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Analyses

Global Economy Continues to Recover in a Fragile Environment

Aleksandra Riedl,
Martin Schneider,
Josef Schreiner¹

U.S. economic growth has been gaining momentum, with the annualized growth rate of real GDP reaching 3.1% in the fourth quarter of 2010. Factoring in this good performance, the IMF has revised upward its economic outlook for 2011 by 0.7 percentage points to 3.0%. At the same time, the labor market has been slow to improve, and housing markets are still adjusting; hence the contribution of labor and housing to economic growth has been rather moderate.

Furthermore, the devastating earthquake in Japan hit the economy at a time when the recovery of economic activity was still fragile. Judging from previous experience with earthquakes, international organizations expect the setback in Japanese growth to be temporary, however. The growth effect might swing back into positive territory as reconstruction efforts accelerate in the second half of 2011. Given the limited openness of the Japanese economy, the repercussions on the world economy are likely to remain subdued. The Bank of Japan (BoJ) moved to support the economy by providing ample liquidity and expanding its purchases of securities from the private sector. The G-7 economies joined forces to intervene against the strong appreciation of the Japanese yen in the days following the earthquake.

The year 2010 saw China emerge as the second-largest economy worldwide behind the United States, measured at current GDP prices. The IMF expects the Chinese economy to grow by 9.6% in 2011. The Chinese central bank responded by raising minimum reserve requirements a few times and by increasing its key monetary policy rates three times to keep the economy from overshooting. The renminbi has appreciated by close to 4% since China returned to a more flexible exchange rate arrangement in 2010.

Euro area real GDP grew by just 0.3% quarterly in the fourth quarter of 2010. Euro area-wide unemployment reached 9.9% in January 2011, just 0.2 percentage points short of the 12-year peak recorded in October 2010. ECB staff projections for GDP growth in 2011 are within a range of 1.3% and 2.1%. Reflecting commodity price increases, the annual growth rate of HICP inflation has been trending upward since mid-2010, standing at 2.4% in February 2011. While the economic recovery implied a reversal of public debt dynamics in most euro area countries, the high debt levels of some euro area countries continued to cause turbulence. Exacerbated by the downgrading of ratings for Greece Portugal and Spain, the spreads payable on sovereign bonds issued by peripheral European countries remained elevated. In the spirit of European solidarity, a permanent crisis mechanism – the European Stability Mechanism – has been established in the euro area, which will become operational in mid-2013.

The gradual economic recovery in Central, Eastern and Southeastern European (CESEE) EU Member States continued in the second half of 2010. The business cycles of the countries in the area reconverged somewhat, and domestic demand gained momentum as a driver of growth. These developments were underpinned by a stabilization of current account balances, following a significant recovery of those positions during the recent years of subdued economic growth. Rising food prices and tax increases in a number of countries stoked inflation in recent months, prompting a number of central banks to raise their key monetary policy rates, thereby initiating a reversal from the broadly accommodative stance adopted in the period of crisis.

The Austrian economy, finally, is in very good shape notwithstanding a number of risk factors. The key engine of growth has been the manufacturing industry, which has begun to invest again given strong export growth, whereas the construction sector continues to contract. The OeNB's short-term economic indicator results point to above-average growth in the first half of 2011. These developments will, in turn, continue to improve labor market conditions, which are already favorable. The surge in energy and commodity prices has caused inflation to rise strongly lately; the rate hit 3.1% in February 2011.

JEL classification: E2, E3, O1

Keywords: global outlook, euro area, central, eastern and southeastern Europe, Austria

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1 Robust World Economic Growth; Effects of Earthquake in Japan Difficult to Estimate, but Geographically Limited

1.1 U.S. Economic Revival Accelerates

U.S. economic growth has been gaining momentum. The annualized growth rate of real GDP reached 3.1% in the fourth quarter of 2010, largely bolstered by household consumption, as in previous quarters. At the same time, the contribution of net exports to growth turned positive again in 2010, reflecting a sharp decline in imports, which had been rebounding strongly. In the first half of 2010, the United States had been benefiting broadly from Chinese export subsidies, which expired at the end of July 2010. A large share of these imports from China was used to restock, thus driving large-scale inventory accumulation. In other words, the decline in U.S. imports and the destocking dynamics in the fourth quarter of 2010 constitute market adjustments.

