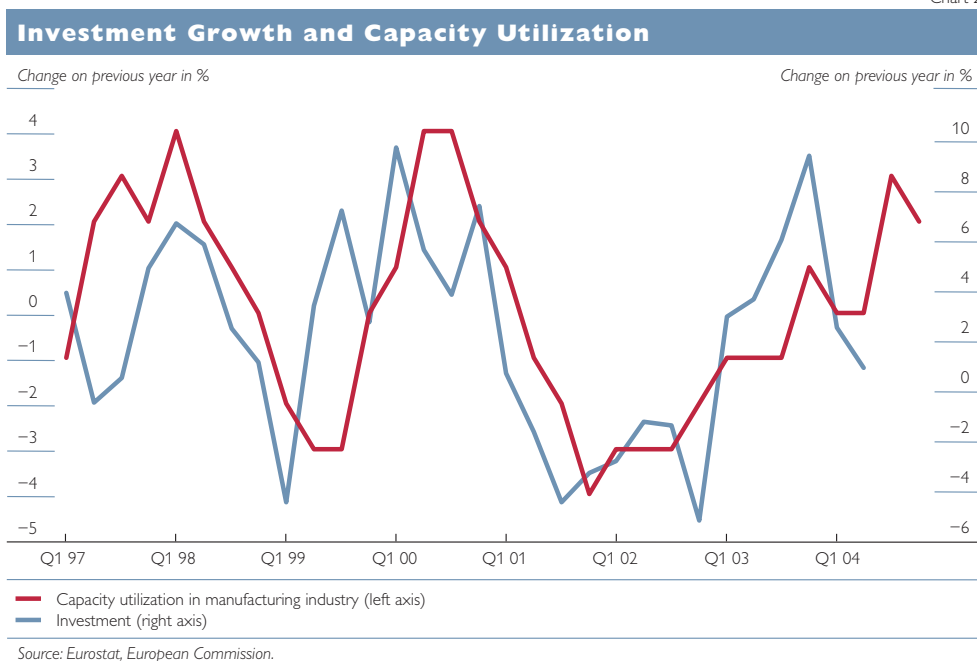
tion with aircraft repairs. In the case of large-scale aircraft repairs abroad, the total aircraft value is recorded as exports and disinvestment in GDP-neutral terms and, following successful repair, recorded as import and investment in GDP-neutral terms again. If these two records occur in different quarters, distortions arise in the GDP components. This is likely to apply, notably, to the fourth quarter of 2002 and to the first quarter of 2003. Second, the investment tax

credit created incentives to implement investment projects in 2003 that had originally been planned for 2002.

In the first half of 2004, investment activity was sluggish: both quarters posted negative growth compared with the previous quarter. Yet the OeNB expects investment demand to pick up in the second half of 2004, on the back of soaring export growth in the first half of the year. This assessment is supported by the marked improvement in capacity utilization. At 82.4%, manufacturing industry's capacity utilization in the fourth quarter of 2004 outperformed its long-term average yet again. In the

past, the year-on-year change in capacity utilization has been a good leading indicator for the investment cycle (see chart 2). In addition, the results of the investment test performed by the Austrian Institute of Economic Research (WIFO) suggest a growing propensity to invest. Finally, favorable financial conditions and a rebound in corporate profits should kick-start the investment cycle. The phasing out of the 10% subsidy on any investment that exceeds the investment level of the past three years at the end of 2004 should trigger an appropriate response in anticipation of this change.

Chart 2



The robust investment growth posted in 2003 (+6.2%) will not be matched in 2004. However, projected growth of 1.5% means that the investment ratio (investments as a percentage of GDP) will remain at the long-term average of 23.2%. Although the reduction in corporate tax in 2005 will not generate a direct strong investment stimulus, it will make

Austria more attractive as a location for foreign investors in the medium and long term. Fueled by accelerator effects, investment is expected to grow to 3.5% in 2005 and to 3.4% in 2006. At almost 24% of GDP, the investment ratio toward the end of the forecast horizon will fall slightly short of its historical record achieved in 2000.



As the most sensitive component of investment, investment in plant and equipment will generate the strongest growth over the entire forecast horizon. Although residential construction investment slipped 4.3% in 2003, moderately buoyant growth is anticipated over the forecast horizon.

With investment activity rebounding in the second half of 2004, inventory changes will also fuel GDP growth. In view of the historical trend, a further negative growth contribution of  $-0.2$  percentage point will be made in 2004. A positive contribution of  $+0.1$  percentage point is expected in both 2005 and 2006.

### 6.3 Despite Rising Employment, Unemployment Rate Stagnates Due to Vigorous Growth in Labor Supply

The growing number of reported vacancies – a good leading indicator for the labor market – signaled an increase in payroll employment during the first half of 2004. In view of this indicator's still positive development, this trend is expected to continue over the next few months. Employment growth is concentrated in the services sector, in particular. What is more, layoffs in both manufacturing and construction industries are now a thing of

the past. Overall, payroll employment will grow by 0.7% in 2004. In 2005 and 2006 employment growth, on the back of economic recovery, will accelerate to 0.9% and to 1.0%, respectively. Public sector employment will continue to fall over the next few years, as will the number of self-employed.

Despite the creation of new jobs, unemployment will stagnate over the forecast horizon as a whole, as labor supply is growing at an above-average rate. Two factors are responsible for this development: first, the sharp increase in foreign labor supply (be they seasonal workers or workers hired for longer periods); second, the greater labor force participation of mature workers as a result of the pension reforms in 2000 and 2003. In particular, the gradual phasing out of early retirement will contribute to higher labor supply growth in the medium term as well. In addition, cyclically induced growth in the labor supply is expected toward the end of the forecast horizon. Overall, labor supply growth will come to 0.4% in 2004, 0.6% in 2005 and 0.7% in 2006. As for the unemployment rate, it will remain unchanged at 4.5% in both 2004 and 2005 and fall only slightly to 4.4% in 2006.

Table 8

#### Labor Market Developments in Austria

|  | 2003               | 2004 | 2005 | 2006 |
|--|--------------------|------|------|------|
|  | Annual change in % |      |      |      |
| <b>Total employment</b>                        | -0.2               | +0.3 | +0.6 | +0.8 |
| <i>thereof:</i>                                |                    |      |      |      |
| Payroll employment                             | +0.3               | +0.7 | +0.9 | +1.0 |
| Self-employed                                  | -2.1               | -1.3 | -0.4 | -0.4 |
| Public sector employment                       | -0.5               | -0.4 | -0.5 | -0.8 |
| Registered unemployment                        | +3.9               | +1.5 | -0.2 | -0.2 |
| Labor supply                                   | +0.0               | +0.4 | +0.6 | +0.7 |
|  | %                  |      |      |      |
| <b>Unemployment rate (Eurostat definition)</b> | 4.3                | 4.5  | 4.5  | 4.4  |

Source: 2003: Eurostat, 2004 to 2006: OeNB fall 2004 outlook.

## 7 Exchange Rates and Oil Prices – Factors of Uncertainty

Austria's economic recovery in the first half of 2004 was driven primarily by exports. According to the OeNB's fall 2004 economic outlook, the upturn will now gradually feed through to domestic demand. However, the extent to which exports will revive investment activity still remains largely unclear. At the very start of a recovery, moreover, the economy is susceptible to external shocks. These include, above all, a further appreciation of the euro and higher oil prices over a protracted period of time. If the euro were to continue appreciating, the competitiveness of Austrian exports – the most important pillar of the economy – would be severely hit. This outlook is based on the assumption of a constant exchange rate of USD/EUR 1.29. If the euro appreciates by 10% against the U.S. dollar in early 2005, Austrian GDP growth would be at the very least 0.1 percentage point lower in both 2005 and 2006. Inflation would also fall by 0.2 and 0.1 percentage point successively in each of these years. In addition, indirect effects, particularly via the country's close trade links with Germany, would lead to a total decline in growth of almost 0.2 percentage point per year.

A further risk factor can be seen in future oil price developments. Higher oil prices over a protracted period of time could occur if production capacities did not satisfy global demand. However, oil prices are currently also influenced by speculative buying and carry a risk premium, given continued geopolitical tensions. A dramatic slump in oil prices is therefore equally possible.

According to the OeNB's fall 2004 outlook, oil prices are expected to de-

cline gradually from USD 46.9/barrel (Brent) in the fourth quarter of 2004 to USD 39.9/barrel (Brent) in the fourth quarter of 2006. Using the OeNB's macromodel, an attempt was made to quantify the impact of oil prices rising by 20% for each quarter from early 2005 onward. This calculation included not only the direct demand effects of an oil price hike but also supply-side cost effects and substitution effects. On the basis of this higher oil price assumption, economic growth is 0.15 and 0.25 percentage point lower in 2005 and 2006, respectively. By contrast, the HICP inflation rate is successively 0.3 and 0.1 percentage point higher in each of these years.

GDP growth will be subject to a modest upside risk arising from the second stage of tax reform. Reducing corporate taxes and introducing group taxation in 2005 will mean merely a small direct reduction in capital user costs. A direct strong investment stimulus was therefore not assumed in the basic scenario. However, it cannot be ruled out that Austria's greater attractiveness over other countries as a location for foreign investors is reflected in the higher investment expected over the forecast horizon. On the consumer front, generous tax relief could have a more positive effect than previously assumed on both consumer confidence and behavior.

## 8 Revision on Spring 2004 Outlook Due to External Assumptions

The key changes in the external trade environment since the spring 2004 outlook relate to oil prices, exchange rates and the growth of Austria's export markets.

Oil prices rocketed during the second half of 2004. For both 2005

and 2006, the technical oil price assumptions are about USD 12, or 40% higher than in the spring 2004 outlook. The appreciation of the euro against the U.S. dollar (almost 10% higher than in the spring 2004 outlook) dampens this effect to some extent. Owing to Austria's large share of external trade with the euro area, fluctuations in nominal effective exchange rates are much smaller. Financing conditions (i.e. short- and long-term interest rates) have remained almost unchanged since the spring 2004 outlook.

The export-led recovery in the euro area commenced, as predicted. However, import demand in the euro area grew at a more dynamic pace than forecast in the spring 2004 outlook. As a result, the expansion of Austria's export markets will accelerate by 1.3 percentage points in 2004. By contrast, growth is expected to

remain almost unchanged in 2005 and 2006.

Table 13 shows a breakdown of the reasons for these forecast revisions, which are explained by the impact of new data, the effects of changing external assumptions and other effects. In the case of GDP growth, the impact of new data includes the influence of new data for the first and the second quarters of 2004 as well as the influence of data revisions for 2003 on the carry-over effect<sup>2</sup>, thus also on annual growth in 2004. The data available for the first few months of 2004 are included in the HICP as well. The effects of new external assumptions were simulated using the OeNB's macroeconomic model. The item "Other" comprises various expert assessments regarding the development of domestic variables (such as government consumption).

Table 9

### Change in the Underlying Global Environment Since Spring 2004 Outlook

|  | Fall 2004 |      |      | Spring 2004 |      |      | Difference |       |       |
|--|-----------|------|------|-------------|------|------|------------|-------|-------|
|  | 2004      | 2005 | 2006 | 2004        | 2005 | 2006 | 2004       | 2005  | 2006  |
| <i>Change on previous year (%)</i>           |           |      |      |             |      |      |            |       |       |
| Growth of Austrian export markets            | +7.4      | +7.5 | +7.2 | +6.1        | +7.2 | +7.6 | +1.3       | +0.2  | -0.4  |
| Competitor prices in Austrian export markets | -1.3      | +0.4 | +1.6 | -1.4        | +1.4 | +1.2 | +0.1       | -1.1  | +0.4  |
| Competitor prices in Austrian import markets | -0.5      | +0.7 | +1.5 | -1.1        | +1.1 | +1.1 | +0.6       | -0.5  | +0.4  |
| USD  |           |      |      |             |      |      |            |       |       |
| Oil price per barrel (Brent)                 | 39.0      | 44.4 | 40.8 | 34.6        | 31.8 | 29.2 | +4.4       | +12.5 | +11.6 |
| <i>Change on previous year (%)</i>           |           |      |      |             |      |      |            |       |       |
| Nominal effective exchange rate (exports)    | -1.3      | -0.8 | +0.0 | -0.6        | +0.3 | +0.0 | -0.7       | -1.1  | +0.0  |
| Nominal effective exchange rate (imports)    | -0.6      | -0.3 | +0.0 | -0.4        | +0.1 | +0.0 | -0.3       | -0.4  | +0.0  |
| %  |           |      |      |             |      |      |            |       |       |
| Three-month interest rate (%)                | 2.1       | 2.2  | 2.2  | 2.1         | 2.1  | 2.1  | +0.0       | +0.1  | +0.1  |
| Long-term interest rate (%)                  | 4.2       | 4.1  | 4.5  | 4.3         | 4.4  | 4.5  | -0.1       | -0.3  | +0.0  |
| <i>Change on previous year (%)</i>           |           |      |      |             |      |      |            |       |       |
| Real GDP, U.S.A.                             | +4.4      | +3.4 | +2.9 | +4.6        | +3.6 | +3.0 | -0.2       | -0.2  | -0.1  |
| USD/EUR                                      |           |      |      |             |      |      |            |       |       |
| USD/EUR exchange rate                        | 1.24      | 1.29 | 1.29 | 1.20        | 1.19 | 1.19 | +0.03      | +0.10 | +0.10 |

Source: ESCB.

<sup>2</sup> The carry-over effect is a measure for the influence of growth in the individual quarters of the previous year on growth in a given year. It is equivalent to the percentage difference between the levels of corresponding variables in the final quarters of the previous year divided by the annual average of the previous year.

Table 10

| <b>Breakdown of Forecast Revisions</b> |                    |      |      |      |      |      |
|--|--------------------|------|------|------|------|------|
|  | GDP                |      |      | HICP |      |      |
|  | 2004               | 2005 | 2006 | 2004 | 2005 | 2006 |
|  | Annual change in % |      |      |      |      |      |
| <b>Fall 2004 outlook</b>               | +1.8               | +2.3 | +2.1 | +1.9 | +2.0 | +1.7 |
| <b>Spring 2004 outlook</b>             | +1.5               | +2.4 | +2.5 | +1.7 | +1.5 | +1.6 |
| <b>Difference</b>                      | +0.3               | -0.1 | -0.4 | +0.2 | +0.5 | +0.2 |
| <b>Due to:</b>                         |                    |      |      |      |      |      |
| New data <sup>1</sup>                  | +0.2               | +0.1 | x    | +0.2 | +0.2 | x    |
| External assumptions                   | +0.1               | -0.3 | -0.3 | +0.1 | +0.5 | +0.2 |
| Other <sup>2</sup>                     | +0.0               | +0.1 | -0.1 | -0.1 | -0.2 | -0.0 |

Source: OeNB fall 2004 and spring 2004 outlooks.  
<sup>1</sup> Effect of new and revised historic data for 2003.  
<sup>2</sup> Different assumptions about trends in domestic variables such as wages, government consumption, effects of measures designed to support the economy, other rating changes and model changes.

The forecast of real GDP growth in 2004 has been revised upwards from 1.5% to 1.8%. This change can be put down to revised historical growth rates in 2003, which imply a higher carry-over effect for growth in 2004, the availability of new data (particularly, robust export-led growth in the second quarter) and changes in external assumptions, which likewise have a mildly positive effect on growth projections. For the years 2005 and 2006, by contrast, GDP growth has been revised downwards by 0.1 and 0.4 percentage point, respectively. In both years, the by now deteriorated external trade environment – especially, the higher oil price assumptions – will dampen growth by 0.3 percentage point successively. In 2005, the impact of this will be partially offset by a somewhat higher carry-over effect. The composition of GDP growth has also changed. In comparison to the spring 2004 outlook, lower investment growth is expected in both 2005 and 2006. Unexpectedly vigorous investment growth in 2003 significantly reduced the demand for replacement

investment. Stoked by the rise in energy prices, the inflation outlook for 2004 to 2006 has been revised upwards by 0.2, 0.5 and 0.2 percentage point for each successive forecast year.

### 8.1 Comparison with Other Forecasts

The current forecasts for real GDP growth in Austria range in a narrow band from 1.6% to 2.1% in 2004 and from 2.2% to 2.5% in 2005. Unlike the Austrian Institute of Economic Research (WIFO) and the Institute for Advanced Studies (IHS), the OeNB is more cautious in estimating domestic demand. Conversely, it anticipates stronger growth in external trade. The OeNB's far more optimistic current account estimate can be explained by the availability of more up-to-date information. There is, quite naturally, little to separate the inflation forecasts available for 2004. The OeNB's somewhat higher inflation outlook for 2005 can be attributed to the current price developments of the last few months. The unemployment rate forecasts are not mutually comparable since the historical series have now been revised.

Table 11

### Comparison of Current Economic Forecasts for Austria

| Indicator   | OeNB<br>November 2004 |         |         | WIFO<br>October 2004 |      | IHS<br>October 2004 |      | OECD<br>November 2004 |      |      | IMF<br>September 2004 |      | European<br>Commission<br>October 2004 |      |      |
|---|-----------------------|---------|---------|----------------------|------|---------------------|------|-----------------------|------|------|-----------------------|------|--|------|------|
|   | 2004                  | 2005    | 2006    | 2004                 | 2005 | 2004                | 2005 | 2004                  | 2005 | 2006 | 2004                  | 2005 | 2004                                   | 2005 | 2006 |
| <i>Annual change in %</i>                         |                       |         |         |                      |      |                     |      |                       |      |      |                       |      |  |      |      |
| <b>Key results</b>                                |                       |         |         |                      |      |                     |      |                       |      |      |                       |      |  |      |      |
| GDP (real)  | +1.8                  | +2.3    | +2.1    | +1.9                 | +2.5 | +2.1                | +2.5 | +1.8                  | +2.3 | +2.6 | +1.6                  | +2.4 | +1.9                                   | +2.4 | +2.4 |
| Private consumption (real)                        | +1.3                  | +2.1    | +2.1    | +1.6                 | +2.5 | +1.6                | +2.6 | +1.4                  | +2.3 | +2.4 | x                     | x    | +1.2                                   | +2.1 | +2.4 |
| Government consumption (real)                     | +0.3                  | +0.2    | +0.2    | +0.5                 | +0.0 | +0.0                | +0.0 | +0.2                  | +0.7 | +1.4 | x                     | x    | +0.3                                   | +0.5 | +0.5 |
| Gross fixed capital formation (real) <sup>1</sup> | +1.5                  | +3.5    | +3.4    | +2.2                 | +3.5 | +1.9                | +3.5 | +1.6                  | +3.0 | +4.1 | x                     | x    | +2.9                                   | +4.0 | +4.3 |
| Exports (real)                                    | +8.0                  | +7.4    | +7.3    | +6.0                 | +6.2 | +6.4                | +6.1 | +8.1                  | +8.0 | +7.9 | x                     | x    | +5.6                                   | +5.7 | +5.6 |
| Imports (real)                                    | +6.2                  | +7.5    | +7.5    | +4.7                 | +6.4 | +5.2                | +5.9 | +7.1                  | +8.1 | +8.2 | x                     | x    | +5.0                                   | +5.6 | +6.1 |
| GDP per employee                                  | +1.4                  | +1.7    | +1.3    | +1.4                 | +1.6 | +1.3                | +1.7 | x                     | x    | x    | x                     | x    | +1.4                                   | +1.7 | +1.6 |
| GDP deflator                                      | +1.9                  | +1.6    | +1.7    | +1.3                 | +1.8 | +1.8                | +2.0 | +2.1                  | +1.9 | +1.4 | +1.5                  | +1.5 | +1.1                                   | +1.2 | +1.2 |
| CPI   | x                     | x       | x       | +2.1                 | +2.0 | +2.0                | +1.9 | x                     | x    | x    | +1.7                  | +1.6 | x                                      | x    | x    |
| HICP  | +1.9                  | +2.0    | +1.7    | +2.1                 | +1.9 | x                   | x    | +1.9                  | +1.9 | +1.4 | x                     | x    | +2.1                                   | +1.8 | +1.4 |
| Unit labor costs                                  | +0.8                  | +0.7    | +1.3    | +0.9                 | +1.2 | x                   | x    | x                     | x    | x    | x                     | x    | +1.1                                   | +0.8 | +1.0 |
| Payroll employment                                | +0.3                  | +0.6    | +0.8    | +0.6                 | +0.9 | +0.7                | +0.8 | +0.5                  | +0.7 | +1.0 | x                     | x    | +0.5                                   | +0.7 | +0.8 |
| <i>%</i>  |                       |         |         |                      |      |                     |      |                       |      |      |                       |      |  |      |      |
| Unemployment rate <sup>2</sup>                    | 4.5                   | 4.5     | 4.4     | 4.2                  | 4.1  | 4.2                 | 4.1  | 5.8                   | 5.8  | 5.5  | 4.4                   | 4.2  | 4.2                                    | 3.9  | 3.4  |
| <i>% of nominal GDP</i>                           |                       |         |         |                      |      |                     |      |                       |      |      |                       |      |  |      |      |
| Current account                                   | 0.1                   | 0.2     | 0.2     | -0.7                 | -0.8 | -0.8                | -0.4 | -0.1                  | 0.0  | 0.1  | -1.0                  | -1.1 | x                                      | x    | x    |
| Government surplus/deficit                        | -1.4                  | -2.0    | -1.8    | -1.3                 | -1.9 | -1.3                | -1.8 | -1.5                  | -2.1 | -2.1 | -1.2                  | -1.8 | -1.3                                   | -2.0 | -1.7 |
| <b>External assumptions</b>                       |                       |         |         |                      |      |                     |      |                       |      |      |                       |      |  |      |      |
| Oil price in USD/barrel of Brent                  | 39.0                  | 44.4    | 40.8    | 36.0                 | 38.0 | 36.0                | 37.0 | 47.0                  | 45.5 | 44.0 | 37.3                  | 37.3 | 39.3                                   | 45.1 | 40.1 |
| Short-term interest rate in %                     | 2.1                   | 2.2     | 2.2     | 2.1                  | 2.1  | 2.0                 | 2.3  | 2.1                   | 2.1  | 2.7  | 2.4                   | 3.1  | x                                      | x    | x    |
| USD/EUR   | 1.24                  | 1.29    | 1.29    | 1.23                 | 1.23 | 1.22                | 1.21 | 1.30                  | 1.30 | 1.30 | 1.22                  | 1.21 | 1.23                                   | 1.24 | 1.24 |
| <i>Annual change in %</i>                         |                       |         |         |                      |      |                     |      |                       |      |      |                       |      |  |      |      |
| Euro area GDP (real)                              | 1.6–2.0               | 1.4–2.4 | 1.7–2.7 | +1.9                 | +2.3 | +2.0                | +2.3 | +1.8                  | +1.9 | +2.5 | +2.2                  | +2.2 | +2.1                                   | +2.0 | +2.2 |
| U.S. GDP (real)                                   | +4.4                  | +3.4    | +2.9    | +4.3                 | +3.0 | +4.5                | +3.0 | +4.4                  | +3.3 | +3.6 | +4.3                  | +3.5 | +4.4                                   | +3.0 | +2.9 |
| World GDP (real)                                  | +4.9                  | +4.3    | +4.2    | x                    | x    | x                   | x    | x                     | x    | x    | +5.0                  | +4.3 | +5.0                                   | +4.2 | +4.2 |
| World trade                                       | +8.3                  | +7.6    | +7.0    | +8.5                 | +7.0 | +16.0               | +8.0 | 9.5                   | 9.0  | 9.5  | +8.8                  | +7.2 | +9.9                                   | +8.1 | +7.7 |

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

<sup>1</sup> For IHS: Gross investment.

<sup>2</sup> Eurostat definition; for OECD: OECD definition.

