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Austria's Economy Moves beyond the Crisis

Powerful Economic Growth Provides a Tailwind to Reduce Budget Deficits

Economic Outlook for Austria from 2011 to 2013 (June 2011)

Christian Ragacs,
Klaus Vondra[1]

1 Summary: Austrian Economy Grows at an Above-Average Pace

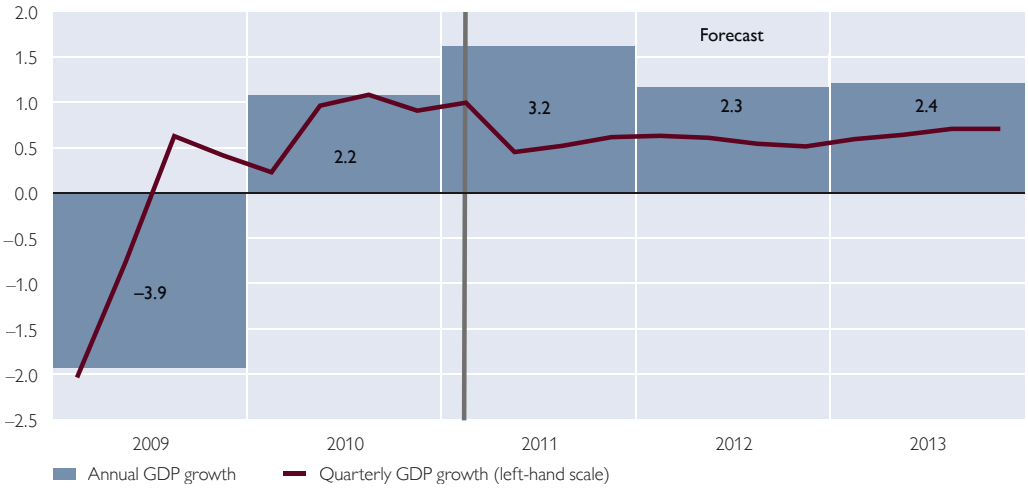
In the June 2011 economic outlook, the Oesterreichische Nationalbank (OeNB) expects the Austrian economy to grow by 3.2% in 2011. Growth will remain above the long-term average in 2012 and 2013 as well (2012: 2.3%; 2013: 2.4%). Compared with the OeNB December 2010 outlook, short-term growth expectations have thus improved considerably. The prospects for growth in 2011 have been revised upward by more than 1 percentage point. The recovery is being driven mainly by exports, but unlike in 2010, domestic demand is contributing substantially to growth as well. The unemployment rate will drop from 4.3% in 2011 to 4.1% in 2013. HICP inflation is set to quicken to 3.2% in 2011 above all because of higher commodity prices and increased taxes and levies. But over the forecast horizon, HICP inflation is expected to ease to 2.1% in 2012 and to 1.9% in 2013. The budget deficit is projected to decrease to 3.0% of GDP already in 2011, given favorable economic developments and good fiscal consolidation performance. With economic growth conditions remaining auspicious, the deficit ratio is anticipated to shrink further in 2012 and 2013.

The emerging economies, especially emerging Asia and South America, were the *main engine of global economic growth* in 2010. But the worldwide

Chart 1

Real GDP Growth (Seasonally and Working-Day Adjusted)

Quarterly and annual changes in %



Source: Eurostat, OeNB.

JEL classification: C5, E17
Keywords: forecast, Austria
Editorial deadline: May 24, 2011

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upswing was also accompanied by a considerable rise in energy and food prices in recent months, heating up inflation. Many countries and regions are counteracting the danger of their economies overheating by tightening monetary policy.

The global economy will continue to revive over the forecast horizon, but the development within the *euro area* in the fourth year after the outbreak of the international financial and economic crisis is highly heterogeneous. Countries whose production structure is dominated by an internationally competitive export sector were more strongly affected by the crisis and the slump in world trade, but recovered faster than average in 2010. Conversely, countries suffering from competitive weaknesses or structural budget problems were faced with a loss of international investors' confidence and therefore with surging risk premiums and refinancing costs for their government debt. In Spain, Greece and Ireland, GDP contracted further in 2010.

The recovery of the world economy, above all of the German economy, provides the key impulses for Austrian economic performance. In 2011 as a whole, *Austrian exports* will surge (10.4%) nearly as strongly as in 2010. In 2012 and 2013, the expected slowdown of the international development will cause Austrian export growth to slacken. However, at roughly 7%, exports will continue to expand at an above-average rate and will remain a pillar of economic growth.

Powered by the recovery of export demand, *gross fixed capital formation* picked up again from the second quarter of 2010. For the most part, investment focused on plant and equipment, whereas investment in building construction and civil engineering was still contracting as late as in the fourth quarter of 2010. Overall, construction investment is anticipated to keep declining in 2011 but to recover over the remainder of the forecast horizon. Gross fixed capital investment as a whole is projected to grow by 3.7% in 2011, by 3.1% in 2012 and by 3.4% in 2013.

Like in 2010, households will partly finance *private consumption* by reducing their savings in 2011. Over the remainder of the forecast horizon, the financial burden imposed by the budget consolidation package will largely unwind and the rate of inflation will ease significantly. These developments will moderately boost real consumer spending (+1.2% each in 2012 and 2013); at the same time, the saving ratio will recover to nearly the level measured before the crisis.

In 2011 as a whole, the *number of employed persons* is likely to rise by 60,000 (or 1.7%) year on year. Above-average employment growth of 1.2% a year is expected in 2012 and 2013. The *unemployment rate* (Eurostat definition) declined to 4.4% in 2010 on the back of a marked increase in employment. Austria is thus among the countries with the lowest unemployment rate in the euro area. Given rising labor supply, the rate of unemployment is likely to decline only marginally to 4.3% in 2011, will stay unchanged in 2012, and will decline to 4.1% in 2013.

Higher commodity prices and the increase in taxes and fees will cause inflation to quicken to 3.2% on average in 2011. Whereas energy price-induced inflation should diminish markedly toward the end of 2011, the overall rate of inflation will be influenced to a greater degree by the expected higher wage settlements for 2012 over the rest of the forecasting horizon. Accordingly, HICP inflation will amount to 2.1% in 2012 and will sink to 1.9% in 2013.

Table 1

OeNB June 2011 Outlook for Austria – Key Results[1]

	2010	2011	2012	2013
Economic activity	*Annual change in % (real)*			
Gross domestic product	+2.2	+3.2	+2.3	+2.4
Private consumption	+1.1	+0.9	+1.2	+1.2
Government consumption	–0.1	+0.8	+0.8	+1.0
Gross fixed capital formation	–1.1	+3.7	+3.1	+3.4
Exports of goods and services	+10.4	+10.0	+6.8	+7.2
Imports of goods and services	+8.3	+8.9	+6.0	+6.6
	% of nominal GDP			
Current account balance	+2.7	+4.0	+4.8	+5.0
Contribution to real GDP growth	*Percentage points of GDP*			
Private consumption	+0.6	+0.5	+0.6	+0.6
Government consumption	+0.0	+0.1	+0.1	+0.2
Gross fixed capital formation	–0.2	+0.7	+0.6	+0.7
Domestic demand (excluding changes in inventories)	+0.4	+1.4	+1.4	+1.5
Net exports	+1.5	+1.2	+0.9	+0.9
Changes in inventories (including statistical discrepancy)	+0.3	+0.7	+0.0	+0.0
Prices	*Annual change in %*			
Harmonised Index of Consumer Prices (HICP)	+1.7	+3.2	+2.1	+1.9
Private consumption expenditure (PCE) deflator	+1.5	+2.7	+1.9	+1.8
GDP deflator	+1.6	+2.1	+1.9	+1.9
Unit labor costs in the total economy	+0.1	+1.1	+1.8	+1.3
Compensation per employee (at current prices)	+1.3	+2.6	+2.9	+2.5
Productivity (whole economy)	+1.2	+1.5	+1.1	+1.2
Compensation per employee (real)	–0.2	–0.1	+0.9	+0.7
Import prices	+3.9	+3.5	+2.2	+1.8
Export prices	+2.2	+2.9	+2.1	+1.9
Terms of trade	–1.6	–0.6	–0.1	+0.1
Income and savings				
Real disposable household income	–0.7	+0.5	+2.1	+2.5
	% of nominal disposable household income			
Saving ratio	9.2	8.6	9.4	10.3
Labor market	*Annual change in %*			
Payroll employment	+0.8	+1.7	+1.2	+1.2
	% of labor supply			
Unemployment rate (Eurostat definition)	4.4	4.3	4.3	4.1
Budget	*% of nominal GDP*			
Budget balance (Maastricht definition)	–4.6	–3.0	–2.6	–2.3
Government debt	72.3	71.9	71.8	71.3

Source: 2010: Eurostat. Statistics Austria; 2011 to 2013: OeNB June 2011 outlook.

[1] *The outlook was drawn up on the basis of seasonally adjusted and working-day adjusted national accounts data. Therefore, the historical values for 2010 may deviate from the nonadjusted data released by Statistics Austria.*

2 Technical Assumptions

This forecast is the OeNB's contribution to the June 2011 Eurosystem staff macroeconomic projections. The forecasting horizon ranges from the first quarter of 2011 to the fourth quarter of 2013. All assumptions about the development of the global economy as well as the technical assumptions for interest rates, exchange rates and crude oil prices take into account developments up to and including May 19, 2011. The forecast was prepared with the OeNB's macroeconomic quarterly model and of

seasonally and working day-adjusted national accounts data calculated by the Austrian Institute for Economic Research (WIFO), which were fully available up to the fourth quarter of 2010. The data for the first quarter of 2011 are based on GDP flash estimates, which cover only part of the aggregates in the national accounts, however. The short-term interest rates used for the forecasting horizon are based on market expectations for the three-month EURIBOR, namely 1.5% in 2011, 2.3% in 2012, and 2.8% in 2013. Long-term interest rates reflect market expectations for ten-year government bonds, and have been set at 3.7% (2011), 4.0% (2012) and 4.3% (2013). The exchange rate of the euro vis-à-vis the U.S. dollar is assumed to remain at USD 1.43. The projected trend in crude oil prices is based on futures prices. The oil price assumed for 2011 is USD 111.1 per barrel of Brent, while those for 2012 and 2013 are set at USD 108.0 and USD 103.7, respectively. The prices of commodities excluding energy are also based on futures prices over the forecast horizon.

3 Global Upswing Driven by Emerging Countries – Development Remains Heterogeneous across Europe

Sustained by the large Asian and South American emerging economies, *world economic growth* in 2010 came to 4.9%, nearly as high as in the boom year 2007 (5.4%). World growth remained fast-paced at the beginning of 2011, though no longer at the rates measured at end-2009 and in early 2010. While staying robust, global economic activity will recede slightly to about 4 ¼% from 2011 to 2013. World trade growth, too, is anticipated to slow somewhat to about 8% over the forecast horizon compared to 12% in 2010.

In recent months, the international upturn has been accompanied by sky-rocketing commodity prices in the energy and food industries. Much as in 2007, this surge spurred inflation. In many regions across the world, policy-makers are counteracting accelerating inflation by increasingly tightening monetary policy.

At the beginning of 2011, the growth prospects for the world's largest economy clouded over: The U.S. economy expanded only moderately in the first quarter of 2011 (0.4% quarter on quarter). The silver lining, though, is the composition of growth, which points toward a positive development in the further course of the year. GDP growth was fueled by consumer spending and investment in plant and equipment. By contrast, public spending as well as commercial and residential construction spending acted as a brake on growth. In view of the planned austerity measures, public spending is not expected to provide any impulses for economic growth over the entire forecast horizon, but the dip in construction spending is seen as temporary, being caused by poor weather conditions. Starting from a very low level, construction spending is therefore expected to provide significant positive impulses for growth in 2012 and 2013. For 2011 as well as 2012 and 2013, GDP is anticipated to advance by between 2½% and 3%.

The emerging countries, above all those in Asia and South America, were the engines of international growth in 2010. In addition to China and India, Taiwan, Singapore, Argentina and Turkey registered over 9% annual GDP growth. South Korea, Indonesia, Thailand, Hong Kong, Malaysia and Brazil posted between 6% and 7% growth, whereas the oil-producing countries of the Middle East, Russia and the Central,

Eastern and Southeastern European (CESEE) countries grew by just 2% to 4%. Compared to the recovery year 2010, in which these economies had embarked on a strong catching-up process after the crisis in 2009, growth is anticipated to decline marginally in this very heterogeneous group of countries over the forecast horizon but to remain very high in an international comparison. The countries with the largest populations, China and India, continue to set the pace of world economic growth. In the wake of these two countries, Asia will remain the region powering international growth.

As a result of the Tohoku Pacific Ocean earthquake and the devastation by the tsunami waves that the earthquake triggered, *Japan's economy* suffered a slump in the first half of 2011. The post-tsunami reconstruction work is set to put the economy back on a positive growth path in the second half of 2011 and in 2012 mainly on account of government consumption and public investment. Full-year GDP is likely to fall slightly in 2011, however. The revival of net exports should additionally boost growth over the remainder of the horizon (2% to 3% in 2012 and 2013).

In the fourth year following the onset of the world financial and economic crisis, economic activity in Europe, in particular in the euro area, presents a very heterogeneous picture. Whereas in 2009, the external shock had entailed a fall in output in all European countries except Poland, the crisis revealed serious structural differences between individual Member States as well as significant macroeconomic imbalances that led to discrepancies between countries so that the crisis manifested itself in differing ways. Countries whose manufacturing structure is strongly oriented on an internationally competitive export sector – especially Germany, Finland, Slovakia, Luxembourg and Austria – were hit harder by the 2009 crisis than others, but also recovered faster in 2010. By contrast, other countries were hit by a country-specific shock in addition to the external shock: A real estate bubble burst in Spain; the banking system required a massive bank bailout in Ireland; risk premiums on, and refinancing costs for, government debt shot up in Greece and in Portugal as a result of fundamental structural budget problems. GDP continued to contract in Spain, Greece and Ireland in 2010. In Greece, Ireland and Portugal, the government debt crisis required joint intervention by the EU, IMF and ECB. The situation prior to the outbreak of the financial and economic crisis as well as the factors that further exacerbated the turmoil point to structural weaknesses and ineffective economic governance. In more detail, the financial sector lacked adequate regulation and supervision; economic structures were not competitive; macroeconomic imbalances had not been addressed; and government debts and deficits had increased substantially. Reforms and problem-solving in these countries are indispensable. In the short term, they will dampen growth, but in the medium term the measures should improve the growth potential.

Even though some of its member countries were grappling with problems, the euro area as a whole closed the first quarter of 2011 with above-average quarter-on-quarter growth of 0.8%. The animated growth drew mostly on the highly dynamic development of the German economy, but France, Belgium and Slovakia also contributed. Growth in Italy and Spain was comparatively subdued, and Portugal's economy even contracted. Overall, the euro area will remain on a moderate growth path and is expected to mount

Table 2

Underlying Global Economic Conditions

	2010	2011	2012	2013
Gross domestic product	*Annual change in % (real)*			
World GDP growth outside the euro area	+5.5	+4.5	+4.7	+4.7
U.S.A.	+2.9	+2.6	+2.7	+2.8
Japan	+4.0	–0.4	+2.8	+1.9
Asia excluding Japan	+9.4	+7.9	+7.5	+7.5
Latin America	+6.0	+4.5	+3.9	+4.1
United Kingdom	+1.3	+1.4	+1.9	+2.2
New EU Member States[1]	+2.0	+3.1	+3.8	+3.9
Switzerland	+2.6	+2.4	+1.8	+1.7
Euro area[2]	+1.7	+1.5 to +2.3	+0.6 to +2.8	x
World trade (imports of goods and services)				
World economy	+12.0	+8.0	+7.8	+7.6
Non-euro area countries	+13.2	+8.9	+8.6	+8.1
Real growth of euro area export markets	+11.6	+8.3	+7.9	+7.5
Real growth of Austrian export markets	+11.5	+7.5	+7.4	+7.2
Prices				
Oil price in USD/barrel (Brent)	79.6	111.1	108.0	103.7
Three-month interest rate in %	0.8	1.5	2.3	2.8
Long-term interest rate in %	3.2	3.7	4.0	4.3
USD/EUR exchange rate	1.33	1.42	1.43	1.43
Nominal effective exchange rate (euro area index)	104.63	105.52	105.98	105.98

Source: Eurosystem.

[1] *Member States that joined the EU in 2004 and 2007 and have not yet introduced the euro: Czech Republic, Hungary, Poland, Romania, Bulgaria, Estonia, Latvia, Lithuania. Since 2011: excluding Estonia.*

[2] *2011 to 2013: Results of the Eurosystem's June 2011 projections. The ECB presents the result in ranges based upon average differences between actual outcomes and previous projections.*

by 1.5% to 2.3% in 2011 and by 0.6% to 2.8% in 2012.

Closing the first quarter of 2011 with growth of 1.5%, Germany outperformed even high expectations: GDP resumed the level it had posted before the crisis in the first quarter of 2008. Germany benefited not just from favorable international developments, but also from a stepped-up construction activity. These two factors do not suffice to explain the robust performance, though, as the economy expanded across the board. Both private consumption and investment in plant and equipment represent powerful motors for growth, and net exports continue to contribute at an above-average rate. Even if the rise in GDP should lose momentum in the next quarters, the German economy is likely to advance by more than 3% in 2011, for the first time posting over 3% growth in two successive years since German unification. French GDP also posted healthy growth in the first quarter of 2011, but the forecasts for the French economy are more moderate. Domestic demand is on the mend, and is supported especially by a dynamic development of investment, but net exports represent a drag on growth. Italy, the euro area's third-largest economy after Germany and France, achieved a mere 0.1% quarterly growth in the first half of 2011. Italy's economy is hampered by persistent structural problems, and high debt has reduced the government's room for maneuver. Spain, the fourth-largest economy in the euro area, also acts as a damper on overall euro area growth. Before the crisis, Spain had

been one of the top performers on the periphery of the euro area in terms of GDP growth and had supported the overall euro area growth rate. But over the forecasting horizon, a slump in the construction sector, the government's fiscal consolidation measures, plus troubles in the labor market will keep a rein on domestic spending; its negative contribution to growth will lead to below-average growth in the long-term comparison.

The CESEE countries also underwent highly disparate developments. Each country was affected differently by the crisis, depending on the importance of its export sector and the size of its foreign currency borrowing share, current account deficit and government debt. Hungary, Romania and Latvia had to resort to help from the IMF and the EU. Growth in those EU Member States that had acceded in 2004 and 2007 but that have not yet introduced the euro is expected to pick up gradually from roughly 3% in 2011 to nearly 4% in 2013.

4 Austria: Robust Growth Coupled with Rising Inflation Provides Momentum to Cut Deficit

With growth running at 3.2%, Austria is one of the growth engines of the euro area. According to recent forecasts by the OECD and the European Commission, only Germany, Finland, Slovakia, Luxembourg and Estonia will post at least similarly high growth. This development already started in 2010, as the Austrian economy has been expanding at an above-average rate for one year. As a result, seasonally adjusted real GDP growth came to 4.0% in the first quarter of 2011 on the same quarter of the previous year.

However, Austria is also posting comparatively high rates of price increase in 2011. Apart from Austria, annual inflation rates of over 3% are anticipated for Spain, Belgium, Greece, Finland, Portugal, Slovakia, Luxembourg, Cyprus and Estonia. For several months, inflation has been quickening substantially, a development traceable

Box 1

Bright Economic Prospects Give Effort to Cut Deficit an Impetus[1]

In 2010, Austria's general government deficit widened to 4.6% of GDP, and government debt rose to 72.3% of GDP. Changes in the accounting recommendations resulting from the implementation of Eurostat's updated Manual on Government Deficit and Debt (MGDD) entailed a marked deterioration of both the budget result for 2010 and of the fiscal indicators for the preceding years. Under the new MGDD, liabilities of extrabudgetary units that are ultimately assumed by the government must be recorded as deficit- and debt-increasing as soon as debt is incurred. Application of these recommendations to the extrabudgetary debt of provincial hospitals and the financing agreement between the federal government and the Austrian Federal Railways result not only in a revision of historical data, but also in a permanent increase in government spending by roughly ½% of GDP.

For 2011, the OeNB expects a significant improvement of some 1½% of GDP in the general government balance in its economic outlook. The following reasons corroborate this assumption:

- *On the expenditure side, the one-off effect of deficit-increasing capital transfers of 0.6% of GDP to KA Finanz AG and Hypo Alpe Adria in 2010 has ended.*
- *Furthermore, low wage settlements for the public sector, a comparatively small increase in pensions and the reduction of social transfers to families contribute to the expectation that primary expenditure growth will be low compared to trend GDP growth.*

[1] *Oesterreichische Nationalbank, Economic Analysis Division, lukas.reiss@oenb.at.*

– *At the same time, tax increases and the exceptionally good macroeconomic developments sharply boost government revenue.*

In 2012 and 2013, the general government balance is anticipated to improve somewhat further. A fairly strong rise in social transfers (in cash and in kind) and interest expenditure will be more than offset by continued sound revenue growth.

The most recent planned values of the Ministry of Finance for the general government budget balance are more pessimistic for 2011 and 2012 in particular than the values of the OeNB's economic outlook. The main reasons are the OeNB's comparably more optimistic projections for the development of social security contributions to the budget and interest payments from the budget. Thanks to relatively high growth over the entire forecast horizon, this deficit development will lead to a stabilization of the debt ratio at an elevated level despite positive stock-flow adjustments (resulting from bilateral loans to states at the euro area periphery).

not just to the rise in commodity and food prices. When the general government deficit has been rolled back to 3% of GDP, the budget will develop fairly well in a euro area comparison on the back of a booming economy. OECD and European Commission forecasts show only Germany, Finland, Luxembourg, Estonia and Malta posting a deficit of a magnitude roughly as low as that of Austria.

With GDP having augmented at above-average rates in the past quarters, in the first quarter of 2011 Austria's economy regained the real GDP level it had stood at prior to the outbreak of the financial and economic crisis. Having remained in positive territory throughout the recession, consumer spending acted as a stabilizer during the crisis. By contrast, exports and investment shrank markedly. At end-2011, exports will have recovered to the precrisis level whereas investment will stay below the precrisis level until the end of the forecast horizon. The crisis had only a comparatively small impact on the domestic labor market, among other things because a multitude of labor market policy measures were taken. Employment has been developing at an above-average pace for months, reaching the precrisis level in the fourth quarter of 2010.

Box 2

Long-Term Output Losses – But No Job Losses[1]

The OeNB's economic outlook sees the Austrian economy developing soundly and overcoming the slump triggered by the crisis faster than many other countries. Yet this does not mean that the crisis will not have a long-term negative impact. Against this backdrop, we compared a data set comprising actual data for GDP, employment, unemployment and exports up to the first quarter of 2011 and forecast data for the same indicators for the period up to the end of 2013 with a data set of hypothetical developments for the same periods without the crisis. To determine the hypothetical developments, we used two different precrisis trends:[2] first, developments from the first quarter of 1990 to the fourth quarter of 2005 (i.e. excluding the two boom years 2006 and 2007 preceding the crisis) and second, developments from the first quarter of 1990 to the fourth quarter of 2007 (i.e. including the boom years). The precisis

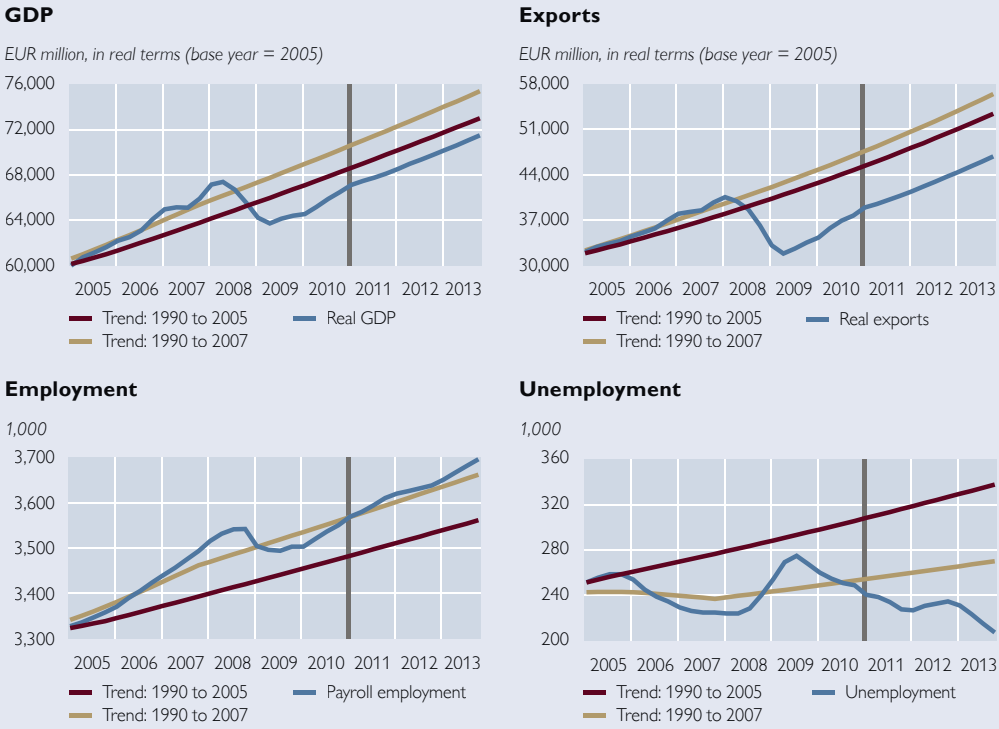
[1] *Compiled by the Economic Analysis Division with contributions by Gerhard Fenz (gerhard.fenz@oenb.at) and Martin Schneider (martin.schneider@oenb.at).*

[2] *The trends were generated with the HP filter (Lambda = 1600).*

trends are extrapolated with the average growth rates of each variable up to the fourth quarter of 2013 and compared with the forecast developments.

The chart below shows the level of real GDP and real exports as well as employment and unemployment figures along with the respective trend developments. GDP growth returned to its precrisis level in the first quarter of 2011, and employment had already surpassed its precrisis level in the fourth quarter of 2010. According to the OeNB's economic outlook, export growth will outperform its precrisis level in the fourth quarter of 2011, and jobless numbers will fall below their precrisis level in the third quarter of 2013. Employment already surpassed its precrisis level in the fourth quarter of 2010, whereas the number of jobless persons will sink below its precrisis level in the third quarter of 2013.

Forecast and Precrisis Trends



Source: OeNB, Eurostat.

The results reflect the sharp drop in economic performance: Both GDP and exports are shown to remain below their precrisis trends until the end of 2013. The output losses in the wake of the crisis may be calculated as the average annual deviation of GDP from the extrapolated precrisis trend. Compared to the trend for 1990 to 2005, the annual real output loss for 2009 to 2013 comes to 2.6% of trend GDP of the respective year, and compared to the trend for 1990 to 2007, the output loss even surges to 5.4%.

The impact of the crisis on the labor market differs sharply from the impact on GDP. Both employment and the number of unemployed persons developed better than the trend extrapolations suggested. Extrapolating the trend for 1990 to 2005, unemployment is noticeably below the precrisis level; employment is substantially higher. Apparently, the two boom years prior to the crisis provided for an employment buffer that the crisis did not eliminate, partly because of appropriate economic policy measures. Employment runs slightly above, unemployment considerably below the trend at the end of the forecast horizon even on the basis of the trend for 1990 to 2007.

5 Export Industry Benefits from Global Momentum

Austria's export industry was among the sectors which suffered most from the economic and financial crisis. Accordingly, exports declined sharply in 2009, only to post a remarkable recovery in 2010: After slumping by 20% in 2009, goods trade expanded by some 16% in the following year. This swift growth continued into 2011. In the current outlook, the OeNB's export indicator expects nominal goods exports to soar by 5.3% in April and 5.4% in May 2011 quarter on quarter. Austria benefits from high demand from Germany, Switzerland and the U.S.A., whose economies are propelled by the fast growth of the Asian and South American emerging countries. At a later point of the forecast horizon, the quickening recovery in the CESEE countries is set to boost demand for Austrian goods. Despite the upturn, Austria again recorded a deficit on goods trade, which came to about EUR 4 billion in 2010.

Thus, the positive development of Austrian exports is attributable to services. In addition to the traditionally successful service sector (tourism), above all business services (excluding transport) contributed a surplus of EUR 6.3 billion to the notable overall result. The crisis hit service trade far less severely than goods trade, so that services acted as a stabilizing factor.

With exports mounting considerably in the first quarter of 2011, export growth in full-year 2011 is anticipated to remain nearly as strong as in 2010. Over the remainder of the forecast horizon, though, the forecast slackening of the international recovery will take its toll on foreign trade as well. A modest slowdown in export growth to about 7% a year is therefore anticipated for 2012 and 2013.

Austria's current account has improved steadily since the mid-1990s. 2008 saw a record surplus of 4.9% of GDP. Although the balance on current account deteriorated as a consequence of plummeting demand for exports during the crisis, it nevertheless remained in positive territory and will more or less resume its precrisis level by 2012.

Table 3

Growth and Price Developments in Austria's Foreign Trade

	2010	2011	2012	2013
	Annual change in %			
Exports				
Competitor prices in Austria's export markets	+5.4	+3.7	+1.7	+1.6
Export deflator	+2.2	+2.9	+2.1	+1.9
Changes in price competitiveness	+3.3	+0.8	–0.4	–0.2
Import demand in Austria's export markets (real)	+11.5	+7.5	+7.4	+7.2
Austrian exports of goods and services (real)	+10.4	+10.0	+6.8	+7.2
Market share	–1.2	+2.6	–0.6	+0.1
Imports				
International competitor prices in the Austrian market	+4.5	+3.8	+1.8	+1.6
Import deflator	+3.9	+3.5	+2.2	+1.8
Austrian imports of goods and services (real)	+8.3	+8.9	+6.0	+6.6
Terms of trade	–1.6	–0.6	–0.1	+0.1
	Percentage points of real GDP			
Contribution of net exports to GDP growth	+1.5	+1.2	+0.9	+0.9

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook, Eurosystem.

Table 4

Austria's Current Account

	2010	2011	2012	2013
	% of nominal GDP			
Balance of trade	3.6	4.9	5.7	5.9
Balance on goods	–1.1	–0.6	–0.2	0.2
Balance on services	4.7	5.5	5.8	5.7
Balance on income	–0.1	–0.4	–0.4	–0.4
Balance on current transfers	–0.7	–0.6	–0.5	–0.5
Current account	2.7	4.0	4.8	5.0

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook.

6 Investment Drives Domestic Demand

6.1 Divergent Developments in Investment Activity

The crisis had a negative impact on confidence, caused exports to slump and therefore resulted in a build-up of capacity utilization, which in turn dampened investment activity. On the back of dynamic export demand, gross fixed capital formation rebounded from the second quarter of 2010.

This recovery of gross fixed capital formation drew mainly on strengthening investment in plant and equipment. Both incoming orders and above-average industrial capacity utilization rates by historical standards (86.3%, long-term average since 1990: 85.4%) point to further impulses for investment activity. Also, over the forecast horizon, more and more capacity-boosting investment is expected. Once the rebound following the crisis has ended, the pace of investment in plant and equipment will ease up again later on during the forecast horizon. Residential construction and civil engineering in-

Table 5

Investment Activity in Austria

	2010	2011	2012	2013
	Annual change in %			
Total gross fixed capital formation (real)	–1.1	+3.7	+3.1	+3.4
of which: Investment in plant and equipment	*–0.4*	*+6.3*	*+5.0*	*+3.6*
Residential construction investment	*–2.7*	*–0.9*	*+1.1*	*+1.8*
Nonresidential construction investment and other investment	*–2.9*	*–0.8*	*+3.0*	*+4.0*
Government investment	*+1.7*	*–0.5*	*+0.0*	*+0.0*
Private investment	*–1.2*	*+4.0*	*+3.3*	*+3.6*
	Contribution to real total gross fixed capital formation growth in percentage points			
Investment in plant and equipment	–0.2	+2.6	+2.1	+1.5
Residential construction investment	–0.5	–0.2	+0.2	+0.3
Nonresidential construction investment and other investment	–1.2	–0.3	+1.1	+1.5
Government investment	+0.1	+0.0	+0.0	+0.0
Private investment	–1.2	+3.7	+3.1	+3.4
	Contribution to real GDP growth in percentage points			
Inventory changes	+0.6	+0.9	+0.0	+0.0

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook.

vestment was still shrinking in the fourth quarter of 2010. No clear signs of a revival in this sector have become noticeable yet; overall construction output (NACE F) still continued to decrease slightly in the first quarter of 2011. So far, no trend reversal has become apparent in civil engineering, and the development of building construction will remain moderate, even though the number of residential building permits was somewhat higher in 2009 and 2010 than prior to the emergence of the crisis. Thus, construction activity is anticipated to decline further in 2011. Over the remainder of the forecast horizon, rising real estate prices and the ongoing upswing are expected to fuel a recovery of investment in both building construction and in civil engineering.

Government investment increased by 1.7% in 2010. The public sector's consolidation measures will cause investment to decline in 2011 (–0.5%) and then to stagnate. Gross fixed capital formation overall is forecast to augment by 3.7% in 2011, by 3.1% in 2012 and by 3.4% in 2013.

6.2 Consumption Growth to Stay Moderate

With the economy picking up, all components of household income (compensation of employees, investment income, mixed income of the self-employed, and operating surpluses) will post nominal increases in 2011 for the first time since the crisis. Compensation of employees will advance decisively in 2011 on account of above-average employment growth (1.7%) and positive wage drift in spite of a moderate increase in negotiated standard wages (2.2%). In 2012 and 2013, employment will grow significantly by 1.2% in each year driven by demand. Negotiated standard wages are set to go up by 2.7% in 2012, which is a reaction to high inflation in 2011, and by a more moderate 2.3% in 2013. Overall, compensation of employees is thus calculated to increase by 4.7% in 2011, by 4.1% in 2012 and by 3.8% in 2013. Mixed income of the self-employed and operating surpluses are also set to post animated growth. In 2011 as well as the two subsequent years, investment income will benefit from rising interest income and the distribution of profits.