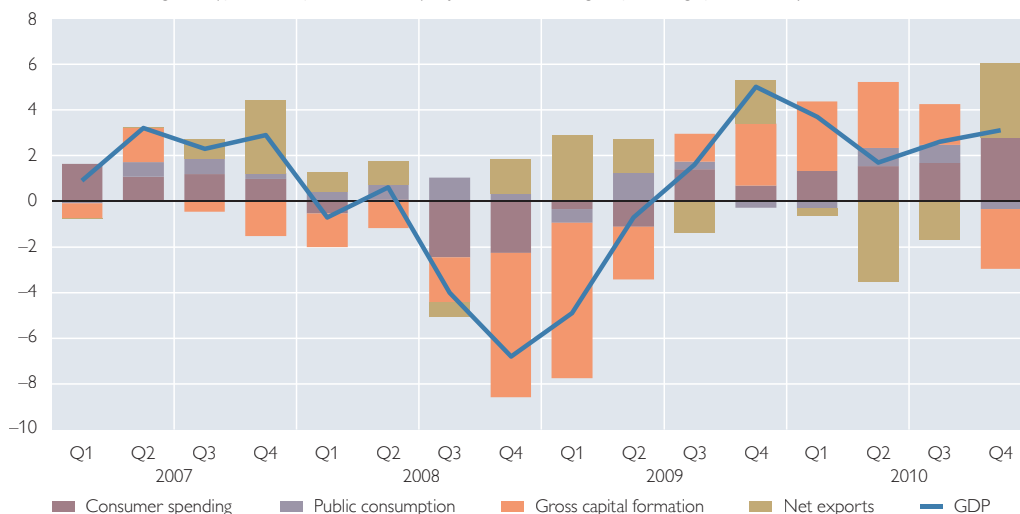
The by now relatively broad-based U.S. growth patterns are likely to be robust. The major leading indicators – such as the Purchasing Managers' Index, retail sales or the Conference Board Consumer Confidence Index – signal rising growth dynamics. The IMF revised upward its growth outlook for 2011 by 0.7 percentage points to 3.0% and expects economic activity to expand by 2.7% in 2012. The Federal Reserve System (Fed) projects growth for 2011 to be within a range of 3.4% to 3.9%, coupled with moderate inflation rates ranging from 1.3% to 1.7%.

The signals coming from the U.S. labor market have been mixed lately. The unemployment rate dropped further to 8.9% in February 2011, which means that it has retreated 1.2% from the peak value registered as a result of the recession but that it remains 5 percentage points above the levels observed in the ten years before the economic and financial crisis emerged. At the same time, the number of new jobs has been limited lately. Adjustments in

Chart 1

U.S.A.: Real GDP Growth

Contributions to GDP growth (quarter-on-quarter, seasonally adjusted, annual change in percentage points or in %)



Source: Bureau of Economic Analysis.

the housing markets are ongoing, as reflected by the continued high number of foreclosures and declining house prices. Thus, housing spending is not contributing to economic growth in the United States for the time being.

The inflation rate has been going up visibly lately; in February 2011, it rose by ½ percentage point to 2.1%. This surge primarily reflects developments in global market prices for crude oil and other commodities. The composite index for commodity prices was close to the peak observed in mid-2008. Apart from the global economic revival, the rise in energy prices reflects the current political turbulence in Northern Africa.

The steep upward trend in food commodity prices is attributable to the adverse weather conditions prevailing in 2010 and might, therefore, be reversed soon. Should inflation continue to rise, a turnaround in the Federal Reserve's monetary policy stance might be in the offing. At its meeting on January 25/26, 2011, the last meeting before the editorial deadline for this report, the Fed left the federal funds rate unchanged within a range of 0% to 0.25% and was intending to keep the rate at this level for an extended period. Furthermore, the Fed confirmed that it continued to stand ready to buy Treasury bonds worth USD 600 billion until mid-2011.