## 9 Annex

### Detailed Result Tables

Table 12

| Demand Components (Real Prices)                        |                |                |                |                |                    |             |             |             |
|--|----------------|----------------|----------------|----------------|--------------------|-------------|-------------|-------------|
|  | 2003           | 2004           | 2005           | 2006           | 2003               | 2004        | 2005        | 2006        |
|  | EUR million    |                |                |                | Annual change in % |             |             |             |
| Private consumption                                    | 121,340        | 115,911        | 118,353        | 120,828        | +0.6               | +1.3        | +2.1        | +2.1        |
| Government consumption                                 | 38,695         | 37,171         | 37,246         | 37,320         | +0.4               | +0.3        | +0.2        | +0.2        |
| Gross fixed capital formation                          | 48,053         | 47,979         | 49,666         | 51,366         | +6.2               | +1.5        | +3.5        | +3.4        |
| thereof: Investment in plant and equipment             | 19,015         | 20,026         | 20,806         | 21,699         | +5.5               | +2.6        | +3.9        | +4.3        |
| Residential construction investment                    | 9,527          | 9,309          | 9,486          | 9,689          | -4.3               | +1.7        | +1.9        | +2.1        |
| Investment in other construction and other investment  | 19,523         | 18,644         | 19,375         | 19,978         | +13.0              | +0.4        | +3.9        | +3.1        |
| Changes in inventories (incl. statistical discrepancy) | 2,245          | 840            | 1,194          | 1,349          | x                  | x           | x           | x           |
| Domestic demand  | 210,333        | 201,902        | 206,459        | 210,864        | +2.3               | +0.7        | +2.3        | +2.1        |
| Exports of goods and services                          | 107,495        | 122,202        | 131,231        | 140,821        | +1.4               | +8.0        | +7.4        | +7.3        |
| Imports of goods and services                          | 101,832        | 117,877        | 126,708        | 136,272        | +4.8               | +6.2        | +7.5        | +7.5        |
| Net exports  | 5,663          | 4,325          | 4,523          | 4,550          | x                  | x           | x           | x           |
| <b>Gross domestic product</b>                          | <b>215,996</b> | <b>206,228</b> | <b>210,982</b> | <b>215,413</b> | <b>+0.8</b>        | <b>+1.8</b> | <b>+2.3</b> | <b>+2.1</b> |

Source: 2003: Statistics Austria, 2004 to 2006: OeNB fall 2004 outlook.

Table 13

| Demand Components (Current Prices)                     |                |                |                |                |                    |             |             |             |
|--|----------------|----------------|----------------|----------------|--------------------|-------------|-------------|-------------|
|  | 2003           | 2004           | 2005           | 2006           | 2003               | 2004        | 2005        | 2006        |
|  | EUR million    |                |                |                | Annual change in % |             |             |             |
| Private consumption                                    | 126,920        | 132,143        | 137,489        | 142,804        | +2.1               | +3.4        | +4.0        | +3.9        |
| Government consumption                                 | 40,635         | 42,659         | 43,631         | 44,627         | +2.5               | +2.3        | +2.3        | +2.3        |
| Gross fixed capital formation                          | 48,648         | 53,052         | 55,827         | 58,539         | +5.9               | +3.2        | +5.2        | +4.9        |
| Changes in inventories (incl. statistical discrepancy) | 987            | 1,027          | 1,650          | 1,827          | x                  | x           | x           | x           |
| Domestic demand  | 217,190        | 228,881        | 238,596        | 247,797        | +3.2               | +2.9        | +4.2        | +3.9        |
| Exports of goods and services                          | 109,062        | 127,698        | 138,305        | 150,099        | +1.5               | +9.0        | +8.3        | +8.5        |
| Imports of goods and services                          | 100,110        | 124,397        | 135,545        | 147,373        | +3.8               | +7.4        | +9.0        | +8.7        |
| Net exports  | 8,953          | 3,301          | 2,761          | 2,727          | x                  | x           | x           | x           |
| <b>Gross domestic product</b>                          | <b>226,142</b> | <b>232,181</b> | <b>241,357</b> | <b>250,523</b> | <b>+2.3</b>        | <b>+3.7</b> | <b>+4.0</b> | <b>+3.8</b> |

Source: 2003: Statistics Austria, 2004 to 2006: OeNB fall 2004 outlook.

Table 14

| Deflators of Demand Components                 |  |              |              |              |                    |             |             |             |
|--|--|--------------|--------------|--------------|--------------------|-------------|-------------|-------------|
|  | 2003                                       | 2004         | 2005         | 2006         | 2003               | 2004        | 2005        | 2006        |
|  | 2003: 2000 = 100, 2004 to 2006: 1995 = 100 |              |              |              | Annual change in % |             |             |             |
| Private consumption                            | 104.6                                      | 114.0        | 116.2        | 118.2        | +1.5               | +2.0        | +1.9        | +1.7        |
| Government consumption                         | 105.0                                      | 114.8        | 117.1        | 119.6        | +2.1               | +2.0        | +2.1        | +2.1        |
| Gross fixed capital formation                  | 101.2                                      | 110.6        | 112.4        | 114.0        | -0.3               | +1.6        | +1.7        | +1.4        |
| Domestic demand (excl. changes in inventories) | 103.9                                      | 113.3        | 115.4        | 117.4        | +1.2               | +1.9        | +1.9        | +1.7        |
| Exports of goods and services                  | 101.5                                      | 104.5        | 105.4        | 106.6        | +0.1               | +0.9        | +0.9        | +1.1        |
| Imports of goods and services                  | 98.3                                       | 105.5        | 107.0        | 108.1        | -0.9               | +1.1        | +1.4        | +1.1        |
| Terms of Trade                                 | 103.2                                      | 99.0         | 98.5         | 98.6         | +1.1               | -0.2        | -0.5        | +0.0        |
| <b>Gross domestic product</b>                  | <b>104.7</b>                               | <b>112.6</b> | <b>114.4</b> | <b>116.3</b> | <b>+1.6</b>        | <b>+1.9</b> | <b>+1.6</b> | <b>+1.7</b> |

Source: 2003: Statistics Austria, 2004 to 2006: OeNB fall 2004 outlook.

Table 15

**Labor Market**

|   | 2003  | 2004    | 2005    | 2006    | 2003               | 2004 | 2005 | 2006 |
|---|---|---------|---------|---------|--------------------|------|------|------|
|   | 1,000   |         |         |         | Annual change in % |      |      |      |
| Total employment                                  | 4,078.3   | 4,072.2 | 4,098.5 | 4,131.0 | +0.3               | +0.3 | +0.6 | +0.8 |
| thereof: Private sector employment                | 3,601.2   | 3,596.8 | 3,625.4 | 3,661.9 | +0.4               | +0.4 | +0.8 | +1.0 |
| Payroll employment (national accounts definition) | 3,327.8   | 3,349.3 | 3,378.4 | 3,413.5 | +0.3               | +0.7 | +0.9 | +1.0 |
|   | %   |         |         |         |                    |      |      |      |
| Unemployment rate (Eurostat definition)           | 4.3   | 4.5     | 4.5     | 4.4     | x                  | x    | x    | x    |
|   | % of real GDP   |         |         |         |                    |      |      |      |
| Unit labor costs (whole economy) <sup>1</sup>     | 64.8  | 69.6    | 70.1    | 71.0    | +1.4               | +0.8 | +0.7 | +1.3 |
|   | EUR 1,000 (2003: Chained volume data (reference year = 2000), 2004 to 2006: at 1995 prices) |         |         |         |                    |      |      |      |
| Labor productivity (whole economy)                | 53.2  | 50.6    | 51.5    | 52.1    | +0.9               | +1.4 | +1.7 | +1.3 |
| Real compensation per employee <sup>2</sup>       | 32.7  | 30.9    | 31.1    | 31.3    | +0.4               | +0.2 | +0.4 | +0.8 |
|   | At current prices, EUR 1,000  |         |         |         |                    |      |      |      |
| Gross compensation per employee                   | 34.2  | 35.3    | 36.1    | 37.0    | +1.9               | +2.2 | +2.3 | +2.6 |
|   | At current prices, EUR million  |         |         |         |                    |      |      |      |
| Total gross compensation of employees             | 113,746   | 118,139 | 121,953 | 126,384 | +2.2               | +2.9 | +3.2 | +3.6 |

Source: 2003: Statistics Austria, 2004 to 2006: OeNB fall 2004 outlook.

<sup>1</sup> Gross wages as a ratio of real GDP.<sup>2</sup> Gross wages per employee divided by the private consumption deflator.

Table 16

**Current Account**

|                             | 2003        | 2004      | 2005      | 2006      | 2003             | 2004 | 2005 | 2006 |
|-----------------------------|-------------|-----------|-----------|-----------|------------------|------|------|------|
|                             | EUR million |           |           |           | % of nominal GDP |      |      |      |
| <b>Balance of trade</b>     | 2,586.7     | 4,555.3   | 4,711.1   | 4,811.1   | 1.1              | 2.0  | 2.0  | 1.9  |
| Balance on goods            | 968.2       | 4,349.6   | 3,973.1   | 4,200.5   | 0.4              | 1.9  | 1.6  | 1.7  |
| Balance on services         | 1,618.5     | 205.7     | 738.0     | 610.7     | 0.7              | 0.1  | 0.3  | 0.2  |
| Euro area                   | -9,647.3    | -10,350.5 | -11,543.5 | -12,645.9 | -4.3             | -4.5 | -4.8 | -5.0 |
| Non-euro area countries     | 12,234.0    | 14,905.9  | 16,254.6  | 17,457.0  | 5.4              | 6.4  | 6.7  | 7.0  |
| <b>Balance on income</b>    | -1,623.3    | -1,891.0  | -1,745.6  | -1,745.6  | -0.7             | -0.8 | -0.7 | -0.7 |
| <b>Balance on transfers</b> | -2,073.3    | -2,375.6  | -2,432.0  | -2,568.5  | -0.9             | -1.0 | -1.0 | -1.0 |
| <b>Current account</b>      | -1,110.0    | 288.8     | 533.5     | 497.1     | -0.5             | 0.1  | 0.2  | 0.2  |

Source: 2003: OeNB, 2004 to 2006: OeNB fall 2004 outlook.

Table 17

| Quarterly Forecast Results  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|   | 2004 | 2005 | 2006 | 2004 |      |      |      | 2005 |      |      |      | 2006 |      |      |      |
|   |      |      |      | Q1   | Q2   | Q3   | Q4   | Q1   | Q2   | Q3   | Q4   | Q1   | Q2   | Q3   | Q4   |
| <i>Annual change in %</i>   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Prices, wages and costs</b>  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HICP  | +1.9 | +2.0 | +1.7 | +1.4 | +2.0 | +2.0 | +2.3 | +2.3 | +2.2 | +2.0 | +1.6 | +1.6 | +1.7 | +1.8 | +1.8 |
| HICP (excl. energy)   | +1.6 | +1.5 | +1.8 | +1.6 | +1.6 | +1.5 | +1.5 | +1.5 | +1.6 | +1.5 | +1.5 | +1.7 | +1.8 | +1.9 | +2.0 |
| Private consumption expenditure (PCE) deflator  | +2.0 | +1.9 | +1.7 | +1.5 | +2.1 | +2.3 | +2.1 | +2.1 | +1.7 | +1.9 | +1.9 | +1.8 | +1.7 | +1.7 | +1.8 |
| Gross fixed capital formation deflator  | +1.6 | +1.7 | +1.4 | +1.1 | +1.4 | +1.8 | +2.1 | +2.1 | +1.8 | +1.5 | +1.3 | +1.2 | +1.4 | +1.4 | +1.5 |
| GDP deflator  | +1.9 | +1.6 | +1.7 | +2.2 | +1.9 | +1.7 | +1.7 | +1.8 | +1.7 | +1.5 | +1.4 | +1.5 | +1.6 | +1.7 | +1.8 |
| Unit labor costs  | +0.8 | +0.7 | +1.3 | +1.7 | +0.9 | +0.5 | +0.1 | +0.2 | +0.5 | +0.8 | +1.2 | +1.2 | +1.2 | +1.3 | +1.3 |
| Nominal wages per employee  | +2.2 | +2.3 | +2.6 | +2.3 | +2.5 | +2.2 | +2.0 | +2.1 | +2.1 | +2.4 | +2.7 | +2.6 | +2.6 | +2.6 | +2.6 |
| Productivity  | +1.4 | +1.7 | +1.3 | +0.6 | +1.5 | +1.7 | +1.9 | +1.9 | +1.6 | +1.6 | +1.5 | +1.4 | +1.3 | +1.3 | +1.2 |
| Real wages per employee   | +0.2 | +0.4 | +0.8 | +0.8 | +0.3 | -0.1 | -0.1 | +0.0 | +0.4 | +0.5 | +0.8 | +0.8 | +0.8 | +0.8 | +0.8 |
| Import deflator   | +1.1 | +1.4 | +1.1 | +0.4 | +1.2 | +0.9 | +1.9 | +1.2 | +1.6 | +1.6 | +1.1 | +1.0 | +1.0 | +1.1 | +1.3 |
| Export deflator   | +0.9 | +0.9 | +1.1 | +0.5 | +2.5 | +0.4 | +0.0 | +1.2 | +0.0 | +1.0 | +1.3 | +1.3 | +1.2 | +1.1 | +1.0 |
| Terms of Trade  | -0.2 | -0.5 | +0.0 | +0.1 | +1.3 | -0.5 | -1.8 | +0.0 | -1.6 | -0.6 | +0.2 | +0.3 | +0.2 | +0.0 | -0.2 |
| <i>At 1995 prices, annual and/or quarterly changes in %</i>                                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Economic activity</b>  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| GDP   | +1.8 | +2.3 | +2.1 | +0.4 | +0.9 | +0.5 | +0.5 | +0.6 | +0.6 | +0.5 | +0.5 | +0.5 | +0.5 | +0.5 | +0.5 |
| Private consumption   | +1.3 | +2.1 | +2.1 | +0.3 | +0.5 | +0.4 | +0.4 | +0.6 | +0.6 | +0.6 | +0.5 | +0.5 | +0.5 | +0.5 | +0.5 |
| Government consumption  | +0.3 | +0.2 | +0.2 | -0.1 | -0.1 | +0.2 | +0.0 | +0.0 | +0.0 | +0.0 | +0.1 | +0.1 | +0.0 | +0.0 | +0.0 |
| Gross fixed capital formation   | +1.5 | +3.5 | +3.4 | -0.3 | -0.5 | +1.0 | +1.2 | +0.8 | +1.0 | +0.8 | +0.9 | +0.8 | +0.8 | +0.8 | +0.8 |
| <i>thereof: Investment in plant and equipment</i>   | +2.6 | +3.9 | +4.3 | -1.5 | +0.0 | +0.9 | +1.3 | +0.7 | +1.3 | +1.0 | +1.1 | +1.2 | +1.0 | +0.9 | +0.8 |
| <i>Residential construction investment<sup>1</sup></i>  | +1.7 | +1.9 | +2.1 | +0.5 | -0.2 | +0.2 | +0.1 | +0.7 | +0.8 | +0.6 | +0.5 | +0.5 | +0.5 | +0.5 | +0.5 |
| Exports   | +8.0 | +7.4 | +7.3 | +0.6 | +5.8 | +2.0 | +1.1 | +1.4 | +1.6 | +1.7 | +1.8 | +1.8 | +1.8 | +1.8 | +1.8 |
| Imports   | +6.2 | +7.5 | +7.5 | -0.7 | +4.0 | +2.2 | +1.3 | +1.6 | +1.8 | +1.8 | +1.9 | +1.9 | +1.8 | +1.8 | +1.8 |
| <i>Contribution to real GDP growth in percentage points</i>                                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Domestic demand   | +1.2 | +2.0 | +2.0 | +0.1 | +0.2 | +0.5 | +0.5 | +0.5 | +0.6 | +0.5 | +0.5 | +0.5 | +0.5 | +0.5 | +0.5 |
| Net exports   | +1.1 | +0.1 | +0.0 | +0.8 | +1.1 | +0.0 | -0.1 | -0.1 | -0.1 | +0.0 | +0.0 | +0.0 | +0.0 | +0.0 | +0.1 |
| Changes in inventories  | -0.5 | +0.2 | +0.1 | -0.4 | -0.4 | +0.1 | +0.1 | +0.1 | +0.0 | +0.0 | +0.0 | +0.0 | +0.0 | +0.0 | +0.0 |
| <i>%</i>  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Labor market</b>   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Unemployment rate (Eurostat definition)   | 4.5  | 4.5  | 4.4  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.5  | 4.4  | 4.4  | 4.4  |
| <i>Annual and/or quarterly changes in %</i>   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Total employment  | +0.3 | +0.6 | +0.8 | +0.0 | +0.2 | +0.1 | +0.1 | +0.2 | +0.2 | +0.2 | +0.2 | +0.2 | +0.2 | +0.2 | +0.2 |
| <i>thereof: Private sector employment</i>   | +0.4 | +0.8 | +1.0 | +0.0 | +0.3 | +0.2 | +0.2 | +0.2 | +0.2 | +0.2 | +0.3 | +0.3 | +0.3 | +0.3 | +0.2 |
| Payroll employment  | +0.7 | +0.9 | +1.0 | +0.2 | +0.2 | +0.2 | +0.2 | +0.2 | +0.2 | +0.2 | +0.3 | +0.3 | +0.3 | +0.3 | +0.3 |
| <i>At 1995 prices, annual and/or quarterly changes in %</i>                                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| <b>Additional variables</b>   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Disposable household income   | +0.9 | +2.3 | +2.2 | +0.2 | +0.1 | +0.6 | +0.3 | +0.9 | +0.6 | +0.5 | +0.5 | +0.6 | +0.6 | +0.5 | +0.5 |
| <i>% of nominal disposable household income (saving ratio) and % of real GDP (output gap)</i> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Household saving ratio  | 8.1  | 8.4  | 8.5  | 8.1  | 7.9  | 8.1  | 8.1  | 8.4  | 8.4  | 8.4  | 8.4  | 8.5  | 8.5  | 8.6  | 8.6  |
| Output gap  | -0.9 | -0.5 | -0.3 | -1.0 | -0.9 | -0.9 | -0.7 | -0.5 | -0.5 | -0.4 | -0.4 | -0.3 | -0.3 | -0.3 | -0.2 |

Source: OeNB fall 2004 outlook. Quarterly data are seasonally adjusted.

<sup>1</sup> Excluding other investment in construction and other investment.



# Determinants of the Household Saving Rate in Austria

The last few decades have seen a decline in the household saving rate in Austria and other industrial countries. Using an error correction model, this paper shows that in Austria personal saving decisions are influenced by income growth, real interest rates, inflation, social security expenditure and the general government budget balance. These findings are becoming increasingly important for economic policy, given the aging of society and the concomitant need for pension system reform. In future, households will be required to make greater provision for themselves and step up their saving efforts. As the results show, this can be achieved by productivity-boosting measures that generate income growth and promote personal saving.

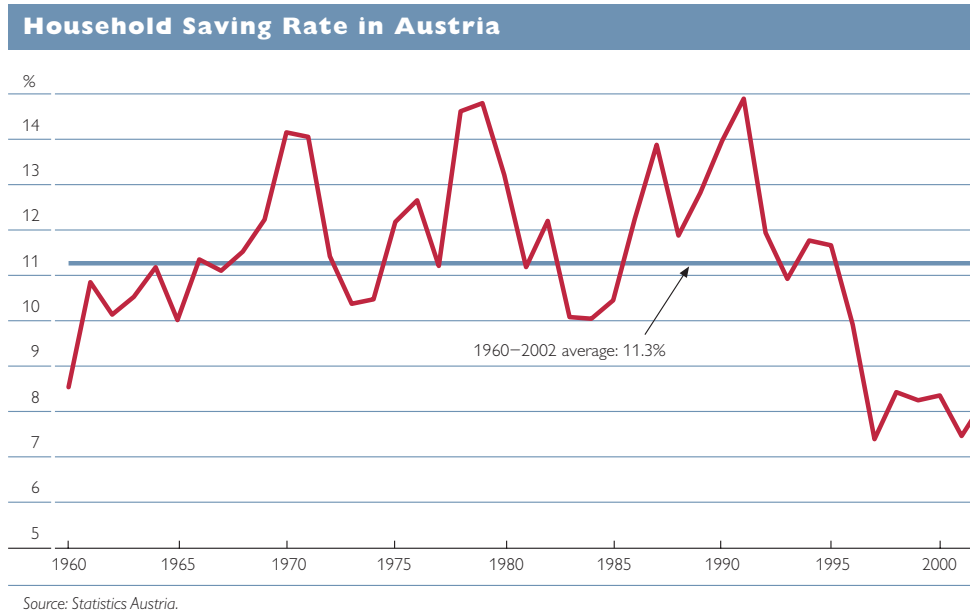
Werner Dirschmid,  
Ernst Glatzer<sup>1</sup>

## 1 Introduction

In traditional economic theory, the saving rate plays a crucial role, as a direct correlation is postulated between the saving rate and investment rate, on the one hand, and economic growth, on the other. For instance, Feldstein and Horioka (1980) observe that, for 21 industrial countries from the early 1960s to the mid-1970s, investment

and domestic savings are positively correlated with each other. In the age of globalization and the close integration of international capital markets, domestic saving should, however, no longer determine growth. As the current example of the U.S.A. shows, capital gaps can be closed by foreign capital flows.

Chart 1



The last few decades have seen a decline in the saving rate in many industrial countries. Long-run determinants responsible for this are becoming increasingly pertinent to economic policy, given current demo-

graphic trends. Aging populations make the reform of pension insurance schemes of utmost urgency and raise two questions: first, whether personal saving can supplement (or, even, partially substitute) claims on the public

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social security system and, second, whether personal saving will be adequate, in view of the levels of self-sufficiency required (Börsch-Supan/Brugiavini, 2001).

In 1991 the household saving rate<sup>2</sup> in Austria peaked at close to 15%. Within six years it had halved and

fallen to a historic low of 7.4%. Since then, there have been no indications that household saving is returning to its average level in the past (1960 to 2002) of 11.3%.

A similar trend can be seen in other countries. As table 1 shows, some saving rates have fallen sharply.

Table 1

### Personal Saving Rates in Selected Countries

|                | 1970–1979 | 1980–1989 | 1990–1999 | 2000–2002 |
|----------------|-----------|-----------|-----------|-----------|
| Average in %   |           |           |           |           |
| U.S.A.         | 9.6       | 9.0       | 5.2       | 2.1       |
| Japan          | 23.7      | 16.3      | 12.3      | 7.5       |
| Germany        | 13.0      | 12.8      | 11.6      | 10.2      |
| Canada         | 12.0      | 15.3      | 9.1       | 4.4       |
| Australia      | 14.2      | 11.1      | 5.0       | 1.7       |
| Austria        | 12.6      | 11.8      | 10.9      | 8.0       |
| Italy          | x         | 29.4      | 22.7      | 15.5      |
| United Kingdom | 7.9       | 8.9       | 9.0       | 5.9       |
| Belgium        | 20.8      | 15.9      | 17.1      | 14.0      |
| Finland        | 3.1       | 3.0       | 3.8       | -0.9      |
| Netherlands    | 4.1       | 14.3      | 13.9      | 8.1       |
| Spain          | 14.8      | 11.6      | 13.1      | 10.5      |
| Ireland        | 16.5      | 12.3      | 10.7      | 10.2      |

Source: OECD.

To be highlighted, in particular, is the trend in Japan where the average personal saving rate plunged from 23.7% in the 1970s to 7.5% in 2000 to 2002. Australia posted a similarly steep decline. In Europe, Italy offers the most striking example: in the 1980s it featured Europe's highest saving rate of, at times, more than 30%. At the start of the new millennium, however, its saving rate had halved.

## 2 Determinants of the Saving Rate in Economic Literature

Owing to the importance of saving for national capital formation, the decline in the saving rate has raised academic interest in its determinants. De Serres and Pelgrin (2003) examine the extent to which the decline in the saving rates of OECD countries can be attributed not only to rising asset prices

in the 1990s but to other effects not induced by the financial markets. Their findings show that household saving is negatively determined by government saving, aging populations and real interest rates, with positive effects coming from changes in terms of trade and from productivity growth. Callen and Thimann (1997) also look at OECD countries, focusing on the impact on household saving by both the tax and social security systems. In their opinion, tax regimes based on direct taxation reduce personal saving, whereas heavier indirect taxation favors net personal saving. Similarly, higher government transfers result in lower levels of saving. Ul Haque, Pesaran and Sharma (1999) do not detect a statistically significant long-run effect on household saving induced by GDP growth, inflation, real interest rates, wealth endowment

<sup>2</sup> See Appendix for a definition of the saving rate.

or demographic trends. Instead, their study suggests that households react strongly to the state of public finances. For instance, if the general government surplus falls, this decline will be almost entirely offset by higher personal saving.

Masson, Bayoumi and Samiei (1998), Edwards (1995) and Loayza, Schmidt-Hebbel and Servén (2000) enlarge this group of countries and analyze the factors influencing saving behavior in both industrial and developing countries. As soon as the income level of less developed countries rises, so too does their propensity to save. Likewise, financial market trends have a positive impact on saving behavior. The deeper and broader the financial markets, the more people save.