Over the entire forecast horizon, nominal household income will be burdened measurably by consolidation measures, i.e. higher petroleum and tobacco taxes, taxes on airline tickets and cuts in social transfers. The growth contribution of net transfers after direct taxes will therefore be negative in the years 2011 through 2013. Overall, nominal household income will expand by 3.3% in 2011 (2012: 4.1%; 2013: 4.4%). With inflation in 2011 running comparatively high, household real disposable income will edge up by a mere 0.5%; real wages (per employee) will in fact drop. During the remaining forecast horizon, inflation is expected to ease substantially. This will boost real household income by 2.1% in 2012 and by 2.5% in 2013.

The saving ratio will contract in 2011 because real per capita wages are on the decline. But in 2012 and 2013, the saving ratio is set to rise again and to approach the 10.3% level it had stood at before the crisis unfolded, for one thing because consumer spending is below average in light of the revival of investment income and mixed income of the self-employed, and for another because uncertainty about the long-term sustainability of the state pension system and the reforms that will have to be implemented is on the rise again. Real consumer spending by households is anticipated to edge up by 0.9% in

Table 6

Determinants of Nominal Household Income in Austria

	2010	2011	2012	2013
	Annual change in %			
Employees	+0.8	+1.7	+1.2	+1.2
Wages per employee	+1.3	+2.6	+2.9	+2.5
Compensation of employees	+2.1	+4.3	+4.1	+3.8
Property income	–20.9	+10.9	+11.3	+13.2
Mixed income and operating surplus, net	+0.4	+1.9	+3.7	+4.4
	Contribution to disposable household income growth in percentage points			
Compensation of employees	+1.7	+3.7	+3.5	+3.3
Property income	–2.0	+0.8	+0.9	+1.1
Mixed income and operating surplus, net	+0.1	+0.4	+0.7	+0.8
Net transfers minus direct taxes[1]	+0.7	–1.5	–1.0	–0.9
Disposable household income (nominal)	+0.8	+3.3	+4.1	+4.4

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook.

[1] Negative values indicate an increase in (negative) net transfers minus direct taxes, positive values indicate a decrease.

Table 7

Private Consumption in Austria

	2010	2011	2012	2013
	Annual change in %			
Disposable household income (nominal)	+0.8	+3.3	+4.1	+4.4
Private consumption expenditure (PCE) deflator	+1.5	+2.7	+1.9	+1.8
Disposable household income (real)	–0.7	+0.5	+2.1	+2.5
Private consumption (real)	+1.1	+0.9	+1.2	+1.2
	% of nominal disposable household income			
Saving ratio	9.2	8.6	9.4	10.3

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook.

2011 and by 1.2% in 2012 as well as 2013.

6.3 Robust Employment Growth Dampens Unemployment only Slowly

The recovery of the Austrian labor market in 2010 was unexpectedly rapid and powerful by historical and international standards. The number of employed persons mounted by around 28,000 (0.8%) all in all. So far, employment growth has been reflected by a sharp increase in leased employment contracts (business support services), in health and social services and, in line with the marked rise in output, in manufacturing. This trend continued into the beginning of 2011. Unlike in 2010, though, construction employment posted slight gains. In the first quarter of 2011, employment advanced by 1.9% (seasonally adjusted). In 2011 as a whole, the number of employed persons is likely to rise by 60,000 (or 1.7% year on year). As GDP growth is set to be above potential in 2012 and 2013, employment will expand at an above-average pace of 1.2% a year as well.

Throughout the cycle so far, employment supply has been highly cyclical; it nearly stagnated in 2009 (+5,000 per-

Table 8

Labor Market Developments in Austria

	2010	2011	2012	2013
	Annual change in %			
Total employment	+1.0	+1.7	+1.2	+1.2
of which: Payroll employment	*+0.8*	*+1.7*	*+1.2*	*+1.2*
Self-employment	*+2.1*	*+1.9*	*+1.6*	*+1.2*
Public sector employment	*+0.1*	*–0.1*	*–0.1*	*–0.1*
Registered unemployment	–4.8	–6.5	–1.1	–5.5
Labor supply	+0.8	+1.2	+1.1	+0.9
	% of labor supply			
Unemployment rate (Eurostat definition)	4.4	4.3	4.3	4.1

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook.

sons; 2008: still roughly +75,000 persons). In 2010, labor supply reacted to the improved economic outlook by widening by nearly 34,000 persons. Over the remainder of the forecast horizon, however, robust economic activity will not be the only factor driving up labor supply. The complete liberalization in May 2011 of the Austrian labor market to persons from the countries that joined the EU in 2004 will add to labor supply growth. Given these countries' proximity to the Austrian border, Austria is liable to experience not just labor supply migration but also more commuter traffic. Over the entire forecast horizon, labor supply could surge by roughly 75,000 commuters or migrants. Considering that a number of professions already benefit from nearly full labor mobility and that the statistical coverage is fraught with uncertainty, this estimate represents an upper limit.

Austria boasted an unemployment rate of 4.4% (Eurostat definition) in 2010, one of the lowest unemployment rates in the euro area. As labor supply is expanding, though, the unemployment rate is expected to ease only marginally to 4.3% in 2011 and to drop further to 4.1% in 2013 despite animated employment growth. Unemployment figures will dip to below the precrisis level again in 2013.

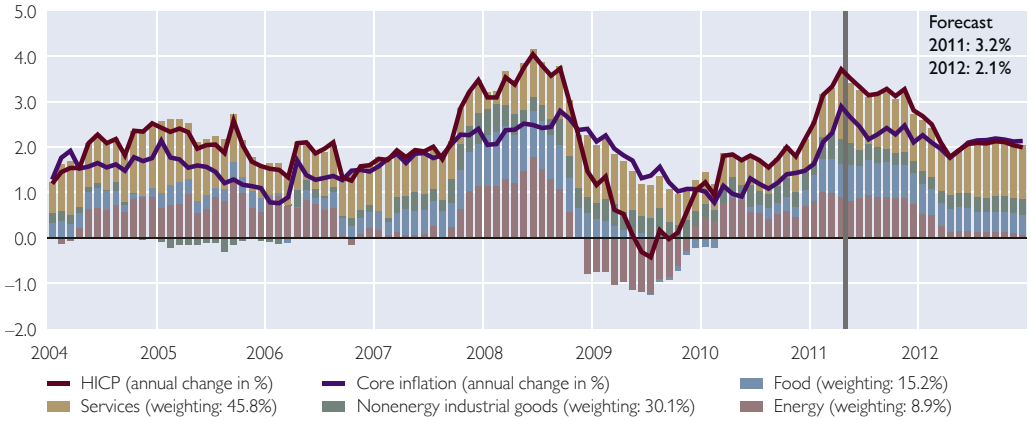
7 Inflation in 2011 to Top 3%

In the first four months of 2011, HICP inflation jumped from 2.5% in January to 3.7% in April, pushing the Austrian rate to above the euro area average (2.8%) and to above the German (2.7%) as well as Italian (2.9%) inflation rates. From January through March 2011, inflation was driven by the rise in externally determined energy and food prices as well as the price of industrial goods excluding energy. A strong surge in service prices speeded up HICP and core inflation further in April 2011. The higher energy and food prices reflect an external price surge on the one hand, but higher petroleum taxes also added to more expensive energy prices. With regard to food prices, Austria has a very high share of discount food stores in a European comparison, which results in international food prices with their low price margins being passed on more directly and more rapidly to the final consumer than in other countries. Service prices rose more sharply in Austria than in Germany in April 2011, especially because special factors – the cut in VAT for accommodation services and the abolition of

Chart 2

HICP Inflation and Contributions by Subcomponents

Contributions to growth in percentage points *Last observation: April*



Source: OeNB, Statistics Austria.

tuition fees in one German state – dampened German service price inflation.

The pace of inflation is expected to slow in May 2011. By the end of 2011, the base effects are likely to have dissipated; thus, energy price-induced inflationary pressure should have run its course. However, the anticipated higher wage settlements for 2012 will result in a greater contribution of service prices to HICP inflation. Consequently, HICP inflation will remain at around 2% in 2012 and will not fall below the 2% mark until 2013.

During the forecast horizon, the improved economic outlook will trigger slightly positive wage drift. The opening of the Austrian labor market will barely have an impact on wage drift, as experts assume that the additional labor will be

Table 9

Selected Price and Cost Indicators for Austria

	2010	2011	2012	2013
	Annual change in %			
Harmonised Index of Consumer Prices (HICP)	+1.7	+3.2	+2.1	+1.9
HICP energy	+7.6	+11.3	+2.5	+2.3
HICP excluding energy	+1.2	+2.4	+2.1	+1.9
Private consumption expenditure (PCE) deflator	+1.5	+2.7	+1.9	+1.8
Investment deflator	+3.0	+2.0	+1.9	+1.9
Import deflator	+3.9	+3.5	+2.2	+1.8
Export deflator	+2.2	+2.9	+2.1	+1.9
Terms of trade	–1.6	–0.6	–0.1	+0.1
GDP at factor cost deflator	+1.7	+2.0	+2.2	+2.1
Unit labor costs	+0.1	+1.1	+1.8	+1.3
Compensation per employee	+1.3	+2.6	+2.9	+2.5
Labor productivity	+1.2	+1.5	+1.1	+1.2
Collectively agreed wage settlements	+1.6	+2.2	+2.7	+2.3
Profit margins[1]	+1.7	+0.9	+0.4	+0.7

Source: 2010: Eurostat, Statistics Austria; 2011 to 2013: OeNB June 2011 outlook.

[1] GDP deflator divided by unit labor costs.

employed above all in sectors that strictly adhere to negotiated standard wages.

8 Forecast Risks Largely Balance Out

On the domestic side, the risks with respect to economic growth are slightly on the upside. Should the saving ratio decline, the funds freed up may flow into stepped-up consumer spending; higher than projected wage agreements would additionally put more disposable funds into consumers' pockets. In the same vein, it cannot be ruled out that employment and unemployment figures develop better than projected. Against the background of rising real estate prices, construction might also recover faster than expected. The external risks to growth are balanced: Above all, economic developments in Germany and in the CESEE countries could be better than assumed in the forecast. Downside risks could emanate from the negative impact of consolidation problems on confidence and the renewed tension in the financial markets these might elicit.

A further rise in commodity prices represents a risk to economic activity and, in particular, an upward risk for inflation. A further depreciation of the euro, stronger second-round effects and higher output growth in the medium term would also fuel inflation.

9 Forecast Revised after Economic Activity Outperforms Expectations at the Beginning of 2011

The underlying assumptions on the growth of global trade have been revised upward since the OeNB's December 2010 economic outlook. For 2011 (2012), we have raised our growth expectations for Austria's export markets by 0.8 (1.0) percentage points. Crude oil futures prices went up noticeably by USD 22.5 for 2011 and USD 17.3 for 2012. The exchange rate of the euro against the U.S. dollar has moved only little. The nominal effective exchange rate is somewhat lower than projected in December 2010. Both long-term and short-term interest rates are slightly higher than pegged in the December forecast.

The effects of these new external assumptions were simulated using the OeNB macroeconomic model. Table 11 lists the reasons for revising the outlook in detail. Apart from the impact of changed external assumptions, they are attributable to the impact of new data and a residual. The influence of new data includes the effects of the revisions of both the historical data already available at the time of the previous economic outlook (i.e. data up to the third quarter of 2010) and the forecasting errors of the previous outlook for the periods now published for the first time (i.e. data for the fourth quarter of 2010 and for the first quarter of 2011). The item "Other" includes new expert assessments regarding the development of domestic variables, such as government consumption or wage settlements, as well as any changes to the model.

The reason why higher economic growth is assumed for 2011 is, first and foremost, the fact that growth in the first quarter of 2011 was stronger than expected in the December 2010 forecast. The fiscal consolidation measures were already factored into the December forecast (2011: –0.3 percentage points of GDP growth; 2012: –0.2 percentage points) and are thus not suited to explaining the forecast revision. The upward revision of the inflation forecast for 2011 is primarily due to higher assumed energy and food prices.

Table 10

Change in the External Economic Conditions since the OeNB December 2010 Outlook

	June 2011			December 2010		Difference	
	2011	2012	2013	2011	2012	2011	2012
	Annual change in %						
Growth of Austria's export markets	+7.5	+7.4	+7.2	+6.7	+6.4	+0.8	+1.0
Competitor prices in Austria's export markets	+3.7	+1.7	+1.6	+1.9	+1.7	+1.8	+0.0
Competitor prices in Austria's import markets	+3.8	+1.8	+1.6	+2.1	+1.7	+1.7	+0.1
	USD per barrel (Brent)						
Oil price	111.1	108.0	103.7	88.6	90.7	+22.5	+17.3
	Annual change in %						
Nominal effective exchange rate (exports)	+0.2	–0.1	+0.0	–0.1	+0.0	+0.3	–0.1
Nominal effective exchange rate (imports)	+0.6	+0.0	+0.0	+0.1	+0.0	+0.5	+0.0
	%						
Three-month interest rate	1.5	2.3	2.8	1.4	1.7	+0.1	+0.6
Long-term interest rate	3.7	4.0	4.3	3.4	3.7	+0.3	+0.3
	Annual change in %						
U.S. GDP (real)	+2.6	+2.7	+2.8	+2.4	+2.7	+0.2	+0.0
	USD/EUR						
USD/EUR exchange rate	1.42	1.43	1.43	1.39	1.39	+0.03	+0.04

Source: Eurosystem.

Table 11

Breakdown of Forecast Revisions

	GDP		HICP	
	2011	2012	2011	2012
	Annual change in %			
June 2011 outlook	+3.2	+2.3	+3.2	+2.1
December 2010 outlook	+2.1	+2.3	+2.2	+1.8
Difference	+1.1	+0.0	+1.0	+0.3
Due to:	*Percentage points*			
External assumptions	+0.0	+0.2	+0.7	+0.2
New data	+1.0	+0.0	+0.0	x
of which: Revision of historical data until Q3 10	*+0.0*	*+0.0*	*+0.1*	*x*
Projection errors for Q4 10 and Q1 11	*+1.0*	*+0.0*	*+0.2*	*x*
Other[1]	+0.1	–0.2	+1.0	+0.1

Source: OeNB June 2011 and December 2010 outlooks.

[1] *Different assumptions about trends in domestic variables such as wages, government consumption, effects of tax measures, other changes in assessment and model changes.*

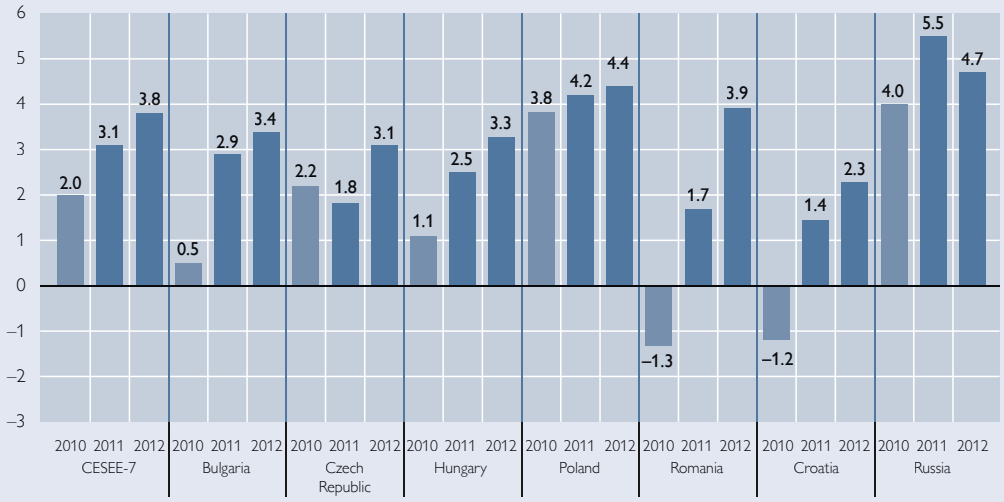
Box 3

OeNB-BOFIT Outlook for Selected CESEE Countries: Domestic Demand Strengthens and External Demand Moderates as Growth Engine[1, 2]

Growth in the CESEE-7 region[3] remained uneven across countries in 2010, but has become more balanced from 2011 onward. Backed by recovering domestic demand and continued (albeit declining) support from external demand, GDP growth is expected to reach 3.1% in 2011 and to increase only moderately to 3.8% in 2012. This overall upward revision of our September projections for the region concerns all countries equally, with the exception of the Czech Republic, for which we revise our forecast downward by 0.6 percentage points. Traditional growth drivers are re-emerging in the CESEE-7. Domestic demand, backed by a strong rebound in investment and a moderate revival of private consumption, will contribute positively to GDP growth again from 2011, while the contribution of net exports is shrinking continually and will turn negative in many countries in 2012. In tandem, capacity utilization is rising sharply. At the same time, restocking has mostly come to an end. The projected acceleration of growth to almost 4% in 2012 should bring back a considerable growth differential to Western Europe (of about 2 percentage points), thus ensuring that the convergence process (which slowed down substantially over the past two years) will pick up again. Nevertheless, growth rates will remain below their pre-crisis levels, which can be attributed to the elevated need for fiscal consolidation in a number of countries, continuously tight credit conditions, a weak construction sector and a moderation of demand in the region's major trading partners, mainly the euro area.

CESEE-7: GDP Growth Projections for 2011 to 2012

Year-on-year growth in %, in real terms



Source: OeNB-BOFIT March 2011 forecast, Eurostat, IMF.

[1] *Compiled by the Foreign Research Division, julia.woerz@oenb.at.*

[2] *The OeNB and the Bank of Finland Institute for Economies in Transition (BOFIT) compile semiannual forecasts of economic developments in selected CESEE countries (Bulgaria, the Czech Republic, Hungary, Poland, Romania, Russia and Croatia). They are based on a broad range of available information, including country-specific time series models for Bulgaria, Croatia, the Czech Republic, Hungary, Poland and Romania (for technical details, see Crespo Cuaresma, Feldkircher, Slačík and Wörz. 2009. Simple but Effective: The OeNB's Forecasting Model for Selected CESEE Countries. Focus on European Economic Integration Q4/09. 84–95). The projections for Russia were prepared by the Bank of Finland Institute for Economies in Transition and are based on an SVAR model. The cutoff date for all projections in this box is March 24, 2011.*

[3] *Bulgaria, the Czech Republic, Hungary, Latvia, Lithuania, Poland and Romania. Latvia and Lithuania are not covered by our own projections in this note, but are included in the CESEE-7 aggregate based on the most recent IMF projections.*

Following a temporary pick-up during the winter, GDP growth in Russia is expected to slow down gradually during the forecast period, slipping from 5.5% in 2011 to 4.7% in 2012. One of the reasons for this decline is that imports are projected to continue expanding rapidly, at about 16% in 2011 and around 10% in 2012. Croatia's GDP growth, in turn, will recover rather moderately by 1.4% in 2011 and accelerate somewhat to 2.3% in 2012 thanks to a further strengthening of domestic demand.

CESEE-7: Cautious Revival of Domestic Demand Hampered by Consolidation Needs

Although growth rates converged somewhat in the second half of 2010, growth was still uneven in the region in 2010 and came to 2% on average. While growth was supported by the sharp expansion in economic activity in Poland and the Czech Republic, it was dampened by weak but positive growth in Hungary and Bulgaria and a persisting real contraction in Romania. In the course of 2010, unemployment rates stabilized in the CESEE-7 region and even declined in some countries, and the downward trend in employment levels came to a halt. Economic sentiment turned cautiously positive in most countries.

For 2011, we expect a further increase of the region's average growth rate to 3.1% and a more even development across countries. With a growth rate of 4.2%, Poland will continue to outperform the other CESEE-7 countries. Growth will accelerate in all CESEE-7 countries except the Czech Republic, where a substantial austerity program is being implemented (even though it was formally repealed by the country's constitutional court and will have to be reapproved by parliament before the end of 2011).

Restocking is coming to an end and investment will pick up as a result of already high capacity utilization levels and renewed demand for investment in the wake of the crisis. Private consumption will also turn positive again in all CESEE-7 countries, while we expect no impetus from public consumption due to harsh budget constraints. Nevertheless, domestic demand is reviving in the region, and we expect it to strengthen further over the forecast horizon. Domestic demand will thus resume its traditional role and contribute positively to economic growth in all CESEE-7 countries except the Czech Republic. Here, the contribution will be slightly negative in 2011.

External demand will cease to be the most important growth driver, as exports are losing momentum. On the one hand, this projection rests on the assumption that euro area import dynamics will moderate; on the other hand, it is associated with the swift and strong rebound in exports in early 2010 and a strong growth impulse from Germany in early 2010, which started to fade out already in the second half of 2010. The trend of currency appreciation further weighs on international price competitiveness, thus compounding these effects. Despite the sharp rise in investment and the revival of private consumption, import growth rates will moderate since it is closely related with export growth. As a result, net exports will continue to contribute positively to growth in the Central European countries, and in the Czech Republic in particular. However, their positive contribution is diminishing in all countries under review and will turn negative in Bulgaria and Romania already in 2011.

The picture will remain largely unchanged in 2012. Domestic demand and investment will gain further momentum, but both will remain well below their 2005–2008 average. This is related to continuing tight credit conditions and sluggish FDI inflows as a result of lower investor trust and strong competition, especially from Asia. Import growth will accelerate to more than 8% across the CESEE-7 region. Net exports will make a negative contribution in all countries apart from Hungary and the Czech Republic.

All countries with the exception of Romania will recover to their pre-crisis GDP levels in 2012. As Poland, the largest economy in the region, did not experience any output loss in 2009, the CESEE-7 region as a whole will reach its pre-crisis output level already by the end of 2011. With growth rates coming close to 4% again, the process of catching-up with Western Europe will pick up pace again after having slowed down substantially for more than two years.

These forecasts are subject to risks that are mainly related to developments in the euro area. Euro area growth may turn out stronger than assumed here, thus posing a sizeable upside risk stemming from external demand. Some downside risks could emerge from fiscal consolidation needs that are stronger than those already addressed by policymakers in the region. Some uncertainty continues to prevail with respect to changes in investor confidence (i.e. the development of global risk aversion, in particular vis-à-vis emerging economies). We still assume that investor confidence will continue to improve gradually over the projection horizon. Investor confidence could, however, strengthen more quickly or it could weaken again, e.g. as a result of contagion from worsening investment conditions in some Western European countries or as a result of a global loss of trust because of current developments in Japan.

Russia: Brisk, but Moderating Growth

Russia's recovery temporarily slowed down in the fall of 2010, which was especially attributable to a stronger rebound of imports and to production losses caused by extreme weather conditions in the summer. Economic growth picked up this winter, supported by the sharp rise of oil, metal and gas prices in recent months. Due to this positive terms-of-trade shock and to the relatively low base level in 2010 (including the unexpected growth dip in the third quarter), annual GDP growth is projected to increase by more than 5% in 2011. GDP expansion is then projected to ease to less than 5% in 2012, assuming that the oil price remains unchanged at around USD 100 per barrel over the forecast period.

The revival of private consumption was rather lackluster in 2010 (3%), while real household income increased by around 4%. Looking ahead, consumption will grow more briskly and will likely become the main growth driver. This will help the agricultural sector rebound from a drastic drop in 2010. Wages are foreseen to rise rather swiftly, but not as fast as in the years before the recession. Consumption is also supported by an expected decline in the household savings rate, which had risen considerably during the crisis, as well as by the continuing growth of household bank lending, which gradually revived in 2010. Yet the increase in households' purchasing power is constrained by inflation, which – spearheaded by the rise in food price and favored by the expansion of M2 – accelerated to almost 10% and induced a tightening of monetary policy. Public consumption, after marginal growth in 2009–2010, is anticipated to increase slowly over the forecast period. This development is backed by the oil price, which is higher than assumed in the three-year budget for 2011–2013 and will thus generate additional budget revenues and allow for some additional expenditure, also in the context of the forthcoming elections.

As noted in the previous outlook (September 2010), fixed investment is recovering with a delay (+6.1% in 2010 following a plunge in 2009). A full-fledged revival is expected for 2011 and 2012, as during the latter part of 2011, utilization of production capacity can be expected to rise to the level observed during the pre-slump boom. Remarkably, inventory restocking was the main growth driver in 2010. In our forecast, this inventory cycle is assumed to be almost completed.

Russia's export volume picked up quickly in 2010 from a recessionary dip and exceptional disruptions of gas delivery in early 2009. However, from 2011, exports are expected to increase relatively slowly – compared to global trade – since export volumes of crude oil and oil products are not likely to grow. That said, anticipated increases in natural gas deliveries and in exports of Russia's other basic commodities will partly alleviate the situation.

In 2010, Russia's imports recovered considerably faster than forecast, with import volumes rising by 25% from a crevasse of –30% in 2009. The import surge partly stemmed from a disturbance to production during the summer. Import growth eased again last winter and is forecast to slow down gradually toward the fourth quarter of 2012, but it is still expected to roll on at about 15% in 2011 and around 10% in 2012. In any case, imports continue to be propped up by the Russian ruble's real exchange rate, which is likely to further appreciate as the current account will remain in surplus.

This forecast, like that of September 2010, is based on the assumption of strong growth in the world economy and world trade. The oil market price is assumed to be high (even if flat), which implies high prices for Russia's other main exports, i.e. fuel oils, gas and metals. The forecast is surrounded by considerable uncertainty. The associated risk is mostly on the upside, as prices could rise even higher due to uncertainty concerning the extent and timing of supply reactions to growing demand and given that exports continue to account for 30% of Russia's GDP. Yet the Russian government may delay spending the additional tax revenues generated because of the rise in oil prices. Global uncertainties may entail considerable swings in financial inflows and outflows. In Russia, faster-than-expected inflation would further erode real consumption growth but boost real appreciation and support the propensity to import.

Delayed Recovery in Croatia Backed by Nascent Domestic Demand

Economic conditions remained weak in Croatia in 2010, with GDP contracting by 1.2% year on year as domestic demand continued to decline (albeit at a diminishing rate). However, while investment activity (in particular in the construction sector) remained depressed throughout the year, private consumption showed tentative signs of recovery in the latter part of 2010, following a personal income tax reform and the abolition of a crisis tax on household income. At the same time, public consumption remained subdued against the background of increasing fiscal constraints. Net exports continued to contribute positively to economic growth, although somewhat less so than in 2009, given gradually firming import growth toward end-2010.

The Croatian economy is forecast to grow by 1.4% in 2011, with both domestic demand and net exports contributing to economic growth. Investment activity is expected to turn marginally positive, driven by strengthening credit growth and improving business sentiment. Private consumption should gather momentum as the impact of the tax reform fully materializes and first signs of improving labor market conditions become apparent. Even though 2011 is an election year, no major stimuli are to be expected from public consumption given the freezing of budget expenditures for 2011 at the level of the revised 2010 budget. Export growth is expected to stay firm in 2011, but will be accompanied by a further acceleration of import growth in light of strengthening domestic demand. Accordingly, the positive contribution of net exports to GDP growth is likely to diminish further.

In 2012, GDP growth is expected to accelerate to 2.3% driven by strengthening domestic demand. In particular, gross fixed capital formation is forecast to pick up on the back of increased FDI inflows ahead of the envisaged EU accession.

Annex: Detailed Result Tables

Table 12

Demand Components (Real Prices)

Chained volume data (reference year = 2005)

	2010	2011	2012	2013	2010	2011	2012	2013
	EUR million				*Annual change in %*			
Private consumption	141,414	142,663	144,379	146,157	+1.1	+0.9	+1.2	+1.2
Government consumption	49,385	49,761	50,139	50,628	–0.1	+0.8	+0.8	+1.0
Gross fixed capital formation	52,415	54,366	56,053	57,960	–1.1	+3.7	+3.1	+3.4
of which: Investment in plant and equipment	*21,409*	*22,761*	*23,908*	*24,777*	*–0.4*	*+6.3*	*+5.0*	*+3.6*
Residential construction investment	*10,141*	*10,046*	*10,153*	*10,334*	*–2.7*	*–0.9*	*+1.1*	*+1.8*
Investment in other construction	*20,935*	*20,767*	*21,391*	*22,249*	*–2.9*	*–0.8*	*+3.0*	*+4.0*
Changes in inventories (including statistical discrepancy)	2,165	3,944	3,995	4,021	×	×	×	×
Domestic demand	245,379	250,733	254,566	258,765	+0.7	+2.2	+1.5	+1.6
Exports of goods and services	144,699	159,222	170,113	182,424	+10.4	+10.0	+6.8	+7.2
Imports of goods and services	128,038	139,409	147,807	157,570	+8.3	+8.9	+6.0	+6.6
Net exports	16,661	19,813	22,307	24,854	×	×	×	×
Gross domestic product	262,040	270,546	276,873	283,619	+2.2	+3.2	+2.3	+2.4

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook.

Table 13

Demand Components (Current Prices)

	2010	2011	2012	2013	2010	2011	2012	2013
	EUR million				*Annual change in %*			
Private consumption	153,223	158,753	163,783	168,854	+2.6	+3.6	+3.2	+3.1
Government consumption	55,799	57,282	59,173	61,047	+2.9	+2.7	+3.3	+3.2
Gross fixed capital formation	59,170	62,586	65,762	69,283	+1.9	+5.8	+5.1	+5.4
Changes in inventories (including statistical discrepancy)	2,313	4,768	4,941	5,055	×	×	×	×
Domestic demand	270,505	283,389	293,658	304,239	+3.3	+4.8	+3.6	+3.6
Exports of goods and services	157,023	177,756	193,893	211,795	+12.8	+13.2	+9.1	+9.2
Imports of goods and services	143,629	161,763	175,274	190,133	+12.6	+12.6	+8.4	+8.5
Net exports	13,394	15,993	18,619	21,663	×	×	×	×
Gross domestic product	283,899	299,382	312,278	325,902	+3.8	+5.5	+4.3	+4.4

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook.

Table 14

Deflators of Demand Components

	2010	2011	2012	2013	2010	2011	2012	2013
	2005 = 100				*Annual change in %*			
Private consumption	108.3	111.3	113.4	115.5	+1.5	+2.7	+1.9	+1.8
Government consumption	113.0	115.1	118.0	120.6	+2.9	+1.9	+2.5	+2.2
Gross fixed capital formation	112.9	115.1	117.3	119.5	+3.0	+2.0	+1.9	+1.9
Domestic demand (excluding changes in inventories)	110.3	112.9	115.2	117.4	+2.1	+2.4	+2.1	+1.9
Exports of goods and services	108.5	111.6	114.0	116.1	+2.2	+2.9	+2.1	+1.9
Imports of goods and services	112.1	116.0	118.6	120.7	+3.9	+3.5	+2.2	+1.8
Terms of trade	96.8	96.2	96.1	96.2	–1.6	–0.6	–0.1	+0.1
Gross domestic product	108.3	110.7	112.8	114.9	+1.6	+2.1	+1.9	+1.9

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook.

Table 15

Labor Market

	2010	2011	2012	2013	2010	2011	2012	2013
	Thousands				*Annual change in %*			
Total employment	4,119.5	4,191.1	4,243.3	4,296.2	+1.0	+1.7	+1.2	+1.2
of which: Private sector employment	*3,586.5*	*3,658.8*	*3,711.7*	*3,765.2*	*+1.1*	*+2.0*	*+1.4*	*+1.4*
Payroll employment (national accounts definition)	3,527.6	3,588.0	3,630.3	3,675.7	+0.8	+1.7	+1.2	+1.2
	% of labor supply							
Unemployment rate (Eurostat definition)	4.4	4.3	4.3	4.1	×	×	×	×
	EUR per real output unit x 100							
Unit labor costs (whole economy)[1]	63.6	64.3	65.4	66.3	+0.1	+1.1	+1.8	+1.3
	EUR thousand per employee							
Labor productivity (whole economy)[2]	63.6	64.6	65.2	66.0	+1.2	+1.5	+1.1	+1.2
	EUR thousand							
Real compensation per employee[3]	37.3	37.3	37.6	37.9	–0.2	–0.1	+0.9	+0.7
	At current prices in EUR thousand							
Gross compensation per employee	40.4	41.5	42.7	43.8	+1.3	+2.6	+2.9	+2.5
	At current prices in EUR million							
Total gross compensation of employees	142,639	148,831	154,930	160,830	+2.1	+4.3	+4.1	+3.8

Source: 2010: Eurostat; 2011 to 2013: OeNB June 2011 outlook.

[1] *Gross wages divided by real GDP.*
[2] *Real GDP divided by total employment.*
[3] *Gross wages per employee divided by the private consumption expenditure (PCE) deflator.*

Table 16

Current Account

	2010	2011	2012	2013	2010	2011	2012	2013
	EUR million				*% of nominal GDP*			
Balance of trade	10,112.0	14,609.4	17,762.1	19,141.7	3.6	4.9	5.7	5.9
Balance on goods	–3,216.0	–1,896.3	–494.6	636.9	–1.1	–0.6	–0.2	0.2
Balance on services	13,328.0	16,505.8	18,256.7	18,504.8	4.7	5.5	5.8	5.7
Balance on income	–290.0	–1,061.8	–1,355.9	–1,366.6	–0.1	–0.4	–0.4	–0.4
Balance on transfers	–2,065.0	–1,668.6	–1,546.1	–1,493.6	–0.7	–0.6	–0.5	–0.5
Current account	7,757.0	11,879.0	14,860.1	16,281.4	2.7	4.0	4.8	5.0

Source, 2010, Eurostat; 2011 to 2013: OeNB June 2011 outlook.