1.2 Devastating Earthquake Hits Japan on Top of Already Fragile Economy

An earthquake measuring 9.0 on the Richter scale shook northeast Japan on March 11, 2011, triggering a tsunami and causing severe damage to several nuclear power plants and hitting an economy that was still at a very fragile stage of the business cycle. Government consumption incentives such as

premiums for car and flat-screen TV purchases had caused substantial front-loading effects in mid-2010 but by the fourth quarter, when the incentives were phased out, GDP growth had returned to negative territory quarter-on-quarter. In January 2011, the IMF forecast growth for 2011 to be modest at 1.6%.

While only about 6% to 7% of the Japanese population live in the areas afflicted most by the earthquake and the tsunami, and these areas only account for the same percentage of output, the damage to the economy is considered to be massive. Several weeks of recurrent temporary power outages in a larger region that accounts for some 40% of Japanese output contributes to this damage. It will take some time to fully assess the impact of the accidents at the nuclear power plants. However, the negative growth effects stemming from output losses will gradually be offset by the positive effects of reconstruction. Provided that experience with tremors in the past is applicable to this incident, the net economic effect may well be positive after a few months.

The impact on the global economy may well be limited, however, since Japan is a fairly closed economy with a share of no more than 4.5% in world trade. China and the U.S.A. are Japan's main trading partners; the euro area follows with a substantially smaller share. But noticeable effects for the world economy could result from its reliance on important niche products from leading suppliers of automotive and electronic parts in the affected region. These suppliers' failure could disrupt global production chains.

To stabilize financial markets, which became edgy when the earthquake hit, the Bank of Japan provided large-scale liquidity in the days following the tremor and announced that it

would double its securities purchase program from JPY 5,000 billion to JPY 10,000 billion (EUR 87 billion). With key interest rates near zero (ranging from 0.0% to 0.1%) and government debt at over 200% of GDP, Japan's economic policymakers have virtually no scope to stimulate the economy.

Whereas Japanese stock prices plummeted in the days following the earthquake, the Japanese yen appreciated, reaching its highest value against the U.S. dollar since World War II on March 16, 2011. Apparently, insurance companies and investors withdrew funds from abroad to finance reconstruction. To curb the rise of the Japanese yen and the rapid deterioration of Japanese competitiveness in its wake, the G-7 industrial nations pledged a concerted money market intervention, thus bringing down the value of the yen against the world's major currencies and stabilizing it at a level close to that of the months preceding the earthquake.

1.3 China Puts a Lid on Inflation

In 2010, China for the first time took second place in terms of nominal GDP behind the U.S.A. China displaced Japan, which had been the runner-up to U.S. output for decades after stepping into Germany's shoes in 1967. In the fourth quarter of 2010, China's economy grew by 9.8% (annualized). The IMF forecasts growth to continue in the same vein in 2011 and 2012. The impact of the earthquake in Japan on the country's main trading partners is difficult to assess. In the short run, China may benefit by taking up the slack caused by the shortfall in Japanese production. In the medium term, though, disruptions of the production chain may also have negative effects.

Dynamic economic growth in China does present some problems. For

example, inflation was running at 4.9% in the first two months of 2011. Fast-paced inflation reflects a rapid rise in politically particularly sensitive food prices as well as energy and other commodity prices. However, core inflation is also elevated.

China has already raised its minimum reserve rate several times and boosted key interest rates three times, most recently by 25 basis points in February 2011, to counteract an overheating of the economy. The speed of the appreciation of the Chinese renminbi against the U.S. dollar has also gained momentum. Since the fixed peg was loosened in June 2010, the value of the renminbi has risen by nearly 4%.