For Austria, Gugerell (1980) shows the extent to which saving behavior (in addition to macroeconomic variables such as income, interest rates and prices) can also be explained by households' expectations of their financial situation. Pollan (1988) examines the impact of unemployment and inflation on saving deposit trends. A key focus of the in-depth study by Jäger and Neusser (1988) on the theory of consumer and saving behavior is the correlation between household saving behavior and fiscal policy in Austria, also analyzed at length by Neck (1993).

There are two kinds of literature currently available on Austria in this area. The first describes the effects on consumption and then, owing to the intimate relationship between consumption and saving, derives implications for the latter. The second analyzes only one component of national saving, namely the accumulation of financial assets, and ignores nonfinancial assets.

This study differs from the above-mentioned literature on Austria in many respects. First, the saving rate is explicitly described as a dependent (and thus analyzable) variable. Second, instead of considering individual effects in isolation, the effect on the saving rate by all available determinants is tested simultaneously. In addition, new factors are introduced, which have not yet been investigated for Austria so far. Finally, the study's observation period of four decades allows conclusions to be drawn on Austria's long-term saving behavior.

This study is structured as follows: Chapter 3 presents the theoretical underpinnings of the saving behavior applied in the model. Chapter 4 introduces the model used to test the factors influencing Austria's saving rate. Chapter 5 discusses the findings and compares them with previous studies on Austria. The final chapter presents the conclusions, which round off this study.

### 3 Theoretical Basis of Saving Behavior

The theoretical underpinnings of this study are essentially based on the life cycle hypothesis proposed by Modigliani and Brumberg (1954). This postulates that the consumption decisions of individuals are subject to an intertemporal decision-making process, the aim of which is to maximize utility. In its simplest form, the model divides the lifetime of individuals into a working period and a retirement period. In the working period individuals accumulate wealth, which is used in the retirement period (when a decline in income can be expected) to maintain their accustomed level of consumption.

The structure of this model gives income growth and the age structure of the population a special role in explaining the national saving rate (Deaton, 1992; Modigliani, 1986). First, income growth influences personal saving due to the productivity of the younger generation in the population, which is higher than that of the older generation. If the propensity to save is equal, net saving is positive, as the relative income shares of the young are higher than the elderly population's. Second, demographic trends, or the age structure of the population, are a key determinant of the saving rate. The higher the share of the nonworking population, the stronger the impact a decline in wealth causes at this stage of life. Aging populations therefore mean a lower saving rate, as saving by the active population is squeezed by the negative or low saving of those no longer in work.

As Browning and Crossley (2001) and Attanasio (1999) explain, the life cycle model described above provides a general framework that cannot include every aspect affecting both consumption decisions and saving decisions. Instead, other factors need to be included in this framework in order to better represent reality. One aspect excluded by the life cycle hypothesis is the psychological determinants of saving behavior. For instance, Thaler (1994) points out that it cannot be assumed of all individuals that they see their life as a maximization problem to be solved accordingly. Saving in the context of the life cycle hypothesis follows a strict pattern that requires present consumption to be deferred. Individuals' lack of self-control and shortsightedness conflict with this behavior.

In addition to income growth and demographic trends, the model employed includes yet more potential factors influencing saving behavior. One of these is the trend in interest rates, although its effect on saving behavior is not clear in theoretical terms. If interest rates are high, households will limit their present consumption and save more in order to consume more in the future. However, this is contradicted by the fact that households look forward to higher income thanks to better earning prospects in the future. This allows them to increase present consumption and anticipate future income growth. It is unclear *a priori* which of these two effects is the greater. Empirical analysis of the interest rate effect does not arrive at any consistent results either. For instance, although Bosworth (1993) identifies a positive coefficient for the interest rate variable in time series estimations for individual countries, when he carries out a cross-country panel assessment he finds a negative coefficient.

A further factor relates to the consideration of imperfect credit markets. If households cannot raise a loan, they consume less than intended, which means they save more. Furthermore, liquidity constraints that are nonbinding at present (but may be binding in future) lead to households saving more in a bid to offset potential declines in income (Zeldes, 1989). According to Jappelli and Pagano (1994), international differences in personal saving can be attributed to liquidity constraints, reflecting, for instance, the amount homebuyers may borrow and statutory lending restrictions.

According to Feldstein (1976), public pension schemes influence personal saving, as households substitute private wealth with claims on the social security system. The extent of wealth substitution depends on the degree to which pension claims are seen as being equivalent to traditional saving investments. However, there is a retirement effect, which induces households to step up wealth accumulation during the working period. Public pension schemes enable households to limit their supply of labor and to take early retirement. But this means they are gainfully employed for a shorter period of time and will need to distribute their decline in wealth over a longer period of retirement. The retirement effect also depends on life expectation and the income substitution rate.

Uncertainty in the form of inflation and unemployment can also change the optimal distribution of resources over both present and future time periods. Inflation is an illustration of general macroeconomic uncertainty, which fuels higher net saving according to Deaton (1977) since, in periods of general inflation, consumer price increases are misinterpreted as relative price increases. This results

in consumer restraint. Unemployment is used as an indicator for individual income uncertainty. According to Carroll (1992), expectations of unemployment and related income uncertainty trigger precautionary saving.

Furthermore, public debt can influence personal saving. Barro (1974) argues that households with a long planning horizon take account of the government's intertemporal budget restriction in their saving decisions. If government is in debt and chooses not to finance its spending by taxation, households will increase their net saving. This is because they expect a further hike in taxes in future to discharge the debt.

#### 4 Factors Influencing the Saving Rate in Austria – Empirical Estimations

The data used (see Appendix for more details) cover the 1960 to 2002 period. Since the list of potential factors is extensive, a relatively simple empirical method (rather than a highly structured theoretical model) is used to identify the main determinants of the household saving rate. By estimating different equations, variables are eliminated that do not contribute toward explaining the saving rate trend.

#### Econometric Method of Estimation

*Since both saving and consumer behavior evolve slowly, we do not estimate the correlations by means of simple regression but use an error correction model. This allows us to estimate a long-run correlation between the variables and to model behavior in the short run. The error correction model is generally represented by the following equation:*

$$\Delta Y_t = \beta_1 \Delta X_{1t} + \beta_2 \Delta X_{2t} + \dots + \beta_n \Delta X_{nt} + \gamma(Y_{t-1} - \alpha_0 - \alpha_1 X_{1t-1} - \alpha_2 X_{2t-1} - \dots - \alpha_n X_{nt-1}) + \varepsilon_t.$$

*The equation consists of two parts. The first part (written in terms of changes in variables) describes short-run fluctuations and how quickly the system attains the (new) state of equilibrium. The second part (the expression in parentheses) describes the long-run state of equilibrium attained by the system. This expression contains one period-lagged deviations from equilibrium. This means that if there is a deviation from equilibrium, in the next period an effect is produced in the direction of equilibrium provided the coefficient  $\gamma$  is negative. The magnitude of coefficient  $\gamma$  corresponds to the speed with which the saving rate moves toward equilibrium.*

One condition for an error correction model is the existence of a cointegration relationship between variables. For this, two things are necessary. First, the variables must be integrated (in the simplest case, of order 1) and, second, the residuals derived from the regression of these variables must be stationary. This is why augmented Dickey-Fuller (ADF) tests, demonstrating that the saving rate, real interest rate and inflation rate are nonstationary, were performed. Thury and Wüger (1994, 2001) derive an error correction model for the consumption habits of Austrian households. The stationarity of the saving rate derives from the fact that consumption and income are cointegrated. However, data up to 2002 reveal that the saving rate is nonstationary.

First, a long-run relationship between the key variables was estimated. These included income growth, the real interest rate and the inflation rate. The residuals of this regression were then tested by an ADF test for stationarity. Since this test did not indicate nonstationarity, a cointegration relationship between the variables was assumed.

The next step involved the estimation of the error correction model using various combinations of explanatory variables. After eliminating all insignificant parameters, we obtained the final specification:  $\Delta S_t = \beta_1 \Delta g_t + \beta_2 \Delta r_t + \beta_3 \Delta z_t + \gamma(S_{t-1} - (\alpha_0 + \alpha_1 g_{t-1} + \alpha_2 r_{t-1} + \alpha_3 \pi_{t-1} + \alpha_4 n_{t-1})) + \varepsilon_t$ .

S ... Household saving rate

g ... Growth rate of real disposable household income

r ... Real interest rate

z ... Public social security expenditure as a percentage of disposable household income

$\pi$  ... Inflation rate

n ... Budget balance

A summary of the estimation results is reported in the table below.

### Estimation Results

Dependent Variable:  $\Delta$  Saving Rate

|                                      | Coefficient | Standard error | t-value |
|--------------------------------------|-------------|----------------|---------|
| $\Delta$ Income growth               | 0,61        | 0,09           | 6,81    |
| $\Delta$ Real interest rate          | 0,69        | 0,19           | 3,60    |
| $\Delta$ Social security expenditure | 0,90        | 0,28           | 3,22    |
| Adjustment coefficient               | -0,52       | 0,12           | -4,31   |
| Constant                             | 1,05        | 1,61           | 0,66    |
| Income growth                        | 0,97        | 0,24           | 3,96    |
| Real interest rate                   | 1,16        | 0,26           | 4,40    |
| Inflation rate                       | 0,62        | 0,19           | 3,33    |
| Budget balance                       | -0,35       | 0,17           | -2,08   |

Adjusted R2 was 0.65 and the Durbin-Watson statistic was 2.10, which does not signify an indication of serial correlation. Similarly, a Breusch-Godfrey test did not indicate serial correlation. A White test was used to check whether the residuals were heteroscedastic. The test revealed that this problem was nonexistent for the model employed.

The adjustment coefficient is -0.52. This means that households within a single period offset approximately 50% of deviation occurring from their target saving rate. The minus sign ensures the stability of the model.

According to these empirical estimations (see box “Econometric Method of Estimation”), the saving rate is positively influenced by income growth in both the short and long run. The short-run coefficient is 0.61 and the long-run coefficient is 0.97. This means that if real income grows by 1 percentage point, the saving rate

will rise by 0.61 percentage point in the short run and by about 1 percentage point in the long run. One of the key hypotheses proposed by Modigliani (1986) is that income growth influences personal saving. Although households base their consumption decisions on lifetime income, owing to deep-seated behavioral patterns

they adjust their behavior in line with their improved earning prospects only tentatively, which results in higher saving.

As far as their saving decisions are concerned, households react relatively strongly to fluctuations in the real interest rate. If the real interest rate increases by 1 percentage point, the saving rate will rise by roughly 0.69 percentage point in the short run. In the long run, this effect will be as much as 1.16. In both cases, the coefficient will be positive. In other words, households defer present consumption to the future by saving. This finding contrasts with earlier studies on the interest rate elasticity of Austrian households. In an international comparison, Wüger (1985) reached the conclusion that Austrian households react to higher interest rates primarily by portfolio shifts rather than by additional saving. In other countries, saving is on the whole more sensitive to interest rate fluctuations than in Austria. Gugerell (1980) attributed Austrians poor responsiveness to interest rates in the 1970s to their experience of inflation and to the fact that central bank was aiming at keeping nominal interest rates stable.

The effect of the social security system on personal saving decisions was initially tested by pension income and proved to be insignificant. In a further step, the ratio of public social security expenditure to disposable household income was used as an indicator. This indicator throws light on what share of income is financed by government (via household contributions) and does not need to be provided by personal saving. According to our estimations, social security expenditure does not have a long-run effect on the saving rate. Instead, it has a robust short-run effect: if the

share of social security expenditure as a percentage of disposable income increases by 1 percentage point, the saving rate will rise by 0.90 percentage point.

Although social security expenditure does not play a role in households' long-term financial planning, the positive saving incentive it creates in the short run reflects how the social security system has grown in the last few decades. Broad sections of the population have become entitled to social security benefits, allowing them to reduce their precautionary saving for contingencies and income uncertainties and, instead, to accumulate private wealth. This effect was strengthened through public subsidies for various saving instruments, which reached considerable proportions according to Inderst, Mooslechner and Unger (1990). Between 1970 and 1980 alone, the share of subsidized assets as a percentage of total household financial assets is estimated to have risen from 8.5% to some 20%.

In contrast to social security expenditure, the inflation rate does not have a direct impact on short-term personal saving decisions. However, it has an indirect effect via real interest rates. In the long run, a rise in the inflation rate will cause the saving rate to increase by 0.62 percentage point. This can be attributed to two reasons. First, as far as their long-term inflationary expectations are concerned, households can exploit real asset price inflation and invest more heavily in real estate and other nonfinancial assets. Second, financial assets play a crucial role in wealth formation, making a large part of the population vulnerable to inflation. To reconverge toward the long-term asset equilibrium, losses in real wealth triggered by inflation are offset by greater per-

sonal saving efforts. Pollan (1988) also reaches similar conclusions. He assumes that households strive to achieve a specific ratio of savings to income. During the period of high inflation in the 1970s, he computes high inflation-induced losses in savings, which disturbed this ratio. Pollan attributes the increase in the saving rate in 1975 and 1976 to the fact that households wanted to pursue a long-term wealth target and rebuild their accustomed level of real savings.

The unemployment rate – a second factor of uncertainty – is not significant in the present specification. The evidence from previous studies on the impact of unemployment on personal saving decisions is mixed. Pollan (1988) assumes that, in the first half of the 1980s, the bleak labor market scenario at the time induced households to increase saving above trend (of the previous years) in order to counter greater income uncertainty. Although saving deposits form only one component of total private wealth, if losses in income are incurred in the short run, saving deposits' high liquidity makes them more suitable as contingency funds than non-financial assets and other financial assets. According to the abovementioned cross-section comparison by Wüger (1985), a statistically measurable effect of unemployment on the saving rate could not be ascertained after the second oil crisis. Wüger attributes this to, for instance, Austria's social provision measures, which did not make precautionary saving necessary to the same extent as in countries with a less well-developed social infrastructure.

The budget balance (in % of GDP) has a long-run effect of  $-0.35$  percentage point. This means that households will save more intensively in the

event of a growing budget deficit (falling budget balance). There are signs here that households in their intertemporal resource allocation make some allowance for public debt and anticipate future tax changes. By contrast, the available studies on the impact on consumption and saving by Austrian fiscal policies arrive at opposite conclusions. Neck (1993) estimated consumption functions that include various financial indicators of the public sector as an explanatory variable. His findings reject the hypothesis that there are Ricardian equivalence effects in Austria. Jäger and Neusser (1988) reached the same conclusions, i.e. growth in the budget deficit does not lead to a reduction in consumption and to an increase in saving. However, these studies date from some time ago.

Finally, two potential factors, which proved insignificant in the estimation, still need to be examined. First, a test was performed on the degree to which Austrian households are subject to borrowing constraints and thereby urged to save. Household debt, which has accelerated sharply in the last three decades, was used as an indicator. Between 1970 and 2002, household debt grew from 10% to almost 50% of disposable income. The fact that liquidity constraints are currently nonexistent in Austria could be related to the deregulation of the financial markets since the second half of the 1970s. At that time, the measures adopted included the reduction of market entry restrictions for banks, the removal of lending growth limits and permission to advertise consumer loans (Braumann, 2002).

Second, demographic changes, as shown by the ratio of the number of pensioners to the number of people in work, did not have a significant

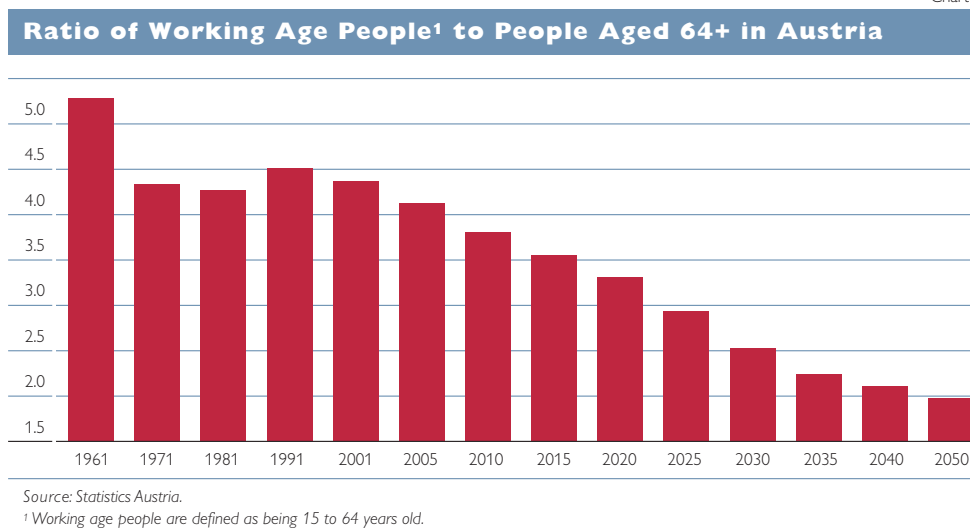


effect on the saving rate either. This can be attributed to two factors. First, saving by elderly households is led by bequest motives and provisions for health expenses, which averts a rapid reduction in wealth in old age.

Second, the age structure in the last 40 years has altered only gradually. The share of people aged 15 to 64 in Austria's total population increased from 65.3% to 67.7% between 1961 and 2001, whereas the share of those aged 64+ grew by 3.1 percentage points to 15.5% in the same period. In the next few decades, however, this scenario could undergo a sea change. As the projections indicate, the ratio of working age people to those aged 64+ will shrink dramatically owing to the acceleration of

population aging (see chart 2). The baby boom generation is currently enjoying a time of life associated with high income and a high propensity to save, which positively contributes to net current saving. For Austria, there are admittedly signs that, during the retirement period, consumption declines more steeply than income, which means this time of life is seen more as a saving (than a dissaving) period (Wüger, 1989). It is well known from studies analyzing income data according to age group that, although the saving rate remains positive at retirement age, it is lower than during working life (Börsch-Supan et. al., 2000). Were this to apply to Austria as well, it could nudge down the country's saving rate in future.

Chart 2

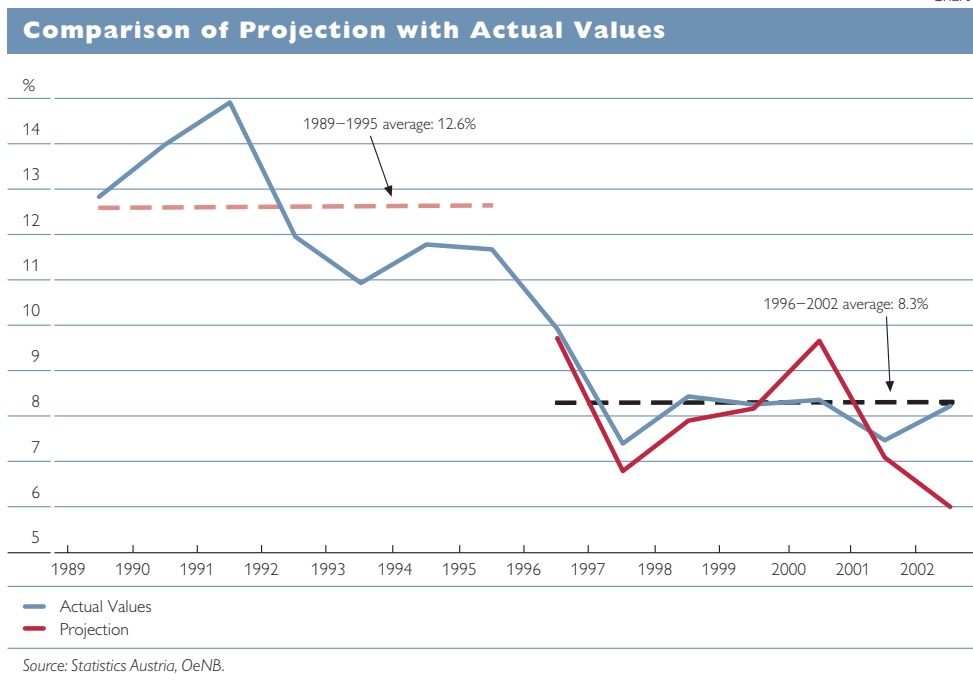


## 5 Determinants of the Decline in the Saving Rate in the 1990s

An analysis of the trend in the household saving rate in Austria shows a striking decline since the mid-1990s. To test the model for goodness-of-fit and to identify potential determinants of this decline, the model was fitted to the data up to 1995; thereafter projec-

tions were estimated for 1996 to 2002. The results of this estimation are reported in chart 3. This reveals that the model is actually a good representation of the decline in the saving rate. Its estimated parameters for the truncated period are close to those resulting from the estimation for the entire period. The model also indicates the absence of a structural break and

Chart 3



that household saving behavior can be described by the specification used over the entire period.

To identify the determinants of the decline, the averages of the individual data series in the 1989–1995 period are compared with those in the 1996–2002 period (see table 2). The average saving rate in the last seven years has been 4.29 percentage points below the average of the preceding seven-year period. The contributions of the individual explanatory variables are presented in a way such that the change in the seven-year average is multiplied in each case by the corre-

sponding coefficient of the model's long-run component. This shows that the most robust effect (1.63 percentage points) is produced by the lower real interest rate. The next biggest contribution (0.93 percentage point) stems from the lower inflation rate. Weaker real income growth contributes 0.87 percentage point and the improved budget balance (smaller budget deficit) contributes 0.60 percentage point. Overall, these four variables (4.03 percentage points) explain a large part of the decline in Austria's household saving rate since the mid-1990s.

Table 2

**Contribution of Explanatory Variables to the Saving Rate Decline  
in the 1990s**

|  | Saving rate | Income growth | Real interest rate | Inflation rate | Budget balance |
|--|-------------|---------------|--------------------|----------------|----------------|
| 1989-1995 average in %                 | 12.58       | 2.52          | 4.43               | 3.14           | -3.56          |
| 1996-2002 average in %                 | 8.29        | 1.62          | 3.03               | 1.64           | -1.82          |
| Change in average in percentage points | -4.29       | -0.89         | -1.40              | -1.50          | 1.74           |
| Coefficient                            |             | 0.97          | 1.16               | 0.62           | -0.35          |
| Contribution in percentage points      |             | -0.87         | -1.63              | -0.93          | -0.60          |

Source: OeNB.

## 6 Summary, Outlook and Conclusions

Since the early 1990s the saving rate has been in steep downtrend. This decline can be explained by the variables estimated in the present study, which determine long-term saving behavior. Budget consolidation in recent years has reduced saving for future tax increases. Similarly, a more stable price climate has contributed to lower welfare losses that did not need to be substituted by additional net saving. Low real interest rates set only low incentives designed to limit present consumption and to generate higher income in future by increasing investment. Last but not least, income growth was additionally too low to fuel intensive saving in Austria.

What can be expected in future? Changes currently being implemented in the pension system could influence household saving. With lower pension income, precautionary saving for retirement is likely to become more important. Recent surveys on saving behavior reveal that the saving motive in Austria is already changing accordingly. Tax incentives favor private pension provision over alternative investments and could – in addition to a switch between alternative saving vehicles – also give rise to additional net saving, as shown by households' response to interest rate incentives in the past.

As an aggregate parameter, however, the saving rate conceals the fact that not all households can make adequate provisions for their pension income. Despite the opening up of financial markets, low-income households, in particular, are subject to liquidity constraints and greater income uncertainty than households on a better financial footing. The purchase of illiquid receivables to build up pension

capital is generally not feasible in these cases. As the UK's experience shows (Attanasio and Rohwedder, 2003), this scenario can lead to the introduction of private pension insurance generating negative distribution effects in its wake. The trend in the aggregate saving rate therefore offers only an initial indication of adequate precautionary saving.

Demographic trends are also likely to have an impact on personal saving. The baby boom generation, currently enjoying a high income and net savings, will retire from working life in the next few decades. Since saving rates dip in old age and the ratio of the working population to pensioners is shrinking, a decline in the private saving rate should be expected in the long run. Although global capital markets are closely integrated with each other and a smaller domestic supply of capital can be offset by foreign capital flows, it should be borne in mind that other developed countries are also faced with similar demographic aging processes (Bloom and Canning, 2004). Negative growth effects could therefore arise from higher real interest rates induced by an excessive shortfall in the supply of capital.

As the model shows, income growth is a key determinant of personal saving. If the working population declines in future, productivity will have to increase at the same time to prevent the incurrence of welfare losses. Gnan, Janger and Scharler (2004) confirm the cardinal importance of productivity for Austrian growth over the last 40 years. To safeguard growth prospects in the long run, productivity-boosting activities such as research and development should be supported to a greater extent and human capital be promoted. This should also entail positive effects

on personal saving that counter the impact by population aging on the supply of capital in the economy as a whole.