Table 17

Quarterly Outlook Results

	2011	2012	2013	2011				2012				2013			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Prices, wages and costs	*Annual change in %*														
HICP	+3.2	+2.1	+1.9	+3.0	+3.5	+3.2	+3.1	+2.4	+1.9	+2.1	+2.0	+2.0	+2.0	+1.9	+1.8
HICP (excluding energy)	+2.4	+2.1	+1.9	+2.2	+2.8	+2.4	+2.3	+2.1	+1.9	+2.2	+2.1	+2.0	+2.0	+1.9	+1.8
Private consumption expenditure (PCE) deflator	+2.7	+1.9	+1.8	+2.5	+2.9	+2.8	+2.6	+2.2	+1.8	+1.9	+1.9	+1.8	+1.9	+1.8	+1.8
Gross fixed capital formation deflator	+2.0	+1.9	+1.9	+2.0	+1.9	+2.0	+2.0	+1.9	+1.9	+1.9	+1.9	+1.9	+1.9	+1.9	+1.8
GDP deflator	+2.1	+1.9	+1.9	+1.9	+2.2	+2.2	+2.2	+2.2	+1.8	+1.8	+1.9	+2.0	+2.0	+1.8	+1.8
Unit labor costs	+1.1	+1.8	+1.3	–0.9	+0.5	+2.0	+2.8	+2.9	+2.1	+1.3	+0.8	+0.9	+1.2	+1.5	+1.7
Nominal wages per employee	+2.6	+2.9	+2.5	+1.4	+2.2	+3.1	+3.7	+3.5	+3.1	+2.6	+2.3	+2.3	+2.4	+2.6	+2.8
Productivity	+1.5	+1.1	+1.2	+2.3	+1.7	+1.0	+0.9	+0.6	+1.0	+1.3	+1.5	+1.4	+1.2	+1.1	+1.1
Real wages per employee	–0.1	+0.9	+0.7	–1.1	–0.7	+0.2	+1.1	+1.3	+1.2	+0.8	+0.4	+0.4	+0.5	+0.8	+0.9
Import deflator	+3.5	+2.2	+1.8	+4.8	+3.6	+3.0	+2.6	+2.1	+2.4	+2.2	+2.1	+1.8	+1.7	+1.7	+1.7
Export deflator	+2.9	+2.1	+1.9	+3.1	+2.8	+2.9	+2.8	+2.6	+2.2	+1.8	+1.8	+1.8	+1.9	+1.8	+1.9
Terms of trade	–0.6	–0.1	+0.1	–1.6	–0.7	–0.1	+0.2	+0.5	–0.2	–0.4	–0.3	+0.0	+0.2	+0.1	+0.1
Economic activity	*Annual and/or quarterly changes in % (real)*														
GDP	+3.2	+2.3	+2.4	+1.0	+0.5	+0.5	+0.6	+0.6	+0.6	+0.5	+0.5	+0.6	+0.6	+0.7	+0.7
Private consumption	+0.9	+1.2	+1.2	+0.2	+0.1	+0.3	+0.3	+0.3	+0.4	+0.3	+0.3	+0.3	+0.3	+0.3	+0.4
Government consumption	+0.8	+0.8	+1.0	+0.0	+0.9	+0.4	+0.2	+0.1	+0.0	+0.0	+0.2	+0.3	+0.3	+0.4	+0.4
Gross fixed capital formation	+3.7	+3.1	+3.4	+0.9	+0.6	+0.8	+0.8	+0.8	+0.8	+0.8	+0.8	+0.8	+0.9	+0.9	+1.0
Exports	+10.0	+6.8	+7.2	+3.4	+1.4	+1.5	+1.6	+1.7	+1.8	+1.8	+1.7	+1.7	+1.8	+1.8	+1.8
Imports	+8.9	+6.0	+6.6	+2.4	+1.4	+1.5	+1.3	+1.4	+1.5	+1.6	+1.6	+1.6	+1.7	+1.6	+1.6
	Contribution to real GDP growth in percentage points														
Domestic demand	+1.4	+1.4	+1.5	+0.3	+0.4	+0.4	+0.4	+0.3	+0.3	+0.3	+0.3	+0.4	+0.4	+0.4	+0.5
Net exports	+1.2	+0.9	+0.9	+0.7	+0.1	+0.1	+0.3	+0.3	+0.3	+0.2	+0.2	+0.2	+0.2	+0.3	+0.3
Changes in inventories	+0.7	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0	+0.0
Labor market	*% of labor supply*														
Unemployment rate (Eurostat definition)	4.3	4.3	4.1	4.5	4.3	4.2	4.2	4.3	4.4	4.4	4.3	4.3	4.2	4.0	3.9
	Annual and/or quarterly changes in %														
Total employment	+1.7	+1.2	+1.2	+0.4	+0.4	+0.5	+0.5	+0.3	+0.2	+0.2	+0.2	+0.3	+0.4	+0.4	+0.4
of which: Private sector employment	*+2.0*	*+1.4*	*+1.4*	*+0.4*	*+0.5*	*+0.6*	*+0.5*	*+0.3*	*+0.2*	*+0.2*	*+0.2*	*+0.4*	*+0.5*	*+0.5*	*+0.5*
Payroll employment	+1.7	+1.2	+1.2	+0.5	+0.3	+0.4	+0.5	+0.3	+0.2	+0.2	+0.2	+0.3	+0.4	+0.4	+0.4
Additional variables	*Annual and/or quarterly changes in % (real)*														
Real disposable household income	+0.5	+2.1	+2.5	–0.6	+0.1	+0.5	+0.7	+0.6	+0.5	+0.4	+0.5	+0.6	+0.7	+0.8	+0.8
	% of real GDP														
Output gap	0.2	0.4	0.7	0.1	0.2	0.2	0.4	0.3	0.6	0.4	0.4	0.5	0.6	0.8	1.1

Source: OeNB June 2011 outlook (based on seasonally and working-day adjusted data).

Table 18

Comparison of Current Economic Forecasts for Austria

Indicator	OeNB			WIFO		IAS		OECD		IMF		European Commission	
	June 2011			April 2011		April 2011		May 2011		April 2011		May 2011	
	2011	2012	2013	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
Key results	*Annual change in %*												
GDP (real)	+3.2	+2.3	+2.4	+2.5	+2.0	+2.3	+2.1	+2.9	+2.1	+2.4	+2.3	+2.4	+2.0
Private consumption (real)	+0.9	+1.2	+1.2	+1.1	+1.1	+0.8	+1.1	+0.9	+1.2	×	×	+1.1	+1.1
Government consumption (real)	+0.8	+0.8	+1.0	+1.0	+1.0	+0.2	+0.5	+0.3	+0.4	×	×	+0.8	+0.8
Gross fixed capital formation (real)[1]	+3.7	+3.1	+3.4	+2.6	+2.7	+2.5	+2.1	+3.0	+2.5	×	×	+3.0	+2.9
Exports (real)	+10.0	+6.8	+7.2	+7.4	+6.5	+7.4	+5.9	+9.6	+6.8	×	×	+7.0	+6.8
Imports (real)	+8.9	+6.0	+6.6	+6.1	+6.0	+5.7	+4.8	+7.7	+6.0	×	×	+5.9	+6.3
GDP per employee	+1.5	+1.1	+1.2	+1.1	+1.3	+1.2	+1.2	×	×	×	×	+1.6	+1.3
GDP deflator	+2.1	+1.9	+1.9	+2.0	+2.1	+2.0	+2.0	+1.7	+1.6	×	×	+1.7	+1.8
CPI	×	×	×	+2.8	+2.4	+2.7	+2.3	×	×	+2.5	+2.0	×	×
HICP	+3.2	+2.1	+1.9	+2.9	+2.4	×	×	+3.1	+1.8	×	×	+2.9	+2.1
Unit labor costs	+1.1	+1.8	+1.3	+1.4	+1.6	×	×	×	×	×	×	+1.0	+1.4
Payroll employment	+1.7	+1.2	+1.2	+1.6	+0.9	+1.1	+0.9	×	×	×	×	+0.8	+0.7
	% of labor supply												
Unemployment rate (Eurostat definition)	4.3	4.3	4.1	4.1	4.0	4.3	4.3	4.2	4.0	4.3	4.3	4.3	4.2
	% of nominal GDP												
Current account	4.0	4.8	5.0	3.7	4.3	×	×	3.1	3.8	3.1	3.1	2.6	2.8
Budget balance (Maastricht definition)[2]	–3.0	–2.6	–2.3	–3.4	–3.0	–3.0	–2.5	–3.7	–3.2	–3.1	–2.9	–3.7	–3.3
External assumptions													
Oil price in USD/barrel (Brent)	111.1	108.0	103.7	100.0	100.0	112.0	115.0	120.0	120.0	107.2	108.0	117.4	117.2
Short-term interest rate in %	1.5	2.3	2.8	1.3	2.3	1.6	2.2	1.3	2.0	1.7	2.6	1.6	2.5
USD/EUR exchange rate	1.42	1.43	1.43	1.35	1.30	1.39	1.40	1.43	1.43	1.37	1.36	1.43	1.45
	Annual change in %												
Euro area GDP (real)	+1.5 to +2.3	+0.6 to +2.8	×	+1.5	+1.5	+1.8	+1.7	+2.0	+2.0	+1.6	+1.8	+1.6	+1.8
U.S. GDP (real)	+2.6	+2.7	+2.8	+2.9	+3.0	+2.9	+2.7	+2.6	+3.1	+2.8	+2.9	+2.6	+2.7
World GDP (real)	+4.1	+4.2	+4.3	+4.2	+4.4	×	×	+4.2	+4.8	+4.4	+4.5	+4.0	+4.1
World trade	+8.0	+7.8	+7.6	+8.0	+8.5	+8.0	+7.0	+8.1	+8.4	+7.4	+6.9	+7.3	+7.4

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

[1] For IAS: Gross investment.

[2] Taking into account the revisions made at the end of March 2011 (EDP report). IHS and IMF; not taking revisions into account.

Inflation Differentials between Austria, the Euro Area, Germany and Italy

Friedrich Fritzer[1]

In Austria, inflation as measured by the HICP has been accelerating at a faster rate than in other euro area countries since late 2010. By May 2011, Austria had built up an inflation differential of 1.3 percentage points against Germany and of 0.7 percentage points against Italy.

A more detailed analysis shows inflation developments in Austria to have diverged from euro area patterns above all in the food sector. This can partly be explained with the increase of the tax rate on tobacco products in Austria at the beginning of 2011. In addition, domestic food retailing market structures may have contributed to the faster and stronger pass-through of global cost shocks to consumer prices in Austria compared with other euro area countries. This study argues that retail price competition may be the key driver behind the faster and stronger pass-through. This finding would, however, have to be substantiated by a comprehensive analysis of price setting dynamics and of market structures in food retailing to be conclusive. The energy sector is another industry in which Austria recorded more rapid inflation growth than other euro area countries in early 2011, the reason being the petroleum tax increase that was implemented in 2011. The oligopolistic structure of the domestic motor fuel market calls for continued close monitoring. Service inflation accelerated to 3.3% in May 2011, significantly exceeding above all the corresponding German rate. This divergence may be attributed at least in part to country-specific effects, including the reduction of the VAT rate on accommodation services in Germany from 19% to 7% and the abolition of university tuition fees in one of Germany's federal states in 2010. Industrial goods excluding energy also contributed to the disproportionately strong acceleration of domestic inflation in early 2011 (May: 1.9%). Above all shoe and garment prices rose comparatively faster in Austria than in Germany. Given the seasonality of price movements that is typical of nonenergy industrial goods and given the uncertainty surrounding inflation measures following the implementation of harmonized EU standards for the treatment of seasonal products in the HICP in January 2011, it is, however, too early to deduct an inflation trend in this sector at this stage.

At the aggregate level, the Austrian inflation rate and its differential against other countries' rates are expected to shrink considerably in the coming months and in 2012. According to the OeNB's latest projections, annual Austrian HICP inflation should drop substantially from 3.2% in 2011 to 2.1% in 2012. At the same time, Austria's inflation differential to the euro area should narrow by 0.2 to 0.5 percentage points against the euro area and by 0.1 to 0.3 percentage points against Germany and Italy.

JEL classification: E31
Keywords: sectoral inflation, inflation differentials

Following accelerated inflation in recent months, price growth leveled off in Austria in May 2011 at a high rate. Having risen from 2.2% in December 2010 to 3.7% in April 2011, Austria's annual HICP inflation rate stayed at the April level in May. Mirroring these developments, core inflation (which excludes the volatile components energy and unprocessed food) climbed from 1.5% in December 2010 to 3.0% in May 2011. Until March 2011, energy and food prices had accounted for roughly two-thirds of this rise in headline inflation, whereas in April and May services were the key drivers.

Amid the continuing uptrend in euro area inflation, Austria has lately been recording significantly higher increases in inflation than the euro area

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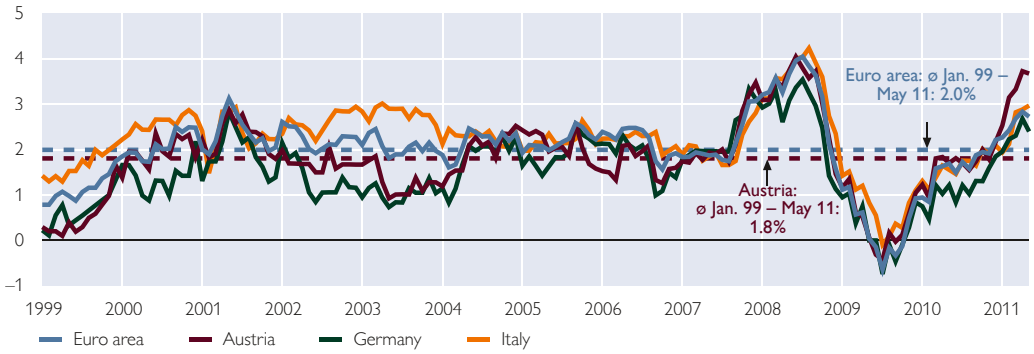
Chart 1

HICP Inflation Developments in Selected Euro Area Countries

Annual change in %



Source: Eurostat.

as a whole and than Germany and Italy, its two biggest neighbors and largest trading partners. While annual HICP inflation was on a par in Austria and in the euro area in December 2010 at a rate of 2.2%, developments have since diverged, causing an inflation differential of 1 percentage point to emerge by May 2011 (Austria: 3.7%, euro area: 2.7%). A comparison with developments in Germany and Italy underlines the unusually high rise of inflation in Austria. While in December 2010, Austrian inflation had exceeded the corresponding levels in Italy and Germany by just 0.1 and 0.3 percentage points, respectively, this differential widened significantly up to May 2011. By May, the domestic inflation rate had risen to 0.7 percentage points above that of Italy (3.0%) and 1.3 percentage points above that of Germany (2.4%). This deviation is one of several episodes since the launch of the euro area during which inflation developments in Austria have been out of sync with those of its neighboring countries (chart 1).

Similarly to headline inflation, core inflation (excluding energy and unprocessed food) has grown more strongly in Austria since December 2010 than in the euro area on average and in Austria's neighboring countries. Domestic core inflation in fact doubled to 3.0% from December 2010 to May 2011. Thus, core inflation was 1.3 percentage points above the euro area average and 1.6 and 0.8 percentage points, respectively, above the corresponding German and Italian rates.

The following sections will look more closely at inflation developments in some subsegments of the HICP in Austria with a view to highlighting potential causes of the inflation differential.

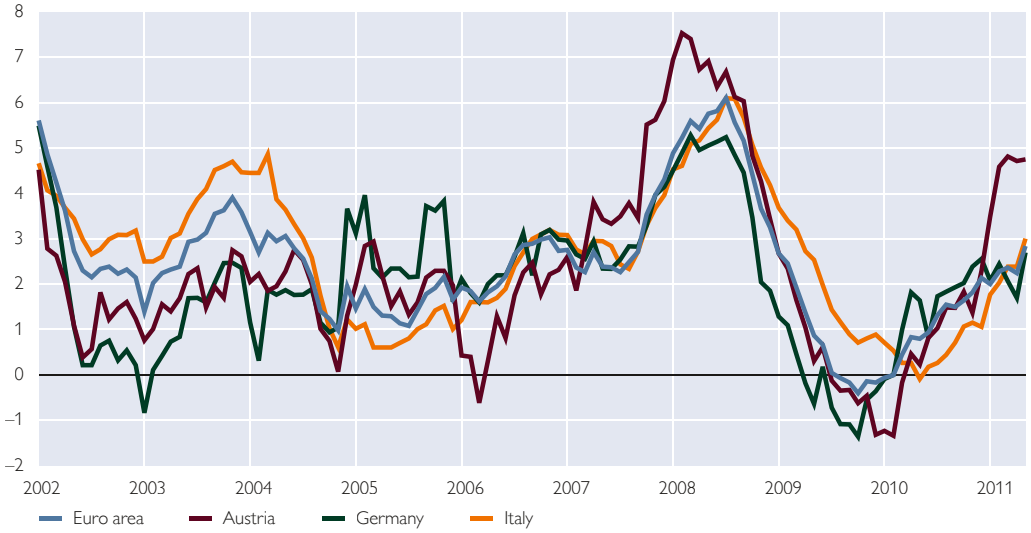
1 Tax Increases and Stronger Pass-Through of Global Cost Shocks Drive Accelerated Rise in Food Price Inflation

In Austria, the food component of the inflation rate (which includes alcohol and tobacco) climbed from 2.3% in December 2010 to 4.7% in May 2011. While food prices increased also in the euro area average during this period, they did so at a far smaller rate (December 2010: 2.1%; May 2011: 2.8%). Moreover, these averages mask divergent developments across the euro area. In Germany, for instance, price growth even declined in the food segment from December 2010

Chart 2

Inflation of Food Prices Subject to Marked Increases in Austria

Annual change in %



Source: Eurostat.

to April 2011 and did not start to regain momentum until May 2011.

Current inflation differentials between Austria and its neighbors Germany and Italy can, to some extent, be attributed to the increase in the tobacco tax rate, which became effective in Austria at the beginning of 2011 and which contributed approximately 0.6 percentage points to recent food price inflation.

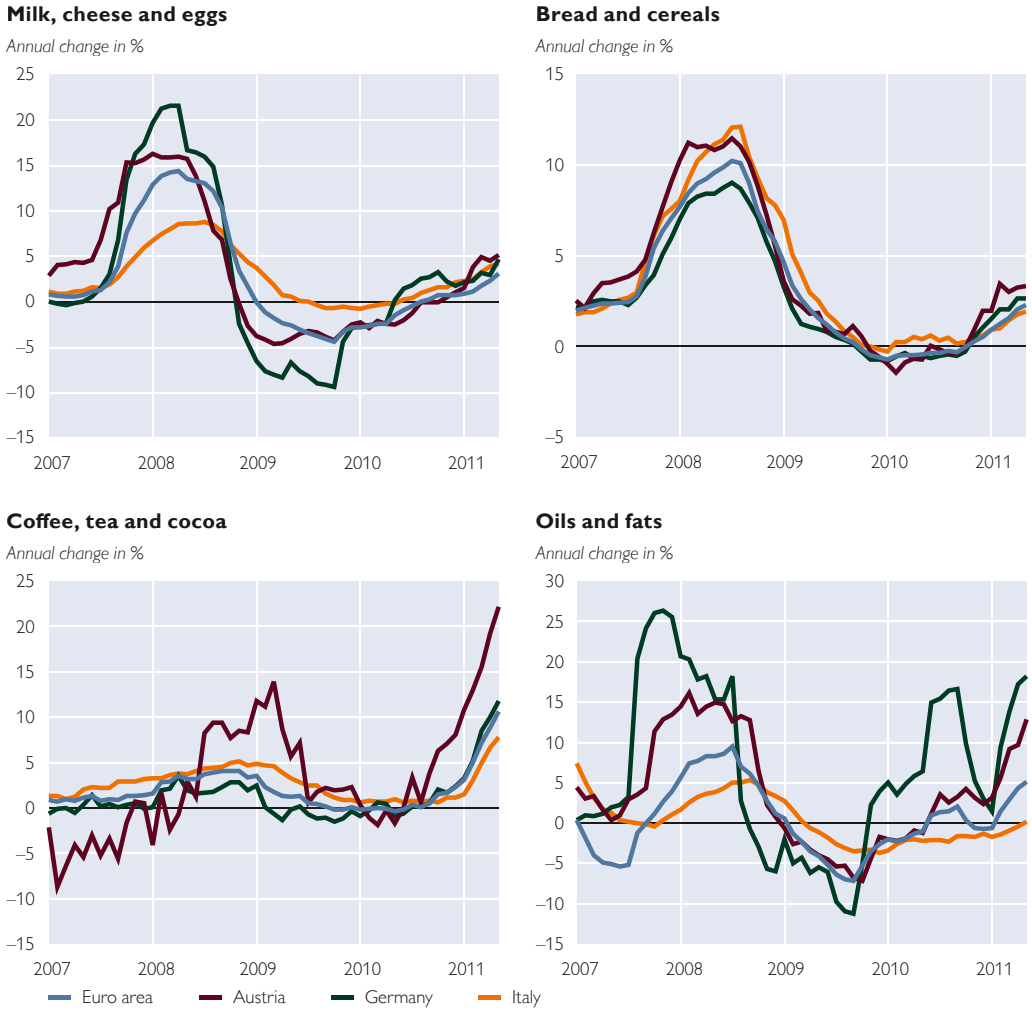
Yet other factors have also been at play. A cross-country comparison shows that the costs of global price developments were passed through to consumer prices in Austria at a markedly stronger rate than abroad. The pass-through of price developments has been particularly strong in the case of nonalcoholic beverages such as coffee, tea and cocoa. In addition, the prices of bread and cereals as well as of dairy products have also been rising faster in Austria than in the euro area as a whole and in the neighboring countries.

To some extent, these diverging developments can be explained by the food retail market structures prevailing in Austria and their role in transmitting world market prices, which have risen by more than 100% in some instances for wheat, corn and coffee since mid-2010. Some factors indicate that food retailing is characterized by high price competition in Austria and that this has fueled a rapid pass-through of costs to end users against the backdrop of the global commodity price increases.[2] The fiercer the competition, the smaller corporate profit margins are and the stronger or faster the rate is at which rising costs need to be passed on to consumers in the form of higher prices. In selling bread and cereal products

[2] *In an older study, Weiss (1995) established a robust relationship between the degree of concentration and the degree of price pass-through in the Austrian manufacturing industry: The lower (higher) the degree of concentration, the higher (lower) the degree of cost pass-through.*

Chart 3

Substantial Acceleration of Prices for Some Food Products



Source: Eurostat.

and nonalcoholic beverages, Austrian food retailers generate notably smaller operating profits than their Italian counterparts but also smaller profits than their German counterparts (KMU FORSCHUNG AUSTRIA and IHS, 2011).

Apart from the comparatively lower operating profits of Austrian food retailers, a number of other factors would imply that competition intensity is rather high in the Austrian food retail market. While this market is dominated by just three chains, which between them account for a market share of 80% (Nielsen, 2010), this degree of concentration is put in perspective by the fact that these chains also operate discount stores through which they can – and evidently do – compete on prices. A recent survey among Austrian food producers and retailers has identified price competition among the retail chains together with rising and volatile commodity prices as today's key challenges (AMA, 2011).

Overall, the reasons for "home-made" inflation remain subject to uncer-

tainty, however.[3] KMU FORSCHUNG AUSTRIA and IHS (2011) found but little evidence for the impact of market structures on price setting, that is to say, they found only a weak correlation between the degree of concentration and the level of prices (not taking into account the relationship between concentration and inflation rates). The market mechanisms which determine prices need to be assessed in a comprehensive way, however. To do so, it is not sufficient to look at the degree of concentration alone; it is also necessary to evaluate the buyer power of individual retailers in their supply markets. Finally, cost patterns are also a crucial factor in corporate pricing policies. In the absence of a comprehensive analysis that takes all such aspects into account, it is not possible to arrive at a conclusive assessment at the current juncture. The Austrian Competition Authority last conducted an industry-wide analysis of retail trade in Austria in 2007; yet even this analysis covered only a limited number of aspects (Bundeswettbewerbsbehörde, 2007).[4]

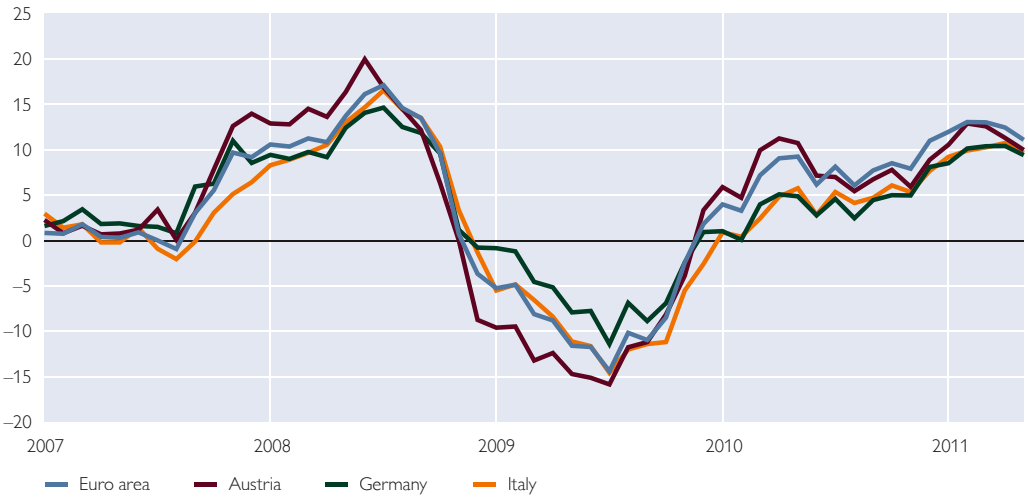
2 Energy Price Inflation Has Recently Leveled off to Slightly above German and Italian Rates

Energy price inflation accelerated at a markedly faster rate in Austria in early 2011 than in other euro area countries, rising to 12.6% in March 2011, which is more than 2 percentage points above the corresponding figures for Germany (10.4%) and Italy (10.3%). By May

Chart 4

Austria's Energy Price Inflation Differentials against Neighboring Countries Have Narrowed

Annual change in %



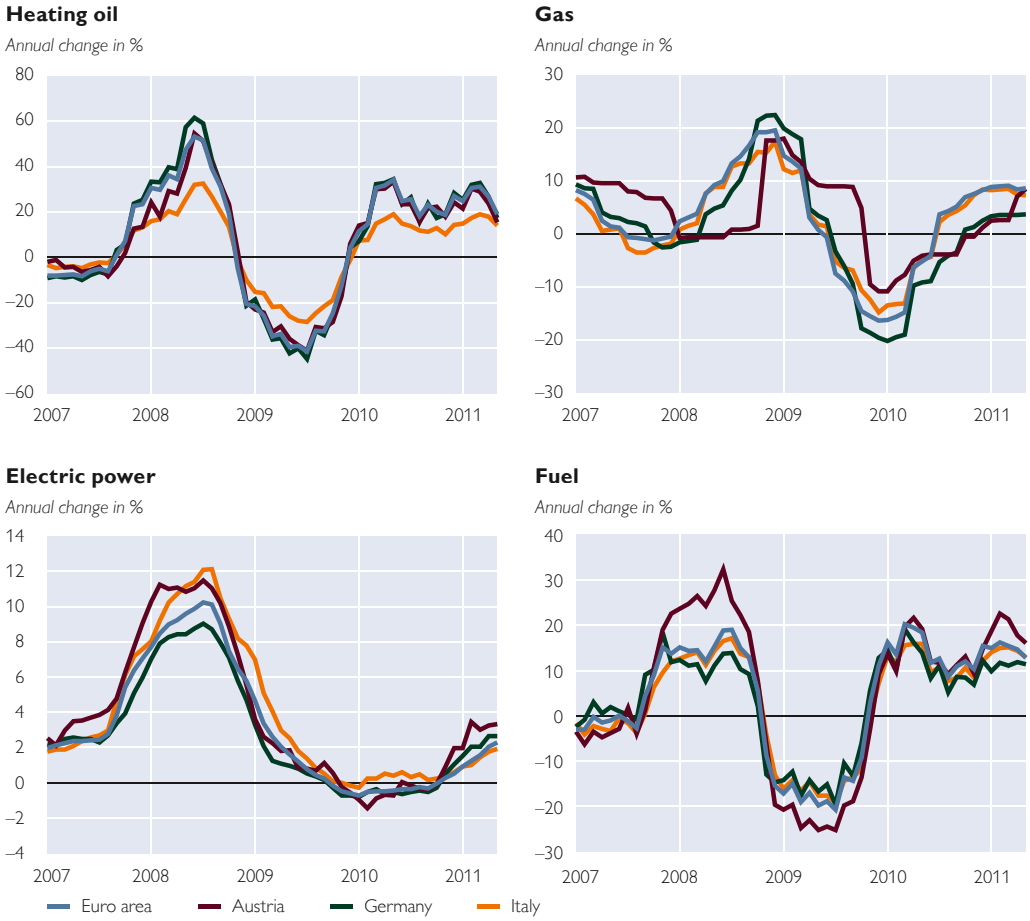
Source: Eurostat.

[3] *Food price inflation was considerably higher in Austria than in the euro area on average or than in Germany and Italy already during the commodity price shocks of 2007 and 2008. In econometric analyses, Baumgartner (2008a, 2008b) identified dairy products as well as oils and fats as the key domestic drivers of the above-average rise of inflation in Austria. The findings of Fritzer et al. (2008) support this evidence to some extent. Conclusive evidence on the role of domestic inflationary pressures has yet to be established.*

[4] *This analysis found buying power to be high in some food retail sectors.*

Chart 5

Inflation Dynamics of Selected Energy Sources



Source: Eurostat.

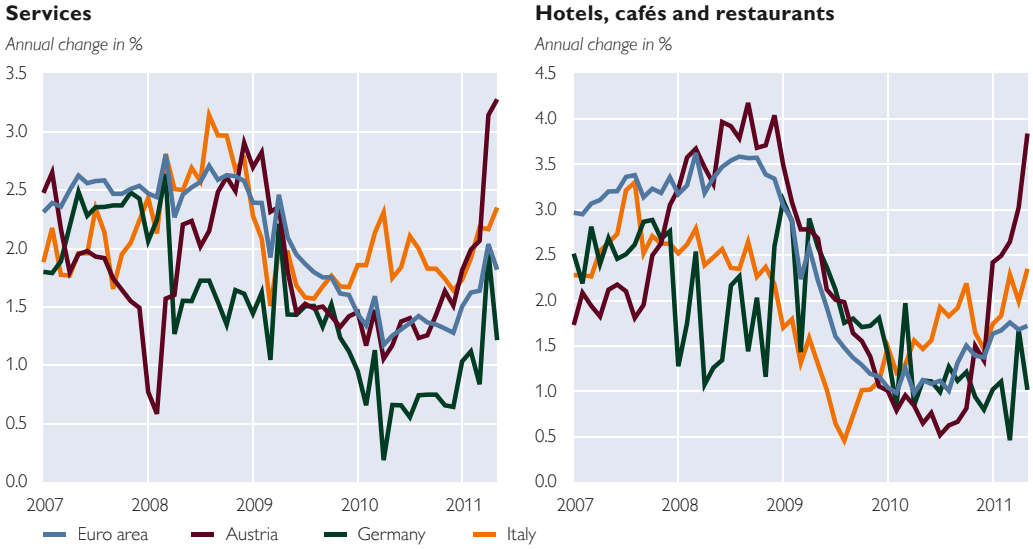
2011, the inflation differential in the energy sector had narrowed again visibly (Austria: 10.0%; Germany: 9.4%; Italy: 9.7%). The narrowing of the inflation differential may, however, be partly attributable to a base effect that reflects the disproportionately high increase of energy prices in Austria in early 2010.

In particular, motor fuel prices accelerated more sharply in Austria than in other euro area countries from December 2010 onward. This faster rise is attributable to higher petroleum taxation, which became effective in January 2011 and drove up energy inflation by 3 percentage points. Heating oil, though, remained unaffected by the rise in petroleum tax, so that inflationary developments in Austria differ little from developments in the neighboring countries in this area.

In addition, the price increases may also reflect the structure of the Austrian motor fuel market, which is characterized by a very high degree of concentration (Bundeswettbewerbsbehörde, 2011). Last but not least, the petroleum corporations operating in Austria buy the bulk of their motor fuel from a single company (possibly on account of the lack of refining capacity in the vicinity of Austria). In the past few months, however, prices have apparently not been affected by these aspects.

Chart 6

Strong Increases in Prices for Hotel and Restaurant Services



Source: Eurostat.

3 Visible Increases in Austrian Service Prices in Recent Months

The annual rate of HICP inflation has lately accelerated visibly in the Austrian service sector. Service prices climbed from 1.5% in December 2010 to 3.3% in May 2011, with inflation differentials against Italy and Germany widening in the process. The key driver behind these developments was the growth of inflation for restaurant and hotel accommodation services, which stood at 3.8% in May, having almost tripled from December 2010, whereas Italy saw only a slight upward trend and Germany even reported a decline in restaurant and hotel accommodation price growth. Following the increase in prices for restaurant and hotel accommodation services, postal services have also become more expensive in Austria as of late, as have prices for social protection.

The fact that service price inflation rates have risen particularly strongly in Austria recently can partly be attributed to one-off effects. Germany, for instance, lowered its VAT rate on accommodation services from 19% to 7% in 2010, the effects of which are likely to have spilled over into the first few months of 2011. In addition, service price inflation in Germany has benefited from the abolition of student tuition fees in the state of Saarland in April 2010. This effect ceased to have an impact on HICP inflation in May 2011. The comparatively high weight of hotel and restaurant services in the Austrian HICP was also instrumental in a faster acceleration of inflation. Finally, the rise in consumer prices may also have been driven by rising corporate price expectations. In the latest business survey of WKÖ (2011), the net balance of responses regarding price expectations reached the highest value in the history of the survey. Among the reasons why respondents expected prices to go up in the 12 months ahead, anticipations of wage increases figured prominently (stated by 64% of respondents). The share of respondents who expected

prices to rise was considerably higher in the wage-intensive services sector (65% of service providers) than in the manufacturing industry (51%).

4 Nonenergy Industrial Goods Inflation Largely Driven by Garment and Shoe Prices

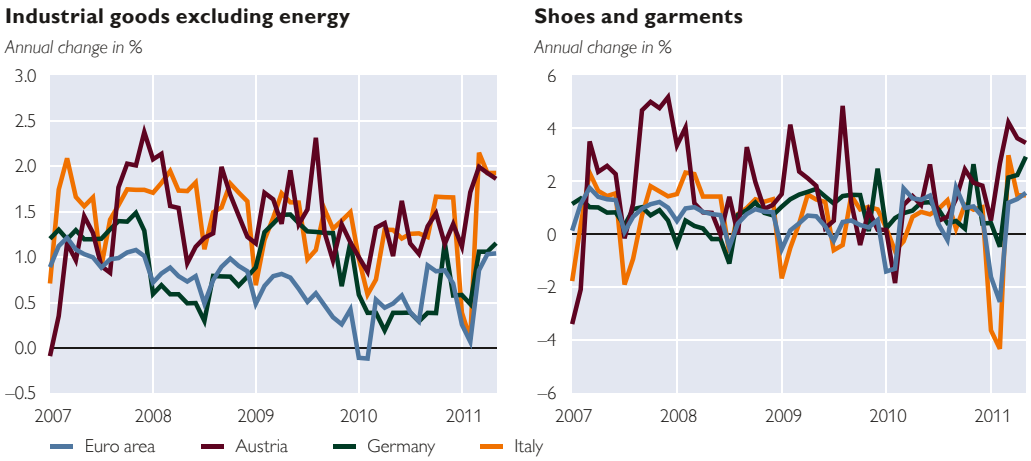
In the nonenergy industrial goods segment, prices have been going up in Austria – as in other euro area countries – since December 2010. In May 2011, inflation in this segment totaled 1.9%, 0.7 percentage points higher than in Germany and as high as in Italy.