2 Euro Area Economy Remains on a Growth Path

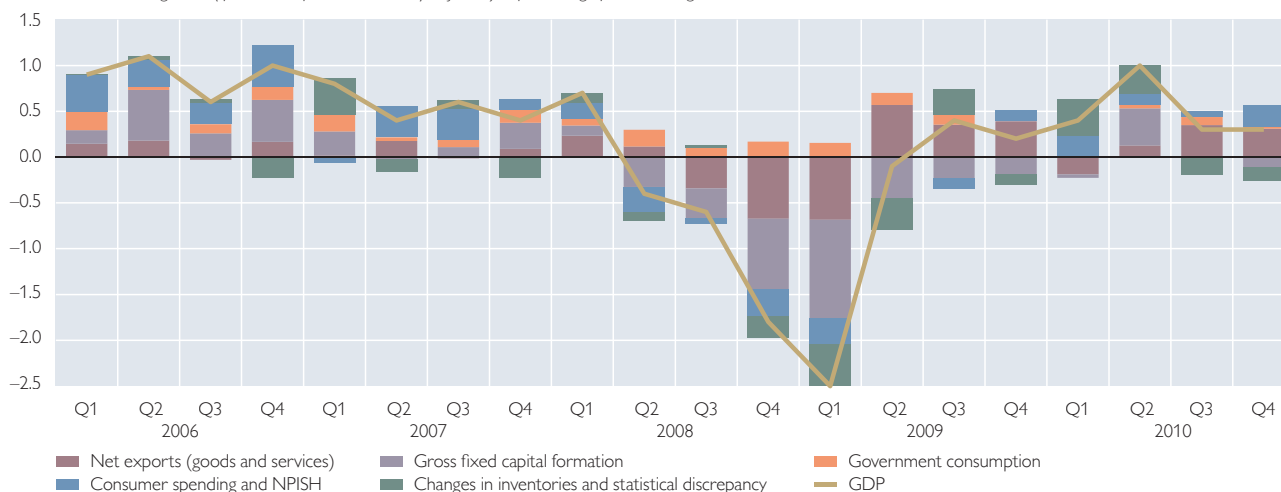
2.1 Exports and Private Consumption Are Mainstay of Growth in the Fourth Quarter of 2010

After experiencing robust growth in the first half of 2010, the euro area saw economic momentum weakening somewhat in the second half of the year. GDP growth came to just 0.3% quarter-on-quarter in the fourth quarter of 2010. For 2010 as a whole, economic growth ran to 1.7%. Net exports and consumer spending made positive contributions to growth in the fourth quarter of 2010, with consumer spending largely making up for the losses it had suffered during the recession. Inventory changes and gross fixed capital formation provided slightly negative contributions to growth in the second half of 2010.

The business cycle pattern of the euro area at the end of 2010 was mainly influenced by the economic developments in Germany. The German economy expanded by only 0.4% in the fourth quarter of 2010 after having posted above-average growth in the

Components of Real GDP Growth in the Euro Area

Contributions to GDP growth (quarter-on-quarter, seasonally adjusted) in percentage points, GDP growth in %



Source: Eurostat.

second and third quarters. Growth rates were moderate in France, Spain and Italy as well. Greece and Portugal posted negative growth rates, as private consumption contracted sharply in the wake of substantial consolidation measures.

2.2 GDP Growth Expected to Be Stable in 2011 and 2012

Economic growth is expected to rise to 0.5% in the first quarter of 2011. The sustained global recovery boosts the export sector, and high business confidence as well as an expansive monetary policy support investment. Capacity utilization is also increasing at a constant rate; in the first quarter of 2011, it was only marginally below its long-term average. Confidence indicators signal a positive attitude as well. The Purchasing Managers' Index for industry, for example, which generally is a reliable leading indicator of quarterly GDP performance, posted a ten-year high in February 2011.

The improved outlook for the world economy and for domestic demand prompted upward revisions of key fore-

casts. ECB experts anticipate GDP growth to range between 1.3% and 2.1% in the euro area in 2011. This corresponds well with the most recent estimates of the European Commission (+1.6%). For 2012, ECB experts expect a growth rate of between 0.8% and 2.8%. The worldwide recovery, expansionary monetary policy and ongoing financial system stabilization measures will continue to support the euro area economy. The upswing will increasingly become self-supporting on the back of the gradual improvement of consumer spending. However, indispensable budget consolidation will act as a damper on the upturn.