### Appendix: Data Series and Data Sources

| Data series  | Source of data                                    |
|--|---|
| Household saving rate                                | Statistics Austria                                |
| Household disposable income                          | Statistics Austria                                |
| Real household disposable income                     | Statistics Austria                                |
| Secondary market yield                               | Oesterreichische Kontrollbank                     |
| Social benefits                                      | Statistics Austria                                |
| Inflation rate (annual rate of change in CPI)        | Statistics Austria                                |
| Budget balance, % of GDP                             | Statistics Austria                                |
| Nominal GDP  | Statistics Austria                                |
| Loans to households                                  | Oesterreichische Nationalbank                     |
| Unemployment rate                                    | Statistics Austria                                |
| Structure of population by age and employment status | Statistics Austria,<br>Social security statistics |

Data relating to the household saving rate and to disposable household income are drawn from the national accounts. Disposable income, in this context, is equal to the sum of primary income (mixed income, compensation of employees and investment income) minus social security contributions as well as income and investment tax, plus social benefits and other current transfers. Household saving is calculated as the difference between disposable income and private consumption. Saving as defined by the national accounts includes not only the accumulation of financial assets (e.g. savings deposits) but also

the accumulation of nonfinancial assets (real estate, valuables, etc.). Finally, the saving rate is the ratio of saving to disposable income. A problem with the national accounts data is that the data collection systems were modified during the observation period (System of National Accounts (SNA) 68, European System of Accounts (ESA) 95). As a result, there are no general data series based on a standardized methodology. In view of these different data generation processes, it can therefore be assumed that the transition between individual data collection systems did not occur seamlessly.

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# The Role of Corporate Bonds for Finance in Austria

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*With corporate bond issuance having grown at a fast pace in Austria in recent years, bonds have become firmly established as a pillar of the financing structure of the domestic corporate sector. More and more issuers are smaller firms, and they come from a broad range of industries. Bond financing allows companies to diversify their financing sources and to broaden their creditor base beyond the banking industry. Rather than drive up corporate debt, bonds have become an alternative to bank loans as a borrowing instrument. Compared with loans, bonds allow companies to borrow money over longer horizons, but high upfront costs make this instrument more attractive for companies that need to finance large volumes. Moreover, bonds are not equally appropriate for all financing requirements, which is why they will never fully replace loans in the long term. Finally, more stringent requirements implicitly apply to the quality of a company's credit ratings when companies intend to issue bonds than when they apply for a bank loan. So far, there have been very few cases of bond defaults in Austria.*

## 1 Introduction

Bank loans have typically been the single most important source of external financing for Austrian companies. Bonds, by contrast, would for a long time play rather a minor role. In recent years, however, bond issuance has taken off as a means of financing also for domestic companies. In the euro area, issuance activity rose sharply immediately after the introduction of the euro in 1999. In other words, the disintermediation trend in external financing observed in international financial markets for a number of years emerged also in Austria.

Raising funds through the issuance of bonds differs from borrowing from banks in a number of ways: with regard to maturity profiles and underlying costs, but also with regard to the basic design of payment flows. It follows that bonds are not equally appropriate for all companies (and investment projects). When companies opt for bond financing, this has also impli-

cations for financial stability, as credit risk and the associated chances and risks are no longer taken by banks specifically equipped to deal with such challenges but by a broad range of bond creditors.

The aim of this paper is to look into the implications the changing funding trends have had for corporate finance in Austria. The starting point is a comparative analysis of developments in the euro area and in Austria from 1999 to 2003 and of the major underlying factors on the supply and demand side. The subsequent section provides an analysis of the role corporate bond financing plays in Austria in comparison with bank lending. These findings are then assessed from a financial stability perspective. The final section offers conclusions.

## 2 Data and Definitions

For the purpose of this paper, a corporate bond is a debt instrument issued by a nonfinancial corporation<sup>2</sup> in return for which the investor receives

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<sup>2</sup> Nonfinancial corporations (S. 11) as defined in ESA 1995, i.e. all institutional units of the economy that are market producers whose principal activity is the production of goods and nonfinancial services. Consequently, bonds issued by banks or other financial institutions do not qualify as corporate bonds, even though banks and financial institutions are also business undertakings. Some papers on this issue have, therefore, treated bank bonds as corporate bonds (e.g. de Bondt and Lichtenberger, 2004).

interest and the promise that the capital will be repaid. Bonds are subject to fewer legal provisions and constraints than shares. They do not require the issuing company to have a particular legal form, and they may be tailored to the requirements of the issuing entity or to capital market conditions in terms of maturity, interest rates, coupon payments, currency, asset securitization and the like (Zuffer, 2003). Depending on the placement strategy, there are basically two types of bonds. In a public placement, a given bond is offered to a broad range of investors and subsequently as a rule listed on an exchange. In a private placement, bonds are sold directly to a limited number of specific institutional investors. This paper covers both types of issuance but, to economize on space, does not elaborate on the differences.

Data on outstanding corporate bonds are contained in a number of data sources. First, there are the OeNB's securities issues statistics, for which domestic banks regularly report the amount of securitized liabilities of non-banks (together with their own stock of debt securities).<sup>3</sup> These statistics are available from 1999 onward<sup>4</sup> and are comparable across the euro area as they are compiled on the basis of reporting guidelines established by the European Central Bank (ECB).<sup>5</sup>

Second, the Oesterreichische Nationalbank operates a securities database capturing information supplied by the Austrian banking sector and the two data providers Oesterreichische Kontrollbank (OeKB) and Frankfurt-based Wertpapier-Mitteilungen. This database comprises the profiles of all securities publicly issued at a stock exchange both at home and abroad. The findings of this paper are derived primarily from the data stored in this database. This database, incidentally, also provides input for the OeNB's financial accounts statistics, which, among other things, are used to break down outstanding amounts (available from 1995) and transactions (available from 1999) by investor sectors.<sup>6</sup>

Bonds are valued at nominal prices<sup>7</sup> in the OeNB's securities issues statistics and at market prices in its securities database (and in the financial accounts). Because of these valuation differences, data from the individual statistics do not fully match. For instance, the total value of corporate bonds outstanding at the end of 2003 was EUR 19 billion according to the securities issues statistics, but more than EUR 20 billion according to the securities database and the financial accounts.<sup>8</sup>

<sup>3</sup> Reporting agents provide the stock of all listed and unlisted debt securities denominated in euro and in foreign currencies (including private placements).

<sup>4</sup> In addition, there are the capital market statistics, for which longer time series are available, but only with a view to bonds issued on the Austrian bond market, excluding placements in international markets and issues denominated in foreign currencies. Given that in recent years the bulk of corporate bonds has been placed abroad, issuance activities are reflected only incompletely by the capital market statistics.

<sup>5</sup> For a broader international perspective, we used data of the Bank for International Settlements (BIS) for the United States, the United Kingdom and Japan, which are, however, not fully comparable.

<sup>6</sup> The analysis of the investor pattern is based on financial accounts data. Comparable financial accounts data for a number of European countries can be obtained from Eurostat's NewCronos database.

<sup>7</sup> Except for data on zero coupon bonds, which reflect actual payments.

<sup>8</sup> This difference basically reflects the drop in interest rates in recent years, which pushed up the prices of fixed-income bonds.



### 3 Corporate Bonds in the Euro Area and in Austria

#### 3.1 Corporate Bond Market Structure and Developments since 1999

Between 1999 and 2003, the volume of bonds issued by nonfinancial corporations resident in the euro area

almost doubled, after having grown by a mere 10% over the period from 1993 to 1998. The period from 1999 to 2001 stands out with annual growth rates of approximately 20%. In 2002, growth decelerated to about 2%, but rebounded to 8% in 2003.

Table 1

#### Outstanding Volume of Corporate Bonds in 2003

|                        | EUR billion | % of GDP |
|------------------------|-------------|----------|
| France                 | 306         | 19.6     |
| Germany                | 96          | 4.5      |
| Netherlands            | 52          | 11.3     |
| Italy                  | 38          | 2.9      |
| Belgium                | 34          | 12.8     |
| Austria                | 19          | 8.5      |
| Finland                | 17          | 11.8     |
| Portugal               | 16          | 12.1     |
| Spain                  | 16          | 2.1      |
| Greece                 | 1           | 0.4      |
| Euro area <sup>1</sup> | 594         | 8.2      |
| U.S.A.                 | 1,992       | 25.9     |
| Japan                  | 578         | 19.2     |
| United Kingdom         | 268         | 21.3     |

Source: OeNB (securities issues statistics), ECB, BIS.

<sup>1</sup> Excluding Ireland and Luxembourg, for which data were not available.

This dynamic expansion notwithstanding, at the end of 2003, corporate bonds issued in the euro area corresponded to less than one-third of bonds issued in the United States, and the euro area just barely outpaced Japan. In relation to economic output, bonds outstanding in the euro area accounted for 8% of euro area GDP, which is significantly below the corresponding ratio for the United States, and also below the ratios for both Japan and the United Kingdom (see table 1). Within the euro area, however, there are large differences between individual countries. The GDP ratios of the United States and of the United Kingdom were not reached by a single country. France, which accounted for more than half of all bonds outstand-

ing in the euro area, was on a par with Japan with a GDP ratio of 19.6%. Germany, by contrast, which is the second biggest market in the euro area in absolute terms, posted a ratio of just 4.5% of GDP.

The Austrian ratio – 8.5% of GDP – was the sixth-largest in the euro area and thus slightly above the euro area average. Austrian issuers had a share of 3.3% in total corporate bonds outstanding in the euro area at the end of 2003. Developments in Austria have lagged developments in the euro area by a few years. Following three years of moderate or even negative growth rates, bond issuance growth rates in Austria exceeded the euro area average in 2002 (just barely at 2.6%) and in 2003 (significantly at 22.5%).<sup>9</sup>

<sup>9</sup> Up until the 1970s, bonds played a fairly big role in corporate financing, as is evident from capital market statistics. At the time, electric utilities (governed by the Second Nationalization Act of 1947 until Austria's accession to the EU) were the single biggest issuers. They tapped into the bond market to fund the development of the Austrian energy market. Until 1977, the outstanding amount of bonds issued by "other nonbanks" on the Austrian bond market exceeded 3% of GDP, a level not reached again until 2003.

In the past few years, the issuance activity of Austrian companies was heavily influenced by intermediary funding programs. Under such programs, the federal government has since 1998 relented funds raised through government bonds to state-owned companies. This is why such companies, previously relying heavily on the bond market, hardly issued any new bonds between 1998 and 2002. At the same time, bonds they had issued earlier came up for repayment, which further dampened the overall increase in outstanding corporate bonds considerably. Following a Eurostat decision in February 2003, these financings must be included in the general government debt (Maastricht definition). As a result, intermediary borrowing is being phased out and the companies concerned have returned to the general bond market (OeNB, 2004).<sup>10</sup>

Mirroring the high share of foreign currency loans, bonds of Austrian companies have to a large extent been issued in foreign currencies. At the end of 2003, Austrian foreign currency issues accounted for more than one-quarter of all corporate bonds, which is significantly above the corresponding euro area ratio of 11%. Consequently, the Austrian “market share” was 2.7% for euro-denominated bonds but 8.0% for foreign currency bonds issued in 2003.<sup>11</sup>

### 3.2 Reasons for the Sharp Expansion of Corporate Bonds

The conditions for bond issuance improved significantly when 11 (by

now 12) relatively small and partially underdeveloped markets were integrated to form a broad, deep and liquid bond market. First, chances to sell larger volumes are bigger in a broader market and, second, fiercer competition among investment banks in the euro area has driven down issuing costs. Before the introduction of the single currency, investment banking was very much a national business and experience with marketing and sales of instruments in a particular currency constituted a major competitive advantage. These days, the issuing bank and the issuer often have different nationalities. Santos and Tsatsaronis (2002) show that underwriting fees for euro-denominated bonds sank from 150 basis points in 1997 to 25 basis points in 2000, to a level equivalent with U.S. dollar bonds. In other words, the arrival of the euro led to a significant reduction of issuing costs.

In addition, a number of temporary factors were instrumental in driving up issuance activity from 1999 to 2001. First, the sharp rise in mergers and acquisitions was to a large extent financed by corporate bonds (de Bondt, 2002). Second, the deregulation of the telecommunications market and the need to raise funds to pay for UMTS licenses also stimulated demand for bond financing. Third, in the climate of low inflation and interest rates prevailing at the time, companies more readily opted for long-term financing, including the issuance of bonds.<sup>12</sup> Fourth, following the major setback in inter-

<sup>10</sup> If, for illustration purposes, the total volume of intermediary funding (which would no doubt produce a reverse bias, as bonds were not the only source of funding) is added to the actual amount of bonds outstanding, the imputed outstanding volume reaches 14.5% of GDP; this would be the second-largest figure within the euro area.

<sup>11</sup> Thereof, Swiss franc bonds accounted for 58%, U.S. dollar bonds for 25% and Japanese yen bonds for 17%.

<sup>12</sup> In addition to the decline in bond rates, the yield gap between corporate bonds and government bonds narrowed considerably in the euro area in 2003 (OeNB, 2004).

national exchanges from 2000 onward, demand for bonds was also fueled by portfolio shifts from stocks to bonds (Deutsche Bundesbank, 2004). Finally, in the initial years of monetary union, corporate bonds were in bigger demand as the supply of government bonds contracted in a number of euro area countries given decreasing fiscal balances.

However, conditions changed not only on the supply side; on the demand side, the higher demand for corporate bonds following the advent of the euro reflects the elimination of the “regulatory-driven home bias” due to currency matching rules existing in many countries for insurance companies and pension funds (Perée and Steinherr, 2001). In the euro area, portfolio managers no longer had to stick to currency matching rules, which before had limited the possibility of investing in currencies other than those in which liabilities were denominated. As a result, the range of bonds in which investors could theoretically put their money expanded significantly.

At the same time, as the legacy currencies were replaced by the euro, investors lost the possibility of exploiting exchange rate or yield differences to generate profits. The search for new portfolio diversification options and higher yields drove up demand for corporate bonds (Kaiser and Heilenkötter, 1999). The fact that

the expansion of corporate bonds in the euro area from 1999 was largely carried by the lower end of the yield spectrum reflects the increasing attention above all institutional investors were paying to credit risk (de Bondt and Lichtenberger, 2004).<sup>13</sup>

## 4 Impact on Corporate Financing in Austria

### 4.1 A Broad Range of Industries Issue Bonds

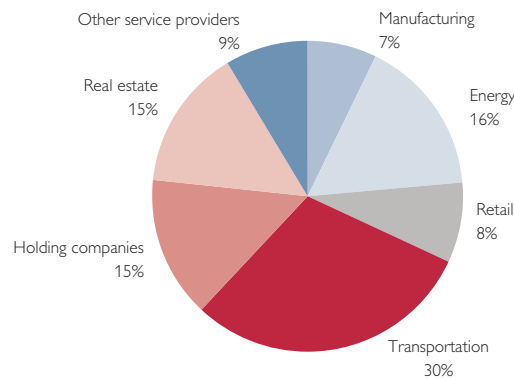
While issuance activity used to be dominated by energy utilities and other quasi-public companies, more recently companies from other industries and, increasingly, smaller firms have also been issuing bonds – the latter typically through private placements.<sup>14</sup> Yet the transportation industry – above all providers of infrastructure – and the energy sector continue to play a big role. The share of real estate companies, including state-owned companies and housing developers, is relatively high. The share of retail companies is larger than the share of manufacturing companies (which is fairly small). At the end of 2003, holding companies, through which a number of companies issue bonds, accounted for a share of approximately 15%. As the funds raised by holding companies are in fact used by companies affiliated with other sectors, the data on the industry structure of corporate bond issuers are somewhat distorted.

<sup>13</sup> The share of bonds issued within the EU rated speculative grade by Standard & Poor’s was below 10% in the mid-1990s and has since increased sharply, to an average of approximately 30% in the first five years since the euro changeover (Standard & Poor’s, 2004).

<sup>14</sup> Another, innovative form of bonds specifically created for smaller companies is the so-called *Gewinnwertpapier*. From a commercial law perspective, this instrument equals a participating bond, pays a coupon that is based on the issuer’s earnings and does not have to be securitized. *Gewinnwertpapiere* are undated securities but have a minimum redemption period of ten years. In consideration for a premium, AWS (Austria Wirtschaftsservice) offers retail investors a 100% no-loss guarantee (50% for businesses) for bond volumes of up to EUR 20,000. The issuing volume of *Gewinnwertpapiere* is typically in the range of EUR 0.5 million and EUR 2 million. For an overview of these and other types of bonds for medium-sized enterprises, see Haiss and Marin (2002).

Chart 1

**Corporate Bonds Issued in 2003 by Industry Affiliation**



Source: OeNB (securities database).

As at December 31, 2003, the OeNB's securities database listed 160 companies that had issued bonds. The issuing volume varied significantly, ranging from EUR 0.3 million to more than EUR 3.2 billion; the average outstanding volume totaled EUR 127 million per company. Roughly one-third of the companies had a bond debt of below EUR 10 million; one-third a bond debt of be-

tween EUR 10 million and EUR 50 million; and one-third a bond debt of more than EUR 50 million.

Bond financing is, thus, no longer the prerogative of a small group of large companies; the industry profile of corporate issuers has come to be very mixed in Austria. Large companies do, however, account for the bulk of bonds that are listed on the stock exchange.

Table 2

**Outstanding Volume of Corporate Bonds Issued**

**by Austrian Companies**

|  | Number of companies |
|--|---------------------|
| Up to EUR 10 million                       | 56                  |
| Between EUR 10 million and EUR 50 million  | 51                  |
| Between EUR 50 million and EUR 100 million | 15                  |
| Above EUR 100 million                      | 38                  |
| Total                                      | 160                 |

Source: OeNB (securities database).

**4.2 Additional Source of Funding**

In relation to the overall number of businesses established in Austria, the share of companies that have issued bonds to raise funds is rather small at 160. At the same time, the funds thus raised accounted for approximately 7% of the external financing liabilities of the Austrian cor-

porate sector in 2003. This is in fact a high share – surpassed by France alone – when compared with other euro area countries (see table 3). By contrast, the percentage of bank loans replaced by bonds as a source of corporate finance is a lot smaller in Austria than in other euro area countries; the amount of bonds out-

Table 3

**Structure of Corporate External Financing in 2003**

|                        | Bonds                   | Loan | Shares and<br>other equity | Other |
|------------------------|-------------------------|------|----------------------------|-------|
|                        | % of external financing |      |                            |       |
| Belgium                | 3.8                     | 24.3 | 49.4                       | 22.5  |
| Germany                | 2.3                     | 43.2 | 48.0                       | 6.5   |
| Spain                  | 1.1                     | 28.3 | 24.3                       | 46.3  |
| France                 | 7.3                     | 24.3 | 38.8                       | 29.7  |
| Italy                  | 2.3                     | 32.1 | 55.6                       | 10.0  |
| Netherlands            | 5.5                     | 46.4 | 37.6                       | 10.4  |
| Austria                | 7.1                     | 63.6 | 26.6                       | 2.8   |
| Portugal               | 5.6                     | 36.4 | 53.0                       | 5.0   |
| Finland                | 5.1                     | 30.8 | 32.0                       | 32.1  |
| Euro area <sup>1</sup> | 4.1                     | 33.1 | 48.2                       | 14.7  |

Source: OeNB, Eurostat.

<sup>1</sup> Excluding Greece, Ireland and Luxembourg.

standing in 2003 in relation to loans was significantly below the euro area average.<sup>15</sup>

Yet the aggregate share of bonds in corporate finance does not say anything about the role bonds play for those companies that have actually issued bonds. Comparing the liabilities of borrowers that use bonds, among other things, as a source of funding with the liabilities of borrowers that finance themselves exclusively through bank loans (using the data of the OeNB's major loans register) provides some insight into this.<sup>16</sup> Among the former group, bonds accounted for about 52% of all funds raised from external sources in 2003.<sup>17</sup> This implies that bond issuance usually does not increase the debt volume of a company but rather tends to replace bank loans as a borrowing instrument.

By issuing bonds, a company may widen its creditor base beyond the range of banks. Bond financing thus complements bank-based financing. A breakdown by investors (based on financial accounts data) indicates that only slightly less than one-fifth of the outstanding volume of corporate bonds was held by (domestic) banks at the end of 2003. This share has risen in recent years, which implies that banks have, in turn, replaced traditional bank lending with securitized lending.

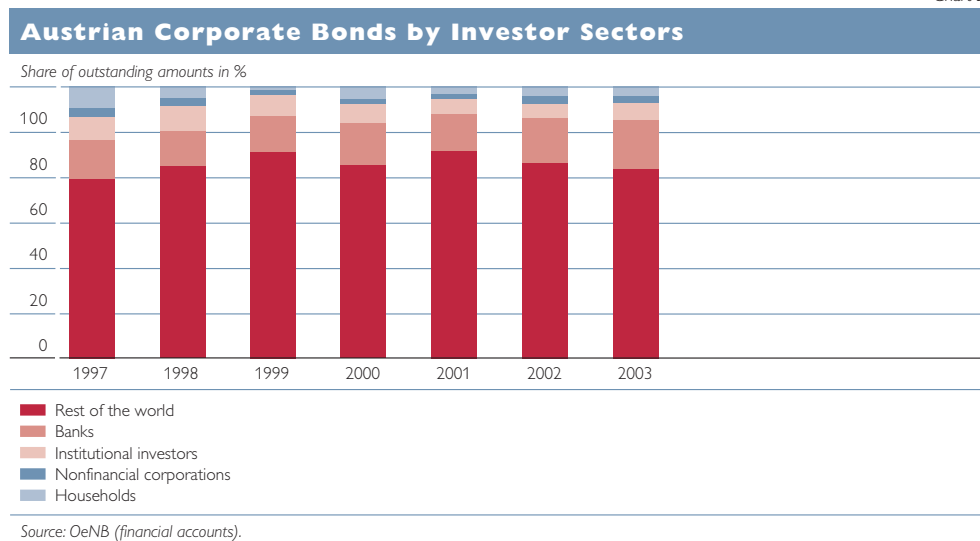
Foreign investors accounted for the single biggest share in a breakdown of Austrian corporate bonds by investors at the end of 2003, namely for about 70% of outstanding amounts. International investors go above all for large and liquid issues for which an external rating is available. For instance, in the category of

<sup>15</sup> In a long-term comparison (based on capital market statistics) bonds are found to have played a major role in the corporate sector's external funding up until the early 1970s (with the qualification that the segment of the economy using this tool was much smaller at the time). Until about 1970, domestic bonds outstanding corresponded to more than 10% of corporate loans extended by banks.

<sup>16</sup> Banks' reports of major loans provide information about the sectoral allocation of loans (or credit lines) that exceed a volume of EUR 350,000. Unlike in the monthly balance sheet reports, banks supply individual data for every single borrower and gross (unadjusted) data. Corporate loans or credit lines at a bank that are below EUR 350,000 are not recorded. As bonds held by investors other than banks are not included in these major loans data, either, the comparison made on the basis of those data underestimates the role of bonds for corporate finance.

<sup>17</sup> By comparison, for companies covered by the major loans statistics, bond financing accounted for 9.6% of external finance.

Chart 2



corporate bonds with outstanding volumes above EUR 500 million, foreign investors had a share of 81%, compared with a share of 34% in the category ranging from EUR 100 million to EUR 500 million.<sup>18</sup> The high share of foreign investors can also be explained with the fact that foreign currency bonds tend to be issued on international capital markets without being offered to domestic retail investors. The latter buy fairly large amounts of smaller bonds issued on the domestic market and tend to keep those bonds until redemption (Marek, 2002). Consequently, the share of households was just 0.6% in outstanding volumes exceeding EUR 500 million but as high as 8% in the category ranging from EUR 100 million to EUR 500 million. With an overall share of 3.4% of corporate bonds outstanding at the end of 2003, households were a minor source of corpo-

rate finance. Similarly to households, domestic institutional investors play a lesser role as buyers of domestic corporate bonds.<sup>19</sup>

#### 4.3 Long-Term Financing

As investors may sell bonds on the secondary market, bond instruments can meet the (differing) maturity needs of both investors and issuers, thus enabling companies to borrow over long horizons.<sup>20</sup> At the end of 2003, more than 80% of bonds issued by Austrian companies had an original maturity of more than five years; in the case of bank loans the corresponding share was close to 60% (see table 4). Approximately 45% of the overall volume of corporate bonds had a maturity of ten years or more. Some companies have even issued perpetuities (especially Gewinnwertpapiere). Unlike in the case of loans, of which 30% had a maturity of below one year, hardly any bonds

<sup>18</sup> This analysis is based on both financial accounts and securities database figures and does not cover bonds with smaller outstanding volumes because the data for the latter are characterized by a high degree of uncertainty due to valuation problems.