Prices for industrial goods excluding energy are, however, subject to pronounced seasonal variations, which is why this upward trend might well be reversed sooner or later. A more detailed assessment of the data shows that at least some of Austria's inflation differential against Germany is attributable to the garments and shoes component (chart 7). Apart from garments and shoes, inflation rates were higher in Austria than in its neighboring countries also for photographic equipment and optical instruments as well as for some electronic devices.

The recent upward trend in prices for garments and shoes must be seen against the backdrop of the strong volatility of such prices. Differences in seasonal patterns across euro area countries as well as the fact that the EU regulation on the treatment of seasonal products in the HICP (European Commission, 2009)[5] became effective in January 2011 may cause national inflation rates to diverge in the short term. In Italy and in Germany, this regulation was implemented only at the beginning of 2011, whereas Austria had switched to the new standards some time ago. It should be stressed that the revision of historical data is still pending in Austria's neighboring countries, so that current inflation rates need not necessarily reflect actual developments pertaining to the implementation of the EU regulation. The new standards relate

Chart 7

Industrial Goods Prices Dominated by Prices for Shoes and Garments



Source: Eurostat.

[5] *Regulation (EC) No. 330/2009 lists conventions on the statistical treatment of seasonal products that all EU Member States implemented by January 2011. Essentially, these conventions relate to the method for calculating prices and weights of seasonal products.*

above all to the COICOP[6] component of garments and shoes as well as to some unprocessed food items (fish, fruit and vegetables). According to estimates of the national statistical offices, implementation of the new standards caused annual HICP inflation to shrink by 0.4 percentage points in January and February 2011 but to rise by 0.1 percentage percentage point in May 2011 in Italy; in Germany, the annual growth rate of HICP inflation was skewed upward by 0.1 percentage points from March to May 2011 (European Commission, 2011). These estimates would imply that, without the new standards, Austria's inflation differential would in fact have been even larger against Germany but significantly smaller against Italy in the first few months of 2011.

Corporate price setting might lead to inflation differentials also in this segment, but this has yet to be investigated.

5 Current Inflation Differentials Likely to Narrow

Current inflation projections imply a narrowing of the substantial inflation differentials that have been building up between Austria and the euro area as a whole as well as its neighboring countries Germany and Italy. Recent projections for euro area HICP inflation range between 2.5% and 2.7% for 2011, and between 1.1% and 2.3% for 2012.

An update of the OeNB's latest inflation projections on the basis of the HICP figures for May 2011, which were not yet available when the projections were made, has confirmed the outlook of 3.2% annual HICP inflation for 2011, and of 2.1% for 2012. In line with the OeNB's inflation projections, Austria's inflation differential against the euro area stands to shrink from about 0.6 percentage points in 2011 to within a range of 0.2 to 0.5 percentage points in 2012 (based on the arithmetic mean of the range projected for the euro area by the Eurosystem). The inflation differentials against Germany and Italy are expected to narrow more strongly judging from recent forecasts (OeNB/Eurosystem/Deutsche Bundesbank, Consensus Forecasts, OECD, European Commission), namely from a range of 0.2 to 0.7 percentage points in 2011 to a range of 0.1 to 0.3 percentage points in 2012.

According to the OeNB's inflation projection model, the service sector is

Comparison of HICP Inflation Forecasts

	2011				2012			
	Austria	Euro area	Germany	Italy	Austria	Euro area	Germany	Italy
	Annual change in %							
OeNB/Eurosystem/Deutsche Bundesbank (June 2011)	3.2	2.5 – 2.7	2.5	×	2.1	1.1 – 2.3	1.8	×
Consensus Economics (June 2011)	2.8	2.6	2.4	2.6	2.1	1.9	2.0	2.0
OECD (May 2011)	3.1	2.6	2.6	2.4	1.8	1.6	1.7	1.7
European Commission (May 2011)	2.9	2.6	2.6	2.6	2.1	1.8	2.0	1.9

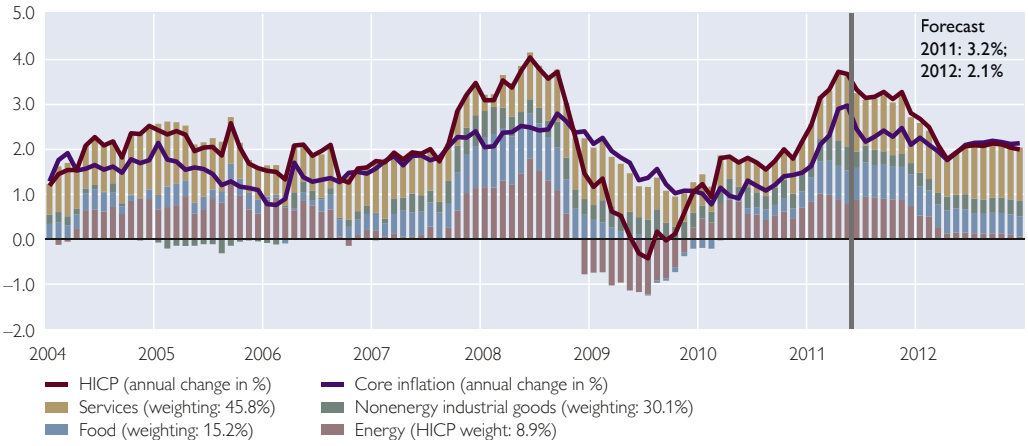
Source: OeNB/Eurosystem/Deutsche Bundesbank (macroeconomic projections by the OeNB for Austria and by the Deutsche Bundesbank for Germany; Eurosystem staff projections for the euro area), Consensus Economics (Forecasts), OECD (Economic Outlook), European Commission (Economic Forecast).

[6] *COICOP = Classification of Individual Consumption by Purpose.*

Chart 8

HICP Inflation and Contributions by Subcomponents

Contributions to growth in percentage points *Latest observation: May 2011*



Source: OeNB (June 2011 NIPE updated on June 16, 2011), Statistics Austria.

likely to see a decline in annual inflation until early 2012, reflecting moderate expectations in tourism, low wage costs and the base effects of strong price growth in this sector since April 2010. Expectations of higher wage settlements in the forthcoming round of wage negotiations should cause service price inflation to return to an upward path in the second quarter of 2012. Yet all in all, annual service price inflation stands to stay slightly below the average of 2011 (2.4%) in 2012 (2.3%).

In the processed food segment, annual HICP inflation totaled 4.8% in May 2011. The upward trend in food price inflation apparent since early 2010 is set to continue until the fall of 2011, given rising world market prices for agricultural commodities, the more rapid pass-through of global price developments to consumers and higher tobacco taxes, which added 1.4 percentage points to food price inflation in 2011. From the fall of 2011 onward, a more moderate development of global agricultural goods prices until the end of 2012 should translate into a pronounced decline of processed food price inflation. Average HICP inflation in this segment is projected to run to 4.8% in 2011 and to 3.8% in 2012.

In the unprocessed food segment, inflation was measured at 4.7% in May 2011, which means that it has been declining since March 2011. This trend is likely to continue until the first quarter of 2012, reflecting above all a normalization of fruit prices, which went up strongly until the first quarter of 2011. Annual inflation in the unprocessed food segment has been projected to average 4.2% in 2011 and 1.9% in 2012.

In the energy segment, a sharp decline in inflation is in the offing for early 2012, given that this year's increase in the petroleum tax will cease to affect the index at the beginning of 2012 and given the base effect resulting from the sharp rise in 2011. Declining crude oil prices will intensify the decline in energy price inflation, which is expected to average 11.3% in 2011 and 2.5% in 2012 according to the OeNB's projections.

Industrial goods excluding energy are in for a pronounced decline in inflation during the remainder of 2011 due

to the pronounced seasonality of this segment and low unit labor costs. In 2012, higher wage settlements in the forthcoming wage round will reverse the dynamics of nonenergy industrial goods prices, driving them slightly upward again. This notwithstanding, HICP inflation for nonenergy industrial goods is not expected to exceed 1.1% in 2012, thus staying below the average projected for 2011 (1.3%).

6 Summary and Conclusions

Since the end of 2010, the inflation rate has been accelerating at a faster pace in Austria than in the euro area as a whole and than in Germany and Italy, Austria's major trading partners.

If inflation pressures were to persist, Austria would stand to lose competitiveness. Against this backdrop, this paper provides a detailed cross-country analysis of how the major HICP subcomponents have developed. As the emergence of inflation differentials against Austria's neighboring countries is a fairly new phenomenon, evidence on the underlying reasons is as yet inconclusive.

What can be said is that price dynamics have been particularly pronounced in the *food sector* as of late. Here, the increase in tobacco taxes that became effective at the beginning of 2011 accounts for part of the inflation differential. In addition, market structures and price competition in the Austrian food retailing sector may have played a role in accelerating and intensifying the pass-through of global cost shocks to consumer prices for some product groups, such as bread and cereal products as well as dairy products and nonalcoholic beverages (coffee, tea, cocoa) more strongly than in other countries.

Energy price inflation also accelerated visibly more strongly in Austria than in other euro area countries in early 2011. In the meantime, inflation differentials against the neighboring countries have, however, narrowed again. The fact that energy price inflation was conspicuously higher in Austria in early 2011 than in Germany and Italy can largely be explained with the petroleum tax increase that took effect in Austria in January 2011.

Following an episode of moderate developments for *services,* inflation in this sector has gone up considerably as of late and actually reached twice the euro area average. These developments may at least partly reflect country-specific special effects (lower VAT rate for accommodation services, abolition of university tuition fees in one of Germany's federal states), which contributed to dampening service price inflation in Germany.

The accelerated rise of HICP inflation for *nonenergy industrial goods* was triggered above all by higher prices for garments and shoes. However, inflation measures in this segment are subject to heightened uncertainty, as the EU regulation on the treatment of seasonal products in the HICP became effective in January 2011.

Based on current information, both the domestic inflation rate as well as inflation differentials against other countries are expected to go down in the coming months and in 2012. The OeNB currently projects HICP inflation to reach 3.2% in 2011 but to narrow substantially to 2.1% in 2012. At the same time, Austria's inflation differential should shrink to a range of 0.2 to 0.5 percentage points against the euro area, and to a range of 0.1 to 0.3 percentage points against Germany and Italy.

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Heterogeneity in Euro Area Consumers' Inflation Expectations: Some Stylized Facts and Implications

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Aggregate measures of inflation expectations mask heterogeneity among consumers. According to the theoretical and empirical literature, expectations may differ due to different information sets and "models" used by individuals. European Commission Consumer Survey data confirm considerable heterogeneity in inflation expectations over time, across countries and across demographic groups. Consistent with findings according to which financial literacy is an important determinant of inflation expectations heterogeneity, our econometric estimates show that education and income seem to play a more important role than age and gender. However, their effect on heterogeneity is nonlinear. We also find evidence of strong country-specific idiosyncrasies in the formation of inflation expectations. Overall, while showing some common tendencies, inflation expectations in the euro area continue to vary across countries and demographic groups as regards their level, driving factors and evolution over time. Employing "targeted" or "multi-tiered" communication strategies for different demographic groups and within the various euro area countries might indeed help "focus," or "anchor," inflation expectations around a level in line with the Eurosystem's definition of price stability.

JEL classification: E31, E52, D83
Keywords: inflation expectations, heterogeneity, communication policies

Expectations are important for economic decisions. Inflation expectations feed not only into consumption and investment decisions but also into price and wage setting, which are particularly important for monetary policy: inflation expectations are a major determinant of inflation itself, and stable and low inflation expectations are therefore a prerequisite for lasting price stability. It is thus not surprising that inflation expectations feature frequently and prominently in the ECB's Governing Council's assessment of the inflation outlook, which underlies its monetary policy decisions. Furthermore, inflation expectations influence the term structure of interest rates and thus ultimately affect both financing conditions and the sustainability of public finances.

Most macroeconomic models assume that economic agents' inflation expectations are identical. The reasoning is that even if expectations differed at certain times, they would converge through various mechanisms. Moreover, the assumption of homogeneous expectations allows important simplifications in economic models.

Recently, a small but growing body of literature has focused on the heterogeneity of inflation expectations of different economic agents. This literature addresses three issues. First, it provides a rationale why heterogeneity in inflation expectations is important for researchers and policymakers and why it should not simply be assumed away. Second, it offers several theoretical explanations of why inflation expectations could persistently differ among economic agents and over time. Third, it studies empirically what factors might explain heterogeneity in inflation expectations.

This study takes stock of existing knowledge on the first two aspects (sections 1 and 2). Then it describes

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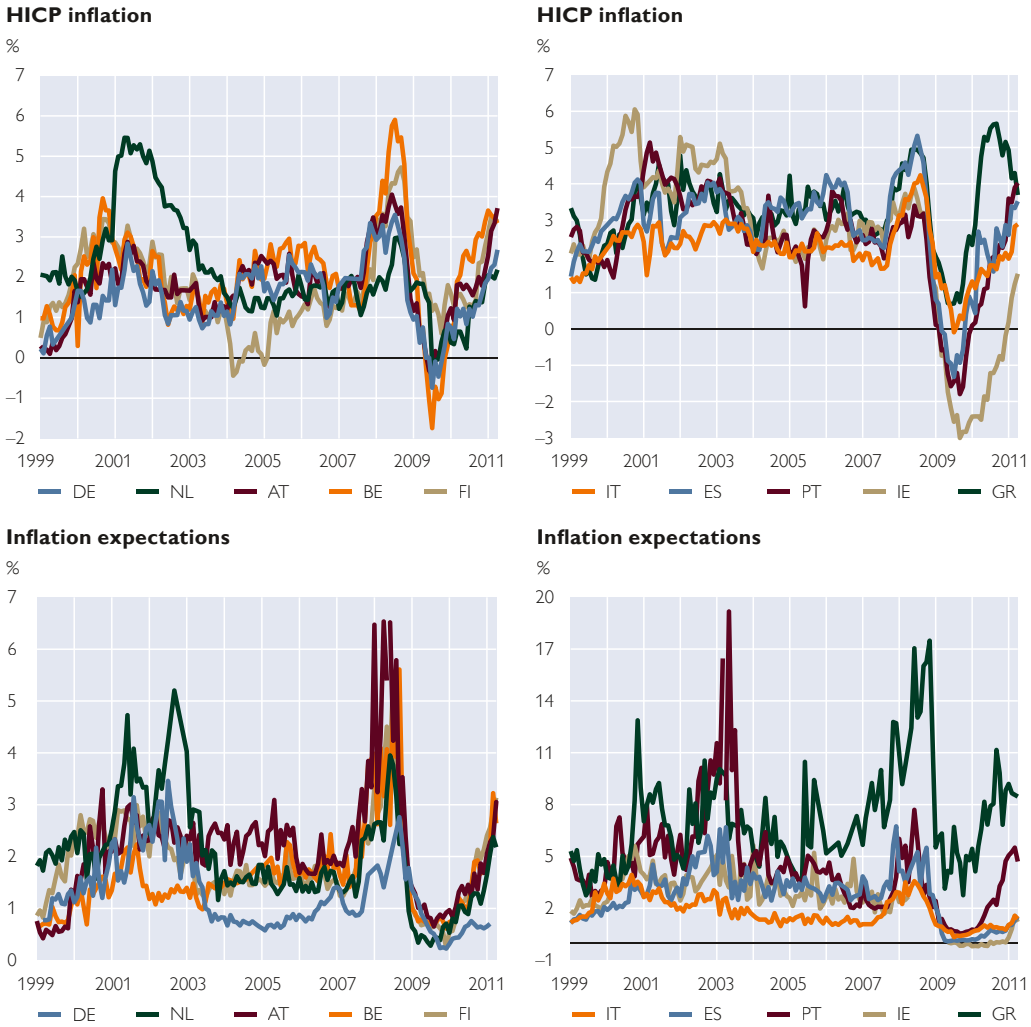
available data sources and explores how to measure heterogeneity in the inflation expectations of euro area consumers (section 3). Section 4 provides some interesting stylized facts about this heterogeneity and section 5 offers an econometric analysis of the factors that drive heterogeneity in inflation expectations in various countries and among various demographic groups in the euro area. Section 6 concludes.

1 Why is Heterogeneity in Inflation Expectations Important?

Economists and policymakers should be concerned with heterogeneity in inflation expectations for several reasons. Three aspects seem relevant here: (1) Is heterogeneity in inflation expectations empirically observable? (2) How might the heterogeneity of inflation expectations theoretically affect the behavior of

Chart 1A

HICP Inflation and Consumer Inflation Expectations over the Next 12 Months[1]
A: By country



Source: OeNB, European Commission.

[1] Consumer inflation expectations are calculated using the method developed by Berk (1999).

Note: We use linear interpolation in case of missing values for inflation expectations.

economic agents and what might be the consequences for economic welfare and economic policy? (3) Do heterogeneous inflation expectations empirically lead to different economic behavior?

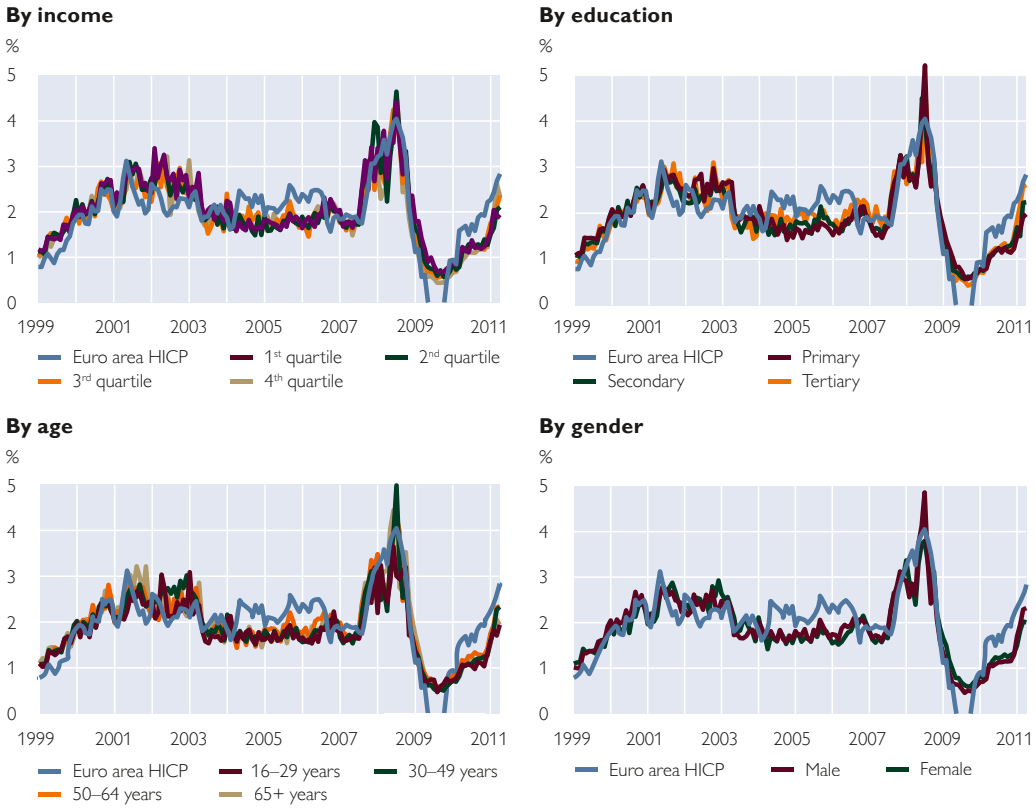
Regarding the first aspect, survey measures of inflation expectations indeed exhibit substantial heterogeneity among respondents: Thus, this topic is empirically relevant.

Concerning the second aspect, heterogeneity in inflation expectations might affect the behavior of economic agents and become relevant for economic welfare and policy through a number of channels.

– Disagreement among economic agents about future inflation may be crucial to understand macroeconomic dynamics (Mankiw et al., 2003; Townsend, 1983). Using models of imperfect information, Phelps (1970), Lucas (1973), Sims (2003) and Woodford (2002) show that the real costs of nominal movements may be related to heterogeneity in inflation expectations. Acemoglu et al. (2007) show that if inflation expectations do not converge, outcomes in various game-theoretical and asset market models are strongly altered. Mankiw and Reis (2006) show that a model featuring staggered updating on the part of consumers, workers and firms is able to reproduce empirical

Chart 1B

HICP Inflation and Consumer Inflation Expectations over the Next 12 Months[1]
B: Euro area average by demographic groups



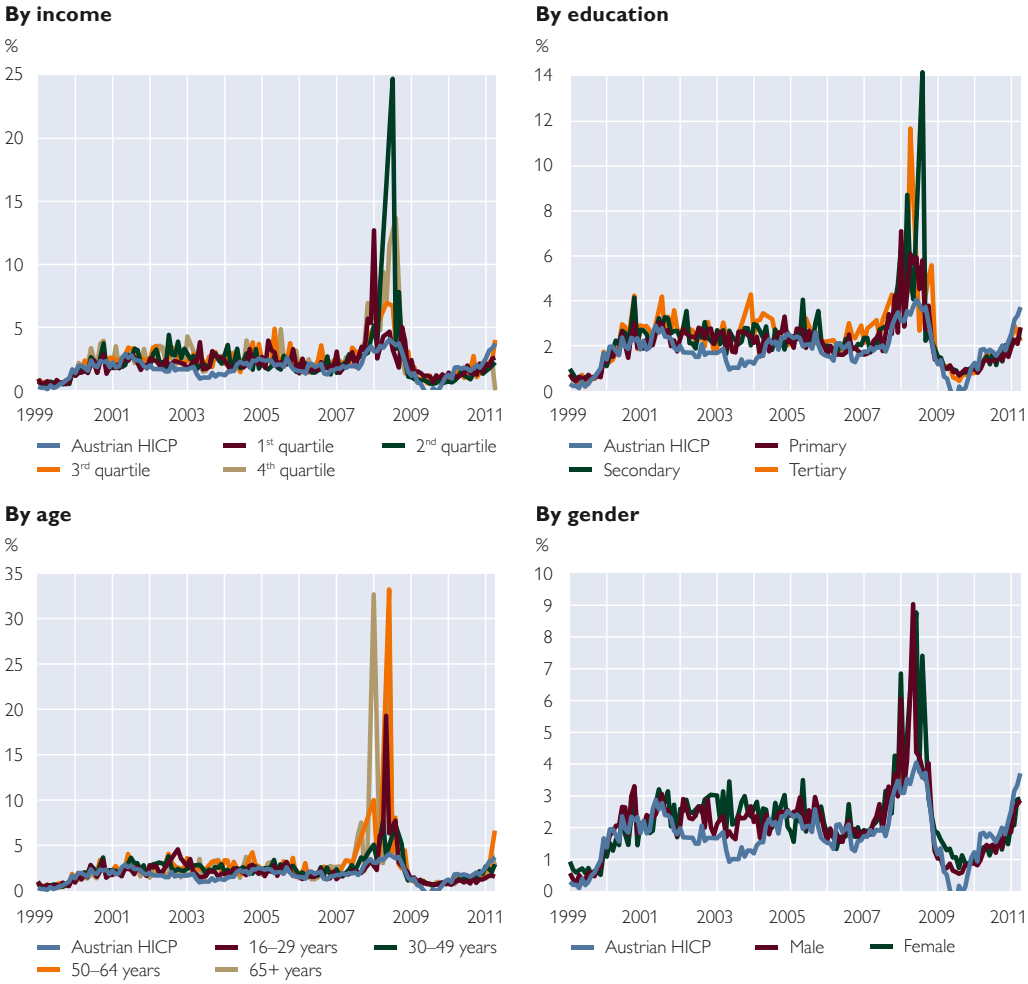
Source: OeNB, European Commission.

[1] Consumer inflation expectations are calculated using the method developed by Berk (1999).

Note: We use linear interpolation in case of missing values for inflation expectations.

Chart 1C

HICP Inflation and Consumer Inflation Expectations over the Next 12 Months[1]
C: Austrian average by demographic groups



Source: OeNB, European Commission.

[1] Consumer inflation expectations are calculated using the method developed by Berk (1999).

Note: We use linear interpolation in case of missing values for inflation expectations.

patterns such as the acceleration phenomenon and real wage smoothness. Sims (2009) argues that heterogeneous views about future inflation and interest rates can lead agents to bet against each other, thus potentially generating overinvestment in real assets and speculative excesses in asset prices, while potentially delaying and distorting monetary policy action.

– "Anchoring" and "focusing" inflation expectations is a core element of many monetary policy strategies. Some studies have for instance evaluated the success of inflation targeting by measuring its effects on the dispersion of inflation expectations (Capistrán and Ramos-Francia, 2010). Thus, central banks need to understand how agents form their inflation expectations, what drives potential heterogeneity and how to influence expectations formation. To the extent that the "learning mechanisms" of economic agents

might differ, optimal communication strategies might differ as well. Burke and Manz (2010) argue that central banks should take into account insights learnt about the expectations formation process from demographic variation. It is against this background that Sims (2009) and Anderson et al. (2010) propose "multi-tiered" communication strategies which specifically target various demographic groups. Heterogeneity and thus nonrationality can also have implications for central banks' optimal reaction functions: Orphanides and Williams (2005) show that under learning, monetary policy should respond more decisively to inflation and focus more on inflation stabilization since tight inflation control speeds up learning and guides inflation expectations more effectively.

– Furthermore, the heterogeneity of inflation expectations may also be regarded as an indicator of perceived uncertainty (Bomberger, 1996; Lahiri and Sheng, 2010; Gnan et al., 2010), thereby influencing risk taking, leverage and vulnerability at the individual as well as at the systemic levels.
– To the extent that inflation expectations may, according e.g. to the New-Keynesian Phillips curve, influence current inflation, monitoring the heterogeneity of inflation expectations may give an indication about the convergence or divergence of inflation, for instance, among different euro area countries.
– Finally, the heterogeneity of inflation expectations might also affect the distribution of income and wealth: If some agents systematically perform worse in forecasting inflation, they are at a disadvantage by making less optimal decisions. So, it is interesting to identify, for instance, whether specific demographic groups are subject to larger expectation dispersion and errors and, if necessary, invest more effort in financial education.

The third aspect mentioned above, namely how inflation expectations indeed empirically affect the behavior of economic agents, has so far been little studied at the micro level and is thus not well understood. One experimental study (Armantier et al., 2010) suggests that survey results on inflation expectations are consistent with agents' financial decisions under experimental conditions under the assumption of risk neutrality. However, the authors emphasize that their experimental result does not prove that everyday behavior is also influenced by beliefs about future inflation.

2 Why Might Inflation Expectations Differ among Economic Agents? Taking Stock of the Literature

There are by now a number of explanations of why inflation expectations among consumers may differ.[2] Several authors provide summaries of relevant research, in particular Döpke et al. (2007), who study professional forecasters' inflation expectations heterogeneity, Ranyard et al. (2008), who study consumers' inflation perceptions from a psychological perspective, Badarinza and Buchmann (2009) as well as Maag (2010), who survey the recent literature with respect to the ability to generate theoretically, and explain empirically, heterogeneous consumer inflation expectations. We propose an encompassing conceptual

[2] *For a survey of the literature on nonrational inflation expectations formation under uncertainty, see Gnan et al. (2010).*

framework which summarizes and integrates the various explanations for heterogeneity in consumers' inflation expectations formation.

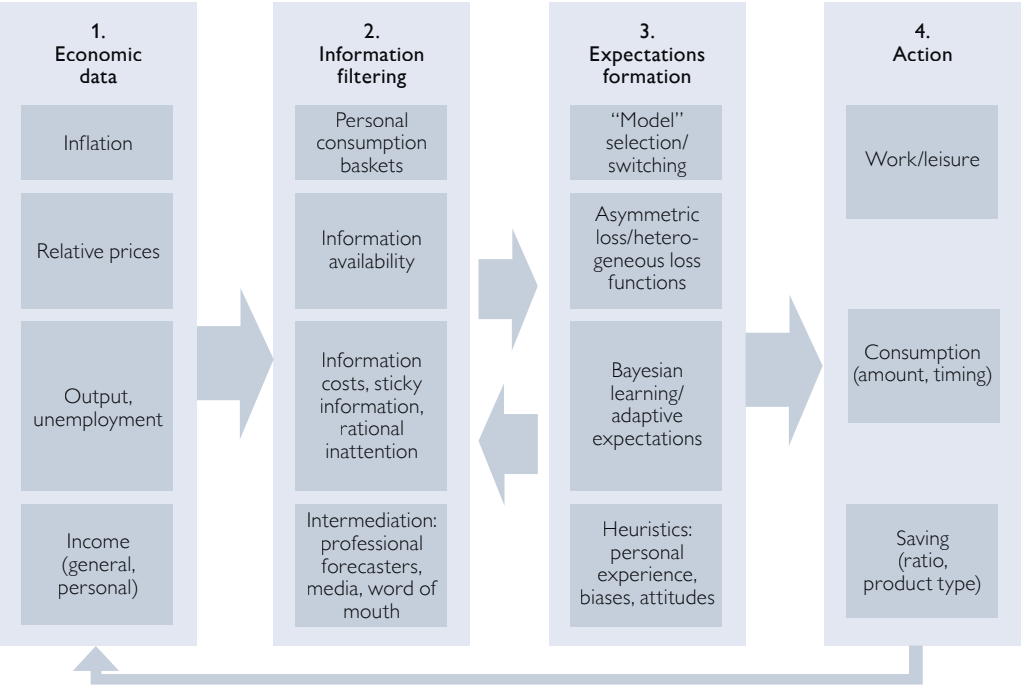
Our framework distinguishes three stages during which heterogeneity might arise, and integrates the possible feedback from the resulting behavior in a fourth stage (chart 2). The process starts from economic fundamentals, i.e. available "objective" data. The second stage describes which information actually reaches, or is actually used by, individuals to form their expectations. The third stage is where the information is processed, i.e. where the actual expectations formation takes place. The resulting expectations will then in a fourth stage influence the behavior of economic agents, which in turn can affect economic fundamentals. Therefore, there are many possible links and feedback loops between these stages which blur the clear distinction between them, but we still believe that for expositional purposes such a conceptual framework may be useful. In the following, we focus on the first three stages of this framework.

Stage 1: Differences in Macroeconomic Data

Let us start with the first stage, in which "objective" information that potentially drives future inflation and inflation expectations becomes available. On the one hand, *macro fundamentals* – such as current inflation, the output gap and unemployment rate as well as the relevance of prices for imported goods like oil or intermediate goods – may differ across countries or regions, thus generating different inflation expectations across countries or regions. These differences in macro fundamentals may be accentuated during periods of large

Chart 2

Heterogeneity of Consumers' Inflation Expectations: Stylized Framework



Source: OeNB.

shocks, such as oil and commodity price shocks, or periods of financial and economic crises.

Objective economic data also comprise information on income developments – both in *aggregate* (e.g. for a country as a whole) and in *relative* terms (individual or group incomes relative to the aggregate). Similarly, data on price developments may refer to an average consumption basket used to generate official statistics, or to developments in prices for individual goods in absolute or relative terms (e.g. gasoline or food prices).

The available empirical evidence on the effect of various macroeconomic variables on inflation expectations heterogeneity tends to confirm that inflation expectations heterogeneity varies over time with the level of inflation, inflation variability, and with relative price variability (e.g. Mankiw et al., 2003).

Stage 2: Information Filtering

The second and third stages, information filtering and processing, are closely interrelated and sometimes difficult to disentangle. In fact, several of the models on inflation expectations formation are actually models of information selection and filtering.

A first issue in the context of *information filtering* is which data out of the universe of available economic information are indeed *relevant* for an individual's inflation expectations formation. For instance, the personal income and cost of living of an employee in Vienna will be different from that of a farmer in Carinthia. Thus, it seems obvious that the relevant prices as well as other economic data will differ across individuals, which means that heterogeneity in inflation expectations may simply arise on the basis of differences in the relevant data, without any "irrational" filtering taking place.

In addition, information *availability* may differ across individuals. Even in the internet age, not everyone has access to online information; moreover, information on some international data might only be available in a foreign language and therefore specific data might, for all practical purposes, still be inaccessible for considerable parts of the population, thus generating information asymmetry. This becomes all the more obvious when information costs (search costs, etc.) are considered, which may differ vastly across individuals.

The recent interest in the heterogeneity of inflation expectations was triggered by Mankiw and Reis' (2002, 2006) *sticky information model*. In their model, economic agents update information sets only in a staggered way. Economic agents who actively acquire information update their forecasts rationally, whereas all others "stick" to their outdated expectations. The sticky information model generates heterogeneous inflation expectations since staggered information updating has the effect that different information sets are used to form expectations. The sticky information model also predicts that higher inflation volatility will increase expectations heterogeneity, since it affects the differences across individuals arising from the timeliness and frequency of information acquisition. This prediction is empirically confirmed by Mankiw and Reis (2002) and subsequently by authors such as Badarinza and Buchmann (2009).

Investing only limited resources into information search and acquisition may be entirely rational from the individual's perspective: Under Sims' (2003) model of *rational inattention* individuals have only limited information acquiring and processing capacity and may weigh the costs of acquiring additional information against the benefits. In this

setting, heterogeneous inflation expectations result from heterogeneous objective functions (not all data are, equally useful to everyone), heterogeneous information processing constraints and heterogeneous errors.

Macroeconomic fundamentals may influence expectations differently, depending on how this information reaches economic agents. In *epidemiological models,* information spreads throughout the population like an epidemic (e.g. Carroll, 2003). Since new information reaches individuals at different points in time, the resulting inflation expectations will differ among individuals as well.

The *media* play a vital role in the spreading of information. Different media cover economic topics, such as inflation, to different degrees, so depending on the use of different media, different individuals are likely to receive different information (quantity, detail, bias/tone) on current and future inflation (Maag and Lamla, 2009; Lamla and Lein, 2008). This media filter alone might account for differences in inflation expectations formation across the euro area countries and across different demographic groups. Also, other forms of social amplification, such as *word of mouth,* may play a role.