2.3 Marginal Decline in Unemployment on the Horizon

Seasonally adjusted unemployment fell slightly to 9.9% in the euro area in January 2011, after the unemployment rate had stabilized at 10.0% in the preceding months. According to first estimates by Eurostat, employment figures also augmented, and employment growth accelerated. The European Commission does not expect the un-

employment rate to decline noticeably until 2012 (to 9.6%).

2.4 Trend Reversal of Budget Developments Initiated, Debt Crisis Continues in Some Euro Area Countries

In 2010, the euro area deficit ratio remained unchanged against the year before at 6.3% of GDP. But a trend reversal is in the offing in most euro area countries, given the continued economic recovery and resolute budget consolidation measures. The average euro area deficit ratio is anticipated to shrink to 4.6% in 2011. Nevertheless, the individual euro area countries' fiscal positions are very heterogeneous and depend significantly on the extent of the macroeconomic imbalances in the respective countries before the financial crisis hit. Ireland, for example, had tipped into a deep recession following the bursting of a real estate bubble in 2008 that severely hit the country's oversized banking sector. Government

support measures, in turn, caused public debt to explode. Ireland's public debt burgeoned to 97% of GDP by the end of 2010, and in 2011, the deficit ratio will probably run to 10.3% of GDP. Countries such as Germany, Finland and Luxembourg, by contrast, will be able to slash their deficits to below 3% of GDP as early as in 2011.

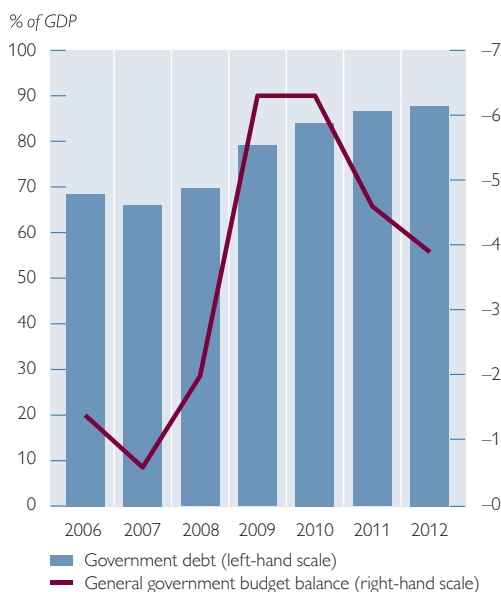
After Greece had been granted bilateral bridge loans in May 2010, other countries with budget problems were also given the option of extending the time they needed to put their finances in order. Therefore, Ireland accepted a bailout package in November 2010 under a financial safety net that the European Union and the IMF had conceived in fall 2010 to run for three years. The emergency funding of EUR 85 billion for Ireland will be financed jointly by the IMF, the newly founded European Financial Stability Facility (EFSF) and the newly founded European Financial Stabilisation Mechanism (EFSM).

In addition to Ireland and Greece, Portugal also moved into the focus of attention at the end of 2010 and beginning of 2011. While Portugal was one of the few euro area countries that had not experienced a banking crisis, it had come under pressure, much like Greece had, because of its high government debt and weak competitive position. Public attention was also focused on Spain, whose government debt at 65% of GDP continues to be just above the level prescribed by the Maastricht Treaty but whose banking sector has to cope with the effects of a real estate bubble.

Neither the first successful programs to consolidate government budgets nor the rapid implementation of newly established funding facilities were able to put financial markets at ease for any length of time. Exacer-

Chart 3

Fiscal Developments in the Euro Area



Source: European Commission, forecasts for 2010 to 2012.

bated by the downgrading of ratings for Greece, Portugal and Spain, the risk premia on sovereign bonds issued by peripheral European countries remained high. To ensure sustained capacity for action, the European Council decided on March 24 and 25, 2011, to establish a permanent European Stability Mechanism (ESM) with subscribed capital of EUR 700 billion, which will take effect from 2013, and the euro area countries along with six other EU Member States adopted a competitiveness pact called the “Pact for the Euro,” under which the participating countries undertake to implement concrete national commitments every year to foster competitiveness, promote employment, contribute further to the sustainability of public finances and reinforce financial stability.