<sup>19</sup> One reason might be that investment funds investing in corporate bonds tend to track international benchmark indices, which include only a small amount of Austrian bonds.

<sup>20</sup> This is primarily true for bonds listed on a stock exchange. The fungibility of private placements is more limited, because private issues are not actively traded on the secondary market.

Table 4

**Original Maturity of Corporate Bonds and Bank Loans  
as at December 31, 2003**

|                           | Corporate bonds | Bank loans |
|---------------------------|-----------------|------------|
|                           | Share in %      |            |
| Up to 1 year              | 0.4             | 30.1       |
| Between 1 and 5 years     | 18.5            | 10.7       |
| Over 5 years <sup>1</sup> | 81.1            | 59.2       |
| between 5 and 10 years    | 36.3            | x          |
| between 10 and 15 years   | 34.3            | x          |
| between 15 and 30 years   | 10.0            | x          |
| over 30 years             | 0.4             | x          |

Source: OeNB (securities database and balance sheet reports).

<sup>1</sup> The design of the balance sheet reports does not allow for a breakdown of loans with a maturity of more than 5 years.

had maturities of less than one year. Commercial paper, i.e. debt securities with short maturities typically issued by large corporations in many countries, plays a minor role in Austria.

As bonds are long-term financial instruments, they provide maturity-matching financing for very long-term investment projects.<sup>21</sup> Moreover, the principal of bonds is payable at maturity, so that companies may actually use the full amount raised through bonds until maturity.

#### 4.4 High Fixed Costs

Unlike loans, where costs are basically proportional to the amount borrowed, bonds come at high upfront one-off issuance costs. These costs include underwriting fees that banks charge for handling a public offering and for guaranteeing to buy any shares they cannot resell; marketing costs,

such as the costs of producing issuance prospectuses;<sup>22</sup> road show costs; and the costs of listing on a stock exchange (which consist of a listing fee payable to the underwriter and the stock exchange listing fee proper).<sup>23</sup> Estimates indicate that, in the case of small and medium-sized bond volumes, these costs may reach between 2% and 3% of the issuance sum (Finanzplatz e.V., 2000). Given the high fixed costs, bonds will thus be used above all by companies with considerable borrowing needs.

Coupons may be fixed or floating, as defined upon issuance for the entire maturity period. In the euro bond market, fixed bonds, which pay a fixed rate of interest and are redeemed at full on maturity (which is also fixed), prevail.<sup>24</sup> A considerable amount of bank loans, by contrast, carries variable interest rates.

<sup>21</sup> See e.g. Hais and Marin (2002), who analyzed a number of bond prospectuses to establish the purpose for which Austrian corporate issuers were raising funds.

<sup>22</sup> Publicly issued bonds are subject to the reporting requirements of the Austrian Capital Market Act, which increases disclosure needs and thus costs (Zuffer, 2003). Private placements can be handled more flexibly, namely on a case-by-case basis; moreover, they are not subject to the Capital Market Act, which reduces disclosure requirements.

<sup>23</sup> At the Vienna stock exchange, the initial listing cost is equivalent to 1 basis point for bonds with a maturity of up to 5 years (no less than EUR 1,450, no more than EUR 5,800) in the Official Market; 0.50 basis point (no less than 725 EUR, no more than 2,900 EUR) in the Semi-Official Market and 0.25 basis point (no less than 500 EUR, no more than 2,750 EUR) in the Third Market. For bonds with a maturity of more than 5 years, the basis point values are twice as high (minimum and maximum rates remain the same). In addition, bond issuers pay an annual listing fee of 0.16 basis point in the Official Market, 0.08 basis point in the Semi-Official Market, and EUR 72.50 in the Third Market.

<sup>24</sup> This is also true for Austrian issuers: Fixed-rate issues accounted for more than 98% of all bonds publicly issued at the Vienna stock exchange by Austrian companies from 2001 to 2003 (OeNB, 2004).

Corporate bond coupons reflect the current benchmark condition for risk-free investment<sup>25</sup> and a premium for the issuer's default risk and credit risk. Furthermore, the issuance volume may affect the coupon, which may contain a premium for a lower degree of liquidity; above all international investors buy high volumes and rate liquidity highly. Again, this means that big companies will be able to borrow at cheaper rates (and that it is cheaper to borrow over longer horizons, when high fixed costs are spread over longer periods of time).<sup>26</sup>

#### 4.5 High Credit Standards

By raising funds through the issuance of bonds, companies may reduce the risk of suddenly facing liquidity constraints should individual banks refuse to lend to them at some point. Bond creditors may typically not exercise any early redemption privileges; all they are entitled to is receiving coupon payments, repayment of the principal and regular company information. The possibility that contracts are changed after the issuance date (be it by the creditor or by the debtor) is virtually nil, as the issuing company deals with a large number of creditors, whose identities will typically not be

known to them; the sheer number of parties involved would make it difficult to handle any such changes. Credits originated by banks, by contrast, can be renegotiated more easily. In the case of temporary liquidity shortages, it is a lot easier to obtain payment deferrals or bridging loans from a single bank than from bond creditors, who may be scattered all over the world. Given the comparatively lower flexibility inherent in bond financing, potential bond issuers must meet disproportionately high credit standards, or the involved risks must be easily assessable by external investors.<sup>27</sup>

Moreover, unlike bank lending, securities lending is typically not secured by collateral,<sup>28</sup> which is one of the reasons why securities lending is basically available only to companies with a fairly good credit rating.<sup>29</sup> This ties in with evidence from the OeNB's major loans register on borrower ratings.<sup>30</sup> A comparison shows that companies that have also issued bonds have a significantly better rating than companies that have taken out only loans. More than three-quarters of all corporate bond issuers, but a mere quarter of all companies indebted to banks were classified in the highest two rating bands at the end of 2003.

<sup>25</sup> In most cases, the swap interest rate applied for the given maturity period is used as a benchmark.

<sup>26</sup> There is a lack of meaningful data that would allow comparisons of bond coupon payments with loan interest rates. The volume of the Austrian market is too small at present to generate meaningful data on corporate bond coupons. At the euro area level, disaggregated coupon data are available for different credit quality categories and maturity sectors, but loan statistics distinguish only between maturities of up to 1 year, between 1 and 5 years, and more than 5 years.

<sup>27</sup> This is true, for instance, for energy utilities, above all, when they have a monopoly, as used to be the case in the past.

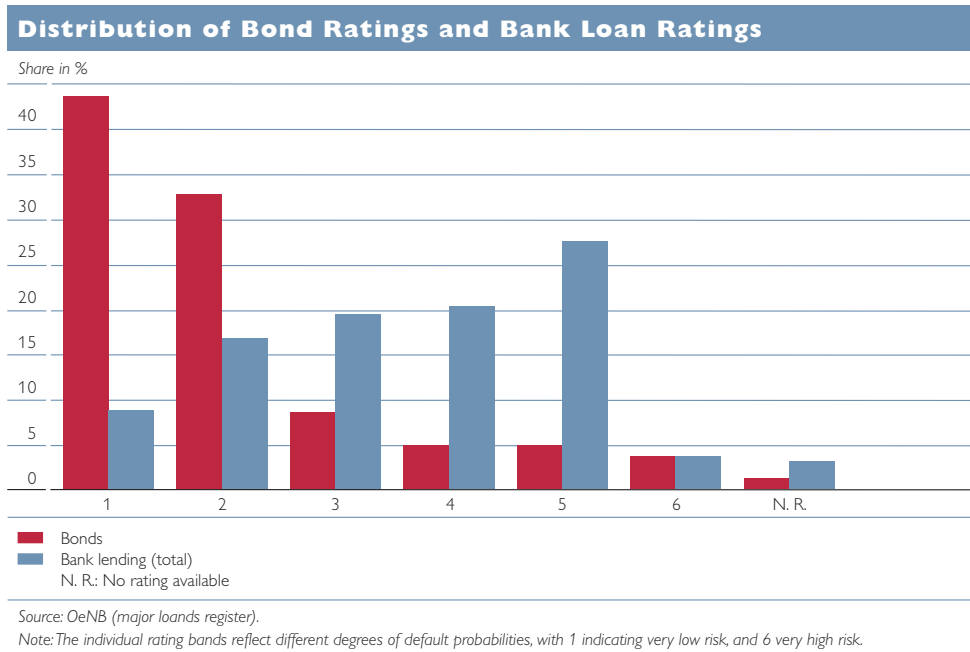
<sup>28</sup> However, the terms and conditions for bonds may include covenants specifying legal requirements and performance indicators that need to be met (Zuffer, 2003).

<sup>29</sup> The avenue of bond market financing is open also for companies with lower credit ratings, but the latter face higher risk premia.

<sup>30</sup> Banks are required to report outstanding volumes of "major loans," including securitized lending, and indicate how they rate individual borrowers internally. This rating reflects only the financial health of the borrower; it does not take into consideration specific loan conditions, such as collateralization or claim subordination. The OeNB maps these risk estimations into a uniform master scale, recently adjusted in August 2004 to contain seven notches plus a default category.



Chart 3



## 5 Implications of Corporate Bond Financing for Financial Stability in Austria

As mentioned above, through the issuance of corporate bonds credit risk is being diversified beyond the banking system. When mutual funds or insurance companies buy corporate bonds, professional investors take over the associated risks, and they can be expected to have implemented an adequate risk management system. Retail investors, by contrast, cannot be expected to be similarly equipped. To begin with, they will not be able to diversify their risks broadly, because of the smaller amounts they invest in the first place.

Banks are typically in a better position to assess the underlying risks of

investing in corporate bonds. Through credit assessments, banks will often have access to more comprehensive information than is disclosed in bond prospectuses. In addition, they will be better informed about recent developments through regular contacts, reports, etc.<sup>31</sup> Given these information asymmetries and the fact that bond creditors typically have a worse bargaining position, the risk of a change in creditworthiness is particularly relevant for bond investors.<sup>32</sup>

In Austria, only minor incidents of credit risk have materialized in recent years. Since – as indicated above – the instrument of bond issuance is typically used by companies with a good credit rating, there have been few cases of corporate bond defaults (see table 5).<sup>33</sup> A total of 2.4% of all

<sup>31</sup> At the same time, investors are better off if these information costs can be allocated to a bigger financing volume, which will typically be the case with larger companies.

<sup>32</sup> In addition to credit risk, bond subscribers also incur price risk (above all when they do not intend to keep the instrument until maturity) and liquidity risk (above all in the case of smaller bond volumes and private placements).

<sup>33</sup> Data on bond defaults could be found for listed bonds only.

Austrian corporate bonds newly listed on the Vienna stock exchange between 1990 and 2003 defaulted.<sup>34</sup> Adjusted for repayments (but excluding forgone interest income), the default volume corresponded to 1.9% of the

underlying issuing volume, which is significantly below loan defaults; the latter amounted to 3.3% of banks' claims on nonbanks in 2003 (OeNB, 2004).

Table 5

**Bonds Issued by Austrian Companies That Have Not Been Completely Repaid**

|   | Maturity   |            | Face value<br>EUR million |
|---|------------|------------|---------------------------|
|   | Begin      | End        |                           |
| 4% Heid warrant bond 1989–1999 <sup>1</sup>                           | 19.12.1989 | 19.12.1999 | 29.1                      |
| 4% Maculan convertible bond 91–96 <sup>2</sup>                        | 07.10.1990 | 07.10.1996 | 48.0                      |
| Axioma participation bond with BÜRGES guarantee 2000 <sup>3</sup>     | 01.10.2000 | perpetual  | 0.7                       |
| Cymantix participation bond with BÜRGES guarantee 2000 <sup>3</sup>   | 01.04.2000 | perpetual  | 0.6                       |
| SHOPtoSHOP participation bond with BÜRGES guarantee 2000 <sup>3</sup> | 01.11.2000 | perpetual  | 0.7                       |
| Educell participation bond with BÜRGES guarantee 2001 <sup>3</sup>    | 01.12.2001 | perpetual  | 1.6                       |
| 6% Adcon convertible bond 02–07/Tranche A/PP <sup>4</sup>             | 13.11.2002 | 14.11.2007 | 1.0                       |
| 6% Adcon convertible bond 02–07/Tranche B <sup>4</sup>                | 09.12.2002 | 09.12.2007 | 3.0                       |

Source: KSV, AWS, APA, Wiener Börse.

<sup>1</sup> Heid offered to buy back outstanding bonds at a rate of 40% of the face value in 1997; at a rate of 28% of the bond price in 1998, and at 24% in 1999.

<sup>2</sup> Creditors were supposed to receive 40% of their claims in the bankruptcy distribution, but actually received only a rate of 10% (with the approval of the Supreme Court).

<sup>3</sup> AWS offers natural persons a no-loss guarantee of 100% of the face value of participation bonds.

<sup>4</sup> Bankruptcy was filed on September 16, 2003.

These small figures would indicate that at least the major Austrian underwriters exercise a high degree of caution in selecting bond issuers; at the same time, large issues can only be placed successfully with the involvement of a major bank. At any rate, no speculative developments have been observed on the Austrian bond market to date.<sup>35</sup>

This might be taken to suggest that as the volume of bond financing grows, and since this is typically only an option for companies with a fairly good credit rating, higher risk would tend to become concentrated in banks' lending books. One factor that speaks against this assumption is that banks, too, have invested more heavily

in corporate bonds. The latter accounted for less than 2% of the volume of loans outstanding to companies at the end of 2003, however. Moreover, the risk position of banks may even improve if companies that have issued bonds put up more collateral for loans, which are typically unsecured.<sup>36</sup> The crucial point, though, is that there is a de facto limit up to which loans may be replaced with bonds; after all, as has been shown, the two types of instruments have different functions in the financing process.<sup>37</sup> A case in point is the fact that the volume of outstanding bonds does not exceed the volume of outstanding bank loans in a single country analyzed here. Furthermore, a poten-

<sup>34</sup> In addition, Omni-Holding ceased to service its Austrian schilling-denominated bond in 1991; creditors received only a small portion of their monies back. This bond had not been issued by an Austrian, but by a Swiss company - an issuing vehicle based on the Cayman Islands.

<sup>35</sup> As a result, there is no market for Austrian high-yield bonds.

<sup>36</sup> Unless specifically excluded through covenants.

<sup>37</sup> In the short-term financing category, a substitution potential may evolve should a market for commercial paper develop in Austria.

tial accumulation of higher credit risks in banks' balance sheets would only pose a problem for financial stability if such risks were not offset by corresponding risk premia.<sup>38</sup>

Owing to the stepped-up issuance of corporate bonds, the risk sensitivity of external financing has improved, as corporate bond prices usually reflect the inherent risk appropriately. It is indeed possible that the better management of risk aspects in Austrian bank lending may have boosted bond financing in recent years. Bond issuance by Austrian companies may become even more attractive should risk considerations in lending continue to gain in importance.

## 6 Conclusions

Through the integration of the Austrian bond market into the euro bond market, which gained in liquidity and market depth thanks to the introduc-

tion of the common currency, raising funds through the issuance of bonds has become an option for an increasing number of domestic companies. Given the dynamic development of bond financing in Austria in recent years, bonds should be here to stay as an instrument of corporate finance. While the range of corporate debt financing instruments has thus broadened, bond financing is unlikely to replace loan financing even in the long term, as bonds are not equally appropriate for all borrowing requirements. Bonds are adequate for investment projects with relatively large and long-term financing needs, but will only be an option for companies with a high credit rating. Overall, bond financing should contribute to the stability of corporate finance, as it smooths access to external debt by broadening the creditor base.<sup>39</sup>

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<sup>38</sup> After all, the fungibility of bonds facilitates risk allocation in the market. Investors intending to eliminate a particular risk from their portfolio may sell the corresponding bond in the secondary market; loans are a lot more difficult to transfer (even though differences in the fungibility of the two instruments are beginning to blend as the trend toward securitization continues (see Lumpkin, 2003).

<sup>39</sup> Davis (2001) has found U.S. companies to have regained access to funding, following a period of crisis, more quickly via bond financing than via bank loans.

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# Economic Growth in Denmark, Sweden and the United Kingdom since the Start of Monetary Union

*This study analyzes GDP growth in Denmark, Sweden and the United Kingdom, examining the determinants of potential growth, cyclical fluctuations in GDP and the contribution of the national economic policy of each of the three countries. High spending on research and development, particularly in information and communications technology, is identified as the main force driving growth in Sweden while a robust increase in private consumption resulting from rising asset prices is found to have been the key growth driver in the United Kingdom. In Denmark and Sweden, swings in the business cycle are being successfully offset through fiscal policy and other measures. The United Kingdom has made considerable progress with respect to business cycle convergence with the euro area, a significant factor for joining Economic and Monetary Union.*

Gabriel Moser,  
Wolfgang Pointner,  
Gerhard Reitschuler

## 1 Introduction

The Maastricht Treaty signed in 1992 laid the foundations for the monetary integration of Europe. However, not all of the Member States of the time were equally willing to deepen the Union in this way. The United Kingdom and Denmark were granted an opt-out clause for participation in Stage Three of Economic and Monetary Union (EMU). The enlargement of the EU in 1994 brought another member that would at first not participate in Stage Three – Sweden. However, unlike Denmark and the United Kingdom, Sweden is obligated to participate in Stage Three once the corresponding criteria<sup>1</sup> are met.

Thus, the start of a single monetary policy in 1999 resulted in a separation of the then-EU-15<sup>2</sup> countries in monetary policy terms, setting an example for a “variable geometry” approach to European integration (e.g. Rey, 1994). While monetary policy decisions for the 12 euro area countries are made by the Governing Council of the ECB, the United Kingdom, Denmark and Sweden have retained their national sovereignty in this area and can conduct monetary policy independently within the framework of the European System of Cen-

tral Banks (ESCB). The exchange rate regimes differ for each of the three countries. Denmark participates in the exchange rate mechanism (ERM) II, but the exchange rates of the Swedish krona and the pound sterling float freely (IMF, 2004a). However, the bilateral exchange rates of the Swedish krona and the pound sterling against other EU currencies are the subject of economic policy coordination and regarded as matters of common EU interest (see Article 124.2 of the Treaty on European Union). This is primarily intended to prevent competitive devaluations. Such coordination, which is a consequence of the increasing interdependence of Europe’s economies, occurs in many other economic policy areas as well.<sup>3</sup>

Because the economies of the three countries are closely linked to the euro area, their development is also significant for Eurosystem monetary policy to the extent that it has an impact on the euro area’s monetary policy targets. For example, the three countries accounted for 24.3% of the euro area’s total export market in 2003, with the United Kingdom notching the largest share at 18.3% (ECB, 2004b). The three countries’ weight in terms of the nominal-effec-

<sup>1</sup> In addition to the exchange rate criterion, Sweden currently does not meet the criterion of central bank independence (see ECB, 2004a).

<sup>2</sup> In May 2004, EU enlargement brought the number of Member States to 25.

<sup>3</sup> See Article 99 of the Maastricht Treaty, which foresees the establishment of broad guidelines on the economic policies of EU Member States.

tive exchange rate is around 28%.<sup>4</sup> Thus, changes in economic growth in Denmark, Sweden and the United Kingdom can also have implications for the euro area.

Although it is unlikely that any of these three countries will join the euro area in the next few years, they do have concrete prospects for membership. A continuation of the process of Europe's monetary integration through the accession of Denmark, Sweden and the United Kingdom to EMU basically hinges on their compliance with the convergence criteria under the Maastricht Treaty. According to the theory of optimum currency areas (De Grauwe, 2003), an important economic requirement for such enlargement is sufficient convergence of the business cycles, which is to say the absence of sharp asymmetrical shocks between these countries and the euro area.

In this study, we will examine economic growth trends in the United

Kingdom, Denmark, and Sweden, focusing on the period since the start of EMU in 1999. In order to obtain a precise picture of the factors relevant to growth, we will analyze the determinants of potential growth and the business cycles in the three countries. We will follow this with a statistical analysis of the convergence of the three countries' business cycles with that of the euro area and an overview of the current state of the debate on joining EMU.

## 2 Potential Growth

From 1965 to 2003, Denmark, Sweden and the United Kingdom achieved very similar rates of real GDP growth (table 1). During this period, the euro area grew faster on average due to higher growth rates in the first half of the period, which were largely attributable to economic catch-up processes in some euro area economies.<sup>5</sup>

Table 1

| Real GDP Growth |                           |                |        |           |
|-----------------|---------------------------|----------------|--------|-----------|
|                 | Denmark                   | United Kingdom | Sweden | Euro area |
|                 | Annual average rate, in % |                |        |           |
| 1965 to 2003    | 2.1                       | 2.3            | 2.3    | 2.8       |
| 1965 to 1985    | 2.4                       | 2.1            | 2.5    | 3.3       |
| 1985 to 2003    | 1.8                       | 2.6            | 2.1    | 2.4       |
| 1985 to 1999    | 1.9                       | 2.6            | 2.0    | 2.6       |
| 1999 to 2003    | 1.3                       | 2.4            | 2.2    | 1.6       |

Source: AMECO database.

The real increases in GDP that are achieved are determined largely by an economy's potential growth, that is, the rates achieved when all production factors are used to their full capacity. In order to examine which factors determined potential growth in Denmark, Sweden, the United Kingdom

and the euro area, we have conducted a simple growth accounting exercise based on the model developed by Feder (1983) (see box for the analytical framework). The main determinants in this model are the production factors labor and capital, total factor productivity (TFP) and the export

<sup>4</sup> The United States accounts for 15.7% of the total export market and has a 23% weighting in terms of the nominal-effective exchange rate.

<sup>5</sup> Greece and Portugal exhibited average GDP growth rates of more than 4% between 1965 and 1985.

sector. TFP combines those factors that increase aggregate output without an increase in the input from production factors, such as technical progress or an improved level of training and education among the labor force. The export sector is taken into account due to possible positive externalities. Feder (1983) justifies the use of exports in the production function approach as follows: “Econometric analysis utilizing this approach indi-

cates that marginal factor productivities are significantly higher in the export sector. The difference seems to derive, in part, from the intersectoral beneficial externalities generated by the export sector. The conclusion is therefore that growth can be generated not only by increases in the aggregate levels of labor and capital but also by the reallocation of existing resources from the less efficient non-export sector to the higher productivity export sector.”<sup>6</sup>

### Growth Accounting Exercise Based on Feder’s Model (1983)

This model views an economy as if it comprises two distinct sectors that have different impacts on aggregate output due to their different productivity trends. The two sectors are the export sector and the rest of the economy, which produces for the domestic market. In addition, it is assumed that labor and capital are the only factor inputs that go into the production process and that the relative marginal factor productivities of labor and capital in the two sectors can differ. The model also assumes that the export sector can generate positive externalities for the rest of the economy because it is “more exposed” than other sectors and should achieve higher productivity due to the higher competitive pressure.

With some assumptions, we can derive the following equation:

$$\dot{Y} = \alpha(I/Y) + \beta\dot{L} + \left[ \frac{\delta_x}{1 + \delta_x} - \theta \right] (\dot{X}(X/Y)) + \theta \dot{X}$$

where  $I/Y$  and  $X/Y$  are the ratios of investment (capital spending) and exports to aggregate output and  $L$  is the labor force. A variable with a superscript point represents the rate of change.  $\delta_x$  is the productivity differential between the export sector and the rest of the economy. If the factor productivity differential is positive (negative), the production factors have a greater (lesser) marginal productivity in the export sector. Total factor productivity (TFP) is calculated, as usual, as a residual. In this study, particular attention is given to the externality effect of the export sector and the contributions of TFP, investment and labor to growth. This study does not address the results of the productivity differential  $\delta_x$  in further detail (results are available from the authors on request).