Empirical research confirms notions of salience, rational inattention and the role of the media in influencing inflation expectations heterogeneity. Badarinza and Buchmann (2009) show that higher inflation is associated with higher agreement on inflation perceptions and expectations. More news on inflation helps reduce expectation errors on average and increases agreement, thus "densifying" perceptions and expectations.

Stage 3: Information Processing: "Models" of Inflation Expectations Formation

Turning to the third stage, various suggestions have been made to model the inflation expectations formation process. They can broadly be grouped into two categories: theoretical economic approaches and psychologically inspired explanations.

Branch's (2007) model of *rationally heterogeneous expectations* provides for agents to rationally choose between different forecasting models each period by evaluating their associated costs and benefits. Expectations heterogeneity arises because the costs and benefits associated with various predictors may differ among agents. With this model, under several model selection rules, the author is able to generate disagreement and time variation in disagreement.

Capistrán and Timmermann (2009) propose a formal model which explains heterogeneity in inflation expectations on the basis of *asymmetric loss* (the cost of over- and underpredicting inflation may be different, prompting a bias in agents' inflation expectations) and *heterogeneity in agents' loss functions* (which would lead to heterogeneous biases in inflation forecasts).

Maag and Lamla (2009) use a *Bayesian learning* model according to which news on inflation influences forecast disagreement by affecting both the information sets and the choice of predictor. Since news is noisy, consumers face a signal extraction problem, which they address by updating their information sets. The authors find that both higher volume and lower heterogeneity of media coverage on inflation reduce forecast disagreement, since agents converge to the same information set.

Regarding psychologically based explanations of simplified inflation forecasting behavior, a first idea is that

agents may use personal *experience,* rather than official statistical information, to form their views on future price developments. Given differences in individual consumption baskets, individuals' expectations about future changes in their personal consumption baskets can also be expected to differ (Bryan and Venkatu, 2001; Ranyard et al., 2008). Thus, higher *relative price variability* should raise inflation expectations heterogeneity, since it introduces additional heterogeneity in the information sets used by households to form individual inflation forecasts (Maag and Lamla, 2009).

While the differences in actual personal inflation rates that are generated by differences in consumption baskets are, empirically, rather small (see e.g. Fritzer and Glatzer, 2009), the *psychological effects of inflation perception (exaggeration* of extreme price movements, *biased* memory, attitudes, *availability* heuristics, *salience, reference prices* etc. – see e.g. Ranyard et al., 2008; Fluch and Stix, 2005; Morewedge et al., 2005; Gnan et al., 2010) may amplify differences in inflation perceptions and, as a consequence, also in inflation expectations. Several surveys (Benford and Driver, 2008; Maag, 2010) provide empirical evidence that inflation perceptions play an important role in the formation of inflation expectations.

Frameworks which *combine several explanations* are conceivable as well. Along this line, Maag and Lamla (2009) argue that inflation expectations heterogeneity might be related to inflation and relative price changes in a nonlinear way. On the one hand, if media coverage on inflation becomes more salient (which would likely be the case in periods of high and rising inflation and in periods of sharp changes in relative prices), individuals invest more effort in the formation of inflation expectations, leading to a convergence of consumers' inflation expectations to those of professional forecasters. On the other hand, if inflation exceeds a certain threshold or if exceptional developments occur (e.g. a change in the monetary policy regime, a sharp economic crisis or a massive oil price shock), the uncertainty about the adequate forecasting model might increase, professional forecasters might need to revise their inflation forecasts more frequently and sharply and, as a result, the heterogeneity of consumers' inflation expectations might increase.

A considerable body of literature explicitly studies the *influence of demographic factors on inflation expectations heterogeneity* (see Burke and Manz, 2010, for a comprehensive survey). The results by Bruine de Bruin et al. (2010) are representative of the general thrust of the literature: They find that female, poorer, single and less educated individuals consistently expect inflation to be higher. They explain this result by two factors: first, the need to focus on how to cover future expenses and, second, financial literacy. This is consistent with Anderson et al.'s (2010) empirical finding that socioeconomic characteristics are statistically highly significant in explaining differences in adaptive learning processes. However, Burke and Manz (2010) show by means of experiments that much of the empirically observed demographic differences in inflation expectations can ultimately be traced back to financial and economic literacy, with differences in the general educational level, income and gender playing a comparatively minor role. According to these authors' experiments, economically literate individuals tend to know better which economic data are most predictive of inflation (i.e. the data filtering and selection described above is more effective) and they also

use a given data set more effectively (i.e. they employ better models to form expectations).

The question arises as to what extent heterogeneous inflation expectations are *persistent or converge* over time. Models of learning assume that agents with bounded rationality continuously adjust their views in light of new information. In principle, this allows for the possibility of long-run expectations convergence, for instance to the inflation target as set by the central bank. Ranyard et al. (2008) summarize the psychological empirical literature in the sense that consumers use rather simple heuristics involving past inflation as well as current actual or perceived inflation to form their inflation expectations. Weber (2007) shows that households update their information sets less frequently than professional forecasters, which slows down such convergence. This finding is in line with the notion that households find updating information more costly than professional forecasters. Weber also shows that agents in countries with higher inflation update information sets more frequently, which is in line with theories of salience and rational inattention. As a result, and contrary to professional forecasters, euro area households' inflation expectations have not yet converged to the ECB's definition of price stability. In this context, Sims (2009) argues that in the face of unprecedented economic developments and policy measures, a convergence of views among agents will likely happen more slowly and less completely.

3 Data Sources and Measurement

3.1 Data Sources for Inflation Expectations Heterogeneity

Inflation expectations can be derived either from financial market data or from surveys. Only the latter offer information on the heterogeneity of expectations. Information from surveys on inflation expectations can, in turn, be grouped according to different characteristics:

a) Type of respondent: The respondents of available surveys are either professional forecasters (ECB Survey of Professional Forecasters and Consensus Economics) or randomly selected citizens (Consumer Survey of the European Commission).
b) Time horizon: The time horizon of the inflation forecast may vary from short term (e.g. over the next 12 months) to medium and long term (5 years, 10 years).
c) Type of information: The survey may provide quantitative information on respondents' expectations in terms of concrete figures, or the information may be qualitative (e.g. increase, remain unchanged, fall). There are several methods to transform qualitative information into quantitative inflation expectations figures; they all have their limitations and caveats, however (e.g. Maag, 2010). Conversely, recent research (e.g. Bruine de Bruin et al., 2011) shows that survey data on direct quantitative inflation expectations need to be used very cautiously as replies depend on the framing of questions (e.g. open questions on quantitative inflation expectations versus choosing among given ranges of future inflation) and differences in the interpretation of survey questions may generate statistical artifacts of heterogeneity in inflation expectations.
d) Type of indicator: The information collected may relate to the price level or to the inflation rate, i.e. an expected change in the price level. Experiments show that the way a question is posed may influence

responses (Van der Klaauw et al., 2008; Maag, 2010). The difference between the price level and changes thereof is not always fully understood and may be interpreted ambiguously by respondents. These caveats must also be borne in mind.

e) Demographic information: Survey respondents may belong to different categories. In the case of consumer surveys, the relevant categories are country of origin and demographic details such as age, gender, income and education/profession.

f) Level of aggregation: The available data may be micro data or aggregate distributions of inflation expectations for given demographic categorie only.

For the purpose of this paper, we would ideally look for monthly micro data that cover a long time span extending from at least the beginning of EMU (or better yet, a couple of years earlier) and provide quantitative medium-term inflation expectations of consumers across all euro area countries, including individual demographic information on age, gender, income and education/profession.

For practical purposes, the choice of data is limited by availability. For our study, we are interested in demographic and country differences, so a natural choice is the European Commission's Consumer Survey. In this survey, question 6 inquires about expected changes in the price level over the coming 12 months. We do not use the existing experimental time series on quantitative inflation expectations collected in a number of euro area countries since 2003, since the series are too short for our purposes, the data still seem quite unreliable and subject to a considerable question bias (Biau et al., 2010) and they have so far not been freely available for all euro area countries. The European Commission's Consumer Survey provides comparable monthly data for most euro area countries since 1991 (except for Austria, Finland, Slovakia and Slovenia, for which data are available from 1995 or 1997). Micro data in the sense of individual responses are not available. But the balance of the qualitative responses as well as the distribution among the five different response possibilities is available for various demographic groups in individual countries.

With these data, it is possible to analyze two things: a) the heterogeneity of expectations regarding inflation developments over the next 12 months across countries and/or demographic groups, and b) differences among various countries and/or demographic groups with regard to the heterogeneity of inflation expectations within a country and/or demographic group. In the remainder of this study, we focus on the latter aspect.

3.2 Measurement of Inflation Expectations Heterogeneity

A number of methods have been proposed in the literature to infer measures of heterogeneity of inflation expectations from the European Commission's qualitative survey data. For a survey of such methods, see Maag (2010, chapter 2.4.2). Following Badarinza and Buchmann (2009), in this paper we use the d^2 index of ordinal variation proposed by Lacy (2006), which for reasons of simplicity we call the "Lacy measure."

$$\textit{Lacy measure} = \sum_{i=1}^{K-1} F^i \, (1 - F^i)$$

where $K = 5$ is the number of response categories in the question on inflation expectations in the European Commission's Consumer Survey and F^i is the cumulative response share in category i,

e.g. $F^3 = s^1 + s^2 + s^3$. The Lacy measure attains its minimum of 0 if all answers lie in the same response category. It reaches its maximum when the distribution is polarized, i.e. if $s^1 = s^5 = 0.5$. Note that the fifth category of survey questions is not included in the above formula because F^5 by definition of the measure equals 1 and therefore does not contain additional information on the distribution of response shares. Note also that the measure is ordinal, i.e. it is not necessary to assume that the distance between categories is equal (Maag, 2010; Badarinza and Buchmann, 2009; Lacy, 2006).

The database we use includes the Lacy measure of disagreement for 12 euro area countries[3] as well as for the euro area total, for the period between 1991 and end-2010. The data are quarterly[4] and split across the demographic categories of income, education, age and gender.

4 Some Stylized Facts for the Euro Area and Its Member Countries

To start with, let us consider the development of inflation expectations heterogeneity across demographic groups for the euro area as a whole (chart 3). Disagreement about inflation over the next 12 months increased continuously from the beginning of the 1990s until the beginning of Stage Three of EMU in 1999. Thereafter, it declined until 2001 and remained at this lower level until 2006. During 2007, disagreement fell strongly and remained low until the third quarter of 2008. From the fourth quarter of 2008 onward, disagreement increased again to levels comparable to, or even slightly above, those prevailing at the start of Stage Three of EMU. For the euro area as a whole, there are some differences across demographic groups, but these differences seem rather small.

However, the euro area total masks important differences across individual euro area countries. To illustrate this, we consider first the development of inflation expectations disagreement for the total population by euro area countries (chart 4). There seems to be no obvious joint pattern across euro area countries in the behavior of disagreement over time, except for an obvious brief period of convergence of disagreement during the financial and economic crisis. Thereafter, disagreement increased again across countries.

Chart 3 exhibited only minor differences in inflation expectations heterogeneity across demographic groups for the euro area total. This changes if we consider developments in individual countries. In this context, three types of countries can be distinguished. In the first group of countries, divergence across demographic groups is rather small (Germany, France and Slovakia). A second group of countries (including Austria and Belgium) shows larger dispersion across various demographic groups. Finally, a third group of countries shows generally low dispersion but either much larger or much smaller heterogeneity for some demographic groups (Italy, the Netherlands, Portugal, Slovenia, and Spain). For reasons of space, we only show the series for Austria in chart 5.[5]

[3] *Cyprus, Greece, Luxembourg and Malta are not included due to lack of data.*

[4] *These are averages of the original monthly data.*

[5] *Charts for other countries are available upon request.*

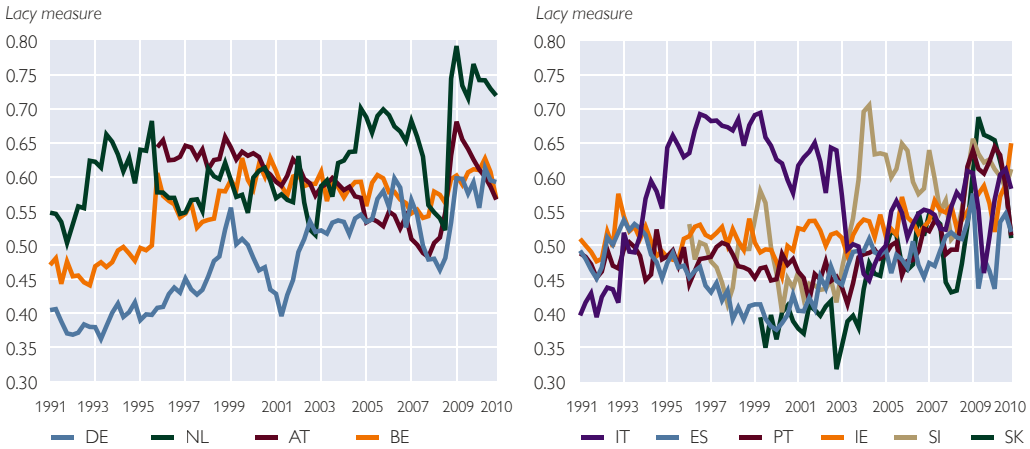
Chart 3

Inflation Expectations Heterogeneity across Demographic Groups in the Euro Area

Source: European Commission, authors' calculations.

Chart 4

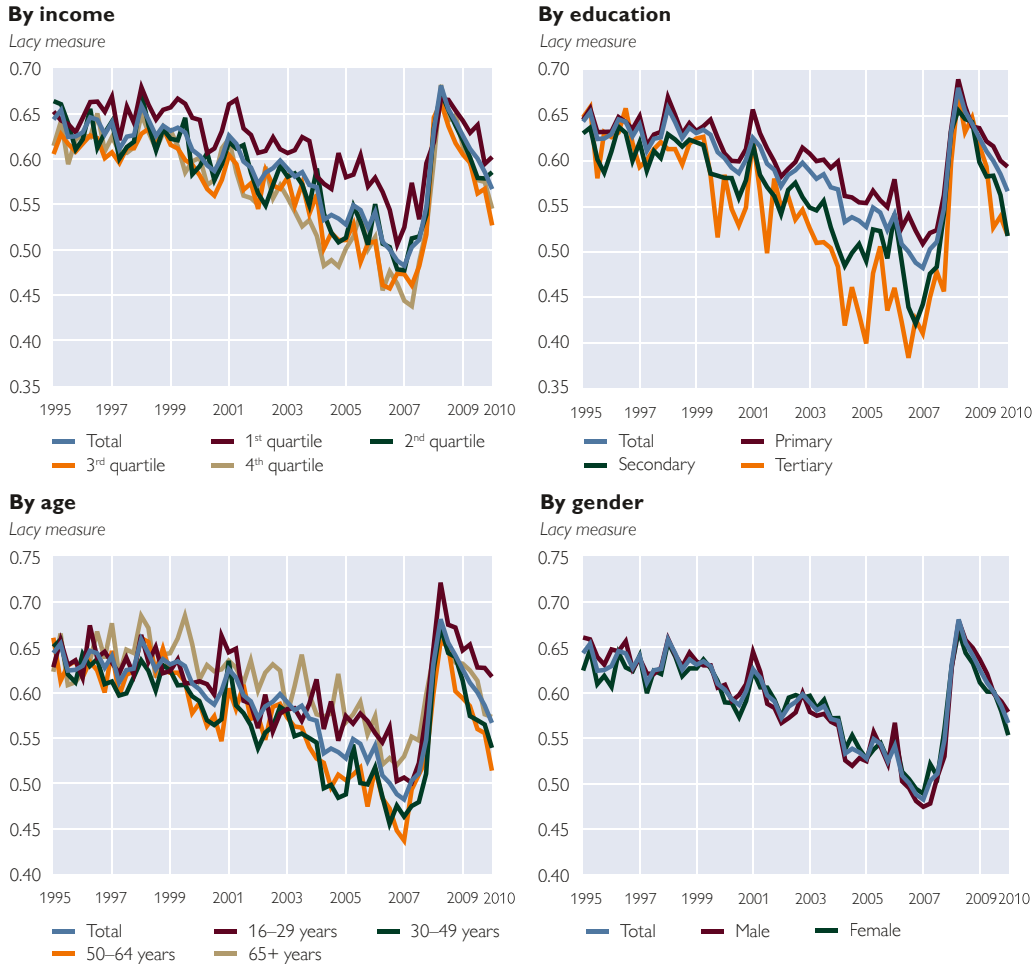
Inflation Expectations Heterogeneity across Euro Area Countries



Source: European Commission, authors' calculations.

Chart 5

Inflation Expectations Heterogeneity across Demographic Groups in Austria



Source: European Commission, authors' calculations.

5 What Drives Heterogeneity in Euro Area Consumers' Inflation Expectations: An Econometric Analysis

In this section, we use the data set from the Consumer Survey of the European Commission to investigate what drives differences in inflation expectations heterogeneity across demographic groups (differentiated by income, education, age and gender) and across countries. Our hypothesis is that besides country specific effects, variables such as the output gap[6], the level of inflation[7] and relative price variability[8], will explain the variation in levels of inflation expectations heterogeneity across countries and across demographic groups.

In past studies (see sections 1 and 2), it has been argued that different demographic groups process information differently. In particular, it was found that the level of education, which should be highly correlated with the level of income, explains differences in inflation expectations and inflation perceptions *across* demographic groups. Based on these past results, our hypothesis is that such factors (education, income, gender and age) may also help explain the heterogeneity of inflation expectations *within* various demographic groups.

In particular, we are interested in how the different demographic groups use the available information and how this information determines the level of heterogeneity within a group. More specifically, we hypothesize that heterogeneity is explained by the level of inflation, relative price variability and the phase of the business cycle captured by the output gap in each country. Because by construction, and also in theory, these series are highly persistent we include a lag of the dependent variable.[9]

5.1 Results by Demographic Groups

Table 1 summarizes the estimation results by demographic groups, using data for 12 euro area countries. In general, we find that the coefficient for inflation is always significant and always negative, while the coefficient of the output gap is significant for more than half of the groups, and it is also always negative. Relative price variability is always positive and almost always significant.[10]

The fact that the effect of the level of inflation on that of inflation expectations heterogeneity is always negative and significant implies that at higher levels of inflation, the heterogeneity of inflation expectations decreases, which would be consistent with models in

[6] *The output gap was obtained by applying a Hodrick-Prescott filter to quarterly real GDP data for each country.*

[7] *Measured as the year-on-year growth rate of the HICP.*

[8] *Relative price variability is the weighted standard deviation of the inflation rate in HICP components. Our measure is based on 12 HICP components for each country in our sample.*

[9] *Despite the fact that we use a lagged dependent variable in our regressions, we use the within-estimator because, for one thing, we are interested in fixed effects, and, for another, we have a long panel with 12 countries and about 79 quarters per country (for a total of around 830 observations). The bias introduced by the lagged dependent variable should therefore be small. Moreover, we are not particularly interested in the size of the lagged coefficient but rather in the effects of other variables on inflation disagreement. (Indeed, estimations carried out with one- and two-step GMM yielded very similar results for the coefficients we are interested in.) The advantage of using the within-estimator is that we can compare the results to OLS estimations carried out at the country level. We estimated different specifications in which either inflation or relative price variability or both were excluded. We find that our results are robust to the specifications used. In the following, we report only results achieved with the full specification (inflation, relative price variability and output gap).*

[10] *In some initial regressions the squared change in annual inflation was used as well, as in Mankiw et al. (2003), but this was not significant.*

which the cost of making forecast errors increases with the level of inflation or with heuristics such as salience, and which confirms the findings of Badarinza and Buchmann (2009) for the euro area.[11] The coefficient of the effect varies between –0.098 and –0.044, and it is the largest effect we find using our three explanatory variables.

The effect of the level of inflation on inflation expectations heterogeneity differs across demographic groups but, as can be seen in the annex, these differences do not seem to be statistically significant.[12] We find, however, interesting patterns in the differences of the coefficients. For example, the coefficient for respondents aged 65 years or older is –0.061, while for respondents aged 16 to 29 years the coefficient is –0.098. The lowest effect, however, is found for consumers aged between 50 and 64, and this is almost identical to the effect found for the group of consumers aged 30 to 49. Thus, we find that the effect of age on the way heterogeneity reacts to inflation is nonlinear. This would suggest that models according to which consumers invest more time on forecasting inflation when the level of inflation rises, which leads to a decline in heterogeneity, seem to be more relevant for either very young or very old consumers.

We also find a similar nonlinear effect of education: inflation expectations heterogeneity among consumers with only primary education on the one hand and with tertiary education on the other responds more strongly to the level of inflation than heterogeneity among consumers with secondary education.

Splitting the sample by income classes shows, however, a linear effect. The smallest effect is found for the lowest level of income and the highest effect for the richest segment of the population. This result is puzzling given the large effect found for the youngest group of the population. We also see that, although not statistically significant, the reaction of women to inflation is less pronounced than that of men. This would be in line with the linear effect found when considering income categories, if we assume that women are more strongly represented in the lower income quartiles.

The effect of relative price variability on inflation expectations heterogeneity is, as expected, positive and almost always significant. This confirms the hypothesis that when certain prices which are more salient increase by more than the general price level, heterogeneity goes up as well. In terms of size, the effect is only slightly smaller than that found for the level of inflation, but we see less variation across demographic groups. Also, as was the case for inflation, these differences among demographic groups are not statistically significant. We also find that when the sample is split by age and education, the effect of age and education is not linear. In particular, compared to the results for the level of inflation we see that with respect to relative price variability, results for the youngest segment of the population do not differ as strongly. In this case, we

[11] *Note that this result differs from the findings by Mankiw et al. (2003) for the United States and by Maag and Lamla (2009) for Germany: The former authors found a positive relation between the level of inflation and inflation expectations heterogeneity, while the latter found no relationship between the amount of news coverage on inflation and inflation expectations heterogeneity.*

[12] *Determining the statistical significance of these differences is no trivial task, since we compare regressions carried out with different dependent variables and identical regressors in a panel data context. Thus, as a way of approximating this significance, we look at confidence intervals.*

also find that the level of income is nonlinear, but for the last two quartiles of the population its effect is not significant. This implies that for groups with higher income, relative price variability does not constitute relevant information for the inflation expectations formation process.

The output gap is used as a proxy for the business cycle and thus the general economic situation that should be taken into account by consumers. We find that the effect of the output gap on heterogeneity is smaller than that of inflation, always negative, but for some groups not significant. The negative sign implies that dispersion of beliefs increases in bad times and decreases in good times. This behavior could be associated with a general increase in uncertainty during bad times. The fact that this effect is smaller and less often significant than the effect found for inflation and relative price variability confirms the hypothesis that people would take into account information that is more relevant or more accessible to them. While information on the inflation level and relative price variability are more readily available and understandable, this may not be the case for the output gap, which is not observable. Moreover, what people actually observe are different indicators about the general situation, which in real-time, as is well established in the literature, can be very different from ex-post statistical output gap measures.

Although we do not see statistically significant differences based on confidence intervals (Annex chart 1A), there are some interesting patterns across demographic groups. First, there is basically no difference between men and women. Second, while very young people do not seem to include this information in their expectations formation process, older people do. Third,

Table 1

Effects[1] of Inflation, Relative Price Variability and Output Gap on the Heterogeneity of Inflation Expectations for Various Demographic Groups

Demographic group	Lag (1)	Inflation level	Relative price variability	Output gap	N	Adjusted R-squared	Durbin-Watson statistic
16–29 years	0.725***	–0.098***	0.050*	–0.020	820	0.61	2.095
30–49 years	0.818***	–0.057***	0.050**	–0.020	820	0.73	1.916
50–64 years	0.795***	–0.056***	0.047*	–0.033 **	820	0.70	2.058
65+ years	0.736***	–0.061 ***	0.055**	–0.036 **	820	0.62	2.119
Primary education	0.781 ***	–0.064***	0.065***	–0.016	820	0.69	2.097
Secondary education	0.826***	–0.048**	0.041*	–0.032 **	820	0.74	2.027
Tertiary education	0.768***	–0.068***	0.053*	–0.034 **	820	0.66	2.084
1st income quartile	0.791 ***	–0.052**	0.061**	–0.037 **	807	0.71	2.007
2nd income quartile	0.772***	–0.072***	0.055**	–0.027 *	807	0.67	2.083
3rd income quartile	0.777***	–0.078***	0.040	–0.018	807	0.67	2.069
4th income quartile	0.755 ***	–0.081***	0.047	–0.021	807	0.63	2.090
Female	0.830***	–0.044**	0.047**	–0.023 *	820	0.75	1.965
Male	0.820***	–0.058***	0.039*	–0.025 *	820	0.73	1.947
Total	0.821 ***	–0.057***	0.045*	–0.023 *	822	0.74	1.873

Source: Data: Eurostat; estimations: authors' calculations.

[1] Standardized beta coefficients.

**** 1% significance level, ** 5% significance level, * 10% significance level.*

Lag (1): one period-lagged value of the dependent variable. N: number of observations.

for people with higher education, the output gap affects inflation expectations heterogeneity more, while its influence falls as income increases.

5.2 Results by Country

As a supplement, we conducted country-level regressions for the level of heterogeneity among the entire population. Here, we additionally included the euro area as a whole as a benchmark. The results are summarized in table 2. For the euro area, 79 quarters are available, starting with the second quarter of 1991; the same applies for most euro area countries, while for Austria, Finland, Spain, Slovakia and Slovenia the sample is much shorter.

Regression results for individual countries show larger heterogeneity than across demographic groups. For example, in table 1 we saw that the coefficients vary somewhat across demographic groups, but their sizes and signs are quite similar and, based on confidence levels, there is basically no statistical difference among the different coefficients (Annex chart 1A). By contrast, at the country level (table 2), we do not find statistically significant coefficients as often as with the panel data. Furthermore, we find not only larger variation in the size of the coefficients but also in the sign, and judging from the confidence intervals (Annex chart 2A), the differences across countries are statistically significant. Moreover, the observed larger variation of the lagged dependent variable suggests that the persistence of inflation heterogeneity differs widely across countries.

Table 2 also shows that the euro area average masks large differences across countries. For the euro area, both the level of inflation and relative price variability have the expected signs but are not significant, while the output gap has a significant negative effect. Regarding individual euro area countries, the inflation level has a significant effect on inflation expectations heterogeneity in Belgium, Finland, Ireland,

Table 2

Effects[1] of Inflation, Relative Price Variability and Output Gap on the Heterogeneity of Inflation Expectations in Individual Euro Area Countries

Country	Lag (1)	Inflation level	Relative price variability	Output gap	N	Adjusted R-squared	Durbin-Watson statistic
Euro area	0.681 ***	–0.161	0.046	–0.124 **	79	0.80	1.840
Austria	0.915 ***	0.024	–0.023	–0.009	60	0.82	1.451
Belgium	0.805 ***	–0.108 *	0.168 ***	0.003	76	0.81	2.294
Germany	0.830 ***	–0.048	0.108 **	–0.082 **	79	0.90	2.060
Spain	0.731 ***	0.119	0.128	0.006	64	0.59	2.455
Finland	0.703 ***	0.278 ***	–0.253 **	–0.341 ***	60	0.78	1.747
France	0.873 ***	–0.044	–0.054	0.016	79	0.80	2.040
Ireland	0.338 ***	–0.396 ***	0.250 ***	0.178 *	74	0.48	2.005
Italy	0.899 ***	–0.016	–0.072	0.021	79	0.84	1.780
Netherlands	0.571 ***	–0.158 **	0.219 ***	–0.141 *	79	0.70	1.963
Portugal	0.811 ***	–0.068	0.055	–0.017	79	0.75	1.781
Slovenia	0.576 ***	–0.412 ***	–0.064	–0.020	59	0.85	1.440
Slovakia	0.731 ***	–0.264	0.160	–0.068	46	0.82	1.535

Source: Data: Eurostat; estimations: authors' calculations.

[1] Standardized beta coefficients.

**** 1% significance level, ** 5% significance level, * 10% significance level.*

Lag (1): one period-lagged value of the dependent variable. N: number of observations.

the Netherlands and Slovenia. This effect is, as expected, negative in all countries except Finland. Relative price variability is significant in Belgium, Finland, Germany, Ireland and the Netherlands. Its effect is, as expected, positive in all countries except Finland once again. While in the panel regressions the output gap was significant in most cases, we rarely find significant effects at the country level. For those countries for which the effect is significant, we see some variation in size but the effect is always negative, except for Ireland.

These results imply that besides the differences across demographic groups, there are strong country-specific effects that explain inflation expectations heterogeneity in individual countries differently. The results obtained from the panel data across demographic groups average out these effects as they concentrate on the effects of demographic differences. The differences found across countries may reflect the cultural or institutional characteristics of these countries which influence the use of information. Further research might make a comparison across countries for each demographic group, but this is not pursued further here due to space constraints.

6 Conclusions

Inflation expectations are an important element of monetary policy strategies and implementation. The respective communication polices are generally aimed at "anchoring" inflation expectations at a level consistent with the inflation target or with the definition of price stability. However, aggregate measures of inflation expectations mask the fact that individual consumers may have very different inflation expectations in mind.

In this paper we first surveyed different explanations of why expectations are not identical across economic agents and, more specifically, consumers. A review of the relevant economic literature reveals two different explanations: a) information sets: heterogeneity occurs because consumers collect information differently; b) "models" of inflation expectations formation: consumers process a given set of information differently.

Second, using data from the European Commission's Consumer Survey, we showed that for the euro area as a whole and for individual member countries[13], there is indeed considerable heterogeneity among consumers in their expectations of inflation over the next 12 months. Moreover, we show that inflation expectations heterogeneity varies over time, across countries and across demographic groups.

In the empirical part, we investigated the effect of information proxied by macroeconomic variables on inflation expectations heterogeneity within various demographic groups and in a large number of euro area countries. Our results seem consistent with the findings by other researchers that financial literacy may play an important role in explaining heterogeneity. The reasons for this conclusion are, first, that the pattern of differences among demographic groups is more robust and consistent than that of differences across countries. Second, when country-specific effects are taken into account, the most significant differences among demographic groups are driven by education and income. Age, by contrast, does play a role but the differences are

[13] *Except Cyprus, Greece, Luxembourg and Malta, which were not covered by the data.*

quite small, and gender differences are found to be negligible.

However, we do not find a linear effect of education or income on inflation expectations heterogeneity. While we see that the effects of macroeconomic variables differ across different levels of income and education, we do not find that the effects are smallest for the richest or most educated, as some theory would predict. There seems to be a threshold effect which might warrant more thorough investigation.

With respect to different countries, we see much larger heterogeneity not only regarding the level of inflation expectations but also on how macroeconomic variables affect heterogeneity, pointing to strong country-specific idiosyncrasies in expectations formation.

Overall, the paper finds that regarding their level, their driving factors and their evolution over time, inflation expectations in the euro area, while showing some common tendencies, are still quite diverse across both countries and demographic groups. To the extent that a stronger "focusing" or "anchoring" of inflation expectations around the Eurosystem's definition of price stability is deemed desirable, "targeted" or "multi-tiered" communication strategies for different demographic groups and in the various euro area countries (including further investment in economic education), as proposed by Sims (2009) and Anderson et al. (2010), may indeed be worth exploring.