2.5 Higher Commodity Prices Push Up Inflation

The rate of HICP inflation in the euro area rose steadily from 1.6% (mid-2010) to 2.4% (February 2011). Around the turn of the year, higher prices for unprocessed foods and energy fueled inflation in particular. Core inflation (HICP excluding energy and unprocessed foods) came to just 1.1% in February 2011. As the rise in food prices had its roots in unfavorable weather conditions in 2010, a change in this trend is to be expected soon. Thus, ECB staff projections show inflation remaining at 2.0% to 2.6% in 2011 and to sink to a rate between 1.0% and 2.4% in 2012. The uncertainty surrounding the development of oil and energy prices represents a significant upside risk to this forecast. More recently, uncertainties linked to the political upheavals in northern Africa

have once again caused the oil price to rise markedly. It is also unclear whether the impact of the earthquake in Japan will prompt a fundamental change in energy policy and will thus lead to a negative supply shock in the medium term. Medium- to long-term inflation expectations remain anchored at a level that is in line with the Eurosystem’s objective of keeping inflation below but close to 2% in the medium term.

2.6 Phase of Rising Interest Rates Begins

Since the press conference following the first ECB Governing Council meeting of 2011, at which the prospect of an increase in interest rates was held out, interest rate expectations have been on the rise. At the end of March 2011, markets were expecting the Euro OverNight Index Average (EONIA) to climb back to the key interest rate level of 1% by May 2011 and to continue its ascent to reach about 1.7% in February 2012; the current level is at 0.7%. The expectation of a boost in interest rates immediately fed into money market rates, causing them to rise.

Long-term rates in the euro area steadily increased from a low of 2.8% in August 2010 to roughly 4.0% at the end of March 2011. The uptrend partly reflects the improvement in business conditions and partly the development of risk premia, which have jumped since October 2010 when the financial markets began to question some highly indebted countries’ solvency. European solidarity with countries experiencing financial difficulties will be decisive for the further development of long-term interest rates. Agreement on the details of the ESM at the end of March 2011 was a decisive step in support of common initiatives.

3 Economic Developments in Central, Eastern and South-eastern Europe

3.1 Gradual Economic Recovery Continues

After the 2009 crisis, Central, Eastern and Southeastern Europe (CESEE) saw a gradual economic recovery in 2010, with quarter-on-quarter economic growth averaging a robust 0.7% in the third and fourth quarters. This is still just around half the growth rate recorded in the years immediately preceding the crisis, but the economic upswing then had taken place in a particularly favorable environment.

Moreover, in 2010, the economic cycles of the individual CESEE countries began to show signs of reconvergence. A certain degree of heterogeneity remains, however, with developments remaining subdued in Hungary and Romania in particular. In addition, output developments in the Baltic countries continue to display relatively high volatility.