### Sectoral Production Function Approach from 1965 to 2003

|                               | Denmark         | Sweden          | United Kingdom  | Euro area       |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|
| TFP                           | 1.54 *** (0.15) | 1.32 *** (0.36) | 1.40 *** (0.50) | 0.66 *** (0.12) |
| I/Y                           | 0.92 *** (0.04) | 1.01 *** (0.13) | 1.10 *** (0.20) | 0.36 *** (0.07) |
| L                             | 0.15 (0.14)     | 0.67 *** (0.23) | 0.57 *** (0.15) | 0.73 *** (0.11) |
| X                             | 0.54 *** (0.03) | 0.13 * (0.07)   | 0.17 (0.21)     | 0.61 *** (0.02) |
| R <sup>2</sup> <sub>adj</sub> | 0.71            | 0.67            | 0.62            | 0.85            |

Source: AMECO database; Estimation method: Generalized Method of Moments (GMM).  
\*\*\* (\*\*) [\*] indicates significance at the 1% (5%) [10%] level, standard error in brackets.

TFP has dominated real GDP growth rates in Denmark, Sweden and the United Kingdom since 1965.

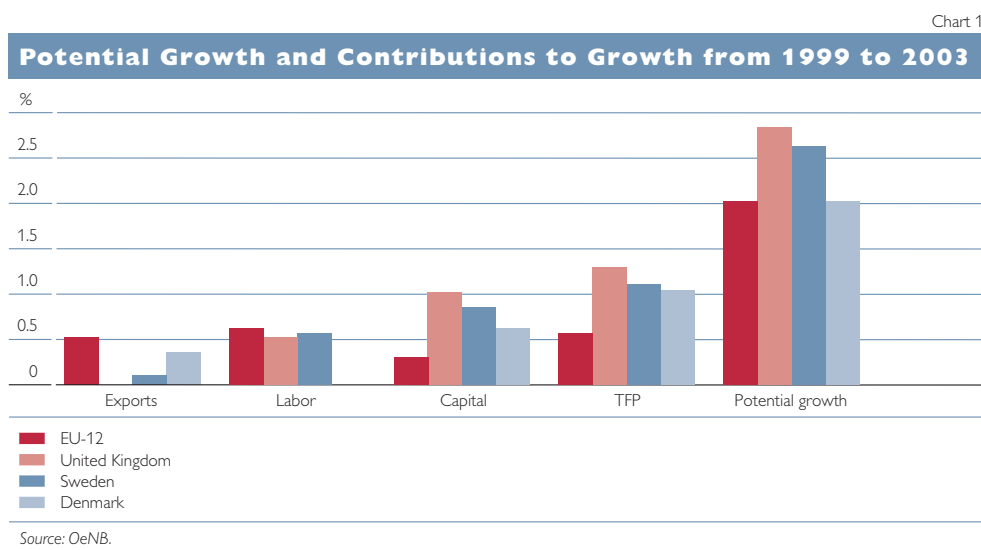
TFP’s contribution was considerably higher up to 1985 than in the years that followed.<sup>7</sup> However, after 1985

<sup>6</sup> For another application of Feder’s model, see Crespo Cuaresma and Wörz (2004).

<sup>7</sup> Detailed results are available from the authors on request.

productivity slowed also in the other EU Member States, and in other industrialized countries. Possible explanations for this phenomenon include the rise in oil prices since the 1970s, difficulties with correctly measuring qualitative improvements in production, and the introduction of stricter environmental and labor

regulations. Chart 1 illustrates the shares that TFP contributed to growth in Denmark, Sweden, the United Kingdom and the euro area in the period from 1999 to 2003. This contribution was highest in Sweden and the United Kingdom, and even in Denmark the TFP share was far higher than in the euro area.<sup>8</sup>



Similarly to TFP, the importance of physical capital also declined in Denmark, Sweden, the United Kingdom and the euro area in the period after 1985. This can likely be attributed to the tertiarization of these economies and the associated stronger weighting of labor as a factor. It is striking that the contribution of physical capital to growth was the weakest in the euro area, both over the entire period since 1965 and in the sub-periods. Labor gained considerable importance in the euro area in the period from 1985 to 2003 as compared with the period from 1965 to 1985,

but either held steady or grew only slightly in Denmark, Sweden and the United Kingdom.

The export sector's contributions to growth varied in the individual periods but were relatively high in all four economies, particularly in the period from 1965 to 1985. In the euro area, the export sector contributed heavily (about one quarter) to GDP growth also in the period from 1999 to 2003. Thus, the externalities of the export sector postulated by Feder (1983) in his model were likely the strongest in the euro area.

<sup>8</sup> The growth potential of the euro area is diminished in particular by the trend in Germany. A recent study by the Kiel Institute for World Economics (IfW) shows that potential growth for the euro area would be around 0.2 percentage point higher without Germany.



## 2.1 Determinants of Potential Growth in Denmark, Sweden and the United Kingdom

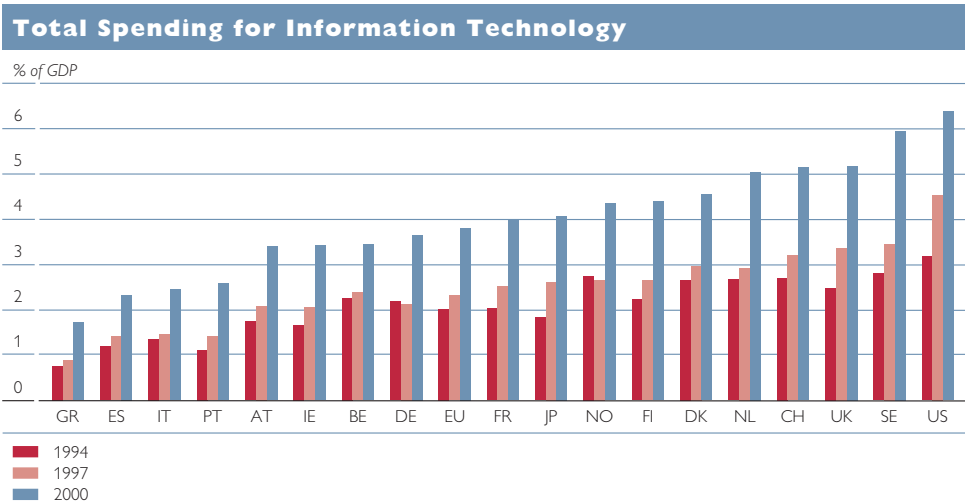
### 2.1.1 Sweden

One of the reasons for the strong GDP growth and the increase in TFP in Sweden lies in the country's high level of spending on research and development (R&D). At more than 4% of GDP, R&D spending was far higher in Sweden than in the other EU Member States – and even the

United States – in the past few years. This higher level of R&D activity yields more product and process innovations, which, in turn, boost GDP growth by increasing productivity.<sup>9</sup>

Sweden's R&D spending is also attributable to the country's dominant position in the information and communication technology (ICT) sector. Sweden was the European leader in terms of ICT spending during this period<sup>10</sup> (see chart 2).

Chart 2



Source: European Information Technology Observatory (EITO).

Studies on productivity trends generally tend to focus on industries like the ICT sector, in which significant technological changes have taken place. In general and particularly for Sweden, their authors argue that ICT sector growth should result in strong increases in productivity. One of the empirical results for Sweden was that growth in manufacturing would have been far weaker had it not been for the spectacular increases in the ICT sector.<sup>11</sup> Chart 1 supports this hypoth-

esis, as it clearly shows that TFP was the main factor contributing to the comparatively strong GDP growth between 1999 and 2003 in Sweden (as well as in Denmark and the United Kingdom).

### 2.1.2 Denmark

The ICT sector also plays an important role in Denmark, though perhaps not to the same extent as in Sweden. Of note is that, due to continually falling prices for goods from the ICT sec-

<sup>9</sup> A comprehensive analysis of the effects of R&D on GDP growth is provided in "The Sources of Economic Growth in the OECD Countries" (OECD, 2003b).

<sup>10</sup> Other measures also put Sweden out in front in this respect.

<sup>11</sup> For a critical analysis of the Swedish ICT miracle, see Edquist (2004). Edquist argues that the higher level of (productivity) growth in Sweden relative to other countries is partly a statistical artifact resulting from the use of the wrong deflators for the ICT sector.

tor, users of ICT products are more likely to benefit from increased productivity than producers. According to Aiginger (2004), the diffusion of new technologies and the creation of industrial clusters in biotechnology have also been key to strengthening Denmark's innovative power.

In the breakdown of Denmark's potential growth (chart 1) it becomes apparent that the changes in labor input between 1999 and 2003 did not contribute to GDP growth. In fact, the size of the labor force stagnated in Denmark in this period while it increased by around 1% in Sweden, the United Kingdom and the euro area. In Denmark, unemployment increased while the labor force participation rate stagnated at a high level of around 80%. Still, at 5.5% in 2003, the unemployment rate remained low compared with other European countries. The 1 percentage point increase in unemployment in 2003 can be attributed to the fact that Denmark has virtually no employment protection regulations, which makes it easier for companies to reduce staff in response to decreased demand. However, the Danish government spends more on active labor market measures than any other EU Member State in order to absorb this high flexibility in hiring and firing (OECD, 2004b), thus providing a social safety net for employees.

### 2.1.3 United Kingdom

The United Kingdom posted higher potential growth in the last few years than Denmark, Sweden and the euro area. This is due both to increases in the labor force participation rate and stronger TFP growth. In terms of the latter, the robust growth in ICT investment likely played a role (OECD, 2004a). However, productivity in the United Kingdom remains far

below that of most other industrialized countries. This can be explained in part by the lower stock of physical and human capital (O'Mahony and De Boer, 2002). Deficits exist in both the public and private sector physical capital stock. The export sector's small contribution to productivity growth is likely also connected to the low capital stock in this area. The result is fewer positive external effects between the exposed sector and the rest of the U.K. economy.

One of the goals of the United Kingdom's economic policy is to increase productivity by improving training and education, increasing public sector investment, further promoting ICT, and further liberalizing the product markets in order to close this "productivity gap" vis-à-vis other countries.

## 3 Business Cycle

In addition to potential growth, economic swings – that is, temporary phases of particularly strong or weak capacity utilization of the production factors – play a key role in economic growth. When analyzing these cyclical swings, it makes sense to differentiate between the role of global and country-specific economic shocks, the economic structure, and national monetary and fiscal policy measures (Westaway, 2003). The following will first provide an overview of the shocks experienced by all three countries since the start of EMU. Since this overview provides significant information about the convergence of the countries' business cycles with those of the euro area, the euro area will also be included in the analysis. Thereafter, an overview of the country-specific shocks and the relevant economic policy trends in Denmark, Sweden and the United Kingdom is provided.

### 3.1 Global Economic Environment – The Role of Global Shocks

Since 1999, the global economy has been hit by several shocks that have also influenced cyclical dynamics in Denmark, Sweden, the United King-

dom and the euro area. Chart 3 shows the impact of these shocks based on economic growth adjusted for potential growth in the three countries and the euro area.<sup>12</sup>

Chart 3

#### Business Cycle – Transitory Components of Growth in Denmark, Sweden, the United Kingdom and the EU-12

Percentage points



Source: Author calculations based on NIGEM data.  
Forecast values from Q2 04 onward.

Chart 3 already indicates a relatively high level of synchronization among the business cycles, which suggests the influence of global shocks. The common economic expansion that lasted until the middle of 2000 was followed by a broadly synchronized slowdown through the middle of 2001. This “early millennium slowdown” (Peersman, 2004) was not limited to the four economic areas, but also extended to many other countries. Restrictive monetary policy in many countries coming into the year 2000, a severe oil price shock, the end of the investment boom in the United States, a price collapse on

the world’s major stock markets after the ICT bubble burst, and finally, growing geopolitical uncertainties that had corresponding negative effects on confidence played an important role here. At the beginning of 2002, an economic recovery began to emerge in the three countries, the euro area, and other regions. However, this recovery was interrupted by a renewed series of negative shocks, including a further substantial decline in stock prices due to disregard for corporate governance standards and growing geopolitical uncertainty as a result of the Iraq war. Starting in mid-2003, a global economic

<sup>12</sup> This analysis uses the potential growth rates estimated using a production function approach based on the NIGEM model. The values are relatively close to those of the European Commission (2004) and the estimates in chapter 2. However, such estimates do come with sometimes considerable uncertainty.

recovery began to emerge, gained momentum, and spread to Denmark, Sweden, the United Kingdom, and the euro area.

Bordo and Helbling (2003) concluded that the role of global shocks for the development of the national economies has increased in the past decades. This trend can be attributed to globalization of the economy, which through the increasing integration of the world's product and financial markets strengthens the global transmission mechanisms of shocks. This stands in contrast to the positive aspects of globalization, which include the possibility to benefit from greater economies of scale, increased international division of labor, simpler financing of current account deficits, and better spreading of income risks through international diversification.

### 3.2 Country-Specific Factors and Economic Policy

#### 3.2.1 United Kingdom

As it had since the mid-1990s, the U.K. economy continued to evolve very positively in the time since the start of the monetary union despite the negative global shocks mentioned above.<sup>13</sup> Particularly striking was the high level of stability of economic growth during this period. Chart 3 illustrates how much less volatile growth is in the United Kingdom compared with Denmark, Sweden and the euro area. This stability can be attributed to strong domestic demand, with private and public sector consumption and capital spending on new construction contributing significantly to stabilization. The stability of these components offset the fluctuations in exports and investment in plant and

equipment, which had evolved more in line with international trends. These demand-side trends led to a growing disparity at the sectoral level between a service sector marked by dynamic growth and a largely stagnant industrial sector.

The strong private consumption of the past years can be explained by a series of factors. Massive real appreciation due to rising short- and long-term real interest rates in 1996 brought continued improvement in the terms of trade. Households' wealth increased considerably, first through stock price gains and then through rising real estate prices. The latter have a greater impact on private consumption in the United Kingdom than in other countries because the financial and real estate markets make it easier to obtain credit through "mortgage equity withdrawals" (home equity loans). These structural factors, combined with a relatively inelastic supply, may have contributed to the increase in real estate prices. The low interest rate policy since 2001 has also supported the real estate prices and, thus, private consumption, not least due to the high share of adjustable-rate mortgage loans. However, the situation on the real estate market is now giving cause for concern since current prices are generally considered to be too high. Another factor contributing to strong private consumption is the positive trend on the labor market, which has reduced income risks for consumers. Greater wealth and better terms of trade along with a more stable labor market likely also contributed significantly to a far lower saving rate.

<sup>13</sup> The following remarks take into consideration inter alia the information and estimates expressed in the Article VI Consultations of the IMF and the OECD Economic Surveys for the period under review.

The vibrant growth of public sector demand for capital goods, consumer goods and labor is largely attributable to the U.K. government's structural policy aims, which are geared toward improving supply in the healthcare and education sectors and increasing labor productivity. However, the sharp rise in spending over a relatively short period has recently resulted in absorption problems. The economic effects of the government's fiscal policy were extremely favorable, both in the consolidation phase following the change of government in 1997 and in the phase of expansionary budget policy after 2000. One of the key problems associated with the use of discretionary measures by government to stabilize business cycles is how to get the timing right, and this probably was not resolved during the period under review in the United Kingdom either. Budget consolidation was done shortly after the elections and, thus, followed the electoral fiscal cycle, whereas the expansionary fiscal policy of the past few years was motivated largely by structural policy goals. Thus, the favorable timing of these measures from a cyclical perspective was probably less a matter of fiscal policymakers' intentions than mere chance.

The weakness of the export and industrial sectors is the flipside of the boom in domestic demand. The massive real appreciation resulting from higher real interest rates, which must be viewed in connection with stronger domestic demand, impaired competitiveness in the export sector perceptibly, which in turn resulted in losses of market share and permanent current account deficits of around 2% of GDP. One of the aims of current economic policy in the

United Kingdom is to curb private consumption somewhat. One way to do this would be to increase current government revenues, a sensible move considering the planned increase in current government spending.

### 3.2.2 Sweden

GDP growth in Sweden during the period from 1999 to 2003 was higher than in the euro area, but the cyclical swings were also wider due to the collapse of the ICT market and this small, open economy's strong foreign trade relations, which facilitated the transmission of global shocks.

The average growth rate of 4.6% in the period from 1998 to 2000, which was achieved during the global boom, was the strongest since the 1960s. Growth in Sweden plummeted to below that of the euro area in 2001 in the wake of the ICT sector collapse, but was already emerging into recovery in 2002. A strongly accommodating fiscal policy likely played an important role here. Sweden had used the boom period at the end of the 1990s to balance its budget from a two-digit deficit (–11.4% of GDP) in 1993. The positive budget situation – a surplus of 5.2% of GDP in 2000 – provided sufficient budgetary leeway at the start of the economic downturn to allow the automatic stabilizers to take their full effect. This, in turn, helped smooth the cyclical trend. The large budget surpluses also permitted Sweden to implement additional discretionary measures, particularly in the form of income tax cuts. According to the OECD (2002a), disposable real income growth picked up by more than 1 percentage point. As a result of this loosening of the fiscal policy stance, the budget surplus shrank from 5.2% of GDP in 2001 to 2.3% in 2003.

The overall trend in Sweden makes obvious the advantages of stability-oriented macropolicy and a credible commitment to and goal for public finances.<sup>14</sup> Moreover, it makes clear how important it is to build budgetary surpluses during expansion phases to ensure fiscal policy leeway during contraction phases.

### 3.2.3 Denmark

GDP growth in Denmark was driven by foreign trade and investment in the years from 1999 to 2001. Although Danish exports generally reacted relatively mildly to fluctuations in the business cycle due to the large share of goods, such as pharmaceutical products and processed foodstuffs, net exports nevertheless made a negative contribution to GDP growth in 2002. The trend in private consumption during this period was relatively subdued. Toward the end of 2002, there was a brief spike in private consumption because households were anticipating that the implementation of an EU directive would result in higher automobile prices in 2003.

On the whole, GDP growth over the past few years was less volatile in Denmark than in the euro area. This indicates inter alia the strong impact of automatic stabilizers. Simulations conducted by the European Commission (2001) show that the automatic stabilizers in Denmark are particularly effective and smooth fluctuations in GDP by around 30%. In a small, open economy, the elimination of monetary policy as an instrument for absorbing

shocks increases the importance of other stabilizing mechanisms such as fiscal policy.

The effectiveness of the automatic stabilizers depends on several factors, including the size of the public sector. At 57%, Denmark has the second-highest government revenue ratio in the EU behind Sweden. Another factor is the progressive tax rate structure.<sup>15</sup> The extent of benefits provided by unemployment insurance also has an impact on the effectiveness of the automatic stabilizers. Here too, Denmark is among the highest-ranking OECD countries. In addition to the effects of the automatic stabilizers, a number of discretionary measures were also adopted at the end of 2001 (Volz, 2004).

In terms of monetary policy, Denmark is linked with the euro area through ERM II, which prescribes a central rate for the Danish krone. In order to maintain this exchange rate, it is important that inflation rates in Denmark and the euro area remain relatively similar. In the years from 1999 to 2003, the average HICP inflation rate in the euro area was 1.9%. In Denmark it was 2.3%. During the same period, the Danish central bank not only followed all of the interest rate changes made by the ECB, it also implemented several interest rate cuts independently, thus supporting GDP growth and narrowing the difference between the key interest rates in Denmark and the euro area from 80 basis points to 15 basis points. This easing of monetary policy was possible

<sup>14</sup> One reason for the large budget surplus in Sweden is the fact that three fiscal policy goals were adhered to that are laid out in an agreement that covers all areas of the public sector: (a) maintaining a cyclically adjusted deficit of 2% over the entire business cycle, (b) adhering to spending ceilings in the federal budget, and (c) ensuring balanced budgeting at the level of the local and regional authorities. These goals were defined in part because Sweden's budget has a high cyclical sensitivity.

<sup>15</sup> The top tax rate of 63% in Denmark is relatively high compared with other countries, and it already kicks in at an income level that is only 6% above the national average (OECD, 2003a).

thanks to the stability of the exchange rate, which has remained within the fluctuation bands<sup>16</sup> defined in ERM II since 1999.

#### 4 Convergence of the Business Cycles

The efforts to create a European monetary union have sparked increased interest in measuring the synchronization of the business cycles within Europe since the beginning of the 1990s. A high level of convergence among the national business cycles is an important criterion for an optimum currency area. Several studies have shown that the convergence of the euro area countries increased in

the second half of the 1990s (e.g. Angeloni and Dedola, 1999; Massman and Mitchell, 2002a).

The extent of synchronization between the euro area and the three countries studied here can be determined by the correlation of the cyclical components in their GDP growth rates (e.g. Artis, 2003). The cyclical component is calculated as the difference between real growth and an estimate for potential growth (see footnote 12). By dividing the period from 1992 to 2004 in half at the first quarter of 1999, we can compare the time before and the time after the start of Stage Three of EMU. Table 2 shows the results.

Table 2

#### Correlation of the Business Cycles

|                      | Q1 92 to Q4 98 | Q1 99 to Q4 04 | Q1 92 to Q4 04 |
|----------------------|----------------|----------------|----------------|
| EU-12/United Kingdom | 0.18           | 0.77           | 0.35           |
| EU-12/Sweden         | 0.83           | 0.70           | 0.77           |
| EU-12/Denmark        | 0.72           | 0.59           | 0.66           |

Source: Author calculations based on NIGEM data.  
Forecast values from Q2 04 onward.

Thus, we see that, since the start of EMU, the business cycles of the three countries have been correlated considerably with that of the euro area. What is striking is the sharp increase in the correlation for the United Kingdom, which can be attributed to the strong cyclical divergences between the continental European economies and the United Kingdom at the start of the 1990s (Massman and Mitchell, 2002b). In Denmark and Sweden, the already high level of correlation dipped only slightly during the 1990s.

In Sweden and the United Kingdom, business cycle convergence plays an important role in the national de-

bates regarding the advantages of joining EMU. In Denmark, it is no longer an issue since Denmark is already participating in ERM II. In the United Kingdom, the Treasury, which is responsible for assessing the economics of joining EMU, determined in June 2003 that long-term convergence of U.K. and euro area business cycles had not yet been achieved and, therefore, joining EMU could not be recommended at this time given the current flexibility on the labor, product and financial markets (HM Treasury, 2003). In Sweden, the government concluded in fall 2002 that sufficient convergence exists between the Swedish and euro area business cycles.

<sup>16</sup> In ERM II, a permissible fluctuation band of 2.25% around the central rate was agreed. Thus far, the Danish krone has never strayed more than 0.49% from the central rate.

Entry to the monetary union is the subject of broad debate in all three countries. The economic advantages and disadvantages of entry are being weighed, but also national traditions linked to the national currency play a role. The governments of the three countries have announced that they will join only after voters have expressed their support in a referendum. According to surveys conducted in October 2004, a majority of Danes are currently in favor of entering EMU. However, a vote is unlikely to take place before 2006 as the Danish government would prefer to wait until the Treaty establishing a Constitution for Europe is ratified before holding another euro referendum. In Sweden and the United Kingdom, the majority of the population continues to oppose participation in EMU.

## 5 Concluding Remarks

GDP growth in Sweden and the United Kingdom has increased faster on average than the euro area since 1999, while growth in Denmark has been somewhat slower than in the euro area. These differences can be explained by both higher potential growth rates and the fact that the euro area business cycle is subject to more severe fluctuations in both upward and downward cycles. With respect to the synchronization of the three countries' business cycles with that of the euro area, there is a high degree of convergence, which has increased since the start of EMU, particularly in the United Kingdom. However, the U.K. Treasury still deems this convergence with the euro area insufficient for entry into EMU.<sup>17</sup>

Our growth accounting exercise clearly shows that – although its impact has declined over the past decades – TFP remains the primary force driving growth in the three “old” EU Member States that are not part of the euro area. TFP's contribution is also greater in these three countries than it is in the euro area. In Sweden, the higher TFP was largely due to high spending for R&D, particularly in the ICT sector. In the United Kingdom, growth was primarily driven by strong domestic demand, with both private consumption and expansionary fiscal policy supporting this growth. The relatively modest rate of GDP growth in Denmark can be attributed to the stagnation in employment since 1999.

One reason for the less severe slowdown in Sweden was the country's highly accommodating fiscal policy. A large budget surplus allowed the automatic stabilizers to operate to their full effect. In addition, income tax reductions increased the amount of disposable income. The situation was similar in Denmark, where the automatic stabilizers also reduced the amplitude of the business cycle.

Finally, it is worth noting that the differences in GDP growth between the EU Member States that are not part of EMU and those that are do not necessarily indicate effects of the common currency. For example, some euro area countries have achieved higher growth than the three countries studied here since the start of EMU. Clearly, other factors also had a significant impact on the GDP trend. Moreover, the period that has passed since the start of EMU is still too brief for the positive effects of a currency

<sup>17</sup> The reports by Calmfors et al. (1996 and 1997) also initially gave the same diagnosis for Sweden.



union on the integration of financial and product markets and thus also on GDP growth<sup>18</sup> in the euro area countries to fully emerge.<sup>19</sup>

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<sup>18</sup> See Rose (2000) and Persson (2001).