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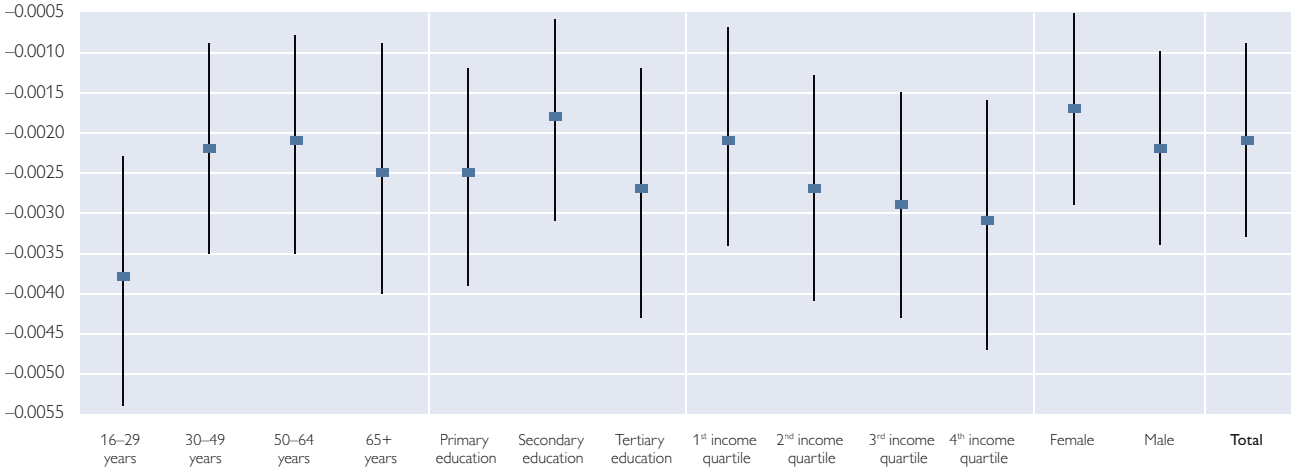
Annex

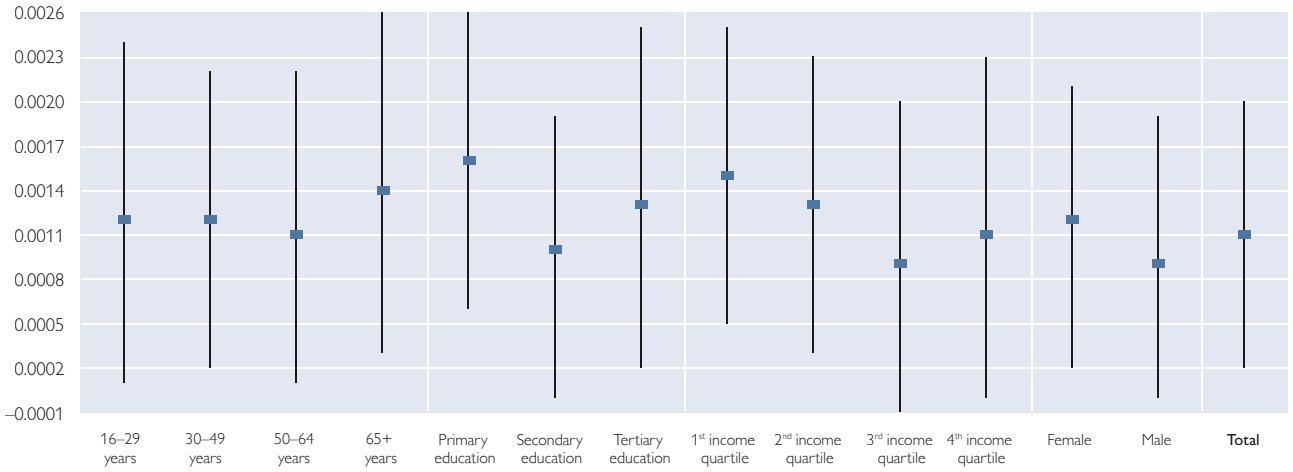
Chart 1A

Effects on Inflation Expectations Heterogeneity for Various Demographic Groups
Point Estimates and 90% Confidence Intervals

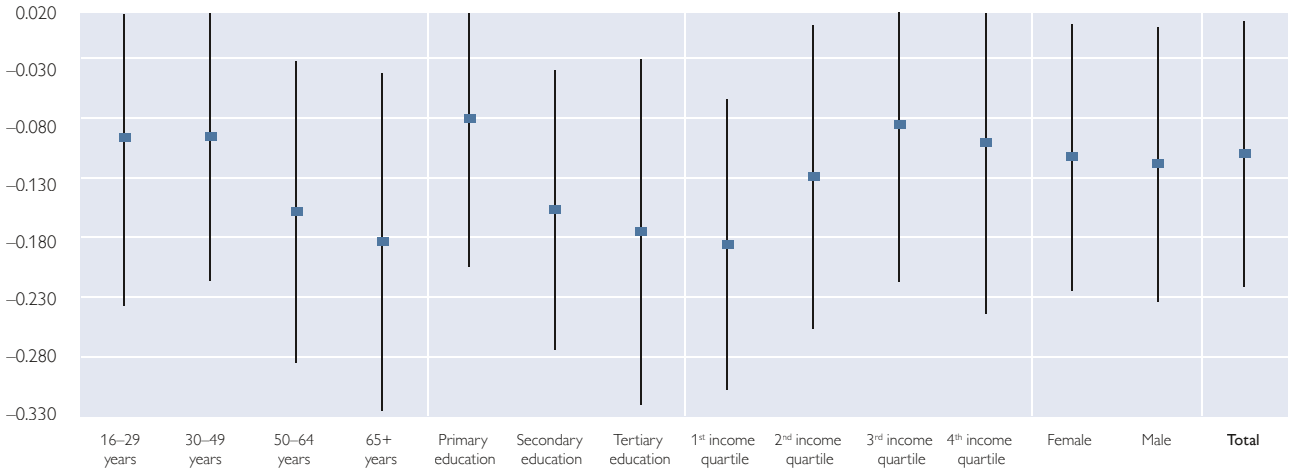
Inflation



Relative price variability



Output gap



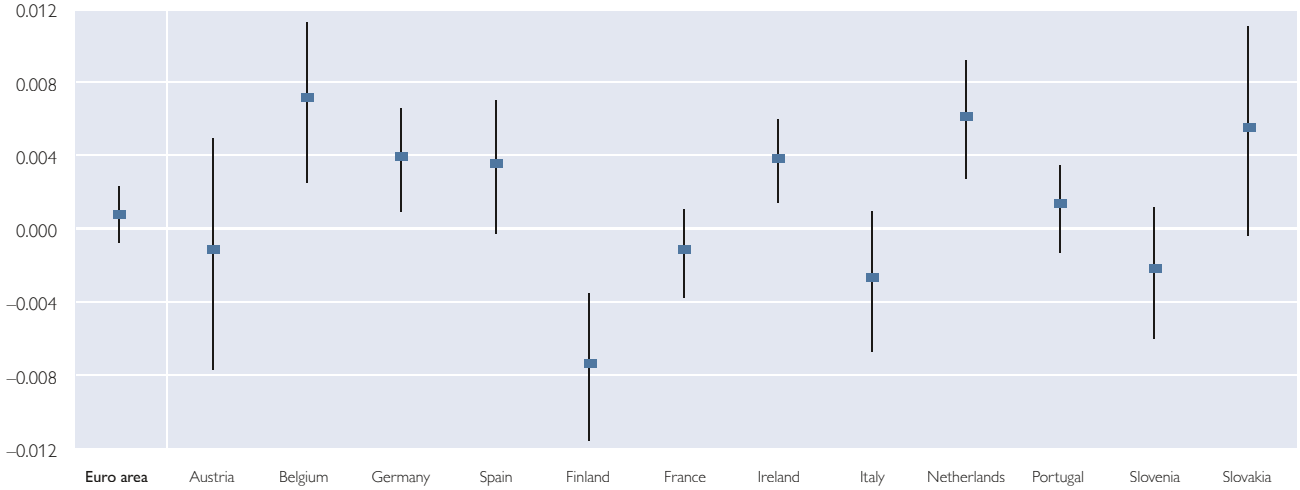
Source: Authors' calculations.

Chart 2A

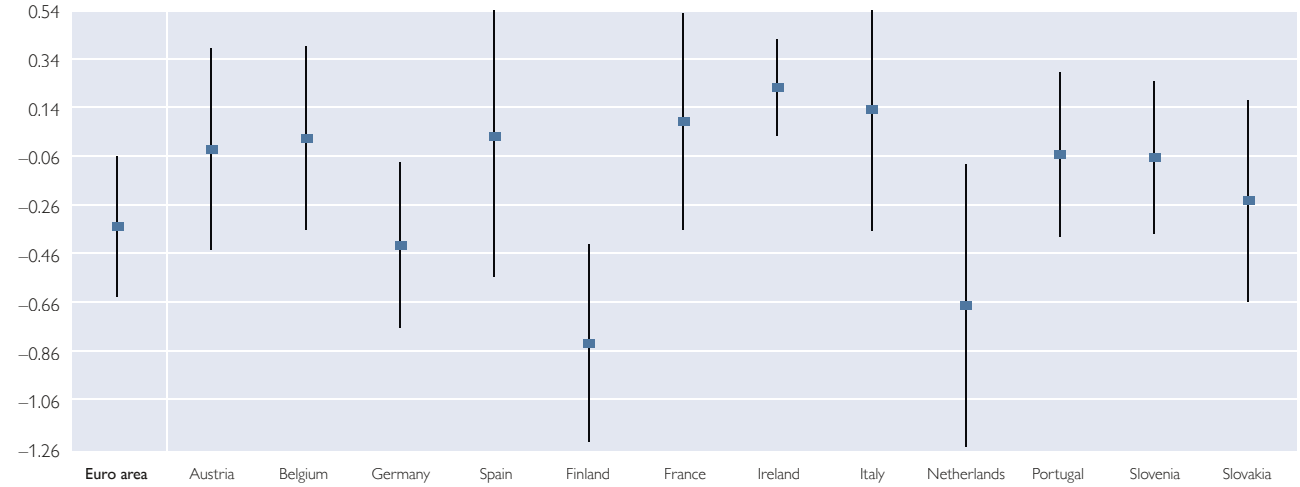
Effects on Inflation Expectations Heterogeneity for the Countries of the Euro Area
Point Estimates with 90% Confidence Intervals

Inflation

Relative price variability



Output gap



Source: Authors' calculations.

The Swiss Economy's Resilience to Crisis and Its Lessons for Austria

Andrés Fuentes,
Paul Ramskogler,
Maria Antoinette Silgoner[1]

Switzerland and Austria, two small, open economies, have emerged fairly unscathed from the financial and economic crisis. Switzerland, above all, is notable for its relative stability. Domestic demand proved to be rather resilient, and in Switzerland, foreign trade performance also contributed to stability. At the same time, the important internationally oriented financial sector of both countries, a growth engine during good times, came to represent a risk factor during the crisis.

The key factors in explaining Switzerland's resilience to the crisis are the country's high degree of economic diversification and its specialization on/in products that are fairly robust to cyclical fluctuations. Like in Austria, a stable labor market and the absence of a real estate bubble preceding the crisis supported the economy. The stability of credit supply and the ultimately small impact of the financial crisis thanks to swift and decisive government action played an important role as well. Economic policymakers also made an important contribution to stability by reducing key interest rates, adopting economic stimulus packages, taking measures to stabilize the labor market and, above all, launching bank rescue packages to safeguard financial stability.

Preventing financial crises will be a great challenge for both countries in the coming years. In Switzerland, the too-big-to-fail aspect represents a major issue, considering that the total assets of the two biggest Swiss banks – UBS and Credit Suisse – each are a multiple of Swiss GDP.

JEL classification: E50, E60, O11
Keywords: Austria, Switzerland, financial market, financial and economic crisis

In times of a global financial and economic crisis, small economies with a comparatively large financial sector are especially exposed. The typically large degree of openness makes such economies very vulnerable to a decline in world trade. Furthermore, financial market turmoil jeopardizes small countries most.

But both Switzerland and Austria have weathered the financial and economic crisis fairly unscathed. The slump in growth during the crisis was less pronounced in both countries than in the euro area, and the recovery was comparably dynamic; this pattern was even more distinct in Switzerland. Domestic demand was relatively unaffected by the crisis, and in Switzerland, foreign trade performance supported stability.

This study examines the structural, economic and monetary policy conditions that helped both countries cope with the crisis. Although both countries have pursued very different strategies – especially with regard to European integration – they (do) have factors in common that fed into their relative resilience to crisis.

This analysis, which focuses on Switzerland, benefits from the findings of a workshop the Oesterreichische Nationalbank (OeNB) held on the topic "Die Schweiz und Österreich – Zwei kleine Nachbarstaaten in und nach der Krise" (Switzerland and Austria – Two Small Neighboring Countries during

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Refereed by:
Fritz Breuss, WIFO

and after the Crisis) on April 11, 2011. Experts on economics and monetary policy and researchers discussed the lessons learned from the recent crisis, using Switzerland as an example, and drew parallels to Austria. The annex contains the workshop program.

Both the authors of this study and the participants of the workshop identified the high degree of diversification in the Swiss economy and the specialization on products that are comparatively robust to cyclical fluctuations as important reasons for the country's resilience to the crisis. A stable labor market and the absence of a real estate bubble supported the economies of both Switzerland and Austria prior to the outbreak of the crisis. Stable credit supply and, in this connection, the ultimately small impact of the financial crisis thanks to swift and decisive government action played a key role as well.

Economic policymakers also made an important contribution to stability by reducing key interest rates, adopting economic stimulus packages, taking measures to stabilize the labor market and, above all, launching bank rescue packages to safeguard financial stability. The important, internationally oriented financial sector was a motor of growth in good times but represented a risk factor during the crisis. In Switzerland, the too-big-to-fail aspect represents/is a major issue, considering that the two biggest Swiss banks – UBS and Credit Suisse – have total assets that are a multiple of Swiss GDP. Preventing financial crises will be a great challenge for both countries in the coming years.

Section 1 of this study describes the different approaches that Switzerland and Austria have pursued in the past decades with regard to European integration. Section 2 describes the relatively favorable economic and economic policy conditions in both countries prior to the outbreak of the crisis. The economic and monetary policy measures taken to combat the crisis are explained in section 3. Section 4 concludes by identifying the challenges in store for the two countries.

1 Two Small, Open Economies in a European Framework[2]

Switzerland and Austria are small, open, and comparatively affluent economies (Breuss, 2011). Per capita GDP (measured in purchasing power parities) is noticeably higher in both countries (Switzerland: EUR 34,000, Austria: EUR 29,300) than the euro area average (EUR 25,600). Switzerland has strong economic ties to the EU in general and to Austria in particular (section 2.1). At 139%, Austria's degree of openness, as measured by the total of exports and imports in GDP, was clearly higher than that of Switzerland at 94%.

In 1960, both countries were founding members of the European Free Trade Association (EFTA). In the following decades, however, each country pursued a different strategy with regard to European integration. As a European integration trailblazer, as it were, Austria decided to pursue a policy of holding its exchange rate stable against the currencies of the main trading partners already in the 1970s, which in the long term proved to be a guarantee for price stability and a sound economic structure. In 1995, Austria drew the logical consequence of the successful hard currency policy it had pursued for years and joined the EU. In 1999, Austria was among the first countries to adopt the euro.

[2] *This and the following sections are partly based on an OECD survey (2009a).*

As part of the EU, Austria benefited directly from the ten-country enlargement in 2004 – some of these countries have since become key trading partners for Austria. This growth bonus for Austria based on participation in European integration becomes apparent in a direct comparison with Switzerland, paralleling the comparison of EU countries' growth with growth in Denmark (Koman and Wörgötter, 1994). Between 1995 and 2008, cumulative growth in Austria exceeded that in Switzerland by 8.6 percentage points. The stronger pace of growth in Austria in the past decades was, however, accompanied by greater volatility. The fluctuation of Swiss economic growth since the beginning of the 1990s was systematically below that of Austrian growth, and this tendency in fact became more pronounced once Austria had joined the EU. The recent crisis years also fit this pattern (chart 1).

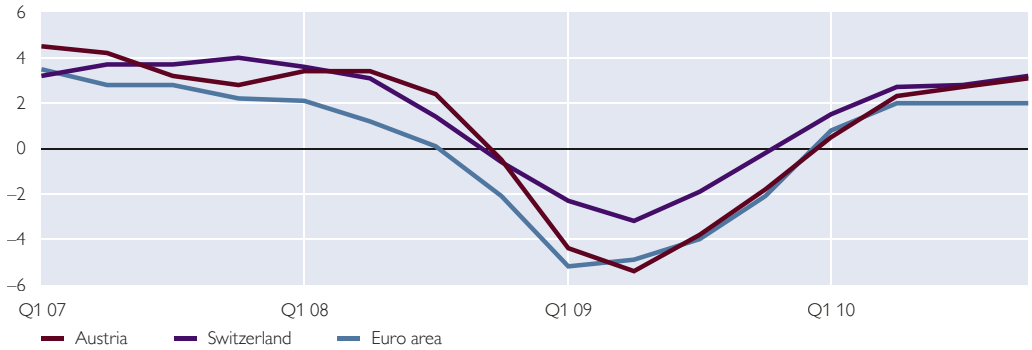
When Austria adopted the euro, it relinquished its monetary policy autonomy. During the financial and economic crisis, Austria (therefore) benefited from the internal and external stability of the euro area. Thanks to the monetary policy of the Eurosystem, liquidity was ample at all times, ensuring that financial markets would remain functional. In this respect, the euro proved to be a protective shield for the euro area countries.

For decades, Switzerland has been pursuing what it refers to as a bilateral approach – it has concluded numerous agreements with EU Member States to govern bilateral political, economic and cultural relations. In May 1992, the Swiss government submitted an application for accession to the EU in Brussels. However, when a Swiss referendum vote at the end of 1992 rejected membership in the European Economic Area (EEA) by a very low margin, the Swiss government suspended EU membership negotiations. Instead, negotiations on a number of bilateral agreements were conducted and concluded in 1999 concerning the free movement of persons, agriculture, and air and road traffic. An additional set of agreements was concluded in 2007; among other things, it covers Switzerland's Schengen membership and anti-fraud cooperation with the EU. Upon enlargement of the EU in 2004, Switzerland extended the freedom of movement of persons to the new Member States and made a financial contribution to the EU's Cohesion Fund.

Chart 1

Austria – Switzerland: Real GDP Growth

Change on the same quarter of the previous year in %

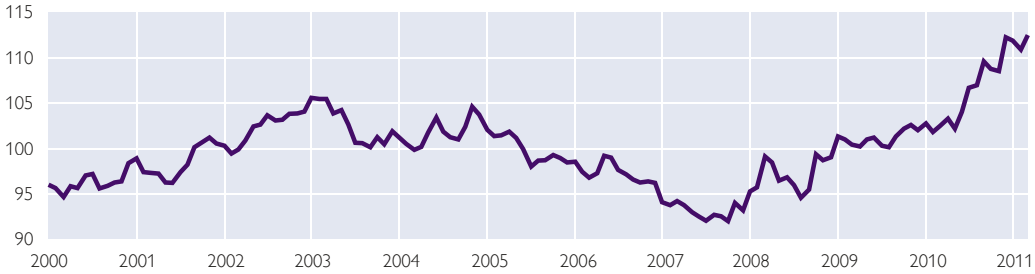


Source: Eurostat.

Chart 2

Switzerland: Real Effective Exchange Rate

CPI-based, broad group of trade partners



Source: ECB.

The country's growth potential has benefited from the agreement on the free movement of persons in recent years (Brunetti, 2011). The strong economic growth preceding the crisis was substantially bolstered by the growth of labor supply, which in turn resulted mainly from immigration[3] (OECD, 2007). Switzerland has succeeded in increasing the structural share of highly qualified skilled labor in recent decades (Pecoraro, 2006). This improvement of the migration structure drew not least on the country's rejection of the traditional immigrant worker model and the introduction of the freedom of movement between Switzerland and the EU (Haug, 2006). At the same time, the supply of foreign labor is traditionally procyclical in Switzerland, which dampens the rise in unemployment during economic downturns. However, this cyclicality has lessened, which may be partly explained by the agreement on the free movement of persons with the EU (OECD, 2007). While Swiss monetary policy is autonomous, exchange rate developments have noticeably restricted policymakers' room for maneuver in recent years (section 3.1). The Swiss franc, traditionally reputed to be a safe haven among currencies in uncertain times, appreciated massively during the crisis. The real effective exchange rate of the Swiss franc rose by more than 20% from mid-2007 to end-2010 (chart 2).

Switzerland is likely to continue to pursue its bilateral approach in the near future. A survey conducted by ISO-PUBLIC in mid-2010 showed two-thirds of the Swiss population to reject EU membership, but 44% of respondents favored membership in the EEA.

2 Favorable Framework: Economic Structure, Labor Market, Fiscal Policy

2.1 Sectoral Specialization Benefits Swiss but Weighs on Austrian Exports

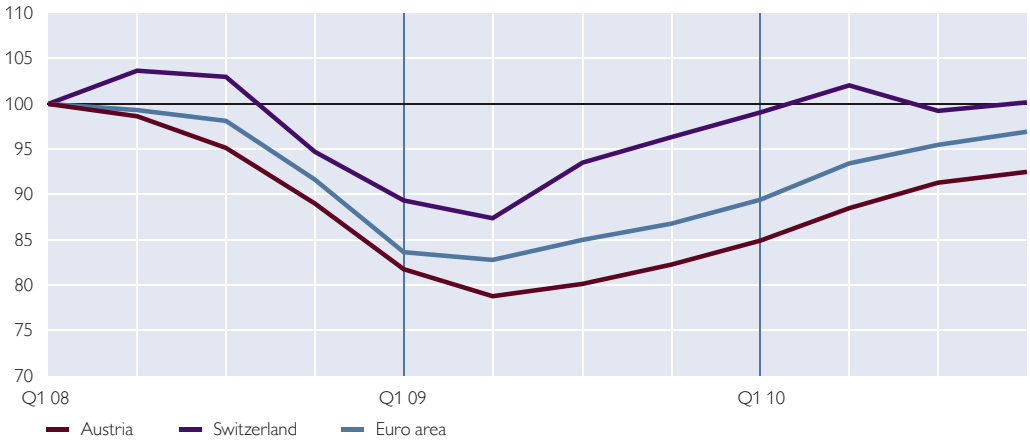
Switzerland's sectoral and regional economic focus has supported the resilience of its foreign trade. Swiss exports slumped far less during the crisis than did euro area and indeed Austrian exports (chart 3). The contribution of net external demand to GDP was twice as high in Switzerland as in Austria during the crisis.

[3] *This is particularly true of per capita economic growth, as most immigrants are working age and as labor force participation rates are high among immigrants.*

Chart 3

Development of Goods and Services Exports

Q1 2008 = 100



Source: Eurostat.

The economic sectors in which Switzerland has taken global market leadership and which are considered to belong to the high-technology sector (chart 4) – above all the pharmaceutical industry and the manufacture of medical devices – were affected relatively little by the crisis. Whereas most manufacturing sectors in the industrialized countries suffered a severe slump in demand for exports in the course of 2009, prices and sales in the aforementioned sectors remained stable, which may be partly explained by the low cyclicality of the generally state-run health care systems in the OECD countries.

The pharmaceutical industry's share of value added in the manufacturing industry is around 20% in Switzerland (euro area: 3½%; OECD, 2009a), and the pharmaceutical industry plus the manufacture of medical devices account for some 35% of Swiss exports. These demand effects have clearly more than offset the negative impact of the appreciation of the Swiss franc. In addition, exchange rate impacts on exports typically take effect with a pronounced time lag. The high degree of representation of Swiss industry in leading-edge technology, frequently with patented products, may have strengthened manufacturers' pricing power and may thus have made them less susceptible to exchange rate fluctuations.

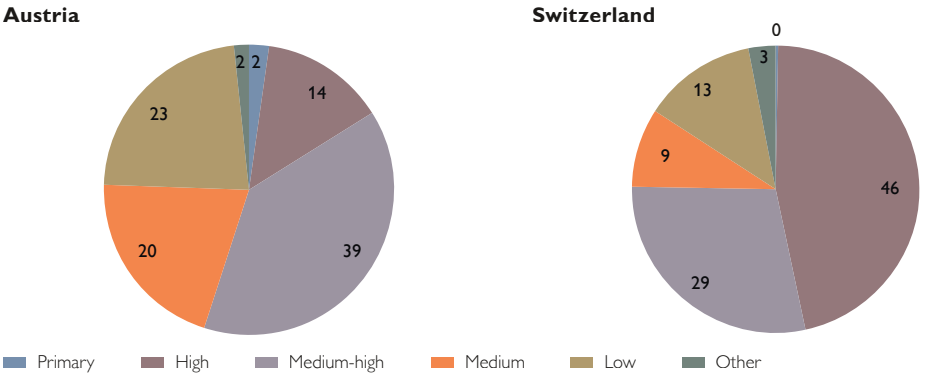
Conversely, Austria has established itself squarely within the trans-European value added chain and has garnered success in exporting, in particular, products with medium-high-technology content. For one thing, this underlines the relatively important role of the automotive supply industry. When the world automobile sector slid into recession, Austria's export industry also took a heavy blow. Austria's service exports, by contrast, performed fairly robustly, but the country has only established itself in services with a low value added potential. 88% of service exports were in the areas transportation and travel.

The Austrian government's economic stimulus packages reflected the crisis-prone structure of Austrian industry. Automotive product suppliers, for instance, indirectly benefited from the

Chart 4

Structural Breakdown of Goods Exports by Technology Intensity in 2009

%



Source: OECD.

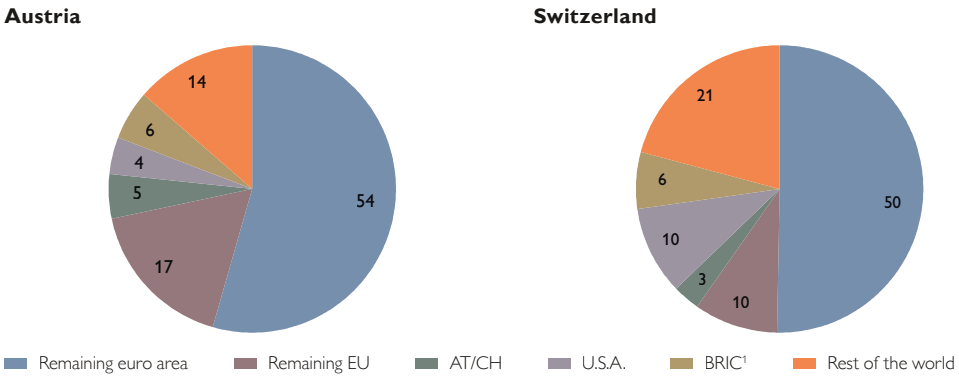
introduction of a car scrapping incentive that cost EUR 240 million overall (Breuss et al., 2009). Other EU Member States' car purchase incentive programs also buoyed Austria's automotive industry.

Switzerland's export industry also benefited from its regional diversification (chart 5): 50% of exports are to the euro area, but Switzerland also conducts a substantial share of foreign trade with emerging countries. These countries – above all China – experienced virtually no slackening of growth during the crisis. According to an OECD analysis, Switzerland even outranks Germany on the list of European OECD member countries that are highly exposed to the Chinese market (Brézillon et al., 2010). By contrast, the lion's share of Austrian exports goes to other EU Member States (71%). Most recently, demand on the part of the Central, Eastern and Southeastern European (CESEE) countries and Germany powered Austrian export growth.

Chart 5

Regional Breakdown of Export Demand in 2009

%



Source: IMF.

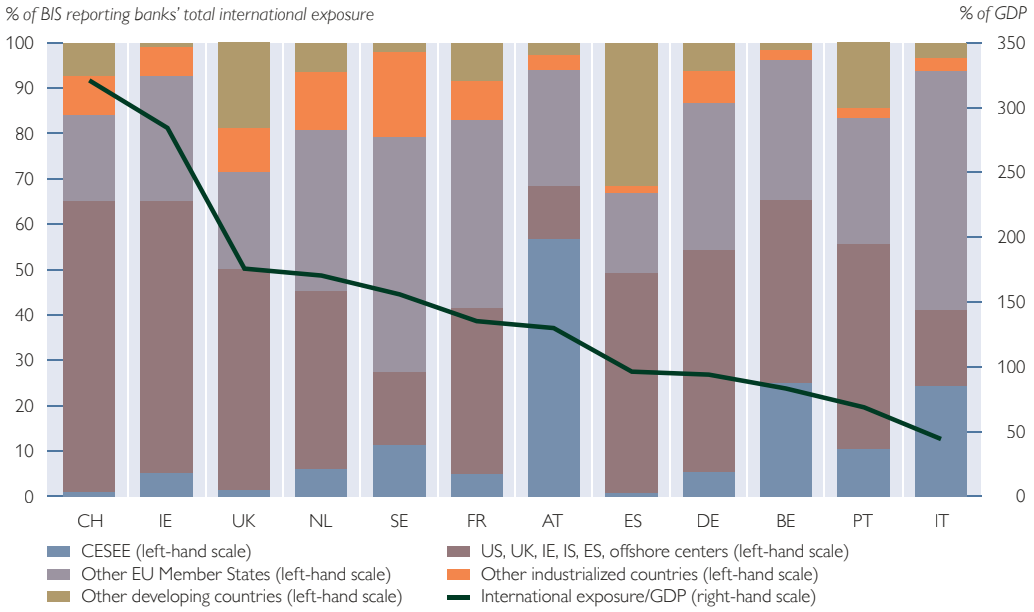
[1] Brazil, Russia, India, China.

The financial market is a key economic factor especially in Switzerland, but also in Austria. Before the crisis, banks accounted for about 8½% of total Swiss value added, a larger percentage than in all other OECD countries (with the exception of Luxembourg).[4] Including the insurance business, the contribution of the financial sector to value added was 13%. By comparison, financial intermediation contributed roughly 4% or 5% to value added in Austria. While the Swiss financial market is dominated by the two global banks UBS and Credit Suisse, whose total assets amounted to seven times Swiss GDP in 2007 and still came to four times Swiss GDP in 2010, the Austrian financial market is rather fragmented and strongly exposed to the CESEE region (chart 6). Moreover, Austrian banks' total assets are much lower than those of their Swiss counterparts. Whereas the financial market in Austria developed as a direct consequence of the European integration process, the Swiss financial center draws its eminent position from the historical importance of the Swiss franc as a safe haven currency – and from Swiss banking secrecy (Kugler, 2011).

As the Swiss financial market has specialized in asset management, fluctuations in the financial market do/did not have a strong negative impact on the economic cycle despite the market's size and global exposure (Schriber, 2007). Asset management business suffered above all from the decline in equity prices and sales, but was otherwise unaffected. Conversely, investment banking was seriously impacted by the financial crisis. The large Swiss banks were very heavily involved in investment banking and had to absorb substantial losses in securities trading for their

Chart 6

Austrian Banks' International Exposure

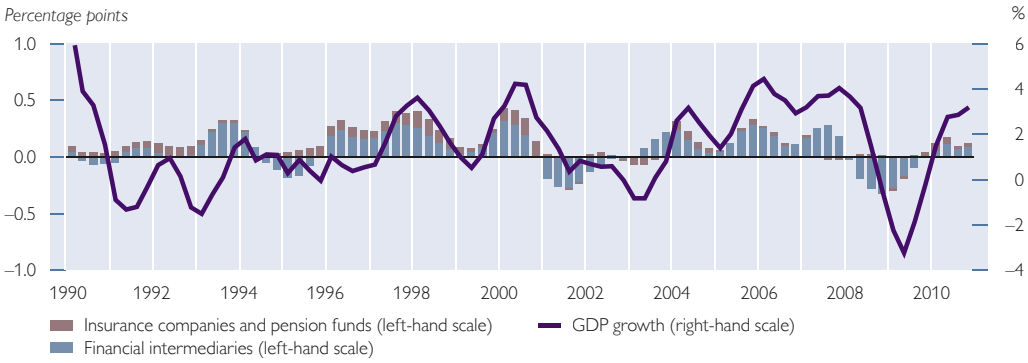


Source: BIS (Q3 2010), Eurostat.

[4] *In 2010, this share declined to an average of approximately 6½% and 10½%.*

Chart 7

Switzerland: Financial Intermediaries' Contribution to Economic Growth



Source: OECD.

own account (section 3.2). However, the banks conducted most of these activities outside of Switzerland. Even before the crisis, securities trading contributed only 15% to the Swiss banking sector's value added (Schriber, 2007). This explains why the negative contribution of financial intermediaries to value added was not much larger than in the previous period of turbulence around 2001, even though the most recent financial crisis was considerably more severe (chart 7).

2.2 Debt Brake Expands Switzerland's Fiscal Policy Leeway

Compared to the euro area average, Switzerland was in a comfortable fiscal policy position before the crisis hit.

In 2007, Switzerland's government debt ratio stood at only 46.5% of GDP (euro area: 66% of GDP). The country's rules-based fiscal policy contributed decisively to this low debt ratio. The Swiss constitution was amended in 2001 to provide for a debt brake for the federal budget[5], calling for a federal budget that was balanced over the course of the economic cycle and thus aiming for a reinforcement of the automatic stabilizers (Brunetti, 2011). Moreover, most of the Swiss cantons have imposed budget rules of their own. The declining debt ratio brought about by these measures affords Switzerland greater room for maneuver in times of crisis.[6] The cautious fiscal policy is likely to have strengthened the safe-haven effect for the Swiss franc and to have held financing costs in the private sector low, as the reduction of public debt bolstered the capital markets'

Table 1

Fiscal Policy Indicators

	Austria		Switzerland	
	Fiscal balance	Government debt	Fiscal balance	Government debt
	% of GDP			
2007	–0.9	60.7	1.7	46.5
2008	–0.9	63.8	2.3	44.3
2009	–4.1	69.6	1.2	42.2
2010	–4.6	72.3	–0.7	40.0

Source: European Commission, OECD.

[5] *See e.g. Danninger (2002) and Federal Finance Administration (2004) for a description.*

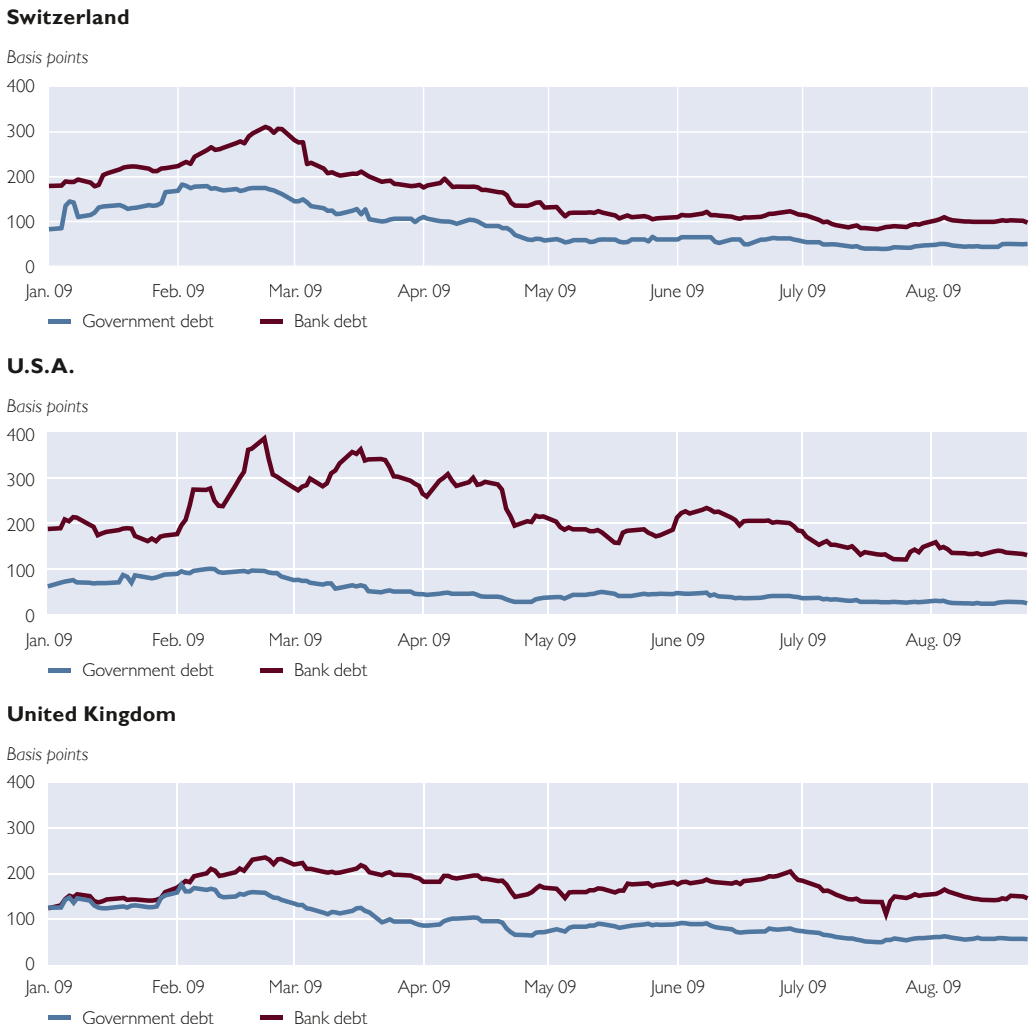
[6] *Weber et al. (2008) present expenditure projections.*

confidence in Swiss stability. Interest on long-term government debt remained favorable in Switzerland, also by comparison to Austria.[7] Prior to the crisis, Austria's public debt ratio stood at 60.7% of GDP, somewhat less than the euro area average.