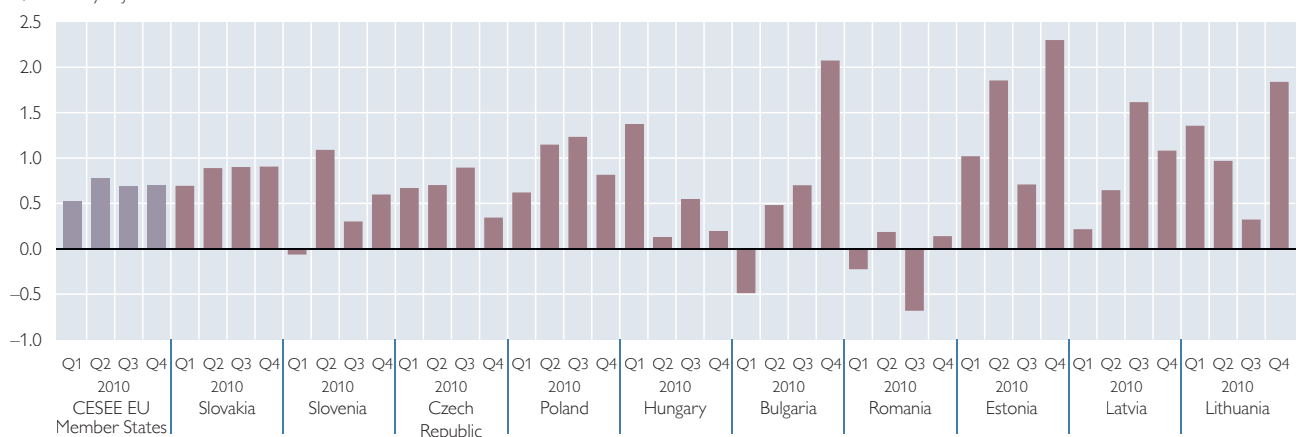
The composition of GDP growth provides another indication of increasing stabilization in CESEE: Although in many countries economic growth con-

tinues to rely to a large extent on inventory changes and the external sector, domestic demand has regained its role as a driver of economic growth in at least some CESEE countries in the third and fourth quarters of 2010. This is particularly the case in some Central European countries which weathered the economic downturn relatively well in 2010 and returned to a growth path at an early stage or which – like Poland – did not slip into recession in the first place. Domestic demand was the major growth factor in Slovakia and Poland and showed signs of improvement in other CESEE countries as well. Both investments and private consumption were the key drivers of this recovery in domestic demand. On the one hand, strong export dynamics and industrial production as well as the subsequent increase in capacity utilization may have contributed to this development, on the other hand, the job market situation in the region has stabilized and public sentiment in general is cautiously positive. The European Commission's Economic Sentiment Indicator for the region consequently returned to its long-term average in January 2011.