<sup>19</sup> However, Faruqee (2004) concludes that positive effects of the currency union on the trade relations of the euro area countries can already be discerned, but that these effects vary widely from country to country. For Finland and Ireland, which are structurally similar and geographically close to the countries studied here, no significant effects were found.

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# HIGHLIGHTS

# The Political Economy of International Financial Governance

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The OeNB recently organized a workshop on “The Political Economy of International Financial Governance” to analyze current trends in financial governance from both an economic efficiency and an institutional perspective. Following a discussion of controversial financial governance theories, a number of case studies were presented on current issues, including financial market integration in the EU, changes in private sector associational activity in global finance, the Basel II process, the governance of pension funds, the market for over the counter (OTC) derivatives as well as financial literacy programs. The case studies highlighted the role that noneconomic factors play in financial governance mechanisms. With a view to developing more realistic models, further research and more case studies will have to be undertaken to broaden the empirical basis for theorizing financial governance.

Alternative forms of regulation such as self-regulation and co-regulation combined with the increasing role of nonstate actors in financial governance have received growing attention in the academic debate about the prospects for the international financial architecture. Given the associated potential repercussions on monetary and financial stability, this implies considerable challenges for central banks. Furthermore, the changing mechanisms of financial governance challenge the role and influence central banks have within financial governance systems. As financial governance is not only an important public concern but also a complex institutional issue involving actors and institutions that have different interests and pursue different strategies, contributions of other disciplines (political science, sociology, international political economy, legal studies, etc.) must complement economic analyses to provide a comprehensive assessment. In his introductory remarks, Peter Mooslechner (OeNB) accordingly argued in favor of an interdisciplinary approach that combines economic efficiency considerations of regulation with institutional considerations. The main intent of the OeNB workshop on “The Political Economy of International Financial Governance” (November 26, 2004) was to advance research into why particular mechanisms and rules of

financial market governance have been put in place and why they take the specific forms they do.

The first two papers discussed theories of financial governance best suited to explain the driving forces behind global capital market liberalization and regulatory reform. In his paper “Theorising Governance in a Global Financial System,” Geoffrey Underhill (University of Amsterdam) reviewed contemporary concepts of governance that are applied to the financial and monetary domain: *Economic* theories of governance, on the one hand, focus on the interaction of rational actors and on achieving optimal patterns of economic transactions. Hence, they represent a rather narrow conception of governance which assumes that the principal goal of governance is market-based efficiency. A main drawback of economic theories of governance is that they can only tell us about incentive structures for particular forms of regulation given certain preferences, but little about how these preferences emerge and how regulatory outcomes actually occur. On the other hand, *political economy* theories of governance, unlike their equivalents in economics, are in search of the linkages between the economic and the social, the political and the market. They demonstrate that the inclusion of political and social variables, particularly the interaction of social constituencies in

the policy process across levels of analysis, can help us explain governance outcomes in a globally integrating economic space. The interdependency of politics and markets is usually depicted as a simple dichotomy: political power versus rational, self-interested markets. Against this state-market dichotomy, Underhill introduces the concept of a state-market condominium and applies it to the financial and monetary domain: change occurs simultaneously through the process of economic competition and the regulatory processes mediated by the institutions of the state. The state-market condominium model facilitates understanding of the role of “nonstate” private interests in driving the process of global integration. What we have seen is not so much a retreat of the state in the face of market forces (politics versus markets) but a transformation of the state in symbiosis with the transformation of economic structures. The creation of global financial markets was a political strategy by a state-market alliance of interests which became transnational in nature. Private preferences were converted, through state policy, into the evolving structure of global financial governance.

In her paper on the “Political Economy Approach to Financial Reform” *Susanne Lütz* (Open University of Hagen) discussed various leading political economy approaches to explain causes and patterns of financial governance reform. First, the “market actors capture the state” approach contends that financial liberalization allows market actors to broaden their sphere of activity in order to circumvent public policies that would impose regulatory costs on them. States, while competing for the most mobile segments of capital, lower their stand-

ards of safety regulation and end up in regulatory races to the bottom. Advocates of a second approach argue that by engaging in multilateral collaboration on the European or global level, states can reduce exit options of market players and regime competition can be overcome. Finally, the varieties of capitalism approach underpins non-convergence of financial systems and its regulatory framework, as it stresses that states and market actors join forces to defend national models of regulation. According to Lütz, none of these three perspectives completely captures the causes and patterns of financial governance reform. Alternatively, she draws on an actor-centered approach that accounts for the interrelationship of global market changes and changing preferences of domestic actors vis-à-vis regulatory solutions and for the fact that the globalization of finance disembeds those actors from the domestic political economy that benefit from market integration while champions of national idiosyncrasies are being left behind. By drawing on cases of regulatory change in Germany’s capital markets and the banking sector, she shows that in Germany reforms were driven by a modernization coalition of foreign regulators, the federal government and those market actors who were most interested in open markets and in adapting to the global rules of the game. At the same time, German state governments, regional banks and small and medium-sized firms were eager to retain their niches.

This introduction to controversial theories of financial governance was followed by several case studies on the most recent issue areas: Financial market integration in the EU, changes in private sector associational activity in global finance, the Basel II process,

the regulation and promotion of pension funds, the international derivatives market, and the proliferation of financial literacy programs.

While financial markets are usually seen as the vanguard of globalization, the market for financial services has been one of the slowest and most difficult areas to integrate within the European Single Market Project. However, after years of stagnation, financial market regulation in Europe made rapid progress at the end of the 1990s: Major milestones include the Financial Services Action Plan in 1999 and the introduction of the “Lamfalussy” procedure for EU decision-making in 2001 as well as its extension to banking and insurance in 2002. In his paper “Policy Entrepreneurship and Subterfuge in the Evolution of EU Financial Market Governance,” *Beat Weber* (Oesterreichische Nationalbank) explored the characteristics and determinants of this invigorating policy process. He shows these developments to be the result of policy entrepreneurship of governments building coalitions with their national financial industries and using techniques of subterfuge to shape the regulation process for financial intermediation in their favor.

While there is a widespread perception that private sector actors and markets have gained influence as finance has become more globalized, there is no consensus on the character and strength of this influence or on its significance for patterns of inclusion and exclusion in the governance of global finance. For some, an expanded influence of private sector actors and markets promotes inclusion because it is an expression of an unleashing of more widespread individual initiative and choice and a loosening of the restrictive grip of the state. For

others, it is detrimental to inclusion because it enhances control by an exclusive financial elite over global financial governance, allowing them to ignore state-based mechanisms of public accountability that have traditionally legitimized financial regulation. In his presentation on “The Significance of Changes in Private Sector Associational Activity in Global Finance for the Problem of Inclusion and Exclusion,” *Tony Porter* (McMaster University) explored the role of private-sector associational activity in global financial governance. By drawing on this research, he challenged both these views and showed that there is tremendous variation in the character, strength and significance of private sector actors and markets across governance and regulatory problems and arrangements. In general this involves stronger and more complex relations of interdependence between private and public sector actors and has both positive and negative implications for the problem of inclusion and exclusion.

Governance arrangements of over-the-counter (OTC) derivatives are of particular interest as self-regulation and self-supervision feature very prominently in this area. In her paper “The Governance of OTC Derivatives Markets,” *Eleni Tsingou* (University of Warwick) analyzed the extent to which the governance of OTC markets has become a policy issue and explains that two elements have prevailed in policy debates: (i) OTC derivatives are just another type of financial instrument and do not require special treatment, and (ii) best practice (as defined by the private sector) and private mechanisms of monitoring are both sufficient and effective. The governance of OTC markets essentially takes the form of monitored self-reg-

ulation and self-supervision. Yet derivatives arguably merit greater attention because they carry leverage and are increasingly used not just to hedge against risk but also to embrace risk. In this context, the paper argues that the governance arrangements of OTC markets show the ways in which the functions of regulation and supervision are changing: governance is shared among a transnational policy community of public and private sector officials, and private interests are internalized in financial policy processes.

In the course of the shift towards funded pension systems across European countries the specific mode of governance of occupational pension funds not only influences financial stability; it furthermore has important repercussions for the political economy of pension reform. *Stefan W. Schmitz* (Oesterreichische Nationalbank) investigated those implications for the case of occupational pension funds in Austria (“The Governance of Occupational Pension Funds in Austria and its Politico-Economic Implications”). Based on the empirical analysis of the Austrian reform of the *Pensionskassengesetz* he discusses the relationship between the corporate governance of occupational pension schemes, the politico-economic background of the bill, and the distribution of the burden of this particular reform. The structural dominance of shareholders can result in a vicious circle for beneficiaries, as it subjects the governance arrangements in place to protect beneficiaries in conflicts of interests with shareholders to substantial political risk.

In her analysis of Basel II (“Financial Governance, Private Agents and Financial Market Regulation: The Case of Basel II”), *Vanessa Redak* (Oesterrei-

chische Nationalbank) showed in how far Basel II has changed and will change – in the field of banking regulation – the relationship between public and private actors, between state and markets, thereby leading to a transformation of traditional regulation and governance mechanisms. In a step-by-step analysis of each of the three pillars of the Basel II framework and by relating the regulatory mechanisms in these pillars with other international trends in financial market regulation, Basel II is conceptualized within recent politico-economic settings in banking and finance.

Finally, *Martin Schürz* (Oesterreichische Nationalbank) (“The Idleness of the Poor: Financial Literacy Programs”) brought to the fore the role of norms and values in financial governance by investigating current programs of financial education initiatives in the United States. Financial literacy programs that are provided by public authorities in alliance with private actors gain increasing attention in Europe as well, given that the financial marketplace of the 21<sup>st</sup> century has become more complex, and individual risk taking more significant. Yet surveys for the United States show that financial education initiatives have actually not been successful in increasing the financial literacy of the poor. Schürz interprets financial literacy programs as a mode of governance that aims at translating an economic problem (low income and high inequality) into a cultural one (attitude of spending too much and saving too little). Moreover, they are linked to a new welfare debate on asset building. Governments now require increased individual responsibility for financial well being. Autonomy is interpreted restrictively as freedom for individual choice, and financial

education shall provide consumers with incentives to make correct choices.

The case studies presented at the workshop emphasized the role of non-economic variables in understanding the evolution of financial governance. They also stressed the difficulties of conceptualizing one specific model of financial governance that encompasses all mechanisms and driving forces of regulatory change. In order to arrive at models that better capture reality, it was concluded that on the

one hand further research should be devoted to case studies to broaden the empirical basis for theorizing financial governance. On the other hand, as discussant *Brigitte Unger* (University of Utrecht) concluded, the term governance itself still needs clarification. A vast body of governance literature has led to a plethora of governance concepts and, therefore, a theoretical debate about the suitability of governance concepts should remain on the agenda.



# Macroeconomic Models and Forecasts for Austria

On November 11 and 12, 2004, the Oesterreichische Nationalbank (OeNB) held a workshop entitled “Makroökonomische Modelle und Prognosen für Österreich” (Macroeconomic Models and Forecasts for Austria). The purpose of the workshop was to provide an overview of the econometric models developed and used in Austria, and to promote exchanges between the main institutions that work on modeling in Austria, namely WIFO (Austrian Institute of Economic Research), IHS (Institute for Advanced Studies), Joanneum Research and the OeNB. This workshop – the first of its kind held in Austria – covered the bulk of the econometric models used regularly in Austria and attracted nearly 100 participants. The papers presented at the workshop are scheduled to appear in an issue of the OeNB Workshop Series in the first quarter of 2005.

Gerhard Fenz,  
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In his introductory statement, *Josef Christl* (OeNB) emphasized the importance of forecasts for economic policymaking. Moreover, he drew attention to the specific role of this workshop in boosting the transparency of research relevant to economic policymaking. In light of this aim, *Peter Mooslechner* (OeNB) then warmly thanked the participating institutions for their active contributions to this workshop. The event was organized by theme and divided into four sessions. The topic of the first session

was a comparison of the structural macroeconomic models applied by the OeNB, IHS and WIFO. *Gerhard Fenz* (OeNB) presented the OeNB’s macromodel AQM (Austrian Quarterly Model). This model follows the neoclassical synthesis tradition. Equilibrium is neoclassical in the long run, where output is supply-determined, but Keynesian in the short run, where output is demand-determined. The rationale is that frictions in the goods and labor markets slow the adjustment of the economy to its equilibrium level. The OeNB uses this model to prepare its semiannual macroeconomic forecast and to perform simulations. In the Multi-Country Model, the model used by the Eurosystem and coordinated by the European Central Bank (ECB), AQM represents the country block for Austria and is linked to the other country blocks through foreign trade equations. As the only quarterly model for Austria, the AQM captures intra-year trends.

Next, *Helmut Hofer* (IHS) and *Robert Kunst* (IHS and University of Vienna) elucidated the IHS’s econometric model, the LIMA (Link Model Austria) model, which is Keynesian, meaning that output is demand-determined. This model is used primarily for economic forecasting purposes; in addition, it serves to perform simulations. LIMA is the Austrian contribution to the United Nations’ LINK

project, an international research activity which integrates independently developed national econometric models into a global econometric model.

The first session concluded with a presentation by *Josef Baumgartner* (WIFO). WIFO's macroeconomic model, WIFO-Macromod, is also a typical demand-determined model. Supply factors are taken into account in price and wage determination. WIFO utilizes its Macromod model for its annual medium-term forecast (with a five-year forecast horizon) and for simulations. However, WIFO does not use the model for its quarterly economic forecast.

The discussants (*Rudolf Zwiener*, German Institute for Economic Research – DIW; *Thomas Warmedinger*, ECB) concurred in emphasizing that while the details differed, the models nevertheless had many features in common. All three models are error correction models that capture both long-term equilibrium effects and short-term adjustment effects. A comparison of the models based exclusively on structures or equations, however, provides an incomplete picture. Hence, the discussion centered on comparing the models' reactions to specified shocks. In general, the discussants shared the view that the simulations produced comparable and broadly plausible results. The reactions of the three models are characterized by a wage-price spiral that is rather strong for a small, open market economy such as Austria. Conversely, their reactions to changes in price competitiveness in foreign trade are fairly weak.

The second session dealt with short-term forecasts using statistical models. *Martin Schneider* (OeNB) presented the OeNB's short-term economic indicator, which is based

on the results of two econometric models: a state space model and a dynamic factor model. The state space model uses six selected indicators (ifo business climate index, credit volume, number of vacancies, real exchange rate, employment, new car registrations) to estimate GDP. The dynamic factor model employs a set of 143 indicators, from which it extracts the major driving forces behind the business cycle by means of dynamic time series techniques. However, econometric models cannot capture all factors determining short-term economic developments, such as discretionary economic policy measures, institutional issues or structural breaks. To adjust the models for such factors, expert judgment is incorporated into the result. In his comment, *Robert Kunst* (University of Vienna) provided some basic thoughts on business indicators and on the standard tests used in the empirical part to assess a model's predictive quality.

*Sylvia Kaufmann* (OeNB) discussed her work on the identification of cyclical turning points for Austria. To this end, information about cyclical conditions is extracted from a large number of Austrian and other countries' economic time series. This method groups those time series together which display similar dynamics over the business cycle. The classification is not specified a priori; rather, it is estimated together with the model parameters. The model identifies a group of series that leads another one, while a third group of series moves independently from two former series. To determine turning points, the economic cycle is modeled using a Markov process which identifies periods of below- and above-average growth. The turning points determined by this process are com-

pared with those identified by the Economic Cycle Research Institute. It turns out that in the first half of the 1990s, the turning points are nearly identical whereas subsequently, minor deviations occur. *Robert Kunst* (University of Vienna) emphasized the innovative character of this approach. He pointed out, however, that describing an economy by means of just two states was an extreme simplification.

The first day of the workshop concluded with a presentation by *Thomas Url* (WIFO) of a long-run economic model for Austria, A-LMM, which was developed jointly by WIFO and IHS. This model is suited to simulating the long-term effects of demographic developments such as aging on employment, output growth and the solvency of the social security system. The model's long-run equilibrium solution is determined by supply-side factors and is derived from neoclassical theory. Demand components are modeled by means of dynamic optimization, which takes into account the forward-looking behavior of economic agents and allows for a smooth transition to the long-term growth path. By disaggregating the population into six age cohorts, the model is able to account for future demographic trends. Alternative scenarios were developed to highlight the effect of aging on the economy from different perspectives. In his comment, *Heinz Glück* (OeNB) underlined that on a scale from theoretical to empirical coherence, the long-run nature of the model clearly placed the main focus on its theoretical foundation.

The second day of the workshop was opened by *Gabriel Moser* and *Fabio Rumler* (both OeNB), who presented model-based inflation fore-

casts. These forecasts use various models – ranging from a factor model as well as VAR (vector autoregressive) and ARIMA (auto-regressive moving average) models – to project the rise in the Harmonised Index of Consumer Prices and its five subindices. The factor models are identified as exhibiting the highest predictive quality for five out of six indices; in two cases, forecasting accuracy may be improved further by combining factor model forecasts with forecasts made using VAR models. All ARIMA models produce less accurate forecasts. Moreover, the aggregation of forecasts for the subindices produce a marginally better result than the forecast of the overall index itself. In his comment, *Gerhard Rünstler* (ECB) identified the problems inflation forecasting faces. Using empirical evidence for the euro area, he showed that the non-stationarity or near-nonstationarity of inflation generally limit predictability.

In the second presentation during this session, *Ines Fortin* (IHS) introduced the model IHS uses for exchange rate forecasting. In general, exchange rate developments are hard to forecast. More complex models do not succeed in producing significantly better exchange rate forecasts than simpler models, such as extrapolations from the last available value (random walk forecasting). This applies particularly to short-term forecasts. However, experience with the IHS exchange rate model also shows that the longer the forecasting horizon is, the better the model's predictive quality is compared to that of random walk forecasting. In his comment, *Harald Grech* (OeNB) clearly established that even though IHS's monetary exchange rate model is frequently used in the literature, it rarely delivers significantly better results over short-

term horizons of up to 12 months. He briefly sketched some of the weak points of the monetary model, touched upon empirical estimation methods (VARs), and then suggested using real-time data or panel estimates to possibly improve forecasting quality.

The last session of the workshop covered input-output models. *Kurt Kratena* (WIFO) described the most recent version of WIFO's MULTIMAC IV input-output-based macroeconomic model. The model integrates econometrically estimated behavioral equations for goods and factor demand, prices, wages and employment using input-output relations for 36 sectors. WIFO regularly uses the MULTIMAC IV model to simulate the sectoral impact of shocks and economic policy measures. Kratena applied the model to two simulations (to the expansion of investment in information and communication technology including counterfinancing and to the impact of road pricing) to demonstrate its possible uses.

*Oliver Fritz* (WIFO) and *Gerhard Streicher* (Joanneum Research) reported on work in progress on developing MULTIREG, the first multi-regional input-output model for Austria. This model consists of three main parts: first, the regional input-output tables for all nine Austrian provinces with time-variant coefficients (based on the make-use approach); second, a trade matrix that captures the delivery linkages between the provinces; third, econometrically estimated behavioral equations. The two discussants (*Karin Wagner*, OeNB, and *Josef Richter*, University of Innsbruck) drew attention to the contradictory context in which such models are built. In practice, the demands on an ideal input-output model cannot be fulfilled. Hence, all existing models invariably represent a compromise in terms of coherence, data timelines, the degree of detail etc. Josef Richter concluded his contribution with a discussion of the demands on the statistical system in Austria from the perspective of input-output modeling.

# A Constitutional Treaty for an Enlarged Europe: Institutional and Economic Implications for Economic and Monetary Union

Paul Schmidt

As the negotiations on the Treaty establishing a Constitution for Europe have been concluded and the Constitutional Treaty<sup>1</sup> has been signed by the Heads of State or Government of the Member States of the European Union (EU), the Oesterreichische Nationalbank (OeNB) organized an international workshop held on November 5, 2004, in Vienna.

The workshop gave an overview of the institutional implications the Constitutional Treaty may have for Economic and Monetary Union (EMU). Furthermore, speakers analyzed the institutional framework for financial stability in Europe and the role fiscal policy and the Stability and Growth Pact play in an enlarged Europe.

In his opening remarks, *Josef Christl*, executive director of the OeNB, stressed how important the Constitutional Treaty, which aims at rendering the enlarged EU more effective, transparent and democratic, was for European integration. According to Christl, the process of ratifying the Constitutional Treaty will be a great challenge but, at the same time, presents an opportunity to put the debate about the future of the European Union into a broader perspective and to bring the European integration project closer to the people.

Now that the EU has been successfully enlarged, the new constitutional architecture should be used to deepen the European integration process. The euro as the single currency plays a key role in this respect, serving as a catalyst for political integration and continuous economic reforms. It represents a successful step toward integration and stands for both unity and variety within Europe.

The OeNB, as an integral part of the European System of Central Banks (ESCB), has been closely following the debates in the Convention on the Future of Europe, as well as the negotiations at the Intergovernmental Conference, and has participated in drawing up ECB opinions. The OeNB will continue to analyze institutional and legal changes relating to EMU; after all, the changing European

framework conditions directly influence the OeNB's daily work.

*René Smits*, professor at the University of Amsterdam, held the keynote speech at the workshop, in which he outlined the structure of the Constitutional Treaty. According to Smits, the Constitutional Treaty contains only minor changes to the institutional framework of EMU; first and foremost, it reconfirms the ECB's independence and, at the same time, provides for its formal integration into the institutional framework of the EU. Furthermore, the Constitutional Treaty states that members of the Executive Board of the ECB have to be appointed by a qualified majority and that the Council of Ministers has to take decisions based on a double majority system. It also formally uses the terms Eurosystem and Eurogroup, introduces the function of a president of the Eurogroup, puts forward that euro area Member States are to have more powers, and contains a declaration by the Heads of State or Government on the Stability and Growth Pact.

According to Smits, the so-called *exit clause* only partially defines the course of action for Member States wishing to leave the European Union and fails to provide a withdrawal procedure. The Constitutional Treaty takes an intergovernmental approach, introducing an EU foreign minister

<sup>1</sup> In the following, the Treaty establishing a Constitution for Europe will be referred to as Constitutional Treaty.

and the election of a European Council president and principally holding on to the rotating EU presidency. By extending the scope of the codecision procedure, it renders the European Parliament more influential. The European Commission's role as a motor of integration is only slightly expanded.

According to Smits, the Constitutional Treaty simplifies all treaties established so far; nevertheless, compared with the U.S. Constitution, it is still complex. The stipulated amendment procedures do not exactly facilitate the evolution process of the Constitutional Treaty. One has to accept that creating a constitution is a continuous and dynamic process. Smits considers the current document a successful step toward integration but calls for further steps to follow.

### **From Maastricht to the Constitutional Treaty: Are there Fundamental Changes for EMU?**

*Isabella Lindner* and *Marlies Stubits*, OeNB, presented a study in which they examined how multilevel economic governance in the European Union is affected by the Constitutional Treaty and which implications these effects have for EMU in terms of effectiveness and efficiency. They argue that the Constitutional Treaty may improve the EU-25's ability to act on both the European and the international level by providing for stronger personalization of the EU's institutions and the Eurogroup and by reducing the size of the European Commission.

Furthermore, the Constitutional Treaty lays down several new provisions and voting rights pertaining exclusively to the euro area Member States. It also formalizes the Euro-

system, de facto integrates the Eurogroup and introduces a longer-term president of the Eurogroup, thus changing the current system of multilevel economic governance in the EU. As heterogeneity among Member States has increased with enlargement, the euro area is more and more turning into a "center of gravity" for integration.

Whether or not the Constitutional Treaty will render the decision-making process more efficient will only be revealed when the treaty comes into effect. At any rate, introducing a double majority system signifies a radical departure from the previous voting system.

The Constitutional Treaty does not contain any substantial changes with regard to monetary union, as most of the changes are of a technical nature only. It reaffirms the framework conditions for monetary union as embodied in the Treaty on European Union.

*Fritz Breuss*, professor at the Vienna University of Economics and Business Administration, stressed the intergovernmental character of the Constitutional Treaty. He warned that extending the powers of the Eurogroup and introducing a president of the Eurogroup could be a source of conflict among the Ecofin Council, the Eurogroup and the ECB. Economic policy coordination, whose core element is the Economic and Financial Committee, remains complex and cumbersome. Breuss said he was wondering whether this type of coordination ultimately has more advantages or disadvantages. He declared the European Commission the big loser in the bargaining game for the distribution of powers among the European institutions.