Despite the greater room for maneuver for Switzerland, far weaker fiscal policy measures were taken during the crisis than in Austria. The discretionary deficit-reducing measures came to roughly 0.7% of GDP in 2009 (OECD, 2009a), less than in Austria (1.2% of GDP; OECD, 2009b). The related expenditures were mainly for projects already started, e.g. infrastructure development or research promotion projects, because the special combination of direct democracy and Swiss federalism can result in long delays in implementing new projects (Brunetti,

Chart 8

CDS Prices for Government and Bank Debt



Source: Thomson Reuters.

[7] *In March 2010, interest on ten-year Swiss government bonds was roughly 2% lower than on Austrian government bonds. At most half of this gap can be explained by the lower inflation target in Switzerland.*

2011). At the same time, strong uncertainty about how long the crisis would last and how deep it would be led policymakers to adopt a gradual approach, under which discretionary measures that had already been adopted were taken stepwise and only after assessing whether they were still required.

Overall, Switzerland even managed to cut its debt from 46.5% in 2007 to 40.0%[8] in 2010 – despite the peak of the crisis. Even during the crisis period, the budget closed with a surplus every year. In Austria, however, the deficit rose from 0.9% of GDP in 2007 and 2008 to 4.6% in 2010, and government debt augmented to 72.3% of GDP. It must be noted, though, that the downturn was more pronounced in Austria than in Switzerland. Expansionary fiscal policy played a crucial rose in buffering the impact of the crisis and helped stabilize sectors sensitive to cyclical fluctuations, such as construction, and to prevent domestic demand from slumping even more.

However, it also became clear in the course of the crisis that – at least from market participants' perspective – government solvency risks were much more closely linked to the perceived solvency risks of the country's largest banks than was the case in other countries with important financial centers (chart 8). This can be explained by the much greater weight the total assets of the two largest banks, UBS and Credit Suisse, had relative to the size of the economy. Consequently, the highly positive perception of the Swiss government's creditworthiness also during the crisis hinged on the stabilization of UBS (section 3.2).

2.3 Short-Time Work Schemes Stabilize the Labor Market Given Favorable Initial Conditions

Both Switzerland and Austria feature internationally very low unemployment rates. In fact, joblessness slipped to a low mark of just 2.5% (Switzerland) and 3.5% (Austria) compared to the euro area average of 7.2% in March 2008. By the end of 2009, it had risen by 1.6 percentage points in each country; since then, unemployment has been on the decline again. In the euro area, though, the jobless rate persisted at a level of 10% until the end of 2010. In both countries, the labor market thus supported consumer demand during the crisis and lessened pressure on government spending.

In addition to the favorable initial conditions, labor market policy contributed to the resilience of the labor market to crisis. Publicly funded short-time working schemes in Switzerland and in Austria played a considerable role in keeping unemployment from rising too strongly: In Switzerland, at times in 2009, 1.5% of the labor force was able to keep its jobs because of short-time working schemes (chart 9). Austria, too, had provisions allowing for short-time working even before the crisis; these schemes were expanded further at the height of the crisis in February 2009.[9]

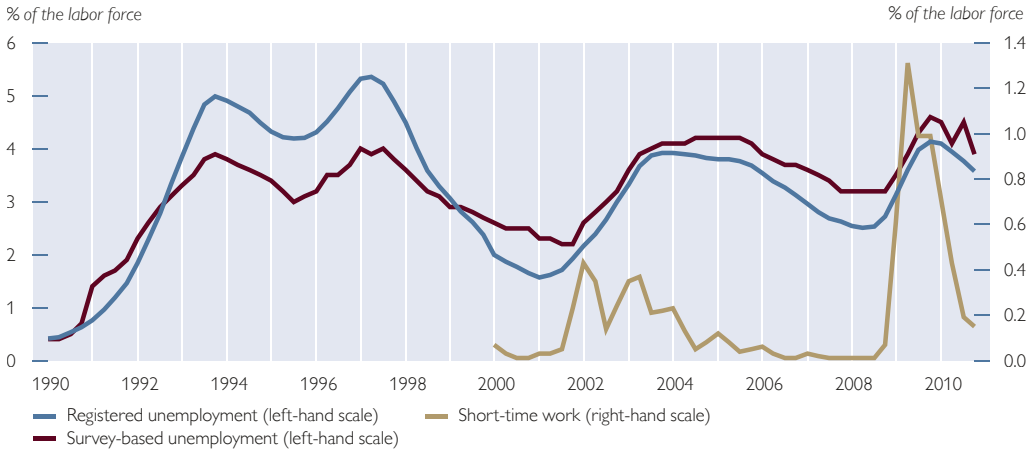
The smooth integration of young job seekers into the labor force via the established vocational training system made a major contribution to stabilizing the labor markets of both countries. The low share of young adults who are neither in training nor in the labor

[8] *OECD estimate of May 2011.*

[9] *This included above all an increase in the maximum permissible reduction of working hours and an extension of the maximum period of applicability of short-time working from 12 months to 18 months.*

Chart 9

Switzerland: Unemployment and Short-Time Work



Source: OECD.

force confirms this assessment. But the vocational training system is not always immune to cyclical crises: Companies experiencing financial difficulties may cut back on investment in vocational training.[10] During the most recent crisis, though, Switzerland did not suffer any shortage of apprenticeship training positions, which may have to do with favorable financing conditions in firms, but also with demographic change and the resultant shrinking demand for training positions.

2.4 The Swiss Real Estate Market Develops out of Sync with the Euro Area Market

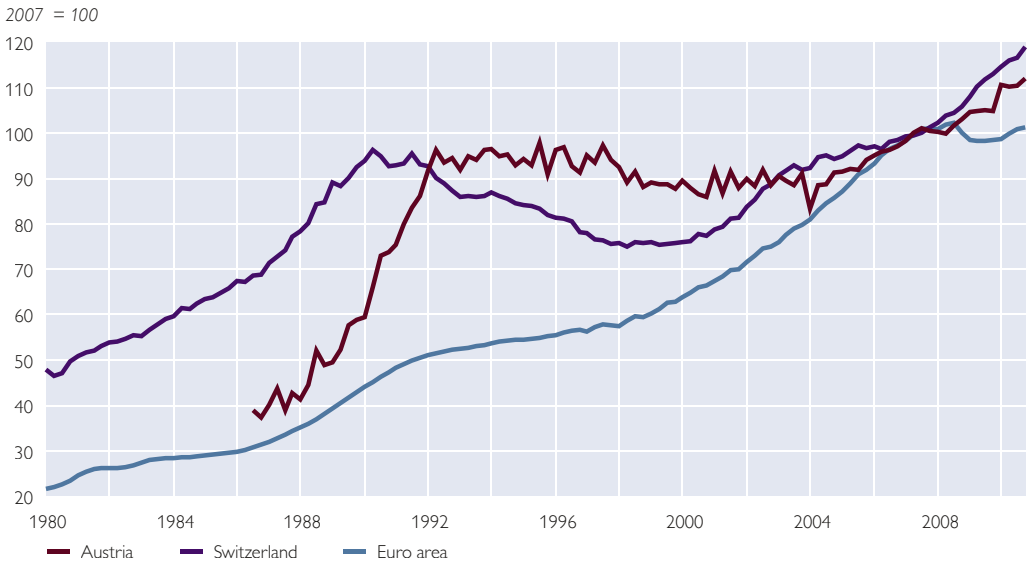
The bursting of a housing price bubble in several euro area countries exacerbated the crisis substantially and massively endangered the stability of the banking system, but neither Switzerland nor Austria encountered such a procyclical factor. During the 1990s and at the beginning of the millennium, real estate prices remained largely stable and did not begin to rise until more recently. In Switzerland, a housing price bubble had begun to develop as early as the mid-1980s, only to burst at the beginning of the 1990s, leading to a severe contraction of real estate prices (chart 10).

In the past few months, experts have increasingly sounded an alarm that a new real estate price bubble is building in Switzerland. In particular, the low key interest rates are helping create the conditions for such a bubble. However, Switzerland has always had high housing costs in an international comparison. One factor involved in these high costs is that each canton has its own construction standards, which undermines competition and raises construction costs (OECD, 2009a). One undesirable consequence of tax competition, moreover, is that local governments have an incentive to keep construction density low – to prefer single-family homes to apartment buildings – to attract a higher-income public. This, in turn, entails a lack of density in settlements close to urban areas and

[10] *In fact, the supply of training positions in Switzerland is procyclical (Höckel et al., 2009).*

Chart 10

Development of Housing Prices



Source: ECB.

thus a shortage of housing supply (OECD, 2009a). By contrast, Austria pursues an entirely different housing policy, namely of providing a large volume of social housing.

3 Monetary and Economic Policy Contributes to the Rapid Recovery of the Economy

3.1 The Swiss National Bank Provides Strong and Targeted Support to the Financial Market and the Economy

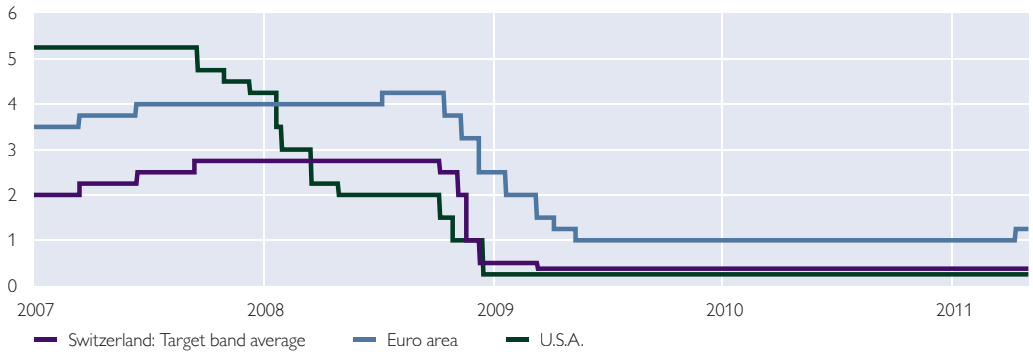
Monetary policy helped significantly to stabilize the economy and the financial market during the crisis. The Swiss National Bank (SNB) participated in the coordinated massive easing of monetary policy alongside the Federal Reserve and the ECB. As monetary policy has a delayed effect, the joint action in 2008 represented an important stabilizing stimulus for the economy in 2009. But some of the effects were different in Switzerland: Like the ECB, the SNB reduced its key interest rate band as late as September 2008 (chart 11), but unlike interest rates in the euro area, short-term rates in Switzerland had stopped rising in the third quarter of 2007 and had also declined faster than in the euro area subsequently (chart 12).

The special nature of the Swiss monetary policy framework may have been partly responsible – the SNB sets an operational target range for the reference interest rate, namely the three-month LIBOR in Swiss francs. During the financial crisis, the spreads between interbank debt and "risk-free" credit spreads (e.g. central bank credit)[11] increased in high-income countries, which dampened the expansionary effects of monetary policy to a certain extent. These spreads were lower in Switzerland than in the U.S.A. or in the euro area. From the outset, the use

[11] *This risk spread may be calculated as the difference between the LIBOR and the OIS (Overnight Indexed Swap) rate. The OIS reflects the expected risk-free overnight rate over the next three months.*

Chart 11

Key Interest Rates



Source: Thomson Reuters.

Note: Swiss target band until March 14, 2007: 1.5 to 2.5; until June 13, 2007: 1.75 to 2.75; until September 13, 2007: 2.0 to 3.0; until October 7, 2008: 2.25 to 3.25; until November 5, 2008: 2.0 to 3.0; until December 10, 2008: 0.5 to 1.5; until March 12, 2009: 0.0 to 1.0; from March 13, 2009: 0.0 to 0.75.

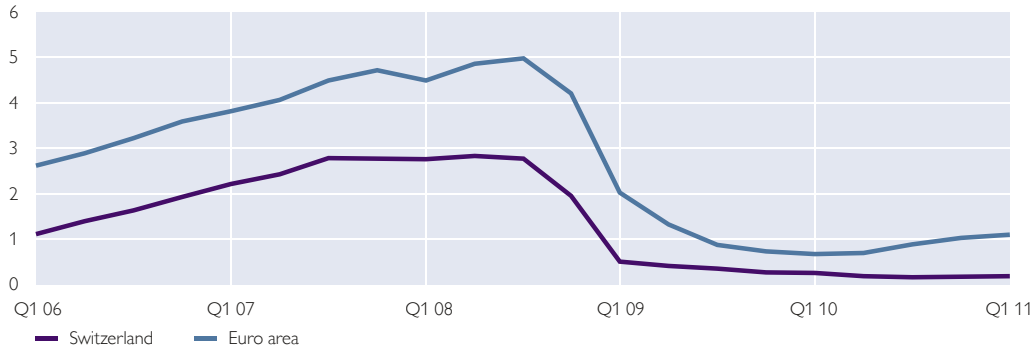
of the interbank rate as an operational target helped buffer factors that would result in a rise in this rate – such as increasing distrust among banks – by means of liquidity injections by the central bank. This approach dampens uncertainty about the future development of the interbank market, in turn reducing the risk premium on the interbank rate (OECD, 2009a).

The euro area key interest rate was cut by a total of 325 basis points, whereas that of Switzerland was reduced by only 237 basis points. This gap may be partly explained by the different nature of the two key interest rates. In Switzerland, the key interest rates included the risen risk premiums on interbank rates, but also reflect the country's lower precrisis interest rate level, giving the SNB somewhat less room for maneuver in cutting interest rates to close to zero. The Swiss definition of price stability is at the bottom of the lower initial level of interest rates: The SNB considers prices stable if inflation lies in a range of 0% to 2%. This target brought the inflation average in Switzerland over

Chart 12

Three-Month LIBOR

Quarterly averages



Source: Thomson Reuters.

the last decade to approximately 1%. Conversely, the Eurosystem targets a rise in the HICP of below but close to 2%; and it has reached this target. Since the introduction of the euro, inflation has averaged about 2%.

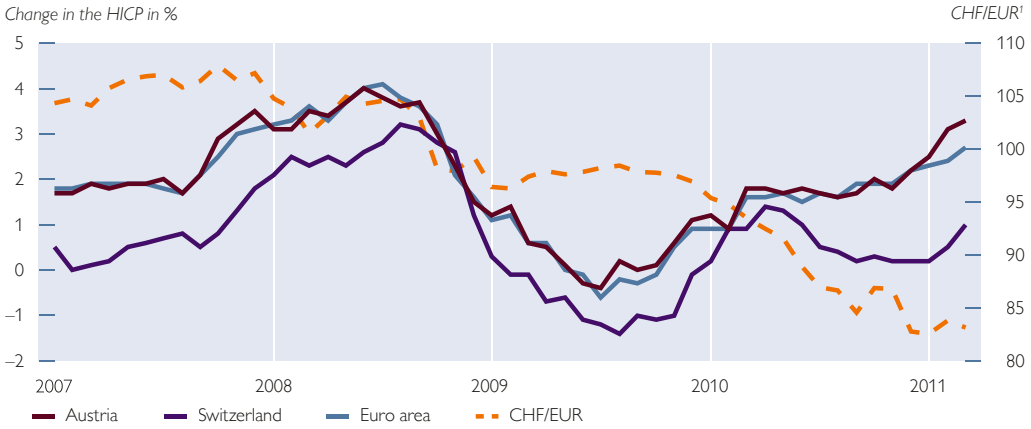
Like other central banks, the SNB took other action in addition to lowering key interest rates to combat the crisis; it provided ample liquidity and purchased additional assets. This had become necessary not least because of the deflation risks which had arisen as a result of the massive appreciation of the Swiss franc in the course of the crisis. Whereas Austria's HICP growth rates were negative for only two months, Switzerland experienced deflation for eleven months in a row (chart 13).

Compared to its Frankfurt and New York counterparts, the SNB was somewhat more restrictive in the choice of assets for purchase. The Swiss markets for asset-backed securities and corporate bonds are less developed than those of the euro area or the U.S.A.[12] From March 2009, the SNB purchased foreign exchange to increase the monetary base. These purchases also served to put a lid on the appreciation of the Swiss currency and thereby to contain the risk of deflation. The purchases were not stopped until price stability had been securely reestablished.

When economic growth firmed in 2010, the SNB was faced with the difficulty that (like in some euro area countries) the interest rate level was too low to support robust domestic demand and thus gave the domestic real estate and mortgage market a strong impetus, but that an increase in key interest rates could fuel the rise in the Swiss franc even more and could thus weigh on activity in the export industry. Moreover, the strong Swiss currency kept inflation low. Given all these factors, the SNB was thus faced with finding the best moment to tighten monetary policy. At the beginning of April 2011, when the Eurosystem took the first step in reining in monetary growth by

Chart 13

HICP and Nominal Exchange Rate



Source: Eurostat, BIS.

[1] Average for 2005 = 100.

[12] *The volume of corporate bonds outstanding was less than 5% in Switzerland in September 2008; in the euro area, it was over 10%. The purchase of government bonds would have been an alternative, even if the Swiss market is smaller relative to GDP than that of the euro area or that of the U.S.A.*

raising key interest rates by 25 basis points, Swiss key interest rates still hovered near zero.

3.2 Rescue of Large Swiss Bank UBS Prevents Systemic Financial Crisis

With total assets of over 400% of Swiss GDP (2007), UBS is the largest bank in Switzerland. The financial crisis hit UBS hard – it had to write down USD 53 billion of its securities holdings until mid-2009 (OECD, 2009a), partly in connection with the U.S. subprime crisis. Since UBS was considered the world's best-capitalized bank before the crisis, its financial distress came as a surprise to some. The problem with this estimate, though, was rooted in the use of a risk-weighted approach for assets: UBS's assets comprised a hefty share of top-rated products that required only little capital cover. When the financial crisis unfolded, it turned out that the risk assessment of many of these products was off the mark.

While some other big banks operating internationally – above all in the U.S.A. – posted much larger losses than UBS in absolute terms and relative to the size of their total assets, UBS had to take writedowns that were very large measured in terms of the size of the Swiss economy as well as in terms of its equity, not least because UBS had such high leverage. Credit Suisse had to take smaller writedowns (OECD, 2009a). The other Swiss banks, which have a much smaller business volume and are concentrated on Swiss customers, did not have significant exposures in the subprime market.

The size of UBS's losses was met with great concern on the part of economic policymakers, who feared for the financial stability of the bank (Kugler, 2011). UBS may be oriented toward financial markets outside Switzerland, but the bank is nevertheless systemically important for the Swiss banking system; for example, it provides domestic and international payment services (Ambühl and Lewrick, 2010). Therefore, if it had not been possible to stabilize the bank, the consequences for the Swiss banking sector as a whole would have been dramatic.

The Swiss Federal Council and the SNB acted quickly in putting together a rescue package for UBS already in October 2008. The plan combined the advantages of transferring securities which had become illiquid into a central bank-run stabilization fund, with a government capital injection[13] (Wiedmer, 2011). At the outset, a volume of USD 54 billion (12% of GDP) of bad securities was slated to be taken over by the stabilization fund; ultimately, only USD 38 billion worth of securities were actually transferred. But this total was quite large compared to the size of the SNB's foreign reserve holdings. The SNB's loan to UBS to fund the asset transfer was financed largely by a swap agreement with the Federal Reserve System. Moreover, within the stabilization package, the Swiss Federal Council provided a capital injection of CHF 6 billion in the form of mandatory convertible notes. This total corresponded roughly to the envisaged maximum contribution by UBS to any losses of the stabilization fund. The residual risk of loss was borne

[13] *From the perspective of stabilizing UBS, the transfer of toxic assets has the advantage of quelling uncertainty about the impact of any price changes on these securities on the bank's balance sheet. The capital injected allows the containment of moral hazard involved in state aid for stockholders of the bank. The moral hazard for the bank's debtors remains, however.*

mainly by the SNB. In the meantime, sales have substantially reduced the volume of assets held by the stabilization fund, and so far, the public sector has not incurred any losses. In the meantime, the Swiss government has sold its mandatory convertible notes at a profit.

Whereas in Switzerland a systemically important financial institution had run into difficulties, in Austria, a handful of smaller banks experienced financial constraints because of their exposure to CESEE countries. In October 2008, the Austrian parliament adopted sweeping measures to ensure the sustainability of the domestic financial sector. As a confidence-building measure, deposits of natural persons were backed in full until end-2009. Since January 1, 2010, deposit insurance has been capped at EUR 100,000 per depositor and bank.[14] In addition, an option was created to strengthen banks' capital bases by providing state participation capital. A clearing bank was established to guarantee interbank credit, but recourse to its services was very low. Compared with the measures taken in other European countries, the Austrian bank support package was fairly generous, reflecting the firm resolve with which the Austrian government acted to maintain the stability of the Austrian financial center/market and to boost lending. Moreover, Austria actively championed the management of crisis-related problems in the CESEE countries with the Vienna Initiative, which helped stabilizing the Austrian banking sector.

Apart from the monetary policy measures taken, the rapid response of decision makers and the circumspect design of the bank rescue packages ensured that no credit shortage occurred in either Switzerland or Austria. In many OECD countries, a more restrictive lending policy dampened domestic demand,[15] either because borrowers' creditworthiness was assessed as being more unfavorable or because banks reduced their credit supply for solvency or liquidity reasons. Banks downsized balance sheets to absorb the impact of losses on capital ratios, in particular by cutting back on lending.[16]

In Switzerland, the total volume of loans granted by Swiss banks declined because foreign demand, which is important for large banks, contracted sharply and because banks scaled back external positions. The volume of lending in Switzerland continued to expand, though, and was in fact more robust than during the previous downturn in 2001 (chart 14). The rescue package put together by the Swiss government and the SNB succeeded in stabilizing UBS and thus the Swiss financial sector. Because the smaller Swiss banks do mainly domestic business, they did not require any consolidation. Moreover, they indirectly benefited from the inflow of funds from UBS customers, which they used to enlarge domestic credit supply (NZZ, 2009). As the crisis did not affect the real estate market, banks were not required to adjust their mortgage portfolios, either. Swiss companies' leverage is moderate in an international comparison, which contributed to the

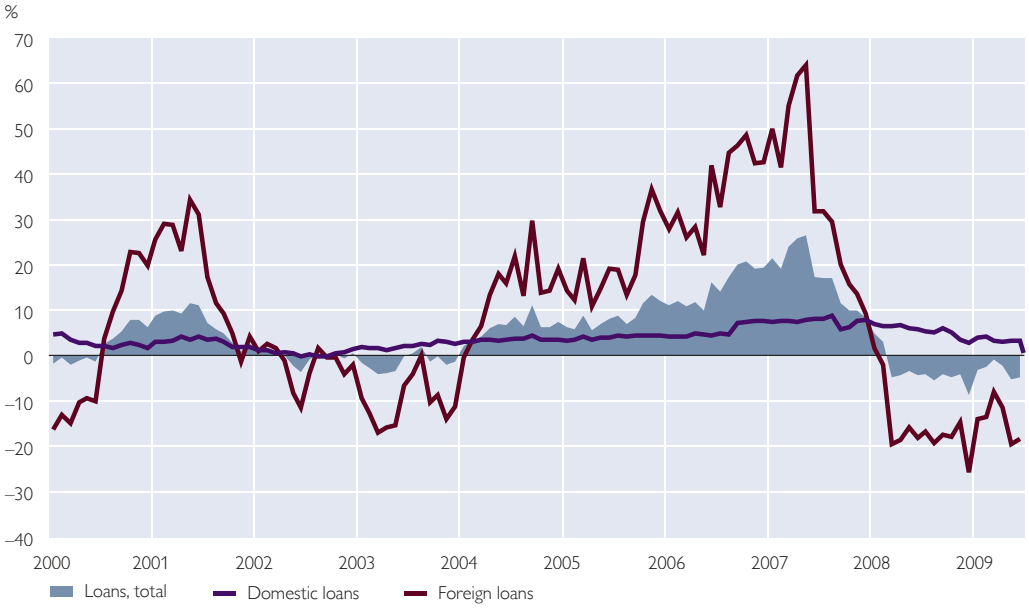
[14] *For more details, see OeNB (2009). Switzerland also extended its deposit insurance coverage, but retained fairly stringent upper limits.*

[15] *Many banks, e.g. in the U.S.A. and in the euro area, introduced tighter lending conditions especially in 2008 (OECD, 2008).*

[16] *More restrictive lending could also have a negative impact on export financing. In fact, a pronounced share of the slump in foreign trade in 2008 and 2009 can be traced to more restrictive lending (OECD, 2008).*

Chart 14

Switzerland: Loan Growth



Source: SNB, Monthly Statistical Bulletin.

stability of their creditworthiness. Low corporate taxes in Switzerland reduce companies' tax incentive for substantial debt financing.[17] The robust labor market and sound government finances also fostered private and public borrowers' creditworthiness (section 2).[18]

4 Summary and the Lessons of the Swiss Experience

Switzerland and to a lesser extent Austria demonstrated resilience during the crisis and experienced a fast recovery. Labor market stability and the absence of a housing bubble before the crisis contributed decisively to both countries' development. Above all in Switzerland, the economy's specialization on/in products that are relatively robust to cyclical fluctuations also played an important role. In both countries, cuts in key interest rates, economic stimulus packages and labor market policy measures made a crucial contribution to stabilizing consumer demand and shoring up business confidence. Another factor which played an important role is that both countries succeeded in stabilizing the banking sector without unduly burdening government budgets. As the financial and economic crisis wore on, the moderate government and private sector debt level came to play a stabilizing role as well.

The strategies that kept Switzerland on an above-average growth path cannot simply be transposed to Austria, however. Austria would do well to improve its export structure by moving to higher-quality production. Increasing research and development expenditure and more investment in education could promote such a shift. As Austria is strongly integrated into overall Euro-

[17] *However, Swiss stockholders have to pay taxes on dividends at regular income tax rates, though not in all cases. By contrast, retained earnings benefit from the fact that value gains are generally not subject to taxation.*

[18] *Then again, household gross debt is high by international standards.*

pean manufacturing structures, such improvement strategies are more contingent on developments in Austria's main export partner countries than is the case in Switzerland. European integration also prevents Austria from pursuing an independent immigration policy of the Swiss type that focuses only on highly qualified migrants. Switzerland benefited most from growing in-migration from EU countries; such effects are hard to achieve in Austria. Switzerland leads by example above all in the development of public finance: Of course, Switzerland is generally the richer economy, but there is no doubt that Austria's public expenditure and tax structures have a great reform potential.

Despite its relatively successful position, Switzerland will face a number of economic policy challenges in the next few years.

As a case in point, it will be especially crucial to take preventive regulatory action against risk emanating from the too-big-to-fail Swiss banks. In this vein, the Swiss banking authorities already tightened existing capital and liquidity standards for banks and introduced a ratio of capital to total non-risk-adjusted assets for large banks (OECD, 2009a). Furthermore, the Swiss government proposed a set of measures to parliament that provides for additional capital requirements for the large banks. These capital requirements are to be calculated based on a given bank's total assets and its systemic importance, but long transition periods are envisaged. Also, the large banks will have to present plans on how to sequester and run systemically important business areas from other operational units if the latter are distressed (Wiedmer, 2011). In addition, it might be worth considering drawing up a set of "macroprudential" regulatory instruments in Switzerland suited to rapidly identifying and defusing stability risks that arise as a result of undesirable systemic developments. At present, cautious observation of real estate price developments is in order.

What is more, trend productivity growth in Switzerland was weak in the past few years both compared to Austria and compared to other OECD countries. Hence, the aggregate level of productivity remained low despite the high/great weight of research-intensive and highly productive sectors in Swiss GDP in an international comparison, mainly because of the development of services not suited to international trade. The relatively high level of prices for goods produced and services rendered in Switzerland by comparison to other high-income countries (e.g. Austria) notwithstanding lower taxes results from weaker productivity in these sectors (OECD, 2007; OECD, 2009a).

Keeping step with the many decisions and reforms in the EU to preserve Switzerland's tried and true "bilateral approach" represents an additional challenge. However, as many agreements with Switzerland are in the EU's interest as well – such as the exchange of financial information – both parties are likely to wish to continue the negotiation of bilateral agreements.

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Annex

Program of the OeNB workshop of April 11, 2011 "Schweiz und Österreich – Zwei kleine Nachbarstaaten in und nach der Krise" (Switzerland and Austria – Two Small Neighboring Countries during and after the Crisis)

9:00 a.m. Switzerland and Austria – Resilience to Crisis thanks to Structural Strengths

Chair:
Doris Ritzberger-Grünwald
Head, Foreign Research Division, Oesterreichische Nationalbank (OeNB)

Aymo Brunetti
Head, Economic Policy Directorate,
State Secretariat for Economic Affairs (SECO), Bern

Andrés Fuentes
Economics Department, Organisation for Economic Co-operation and Development (OECD)

Discussant:
Fritz Breuss
Austrian Institute of Economic Research (WIFO)

11:00 a.m. A Small Country and the Financial Market: Source of Growth and Risk?

Chair:
Peter Mooslechner
Director of the OeNB's Economic Analysis and Research Department, Oesterreichische Nationalbank (OeNB)

Thomas Wiedmer
Alternate Member of the Governing Board,
Swiss National Bank (SNB), Bern

Peter Kugler
Professor, University of Basel

Discussant:
Philip Reading
Director, Financial Stability and Bank Inspections Department,
Oesterreichische Nationalbank (OeNB)

Event Wrap-Ups

The Future of European Integration: Some Economic Perspectives

Summary of the 39th Economics Conference of the Oesterreichische Nationalbank

Ernest Gnan,
Paul Pichler[1]

The recent financial, economic and debt crises have posed a serious challenge to the European institutions and the process of integration. The euro has fostered European integration and shielded the countries of the euro area against exchange rate fluctuations within the area of the single currency. At the same time, however, the crisis revealed shortcomings in the procedures for safeguarding sustainable public finances, in the regulation and supervision of financial systems and in national structural and growth strategies. Against this background, the Economics Conference of the OeNB on May 23 and 24, 2011, brought together renowned national and international experts and leaders from politics, business, finance and academia to discuss the long-term implications of the crisis for the process of European integration.

EU Is Facing Great Challenges

In his opening remarks, *OeNB Governor Ewald Nowotny* stressed the high relevance of the conference theme, which had been on top of the European and international agendas for the past few months. Europe's historical development was comparable to a spiral stair, Nowotny said: With periods of integration alternating with periods of disintegration, each cycle was accompanied by an upward movement. Over the past 66 years, a model of European integration has been created that – for the first time in history – was based neither on strategic alliances nor on involuntary association.

Nevertheless, Europe today is facing great challenges, and finding the right answers to these challenges is not easy. Politicians, economists, and commentators are in disagreement on the causes of the crisis and the ways to resolve it, and this disparity of positions is also mirrored in public opinion. Nowotny identified a "double heterogeneity" as the main cause of the crisis: a heterogeneity of national economic developments and a heterogeneity of supranational institutions. A majority of EU countries has ceded sovereignty in monetary policy to a supranational institution, the ECB; economic policy, however, has to a large part remained the responsibility of the individual Member States. The lack of centralized economic governance became particularly obvious when the crisis laid bare the heterogeneity between the individual countries. Countries differ in their institutions, but also in their preferences as regards the role of the market and the welfare state. While these structural differences are rooted in the history of countries, they are not exclusively individual countries' concern, as the situation in one Member State has implications for other Member States and the EU as a whole.

Call for Stepped-Up Implementation of Reforms

Some euro area countries are faced with structural problems, in particular in terms of competitiveness. European institutions repeatedly warned against these unfavorable developments in the past, and while they excelled in analysis, they were weak in implementing counter-measures. This situation implies the following two challenges: First, the long-

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standing structural problems of certain countries need to be resolved, which will take some time. Second, the time span between identifying a problem and launching counter-measures needs to be reduced. Some reform progress has already been made, including, for instance, improved monitoring of fiscal decision making and macroeconomic imbalances. The following guidelines will prove useful in the ongoing reform process. First, reforms should be implemented not only in economically difficult times but in particular also during boom times; since it is politically difficult to adopt anticyclical measures when the economy is humming, there is a need for automated rules. Second, a gradual approach to reforms should be followed given their uncertain impact. In other words, new elements should be integrated in existing and working structures on a step-by-step basis. Third, it is necessary to reduce public debt and safeguard the sustainability of public finances. These challenges notwithstanding, Nowotny expressed his confidence that European integration will continue.

Fair Reforms

Rudolf Hundstorfer, Federal Minister of Labour, Social Affairs and Consumer Protection, discussed the upcoming challenges to integration in Europe. There has been considerable progress recently, including the adoption of the Lisbon Treaty, which, however, has been seriously thwarted by the financial crisis. Greece and Portugal are struggling to consolidate their finances; it is necessary to support these two countries in this difficult situation, not only to demonstrate European solidarity but also to defend our common interest in protecting the process of integration and, in particular, the euro. The consolidation measures demanded from Greece and Portugal must be well balanced and fair and must not jeopardize economic recovery. Achieving a balanced budget cannot therefore be the only objective. Despite all the challenges it is facing, the EU is still in a better position than the U.S.A. and Japan; the euro area's debt level is lower than that of these two countries. Europe has successfully maintained the stability of the euro area. The main task now is to consolidate public finances and at the same time to implement the Europe 2020 strategy aimed at fostering sustainable and inclusive growth. The following two elements should provide the basis for all reforms: First, a symmetrical approach should be followed in removing imbalances; in other words, both countries with budget deficits and those reporting surpluses must contribute. Second, the focus of efforts must be on the real economy. For Greece and Portugal this means that they must be supported in growing out of the crisis.