### **The Institutional Setting for Financial Stability in Europe**

*Holger Wolf*, professor at Georgetown University, spoke about the challenges arising from financial integration concerning the institutional setup of financial market supervision. In view of the increasing number of cross-border and cross-sector financial institutions, Wolf advocated a two-tier system consisting of an EU authority responsible for supervising large European financial institutions and national authorities supervising only institutions that primarily operate in the domestic markets. When and how such a structure should best be implemented is a much more difficult issue. Since the number of institutions operating EU-wide remains low, and as Basel II brings about a range of substantial changes, a gradual transfer of supervisory powers to the current coordinating bodies (evolutionary approach) would be desirable.

When it comes to crisis prevention and the allocation of costs for lender-of-last-resort (LOLR) operations, however, a formal framework should be established as quickly as possible. According to Wolf, scenarios in which large international banks with their headquarters in a small EU Member State experience problems which exceed the national central bank's capacities are by all means realistic. A lack of clearly defined structures may potentially cause market uncertainties.

According to *Karin Hrdlicka*, OeNB, the moment for changing the supervisory architecture has not yet come. Furthermore, the level 3 Lamfalussy committees have been established only recently, mainly to address challenges arising from the integration process by implementing EU

legislation more consistently and by converging supervisory practices. In terms of stability, a European supervisory authority seems to be a realistic solution, but only in the long run and only if organized on a decentralized basis. Hrdlicka said that a two-tier supervisory structure could cause numerous problems.

### **Fiscal Policy and the Stability and Growth Pact in an Enlarged EU**

*Stefan Collignon*, professor at the London School of Economics, advocated establishing coherent fiscal policies at the EU level to optimize the European monetary and fiscal policy mix. There are more advantages than disadvantages to centralizing public finances (welfare and stability gains) while allocating budgets on a decentralized basis (efficiency gains).

The EU budget must have democratic legitimacy, and costs must be allocated more evenly. According to Collignon, net contributors are more prone to undergo excessive deficit procedures in times of economic downturns than net recipients, as, according to the rules for excessive deficits, net transfers from – as opposed to net payments to – the EU are not taken into account. Having its own source of funding (EU tax) would equip the EU better for its negotiations on the financial perspective; interregional transfers could be conducted via *tradable deficit permits*. Elections to the European Parliament would thus determine decisions on how to use European taxpayers' money. They would ensure that the EU budget reflects the preferences of the majority of citizens and overcomes individual interests. Discussing and voting on the budget in the European Parliament, with proposals from

the Commission and the consensus of the Council (depending on the legislative procedure), would foster European democracy and identity.

*José Marin*, ECB, pointed out that there were different definitions of federalism in Europe. The current expenditure structure of the EU

budget is by all means justified and corresponds to the fragile institutional balance within the EU, as well as to the current level of European integration. *Marin* said that for most EU Member States implementing a more fiscal policy-oriented federalism would currently not be acceptable.



# Longer Working Hours? More Flexible Work Schedules? Do Austrian Economic Policymakers Need to Act?

Alfred Stiglbauer

On September 23, 2004, the Oesterreichische Nationalbank (OeNB) hosted a workshop to discuss extending working hours and increasing working time flexibility. After Peter Mooslechner (OeNB) outlined the development of the present discussion in the media and presented some facts, the participants delivered their statements. Erhard Fürst (Federation of Austrian Industry and Austria perspektiv) called for more flexibility rather than for an extension of working hours. He supported this view by pointing to the rising competitive pressure on enterprises. Sepp Zuckerstätter (Chamber of Labor) opposed lengthening working hours, because this would reduce employment and decrease aggregate demand. In his opinion the current regulations are sufficient. Herbert Walther (Vienna University of Economics and Business Administration) explained that in theoretical models the impact of more flexible working hours on employment is uncertain. Moreover, no connection between the degree of flexibility and key labor market indicators could be established. In the weeks and months preceding the workshop the media reported calls for the extension of standard working hours and more flexible working hours in enterprises.

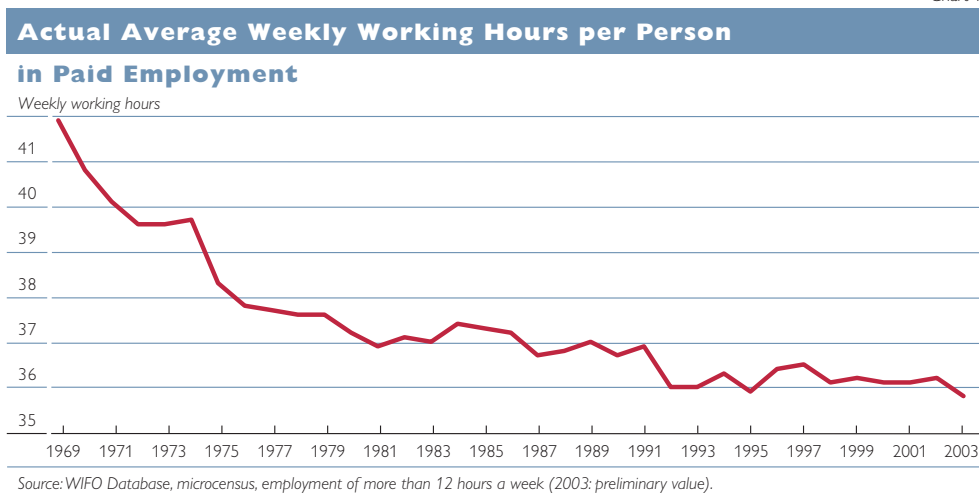
In his introduction, *Peter Mooslechner* referred to the most important elements of the discussion in the media on extending working hours and increasing working time flexibility. From the Austrian perspective it is striking that the topic is discussed much more intensely in Germany than in Austria. In Germany, above all, the developments at Siemens and DaimlerChrysler caused a considerable stir, where an extension of annual working hours was agreed in view of the growing competition from Eastern European countries. In Austria, industry representatives opened the debate on extended working hours and later called for abolishing public holidays. Employee representatives opposed these arguments primarily by claiming that longer working hours would result in decreased overall economic demand, which ultimately could not be in the interest of enterprises. Finally, the discussion in Austria very quickly turned to the issue of establishing a more flexible regulatory framework for working hours. In this vein, the president of the Austrian Federal Economic Chamber, Christoph Leitl, demanded a “radical increase” of working-time flexibility.

Peter Mooslechner stated that the data available on working time, above all for Austria but also internationally,

is insufficient and partly contradictory. According to OECD statistics Austrian employees’ actual annual working hours came to almost 1,500 in 2003. Employees in Germany, the Scandinavian countries and the Netherlands show fewer annual working hours. However, people in the U.S.A. and Eastern European countries like Hungary, the Czech Republic and Poland work longer, while Switzerland has about the same annual working hours as Austria. According to the DICE database of the Munich ifo Institute, the collectively agreed standard working time of 1,700 hours a year in Austria approximately corresponds to the EU average.

The microcensus (Statistics Austria) shows that in the long term, the actual average weekly working hours per employee in Austria decreased significantly from 42 to 37 hours between the beginning of the 1970s and the end of the 1980s. However, since then, it has remained constant despite the increase in part-time work (chart 1). A typical feature of the Austrian labor market is that labor schemes generally associated with flexibility represent a relatively high share. In Austria the proportions of evening work (13.3%), Sunday work (10.4%) and shift work (18.0%) are close to the EU average, while the fig-

Chart 1



ures for night work (9.1%) and Saturday work (19.9%) are significantly higher. These figures, for example, are also considerably higher than in Switzerland and, apart from evening work, are quite comparable with those of the United Kingdom.

This assessment is confirmed by figures of the Main Association of Austrian Social Security Institutions and the Austrian Public Employment Service, which show that about 1.4 million job entrants and leavers (with 3.2 million persons in paid employment) a year seems very high. Moreover, there are 450,000 “atypical” jobs, which include marginal employment, employee leasing and contract self-employment. This raises the principal question of whether Austrian economy policymakers need to act, considering that the Austrian labor market is time and again credited with considerable flexibility – e.g. real wage flexibility – in an international comparison.

*Erhard Fürst* (Federation of Austrian Industry and Austria *perspektiv*) cited the increasingly intense competitive pressure on businesses as a reason for the need to discuss working time arrangements. This pressure has risen

above all because of the creation of the EU single market and EU enlargement. New regulations and taxes (e.g. increased energy taxes, the truck toll and the EU chemicals directive) further compounded cost pressures. Furthermore, Mr. Fürst pointed to international stock market pressures on companies to make high profits designed to keep investors from withdrawing their holdings. The Basel II rules are also likely to augment the cost of raising capital.

According to Erhard Fürst, changing the current working time arrangements is a possible tool to provide more flexibility and reduce costs for enterprises. Principally, however, Austria does not require action as urgently as Germany. Mr. Fürst pleaded for more flexible working time arrangements within a year, which would bring down labor cost by reducing overtime. More flexible working times should be negotiated at the enterprise level, because not all enterprises utilize the current legal possibilities or options laid out in collective agreements in the same way: Some businesses are content with the current possibilities, while others prefer more flexible work models.

Very few enterprises would prefer an extension of working hours without adjusting wages. Mr. Fürst advocated working hour arrangements that meet the individual needs of enterprises within the given framework of the social partnership.

Mr. Fürst saw no immediate reason for extending the current weekly or annual working hours. (However, it should be possible to increase working hours in single cases in order to protect Austrian industries and jobs in the long term.) However, surveys conducted by the Federation of Austrian Industry of industrial enterprises show that there is an urgent need to increase the maximum standard working hours to 10 hours a day and the maximum permissible working hours to 12 hours a day. It is also necessary to generally increase the averaging period to one year. According to Mr. Fürst it is not possible to conclusively assess the macroeconomic impact of longer and more flexible working hours, because the result depends on overall economic capacity utilization and on demand. In the long term, improved international competitiveness will feed through to higher growth and employment. Mr. Fürst emphasized that an extension of working hours (above all over the duration of a lifetime) will become necessary for demographic reasons.

In his introduction, *Sepp Zuckerstätter* (Chamber of Labor) gave thought to work demand. Considering empirical estimates of labor demand elasticities, it is not plausible that an extension of working hours would raise employment. The first effect of an extension of working hours will be to increase labor supply; to boost employment, labor demand elasticity figures would have to be higher than 1. However, no study has found such

high figures. In *Sepp Zuckerstätter's* opinion it is much more likely that employment will decrease while working hours will increase. An extension of working hours results in decreasing income and demand owing to lower overtime pay and wage reductions for part-time workers. Furthermore, it is not very likely that production costs decreased in such a way that they will enhance competitiveness, as other countries will also apply similar strategies. This would trigger a rat race, after which all countries will be in a worse position than before. In addition, all available analyses of the reasons for the current slow growth show that weak domestic demand rather than low exports are at cause. The impact on employment of more flexible working hours is not clear. The profits gained from improved capital utilization need to be allocated Pareto improving to employers and employees.

According to Mr. *Zuckerstätter* it is necessary to remember the reasons for working time arrangements. These include the protection of health, social interests (achieving a work-life balance, volunteer work), protection from arbitrary acts and the regulation of competition between enterprises. As it is easily possible to deviate from the standard 40-hour workweek (with 8-hour workdays) under the existent regulations, the current regime is flexible enough. Flextime regulations and many collective agreements allow employees to work up to 10 hours a day or 50 hours a week without obligatory overtime pay. Also, the arrangements for total working hours (including overtime) allow employees to work up to 60 hours a week, provided the company has put in place such an agreement. In addition, there are special regula-

tions for many industries (e.g. in retailing, hospitals and shiftwork). Moreover, employers can easily adapt standard working hours to their needs, if they provide an objective justification and announce the change in time. In any case, Mr. Zuckerstätter considers the current scope of flexibility high and sufficient, above all when the interests of employees are taken into account.

Mr. Zuckerstätter asserted that the present discussion did not take into account labor supply aspects and the position of employees. More flexible working time entails monetary and nonmonetary costs for employees. These have to be offset by the gains of more flexible working hours. In principle, according to Mr. Zuckerstätter, the shorter the (core) working hours are, the easier it is to be flexible. In comparisons with Eastern Europe, it is predictable that working hours in these countries will also decrease, because the demand for leisure increases with income. The latest OECD Employment Outlook shows that employees who have a say in their working hours report significantly fewer work-life balance conflicts than other employees.

*Herbert Walther* (Vienna University of Economics and Business Administration) began his statement with a question of principle: Why are there any working time arrangements at all? Technical complementarities necessitate coordinated working hours for many but not for all occupations. Therefore, consistent working time arrangements are unavoidable. However, it results in winners and losers due to different preferences for income and leisure. It is easier for an employer to replace an employee than for an employee to change employers. This leads to a structural asymmetry

of power in favor of employers on working hour issues. Collective agreements and legislation create a balance and are suitable for creating trust between employees and employers, which is necessary for the long-term efficiency of contractual relationships. This is also useful for employers. Furthermore, the external effects of working time arrangements (free time for families, employee health) have to be considered as well. In increasing working-time flexibility, the question of who has the right to decide whether and how to make use of flexibility (the “directive right”) is relevant. Employers implement this right when they order employees to work overtime, stand-by employment, forced leave and the like; employees use this right e.g. when they take flextime or parental and nursing leave. It is not always possible to find a consensus when steps toward more flexibility are taken; there are conflicts of interest. In any case, the directive right determines the distributional effects of efficiency gains resulting from more flexible working hours.

Mr. Walther discussed two examples of how more flexible working hours can influence employment. First, he considered the case of ordered overtime combined with compensatory time off later. In this case, labor costs clearly decrease (no overtime pay) whereas for employees the benefit of leisure time declines. The substitution effect (increased use of cheaper labor) could raise employment. Under competition, lower costs cause a reduction in prices and an expansion of demand. However, at the industry level a negative effect on employment has to be expected when demand is inelastic (which is likely). Second, Mr. Walther analyzed the general case of total disconnection

of working and operating hours in a model of monopolistic competition with free entry and exit (Walther, 2000). This results in some contradictory effects on employment. The longer hours of operation and consequently lower capital costs cause a substitution effect to the disadvantage of labor. With respect to the number of enterprises there is a concentration effect (economies of scale) which also has a negative impact on employment. However, lower prices and more flexible supply exert a positive impact on demand and employment. Hence, the overall impact on employment at the industry level and at the macroeconomic level is not entirely clear.

Mr. Walther concluded that working time arrangements always are a question of various private and social costs and gains, which then result – inter alia – in employment effects. Even if an arrangement (such as the extension of standard work hours) seems desirable from an individual point of view, it does not necessarily result in positive effects if other firms of an industry or other countries follow the example. Working hours policy is not a sustainable employment policy tool (no matter whether working hours are extended, reduced or made more flexible). At best it is possible to achieve one-off effects with this instrument, but it is not suitable for solving the problem of slow economic growth in the long run. Furthermore, from the empirical point of view, no correlation between the degree of flexibility and labor market indicators such as the unemployment rate, employment growth, the participation rate and unit labor costs can be identified. In the 1990s, Austrian enterprises profited from the growth of unit labor costs, which at 0.3% was considerably lower than

in the EU (1.9%). Higher economic growth and higher employment growth have reasons other than a failed labor policy. The slow growth in Germany is above all caused by a failure of macropolicy as a consequence of the reunification and the lacking coordination of monetary, fiscal and wage policy. In addition, there is a general misuse of public resources. (Research should receive more aid than agriculture.) Finally, the macropolicy reaction to external shocks (creation of the single market, the introduction of the euro and EU enlargement) was inadequate.

After the three speakers had finished their statements, the audience participated in a lively discussion. *Peter Brandner* (Ministry of Finance) criticized Walther's empirical discussion, stating that mere correlations are not really meaningful. In addition, he questioned Walther's explanations of the causes of slow economic growth, as contradictory theoretical opinions have been stated on this issue. *Alfred Katterl* (Ministry of Finance) criticized the poor quality of labor market statistics and claimed that in view of the decreasing labor share, the cost problem of enterprises could not be very severe. Mr. Katterl proposed abolishing public holidays as the easiest way of extending working hours, if an extension of annual working hours was in fact the objective. *Helene Schubert* (OeNB) addressed the problem that a growing number of women face the risk of economic dependency and the danger of poverty because more women work part-time. *Martina Gerharter* (Staff Council Deputy Chair, OeNB) explained that more flexible working hours have two sides: On the one hand, they are positive for relatively privileged (well-educated) employees, as these employees have

a greater say in decision-making; on the other hand, they are negative for less qualified employees, as such employees are often less well-organized in trade unions. Mr. Walther confirmed that the likelihood of a positive outcome for both sides of industry of flexible working hours is much higher in sectors with a high degree of trade union organization (compare industry versus retailing).

Mr. Walther opposed Mr. Fürst's call for a stronger transfer of working time arrangements to the level of enterprises. In his opinion such issues have to be negotiated at the industry level. Mr. Fürst responded that this

was not effective because the firms covered by the same collective agreements are too heterogeneous. Mr. Zuckerstätter pointed out some special cases in retailing, where working hour regulations are currently violated on purpose. He identified a lack of clear statements from the employers on which measures exactly should be taken to increase working time flexibility. Mr. Mooslechner's concluding question of whether there was a need for action, as suggested in the title of the conference, was answered in the negative by the majority. Mr. Fürst again pointed to the increased cost pressure of enterprises.

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# NOTES

# Abbreviations

|          |  |        |  |
|----------|--|--------|--|
| ACH      | automated clearing house   | GNP    | gross national product   |
| APSS     | Austrian Payment System Services GmbH  | GSA    | GELDSERVICE AUSTRIA Logistik für Wert-<br>gestionierung und Transportkoordination GmbH<br>(Austrian cash services company)                     |
| ARTIS    | Austrian Real Time Interbank Settlement<br>(the Austrian RTGS system)  | HICP   | Harmonized Index of Consumer Prices  |
| A-SIT    | Secure Information Technology Center – Austria   | IBAN   | International Bank Account Number  |
| ASVG     | Allgemeines Sozialversicherungsgesetz – General<br>Social Security Act                                       | IBRD   | International Bank for Reconstruction and<br>Development   |
| A-Trust  | A-Trust Gesellschaft für Sicherheitssysteme im<br>elektronischen Datenverkehr GmbH                           | IDB    | Inter-American Development Bank  |
| ATM      | automated teller machine   | IFES   | Institut für empirische Sozialforschung GesmbH<br>(Institute for Empirical Social Research, Vienna)  |
| ATX      | Austrian Traded Index  | ifo    | ifo Institute for Economic Research, Munich  |
| BCBS     | Basel Committee on Banking Supervision (BIS)   | IGC    | Intergovernmental Conference (EU)  |
| BIC      | Bank Identifier Code   | IHS    | Institut für Höhere Studien und Wissenschaftliche<br>Forschung – Institute for Advanced Studies, Vienna  |
| BIS      | Bank for International Settlements   | IIF    | Institute of International Finance   |
| BOP      | balance of payments  | IIP    | international investment position  |
| BSC      | Banking Supervision Committee (ESCB)   | IMF    | International Monetary Fund  |
| CACs     | collective action clauses  | IRB    | internal ratings-based   |
| CEBS     | Committee of European Banking Supervisors (EU)   | ISO    | International Organization for Standardization   |
| CEE      | Central and Eastern Europe   | IWI    | Industriewissenschaftliches Institut – Austrian<br>Institute for Industrial Research   |
| CEECs    | Central and Eastern European countries   | IT     | information technology   |
| CESR     | Committee of European Securities Regulators  | JVI    | Joint Vienna Institute   |
| CIS      | Commonwealth of Independent States   | LIBOR  | London Interbank Offered Rate  |
| CPI      | consumer price index   | M3     | broad monetary aggregate M3  |
| EBA      | Euro Banking Association   | MFI    | monetary financial institution   |
| EBRD     | European Bank for Reconstruction and<br>Development  | MRO    | main refinancing operation   |
| EC       | European Community   | MÖAG   | Münze Österreich AG – Austrian Mint  |
| ECB      | European Central Bank  | MoU    | memorandum of understanding  |
| Ecofin   | Council of Economics and Finance Ministers (EU)  | NCB    | national central bank  |
| EEA      | European Economic Area   | ÖBB    | Österreichische Bundesbahnen – Austrian Federal<br>Railways  |
| EFC      | Economic and Financial Committee (EU)  | OeBS   | Oesterreichische Banknoten- und Sicherheitsdruck<br>GmbH – Austrian Banknote and Security Printing<br>Works                                    |
| EIB      | European Investment Bank   | OECD   | Organisation for Economic Co-operation and<br>Development  |
| EMS      | European Monetary System   | OeKB   | Oesterreichische Kontrollbank (Austria's main<br>financial and information service provider for the<br>export industry and the capital market) |
| EMU      | Economic and Monetary Union  | OeNB   | Oesterreichische Nationalbank (Austria's central<br>bank)  |
| EONIA    | Euro OverNight Index Average   | OPEC   | Organization of the Petroleum Exporting Countries  |
| ERM II   | Exchange Rate Mechanism II (EU)  | ORF    | Österreichischer Rundfunk – Austrian Broadcasting<br>Corporation   |
| ERP      | European Recovery Program  | ÖBFA   | Austrian Federal Financing Agency  |
| ESA      | European System of Accounts  | ÖNACE  | Austrian Statistical Classification of Economic<br>Activities  |
| ESAF     | Enhanced Structural Adjustment Facility (IMF)  | PE-ACH | pan-European automated clearing house  |
| ESCB     | European System of Central Banks   | PISA   | Programme for International Student Assessment<br>(OECD)   |
| ESRI     | Economic and Social Research Institute   | POS    | point of sale  |
| EU       | European Union   | PRGF   | Poverty Reduction and Growth Facility (IMF)  |
| EURIBOR  | Euro Interbank Offered Rate  | RTGS   | Real-Time Gross Settlement   |
| Eurostat | Statistical Office of the European Communities   | SDR    | Special Drawing Right (IMF)  |
| FATF     | Financial Action Task Force on Money Laundering  | SDRM   | Sovereign Debt Restructuring Mechanism (IMF)   |
| Fed      | Federal Reserve System   | SEPA   | Single Euro Payments Area  |
| FFF      | Forschungsförderungsfonds für die Gewerbliche<br>Wirtschaft – Austrian Industrial Research<br>Promotion Fund |        |  |
| FMA      | Financial Market Authority (for Austria)   |        |  |
| FOMC     | Federal Open Market Committee (U.S.A.)   |        |  |
| FSAP     | Financial Sector Assessment Program (IMF)  |        |  |
| FWF      | Fonds zur Förderung der wirtschaftlichen<br>Forschung – Austrian Science Fund                                |        |  |
| GAB      | General Arrangements to Borrow   |        |  |
| GATS     | General Agreement on Trade in Services   |        |  |
| GDP      | gross domestic product   |        |  |



|            |  |      |  |
|------------|--|------|--|
| SPF        | Survey of Professional Forecasters   | UNO  | United Nations Organization  |
| STEP2      | Straight-Through Euro Processing system offered by the Euro Banking Association  | VaR  | Value at Risk  |
| STP        | straight-through processing  | WBI  | Wiener Börse Index   |
| STUZZA     | Studiengesellschaft für Zusammenarbeit im Zahlungsverkehr G.m.b.H. – Austrian Research Association for Payment Cooperation | WEF  | World Economic Forum   |
| S.W.I.F.T. | Society for Worldwide Interbank Financial Telecommunication  | WIFO | Österreichisches Institut für Wirtschaftsforschung – Austrian Institute of Economic Research                       |
| TARGET     | Trans-European Automated Real-time Gross settlement Express Transfer   | WIIW | Wiener Institut für internationale Wirtschaftsvergleiche – The Vienna Institute for International Economic Studies |
| Treaty     | refers to the Treaty establishing the European Community   | WKO  | Wirtschaftskammer Österreich – Austrian Federal Economic Chamber   |
| UNCTAD     | United Nations Conference on Trade and Development   | WTO  | World Trade Organization   |

## Legend

- = The numerical value is zero
- .. = Data not available at the reporting date
- × = For technical reasons no data can be indicated
- 0 = A quantity which is smaller than half of the unit indicated
- Ø = Mean value
- = New series

Note: Apparent arithmetical discrepancies in the tables are due to rounding.

Irrevocable euro conversion rate: EUR 1 = ATS 13.7603.

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