Austria's reform program mirrors its commitment to the objectives of Europe 2020, which to a large degree reflects the involvement of the social partners in formulating this program. Austria will continue to fight for a Europe serving the interests of its citizens, including qualitative growth, full employment and a strong system of social security. More and better jobs must be on the top of the European agenda. Also, functioning pension and health systems should be seen as a prerequisite for sound public finances. This requires effective financial market supervision and regulation with a focus on security. The financial sector must serve the real economy; high-risk financial products must be banned. An international tax on financial transactions would on the one hand contribute to stabilizing the financial sector and on the other hand generate additional rev-

enues that could be used for promoting social security.

Excessive consolidation in the wake of the crisis would slow down the recovery in labor markets and, consequently, hamper economic growth. Fighting youth unemployment should be one of the main priorities. The Austrian government will continue to give young people job guarantees. One of the goals should be to establish a system that legally entitles young people to the education and training they need for finding a job. Consolidation measures must not affect those who have already suffered most severely from the crisis. The working conditions for European employees must be improved, the measures against illegal employment and wage dumping must be reinforced. Austria has already taken first steps in this direction by adopting a law against wage dumping and lowering social protection standards, which entered into force in May 2011. Safeguarding employment and social peace must remain key objectives as they are prerequisites for protecting democracy and successfully continuing the European peace project.

Euro Area Needs Fundamental Reform

Martin Wolf, Financial Times, claimed that the euro area needed radical reform to safeguard its future. Economic and Monetary Union was the attempt to impose the 19th century gold standard mechanism on heterogeneous democracies with generous welfare states, rigid labor markets and government-insured financial systems. This did not work because the members of EMU are not willing to accept the implications. Sovereign default would lead to loss of confidence in the financial markets, political friction between creditor and debtor countries would ensue. The crisis was caused not only by a lack of fiscal discipline; excessive credit growth and asset price bubbles in the private sector prior to the crisis had played an even bigger role. Generating procyclical real interest rate effects, EMU has been consistently contributing to regional boom-bust cycles in the euro area. The current account imbalances within the euro area reflect these adverse developments.

Crisis management in the euro area has been overshadowed by conflicts between Member States; therefore, the measures launched so far – like the establishment of the European Financial Stability Facility (EFSF) or the European Stabilisation Mechanism (ESM) – were not successful in calming financial markets. The announcement of introducing a regime allowing the bail-in of investors starting from 2013 contributed to the drying up of funding for the countries under pressure. Large current account surpluses cannot be sustained for an indefinite period of time. Possibly, the countries posting surpluses will eventually lose a part of their outstanding claims. The close links between banking systems and governments cause problems and must therefore be loosened, enabling banks to cope with sovereign debt restructuring and governments to deal better with bank failures. Therefore, minimum capital ratios for banks should be raised considerably and the role of capital market funding, in particular through equity, should be reinforced. Countries in distress should be able to obtain liquidity on affordable conditions while meeting strict policy requirements. Systems of automatic wage flexibility should be introduced to overcome persistent competitive disadvantages; such a mechanism will allow cutting nominal wages quickly and considerably in situations where countries face problems concerning their competitiveness.

EU Launched Extensive Reforms

European Commissioner for Economic and Monetary Affairs Olli Rehn, by contrast, painted a much more optimistic picture of the new economic governance architecture in the EU. He started his contribution by quoting Joseph Schumpeter, who famously said that nothing would be more telling about a country's strength than its monetary policy.[2] 80 years later, Rehn continued, many would ask themselves how strong Europe is. What we see now is support fatigue on the one hand and reform fatigue on the other. People ask whether the crisis will never end, whether the support measures are necessary, whether the reforms are too demanding. Rehn pointed out that Europe was on the right track. The immediate action to support countries on the brink of sovereign default was as necessary as the reform and adjustment measures required from these countries. The EU must be firm in insisting on the implementation of these measures; at the same time, patience is called for, since many measures need time to show effect.

Before the crisis, the euro area enjoyed macroeconomic stability and stable inflation rates and saw some improvements in fiscal policy. Over the past decade, macroeconomic imbalances had built up across the euro area, however. The integrated financial market channeled savings from countries with low private demand to countries where demand was high and the current account in deficit. In some places, funds went to the housing sector, contributing to an unsustainable growth of asset prices. At the same time, wages increased faster than productivity, which affected some countries' competitiveness. Current forecasts show that Europe will reach the pre-crisis production level in 2012.

Common Currency Shielded Euro Area from Crisis

Counterfactual scenarios may be difficult to devise, but there can be no doubt that without EMU, the financial crisis would have caused detrimental currency crises in Europe. The euro acted as a shield in this situation, protecting the euro area countries, including Austria. The ECB's responsible action as well as policy decisions and reform efforts in many countries made it possible to contain the sovereign debt crisis to a few countries. Substantial effort is required in these countries to achieve the surplus that is necessary to redeem the debt. Relevant, positive examples from the past show that such reforms can be done. In the 1990s, Belgium achieved large primary surpluses over an extended period of time; Latvia and Romania had received financial assistance tied to a program of conditionality before EU accession, which resulted in successful reforms.

Europe is currently reviewing its economic governance structures. In September 2010, the European Commission adopted a package consisting of three main elements: strengthening the Stability and Growth Pact to correct promptly unsustainable fiscal developments, monitoring macroeconomic imbalances, and introducing a more effective mechanism for automatic sanctions in case of noncompliance with the rules. The EU will be faced with difficult decisions also in the future. Yet, substantial progress has been made, as demonstrated by the economic recovery in most Member States, including Austria. Europe will tackle the remaining chal-

[2] *„Nichts sagt so deutlich, aus welchem Holz ein Volk geschnitzt ist, wie das, was es währungspolitisch tut."*

lenges through perseverance and determination. Coming back to Schumpeter's question, Rehn concluded that Europe is cut from tough cloth.

Fiscal Crisis Affects Only a Few Countries

Professor Wolfgang Franz (Centre for European Economic Research, Mannheim) and Daniela Schwarzer (Stiftung Wissenschaft und Politik, Berlin) analyzed the reform of the Stability and Growth Pact in a panel discussion chaired by *Ernest Gnan (OeNB). Professor Franz* emphasized that the fiscal crisis was essentially the crisis of individual countries and not of the euro area as a whole; nor is the euro the reason for some countries' budget and current account deficits. After all, other large currency areas – Japan, the U.S.A., and the U.K. – posted much more unfavorable deficit and debt figures than the euro area. Still, there are some euro area countries that apparently have not yet internalized the framework of a currency union (a single stability-oriented monetary policy, no monetization of government debt, no possibility of devaluation and the ensuing necessity of wage moderation). The economic policy reforms pushed ahead by the EU are not sufficient. The Stability Pact should stipulate tougher sanctions, financial supervision at the European level should have more far-reaching powers, and crisis management mechanisms should feature a bail-in of private creditors, which is highly unlikely under the current rules. Therefore, the ESM should be renegotiated to make financial aid contingent on whether and for how long a country applying for aid has been subjected to an excessive deficit procedure. In the absence of such a procedure, aid would be granted directly; if a deficit procedure had already been opened, aid would be granted only subject to strict conditionality; and if the country had been under an excessive deficit procedure already for a prolonged period of time, a bail-in of private creditors would be required.

Seizing the Impulse for Reform Triggered by the Crisis

Daniela Schwarzer analyzed the reform of the Stability and Growth Pact from a political-economic angle. Experience so far has shown that the Pact very much lacked credibility, that the Member States did not take the requirement to consolidate their finances seriously, that national interests often take precedence over European interests, that structural problems have remained unresolved, that the role of the European Commission must be strengthened, and that exit strategies are insufficiently specified. The sovereign debt crisis was also due to wrong incentive structures and ineffective instruments for dealing with liquidity and solvency crises. The markets failed to act as a mechanism sanctioning excessive deficits; currently, aid programs and undefined insolvency risks are making it difficult to price risks. The pressure currently exerted by creditors on debtor countries as well as the EU's influencing national fiscal policies are met with resistance in many EU countries and provokes the question of legitimacy. Many politicians have not embraced the idea of EMU and its economic implications, which harms the euro area as a whole. There is the danger that we will miss out on the opportunity for far-reaching reform created by the crisis and that populist sentiment fueled by the crisis diminishes people's willingness for change. History has shown that increasing unemployment goes hand in hand with waning public support for European integration. Against this background, it is likely that the EU will fail to live up

to people's expectations about its capability to tackle the crisis.

Will the new supervisory framework for banks and financial markets be able to prevent future crises? Are the current reforms far-reaching enough? These were the questions discussed in the afternoon of the first conference day by ECB Executive Board Member Lorenzo Bini Smaghi, Professor David T. Llewellyn (Loughborough University), Professor Hans-Helmut Kotz (Universität Freiburg) and Professor Andreas Pfingsten (Universität Münster).

Monetary Policy Is Greatly Intertwined with Macroprudential Supervision

Lorenzo Bini Smaghi, Member of the Executive Board of the ECB, opened the session, chaired by *Andreas Ittner, Executive Director of the OeNB, addressing* "Macroprudential Supervision and Monetary Policy – Linkages and Demarcation lines." Price and financial stability are communicating vessels, Smaghi said. Volatile prices and inflation expectations go hand in hand with volatile asset prices, and financial stability is essential for the transmission of monetary impulses. Too loose a monetary stance can spark a search for yield, excessive financial leveraging and risk appetite, thereby causing asset price bubbles. Short-term interest rates do not only influence expectations but also have direct effects by determining the costs of financial leveraging for financial institutions, the majority of which fund themselves through the short-term market. Securitization may amplify the implications. Empirical evidence shows that low interest rates lead to a loosening of credit standards in the euro area. Given insufficient regulation, a financial system exposed in such a way can be shaken to its core when a negative shock to confidence occurs. Fundamental market failure implies that unregulated private money creation leaves the financial system fatally exposed to systemic risk; in a systemic crisis, fire sales, which are justified from the point of view of each institution in isolation, cause a systemic crisis that also damages otherwise sound financial institutions. Responding to such developments ex post with conventional monetary policy measures is inadequate. Rather, appropriate measures should be taken already in advance. While before the crisis, the doctrine of inflation targeting prevailed, it is now obvious that monetary policy should give consideration not only to asset prices, but also asset price over-valuations, measures of risk appreciation as well as monetary and financial quantities. In particular, an asset price bubble progressing in symbiosis with excessive credit growth is a dangerous development. The Eurosystem has long met this requirement of acting ex ante by pursuing its two-pillar monetary policy strategy. This is where the instruments of macroprudential supervision come in, which are currently being developed; they should reduce the procyclicality of the financial sector on the one hand and improve the resilience of the financial system on the other hand. One tool to tame procyclicality are counter-cyclical capital buffers; on the demand side, ceilings on the loan-to-value ratios for collateralized loans could be established. Both measures raise credit costs, as does an increase in interest rates – so why do we need another set of instruments? Macroprudential measures can counter risks to financial stability already at a time when there is no visible danger to the stability of consumer prices. In a financial crisis, interest rate cuts can support an expansive macroprudential policy. These two policy areas interact in many ways, therefore close coordination is

warranted. Measures to improve the resilience of the financial sector can be aimed at strengthening existing institutions (e.g. raising minimum capital ratios for systemically important institutions) and at changing the structure of the financial sector (e.g. establishing central clearing counterparties or separating commercial banking from other business areas). Apart from solvency issues, macroprudential supervision should also take into account systemic liquidity risk, a field in which further work needs to be undertaken. Moreover, given the degree of integration of international financial markets, the question of how to coordinate macroprudential policies at the international level will also have to be resolved. Going even further, the interplay between macroprudential and monetary policies will eventually raise the question about the coordination of monetary policies, which will require discussion in the years to come.

EU Needs Reform of Strategic Approach to Supervision and Regulation

Professor David T. Llewellyn (Loughborough University) addressed the question as to what extent the new regulatory and supervisory framework in the EU will be able to prevent future crises. The recent crisis happened despite the existing extensive set of complex internationally agreed rules for the banking business (Basel II). This raises the fundamental question of whether the crisis was due to isolated deficiencies in the existing framework or whether the strategic approach to regulation was inappropriate. Financial regulation always involves the risk of distorted incentives and circumvention of regulation. Hence, regulation may precipitate the kind of events it was designed to avoid; in other words, the crisis may be endogenous to the regulatory framework. Regulation is aiming at a moving target, and the target, in turn, moves partly because of regulation itself. This involves the risk of entering a spiral of circumventing regulation, which sends the macroeconomic costs of regulation higher and higher. Incremental measures to improve the regulatory regime therefore always imply new forms of regulation, that is, Basel III would be followed by Basel IV and, eventually, Basel "N". To avoid this spiral, a fundamental change in strategy is required; Basel III would have to be supplemented by a fourth pillar that changes the incentive structure by defining clear resolution rules that prevent the socialization of risk.

The causes of the crisis are numerous. Hence, we need a fundamental and strategic approach to reforming regulation and supervision instead of relying on incremental measures. For instance, financial regulation could aim at lowering the probability of bank failures and their costs; although there is a certain trade-off between these two objectives, they both have to be fulfilled. Traditional banking regulation focuses on crisis prevention and considers the costs of bank failures only when a crisis has materialized. Before the crisis, the absence of bank resolution rules contributed to moral hazard and, in the end, market failure. This problem must be addressed as quickly as possible. The costs for the taxpayers need to be limited. Furthermore, the issue of too-big-to-fail financial institutions needs to be addressed, and arrangements to confer credibility on a no-bailout policy which addresses the time consistency problem must be put in place. Also, the practice of providing financial institutions with de facto insurance cover for free must come to an end. The distribution of the costs of bank failures must be explicit, fair and coherent. The costs should be borne by stakeholders and unsecured

creditors. Regulation must be based on the principle of competitive neutrality and include all institutions that can potentially create systemic vulnerability (including "shadow banks"). Finally, cross-border crisis management also needs to be improved.

Is Post-Crisis Regulatory Reform Far-Reaching Enough?

Whether the reform of financial market regulation is far-reaching enough was one of the questions raised by *Professor Hans-Helmut Kotz (Freiburg University and Center for Financial Studies at the Goethe University Frankfurt)* on an academic panel chaired by *Martin Summer (OeNB).* The Basel II rules essentially focused on the sufficient capitalization of banks, relying on – presumably – refined internal models to establish the degree of sufficient capitalization. This implied that banking supervision broadly relied on self-control. The crisis revealed how fragile and error-prone credit risk models really are: The samples of data are too small, the value-at-risk approach is of an overly simplifying nature, and the models cover neither the systemic dimension nor the endogeneity of risk. While the academic discussion has long addressed the underestimation of systemic risk, the procyclicality of capital requirements and the potentially strong significance of liquidity risks, regulators have tended to neglect these issues in formulating policies. The crisis – understandably – sparked a discussion about the actual role of the financial markets. The appropriateness of a regulatory framework – and of its implementation in supervision – must be judged on the basis of its ability to ensure the efficient, cost-effective allocation of capital and risks. The financial system should facilitate the efficient allocation of capital and risk at reasonable costs; it should not represent an end in itself. Financial regulation should correct externalities (market inefficiencies or lacking markets) and safeguard financial stability as well as consumer protection (a merit good). For regulation to fulfill this purpose, some strategic decisions need to be made. Should regulation be geared at institutions, markets or functions? How can regulatory arbitrage be avoided? A functional approach may be the best way to achieve regulatory goals, including the closing of loopholes. Regulatory standards can be implemented effectively only if the supervisory authorities are independent and capable of enforcing these standards. Only then will they be in a position to ensure the stability of financial institutions. The crisis has revealed deficiencies and the necessity to reform Basel II; the microprudential perspective must be supplemented by a macroprudential perspective. The reforms implemented so far have generated considerable progress. In microprudential supervision and regulation, capital requirements have been adjusted to better reflect risk profiles; also, leverage ratios (in acknowledgment of the inadequacy of risk weightings) and liquidity requirements have been introduced. Furthermore, new European supervisory authorities have been established, and there has been a redistribution of tasks and coordination responsibilities between national and European supervisors. At the macroprudential level, the monitoring of systemic risks has been institutionalized. The newly created European Systemic Risk Board (ESRB) has been mandated to monitor risks and issue recommendations. Many issues, however, for instance the exact definition of systemically important financial institutions, are still waiting to be resolved. The estimates of the costs created by increased regulation vary broadly but must be seen in relation to the benefits of higher financial stability.

The questions that need to be addressed include not only some microprudential aspects (the level of capital and liquidity requirements, the calculation of risk-weighted assets), but also systemic issues (resolution of banks, in particular cross-border institutions, increased requirements for systemically important institutions, EU-wide deposit guarantee scheme) and the activities of the European supervisory authorities and the ESRB. What has been achieved are compromises, which also reflect the constellation of interests in Europe. It remains to be seen whether the measures taken so far will suffice. In any case, the direction the reforms are taking is the right course of action.

New Banking Regulation Involves also Disadvantages and Costs

Professor Andreas Pfingsten (Universität Münster) first illustrated the new rules of Basel III using a stylized balance sheet of a typical commercial bank. While the more stringent minimum capital requirements differentiate between asset positions by risk class, the newly introduced liquidity coverage ratio and the net stable funding ratio differentiate between asset positions by their degree of liquidity. The stricter capital definitions will increase the scarcity of core capital and probably decrease the return on equity, which in turn will lead to even more core capital scarcity. The supply of necessary capital through other financial intermediaries to banks may destabilize the sectors concerned. Market participants may respond to the new situations in various ways: Debtors with a good credit history may turn to the – less, or at least differently regulated – capital market; banks may shift their activities to less capital-intensive lines of business; banks may increase their risk exposure to increase their return on equity, which would imply that no (or at least less) risk mitigation is forthcoming for the financial system as a whole; upward pressure on interest rates may increase banks' credit risk (adverse selection, moral hazard); and higher interest rates may dampen economic growth. The reduction in banks' proprietary trading may affect the information content of financial market prices, and reducing OTC derivatives while giving more weight to products dealt through central counterparties may increase costs and crowd out hedging activities. The leverage ratio may jeopardize some low-risk business models (e.g. specialized real estate lending) and make investments in no-risk government bonds unattractive. The net stable funding ratio restricts long-term bank lending and significantly affects one of the major tasks of banks (maturity transformation). The negative impact of these developments on investment and growth will be felt in particular by small and medium-sized enterprises that do not have access to the capital market, and countries without a large corporate bond market, such as Germany.

Austria Weathered the Crisis Well

In his after-dinner speech, *Thomas Wieser, Director General* in the *Austrian Federal Ministry of Finance* and former long-serving *President of the EU's Economic and Financial Affairs Committee,* reviewed the key developments during the economic and financial crisis. While in the early stages of the crisis, Europe had considered the turmoil a purely Anglo-Saxon affair, it soon became obvious that it was a global phenomenon significantly affecting Europe and the EU too. The counter-measures were being developed as the crisis progressed. Unlike the U.S. authorities, their European counterparts put great emphasis on avoiding effects that would distort

competition in setting up their measures to rescue distressed financial institutions. Keynesian-style stimulation of demand was one of the most widely used instruments to tackle the crisis, yet evidently also fraught with the problem that exiting from expansive policies was difficult, and budget deficits and debt ratios in several countries started to get out of control. Austria too was almost sucked into the vortex of the crisis when international investors questioned Austria's fiscal position in light of its banks' large exposures in Central, Eastern and Southeastern Europe. In this stage, the "Vienna Initiative" crucially contributed to stabilizing the situation, bringing banks to stay in the region in exchange for international support. When it became known that Greece had forged its fiscal statistics, the financial and economic crisis turned into a fiscal crisis. Greece is still working to implement the extensive austerity measures on which the provision of international aid hinges. Meanwhile, Ireland and Portugal applied for aid from the funds established to support EU countries in distress. Despite the comprehensive aid measures, the financial markets have remained skeptical, in particular as regards the sustainability of Greece's public finances. The causes of the fiscal crises differed in these three country. Greece is the only economy whose public finances were already unsustainable when the crisis broke out; in Ireland, the high costs of saving the financial system had a disastrous impact on the public purse; and Portugal suffered from the combination of high public and private debt. These examples show that it does not suffice to monitor the sustainability of public finances; the private sector must not over-borrow either. In the years preceding the crisis, globalization laid bare the structural weaknesses of many Western European countries. Against this background, the financial situation of low-skilled workers deteriorated, which was masked by generous government transfers and/or excessive lending growth. The crisis made it clear that emerging imbalances must be thoroughly analyzed, monitored and tackled much earlier and much more resolutely. Macroprudential supervision must ensure a more critical approach to financial market risks. Before the crisis, many international organization, with the exception of the BIS, paid too little attention to risk and trusted too deeply in the market's self-regulation ability.

Crisis Created Major Challenges for IMF

The challenges faced by the real economy were the central topic on the second day of the Economics Conference. Chaired by *Wolfgang Duchatczek, Vice Governor of the OeNB,* a panel discussion with Anne O. Krueger, Professor at Johns Hopkins University in Washington, D.C., and former IMF Chief Economist, and Thomas Wieser, Director General in the Austrian Federal Ministry of Finance and former long-standing President of the EU's Economic and Financial Affairs Committee, sought to identify strategies to correct macroeconomic imbalances.

Anne O. Krueger pointed out the role of supranational organizations such as the IMF, the World Bank or the World Trade Organization (WTO). Having contributed crucially to remarkable global growth in the past 60 years, these organizations are now facing a range of challenges. It is a crucial task of the IMF, for instance, to put into practice a common regulation of the international financial system. A globally uniform framework is necessary to prevent countries from creating their own competitive advantage by subjecting their financial markets to weak regula-

tion. At the same time, however, it is vital that regulation does not hamper competition and innovation (and, consequently, improvements in efficiency) in finance.

Correcting global macroeconomic imbalances, for instance the U.S. current account deficit, must be another priority of the IMF. The U.S. current account deficit has been funded by the current account surplus of China, whose consumption-to-GDP ratio has meanwhile come down to only 35%, and is therefore unsustainable in the long run. The IMF pointed out this global imbalance already several years ago but did not succeed in instigating correction measures, as both sides insisted on sticking to their policy, calling upon the other party to implement changes. The maintenance of this imbalance was a central cause of the financial crisis. Chinese investors' extraordinarily high demand for U.S. bonds was instrumental in keeping U.S. interest rates low, and the low level of interest rates, in turn, contributed to the real estate boom and the increased risk appetite of creditors seeking to maximize their returns.

Krueger also identified new challenges for the World Bank and the WTO. The World Bank has to intensify its efforts to support growth in developing countries and in particular foster lending to private borrowers, which continues to be low. Promoting the liberalization of the trade in services, which still holds immense potential for growth, is one of the key tasks of the WTO.

In conclusion, Krueger mentioned some issues that equally concern the IMF, the World Bank and the WTO alike. First, governance has become an issue; the international role of some economies, for instance China, India or Brazil, has increased significantly over the past few years while their representation in international organizations has remained largely unchanged. Second, supranational organizations often have problems recruiting senior staff as candidates' countries of origin tend to be given more consideration than their qualifications. Finally, it has not been generally acknowledged that the world economy is a multi-level system. The global economy, in particular globalization, much too often gets the blame for national weaknesses.

Macroeconomic Imbalances Must Be Identified Earlier and Tackled More Effectively

In his contribution, *Thomas Wieser* focused on macroeconomic imbalances within the EU and ways to correct them over the short and the long run. EU policymakers have always been aware of possible macroeconomic imbalances but assumed that coordination mechanisms like the Stability and Growth Pact would keep these imbalances in check. Particular attention has been paid to asymmetrical shocks within monetary union, whereas diverging competitiveness among the Member States has been considered to be of secondary importance. Although ECB President Trichet repeatedly pointed out that the different levels of competitiveness within the EU were not sustainable, financial ministers did not take action. This is attributable to a number of reasons. Among other things, there seems to have been a lack of incentives to initiate and coordinate corrective measures, as in the absence of interest rate differentials the countries concerned were not punished for wrong policies. Moreover, it was assumed that sooner or later there will be an automatic correction of imbalances.

Finally, the debt crisis revealed the serious deficiencies of the available instruments. Measures such as the establishment of the European Financial

Stability Facility (EFSF) and the European Systemic Risk Board (ESRB) have become necessary, and fiscal and macroeconomic monitoring has been reinforced. They aim at creating an incentive for politicians to act responsibly, thereby seeking to ensure the sustainability of their action and, consequently, the sustainability of the euro area. A fiscal union is unthinkable for political reasons; it should be possible, however, to establish institutions that proxy such a union.

In the closing panel discussion, chaired by *Peter Mooslechner (OeNB), Stefan Collignon, Professor of Political Economy at the Sant'Anna School of Advanced Studies, Pisa,* and *Harald Badinger, Professor of International Economics at the Vienna University of Economics and Business,* looked into the key question of whether Europe needed a new growth strategy.

Growth Differentials in Europe

Stefan Collignon likened the global financial crisis to an economic earthquake of a global dimension, which, like a tsunami, wreaked havoc in the public finances of most industrialized countries. The majority of economies have returned to a growth path since the second half of 2009, albeit at different paces. Collignon identified three post-crisis models of adjustment: There are countries whose economies are now growing more strongly than they did before the crisis, e.g. Germany and the U.S.A.; these countries are able to compensate for the reduction in output suffered during the crisis. Most European economies, including Austria, are expanding at the same rate as during the pre-crisis years, but they are unlikely to compensate for the lost output over the medium term. Then there are countries whose growth rates have not yet recovered and whose income levels are still significantly below the pre-crisis level, such as the Southern European countries suffering most severely from the crisis.

Precisely Measuring Competitiveness

Sovereign debt exploded throughout Europe during the crisis essentially as a result of declining revenues as economic growth turned low or even negative. Therefore, Europe should give priority to stimulating growth, thereby paying close attention to competitiveness. Politicians tend to address the issue of competitiveness from the wrong angle, however, by concentrating on current account imbalances. Yet the current account is a misleading indicator for two reasons: First, the current account balance does not show net exports but rather includes factor income and transfers; second, within a currency union, any current account position can be sustainable, as it does not matter whether the creditors are domestic or foreign banks. But this does not imply that a currency union allows unlimited indebtedness; it simply means that the borrowing risk is debtor- rather than country-specific.

Unit labor costs, on the other hand, are a more appropriate indicator of competitiveness. At the same time, the conventionally used unit labor cost index is also flawed, because it does not reflect the level of costs. Given that labor is only one factor in production (next to capital), these levels are different in equilibrium across countries. Hence, capital productivity also needs to be taken into account. As a result, competitiveness levels in some countries would look much different from how they look today. As a case in point, Greece's competitiveness in fact increased rather than decreased over the past few years.

Collignon then analyzed the sustainability of public debt for some Euro-

pean countries, examining whether they will be able to earn sufficiently large primary surpluses in the next few years. While this will be the case in most European countries (in particular Spain), the situation looks gloomier for France, Portugal and Greece.

In concluding, Collignon emphasized that Europe needed higher growth and therefore higher investment; this, in turn, would require reducing uncertainty in capital markets and eventually the introduction of euro area wide bonds ("eurobonds").

Implementing Growth Strategies

Harald Badinger in his presentation confirmed that Europe needed a growth strategy but not necessarily a new one; improving the way the current strategy is being implemented would suffice. Badinger referred to several items of the growth agenda formulated in the Sapir Report of 2004 to underpin his suggestion. For instance, the European single market for services must become more dynamic and competitive. Furthermore, investment in human capital as well as research and development is of key importance. A reform of education systems would not only provide a substantial growth impetus but also have positive effects on crime rates, health and the people's participation in democratic decision-making processes. At present, there is no reason to expect that the EU will reach its knowledge goals set out in the Lisbon Treaty. Similarly, investment in research and development in the EU is low, compared with the U.S.A. and Japan.

Furthermore, Badinger identified room for improvement in the macroeconomic policy framework. The establishment of independent monetary policy-making institutions was one of the big achievements of the past century. It is now time to accomplish a similar success in fiscal policy. What is needed is an improved coordination and monitoring of national policies, which involves giving more weight to decisions made at the supra-national level. It is not clear, however, whether the people are ready for such a move. Public support for European integration and collaboration is a prerequisite for bringing the "EU flotilla" back on course.

Presentation of the OeNB's Klaus Liebscher Award

Like in the previous years, the presentation of the Klaus Liebscher Award was another highlight of the Economics Conference. Following some introductory remarks by *OeNB President Claus Raidl* and a short presentation of the 2011 winners of the Award by *OeNB Governor Ewald Nowotny,* it was the authors' turn to present their winning papers. In their paper "Bank Bailouts, International Linkages and Cooperation," *Friederike Niepmann* and *Tim Schmidt-Eisenlohr* discuss crisis management issues during international banking crises. *Steffen Osterloh* investigates empirically whether regional transfer payments in the EU have an impact on the people's acceptance of the institutions in his paper "Can Regional Transfers buy Public Support? Evidence from EU Structural Policy." The awards were presented to the winning authors by *former OeNB Governor Klaus Liebscher.*

Notes

List of Studies
Published in Monetary Policy & the Economy

For further details on the following publications, see *www.oenb.at*.

Issue Q2/10

Subdued Economic Recovery given Necessary Fiscal Consolidation
Economic Outlook for Austria from 2010 to 2012 (June 2010)
Christian Ragacs, Klaus Vondra

Real Estate Inheritance in Austria
Pirmin Fessler, Peter Mooslechner, Martin Schürz

Stock Market Volatility and the Business Cycle
Burkhard Raunig, Johann Scharler

Modeling and Predicting the EUR/USD Exchange Rate:
The Role of Nonlinear Adjustments to Purchasing Power Parity
Jesús Crespo Cuaresma, Anna Orthofer

Central Banking after the Crisis:
Responsibilities, Strategies, Instruments –
Summary of the 38th Economics Conference
Ernest Gnan, Sylvia Kaufmann

Issue Q3/10

Global Economy Continues to Recover
Gerhard Fenz, Philipp Mayer, Josef Schreiner

The Austrian Labor Market and the Great Recession:
Developments and Measures Taken
Alfred Stiglbauer

Changes in the Wage Distribution in Austria:
An Analysis Based on European Structure of Earnings Survey Data
Wolfgang Pointner, Alfred Stiglbauer

Discount Pricing in Austria:
Insights into Retail Business Practices and HICP Coverage
Manfred Fluch, Fabio Rumler, Tina Wittenberger

Technological Change in the Field of Payment Instruments –
Long-Term Implications for Monetary Policy and Competition Policy
Helmut Stix, Martin Summer

Issue Q4/10

Recovery of the Austrian Economy Continues
Economic Outlook for Austria from 2010 to 2012 (December 2010)
Gerhard Fenz, Martin Schneider

Does a Low Interest Rate Environment Affect Risk Taking in Austria?
Paul Gaggl, Maria Teresa Valderrama

The Impact of Economic Factors on Bank Profits
Fabio Rumler, Walter Waschiczek

Issue Q1/11

Global Economy Continues to Recover in a Fragile Environment
Aleksandra Riedl, Martin Schneider, Josef Schreiner

Austria's Tax Structure in International Comparison – A Statistical and Economic Analysis
Lukas Reiss, Walpurga Köhler-Töglhofer

Administered Prices, Inflation and the Business Cycle – Selected Aspects
Friedrich Fritzer

Issue Q2/11

Austria's Economy Moves beyond the Crisis
Powerful Economic Growth Provides a Tailwind to Reduce Budget Deficits
Economic Outlook for Austria from 2011 to 2013 (June 2011)
Christian Ragacs, Klaus Vondra

Inflation Differentials between Austria, the Euro Area, Germany and Italy
Friedrich Fritzer

Heterogeneity in Euro Area Consumers' Inflation Expectations:
Some Stylized Facts and Implications
Ernest Gnan, Johannes Langthaler, Maria Teresa Valderrama

The Swiss Economy's Resilience to Crisis and Its Lessons for Austria
Andrés Fuentes, Paul Ramskogler, Maria Antoinette Silgoner

The Future of European Integration: Some Economic Perspectives
Summary of the 39th Economics Conference of the Oesterreichische Nationalbank
Ernest Gnan, Paul Pichler

Periodical Publications

See *www.oenb.at.* for further details

Geschäftsbericht (Nachhaltigkeitsbericht) German
Annual Report (Sustainability Report) English

This report reviews the OeNB's mandate, responsibilities and organization as well as the monetary policy of the Eurosystem, economic conditions and developments both in the financial markets and in financial market supervision during the reporting year. Furthermore, it contains the OeNB's financial statements, Intellectual Capital Report and Environmental Statement.

Geldpolitik & Wirtschaft German
Monetary Policy & the Economy English

This quarterly publication analyzes current cyclical developments, provides medium-term macroeconomic forecasts and presents studies on central banking and economic policy topics. It also provides summaries of macroeconomic workshops and conferences organized by the OeNB.

Finanzmarktstabilitätsbericht German
Financial Stability Report English

This semiannual report contains analyses of Austrian and international developments with an impact on financial stability and studies designed to offer in-depth insights into specific financial stability-related topics.

Focus on European Economic Integration English

This quarterly publication provides analyses on the Central, Eastern and Southeastern European (CESEE) region. Contributions include studies dealing with macrofinancial and monetary integration as well as economic country analyses and cross-regional comparisons.

Statistiken – Daten & Analysen German, English summaries

This quarterly publication contains analyses of Austrian financial institutions, cross-border transactions and positions as well as financial flows. Some 200 tables provide information about macroeconomic, financial and monetary indicators. On the OeNB's website, these tables are also available in English. In addition, this series includes special issues on selected statistics topics published at irregular intervals.

Research Update English

This quarterly newsletter is published online *(www.oenb.at/research-update)* and informs readers about selected findings, research topics and activities of the OeNB's Economic Analysis and Research Department.

Proceedings of OeNB Workshops German, English

These proceedings contain papers presented at OeNB workshops at which national and international experts discuss monetary and economic policy issues.

Working Papers English

This series provides a platform for the publication of studies by OeNB or other economists on particular monetary policy topics.

Conference Proceedings of the OeNB's Economic Conference English

These proceedings contain contributions to the OeNB's annual Economics Conference, an international platform for exchanging views and information on monetary and economic policy as well as financial market issues.

Conference Proceedings on the OeNB's Conference on European Economic Integration English

These proceedings contain contributions to the OeNB's annual Conference on European Economic Integration (CEEI), which focuses on Central, Eastern and Southeastern European issues and the ongoing EU enlargement process.

Publications on Banking Supervision German, English

For an overview of the OeNB's publications, please visit
http://www.oenb.at/en/presse_pub/period_pub/finanzmarkt/barev/barev.jsp

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