Chart 4

Quarter-on-Quarter GDP Growth

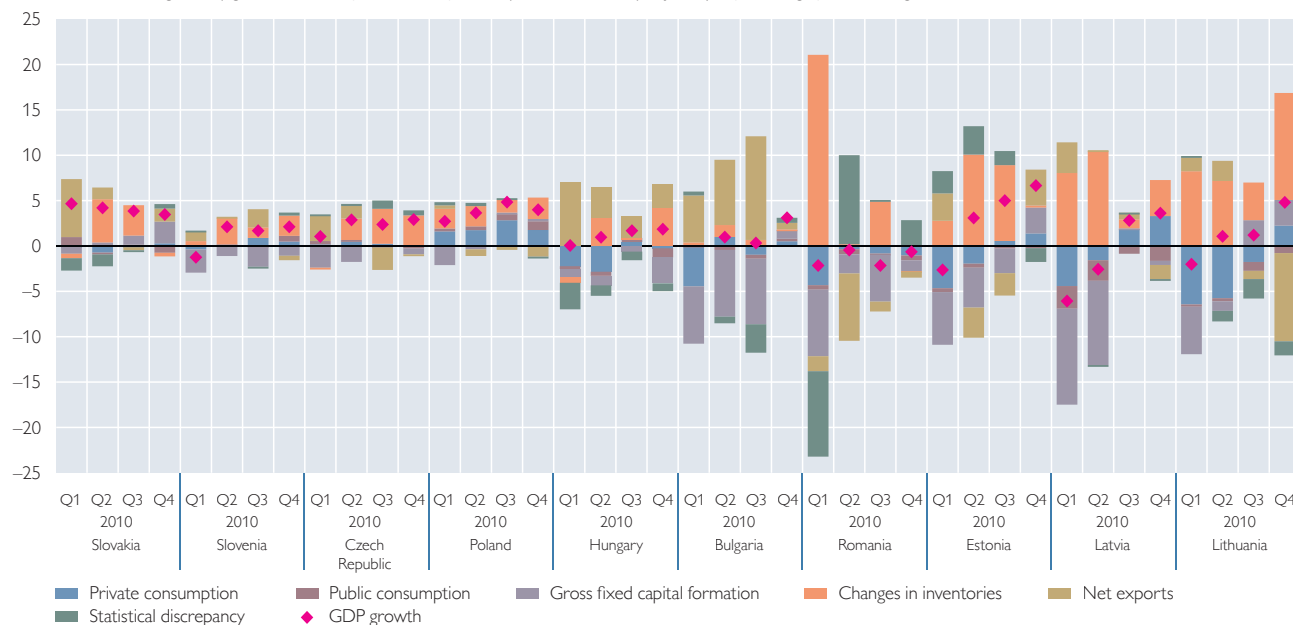
%, seasonally adjusted



Source: Eurostat.

Year-on-Year GDP Growth

Contributions to GDP growth (against the same quarter of the previous year, not seasonally adjusted) in percentage points, GDP growth in %



Source: Eurostat.

Hesitant lending, the necessity to further reduce household debt, the increased need to consolidate public finances and weak construction activity continue to weigh on the overall recovery, however.

Against this background, the economic outlook for the CESEE region will still be somewhat subdued for 2011. Current forecasts assume an average growth rate of just under 3% for CESEE in 2011, with economic activity expanding again in all the countries of the region (at a rate of between 2% and 4.5%). In 2012, growth will continue to increase slightly to an average rate of between 3.5% and 4%, before stabilizing around an annual 4% in the period from 2013 to 2015. At this rate, the CESEE countries would regain a relatively clear two-percentage point growth edge on the euro area. Following a pronounced slowdown in 2009 and 2010, income convergence with the euro area will thus continue at a

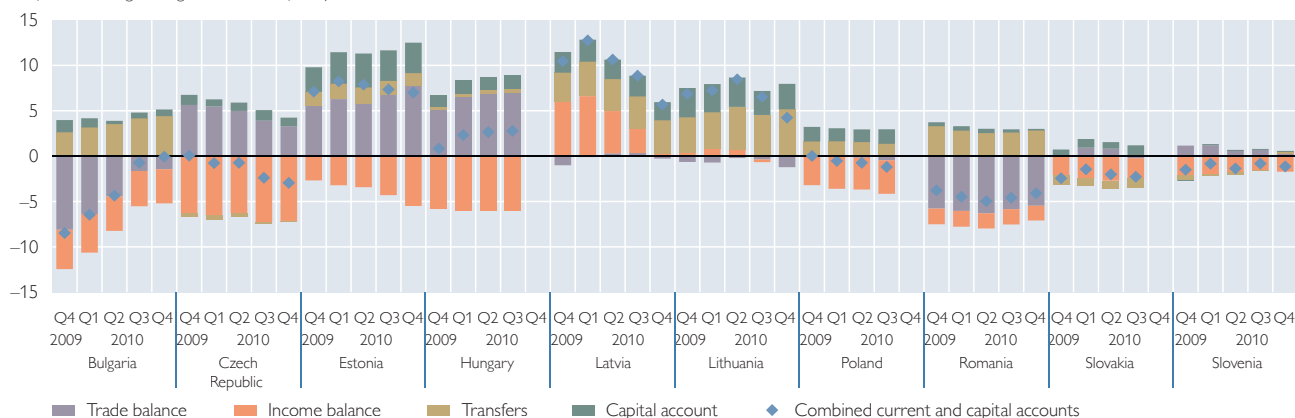
stronger pace in the future. The record highs posted in the pre-crisis boom years may well have been a historical exception, however.

3.2 Current Account Positions Largely Stable after Significant Improvement during the Crisis

The external position of all CESEE EU Member States improved (sometimes significantly) during the crisis. In the wake of accelerating economic activity, current account positions appear to be stabilizing at the moment, which is mainly attributable to two factors: First, domestic demand, which had lately strengthened in some countries, has a dampening effect on trade balances. Second, income accounts deteriorated in many countries, most likely reflecting the renewed repatriation of profits from foreign direct investment enterprises. Hungary, Bulgaria and Romania are the major exceptions from the developments outlined above; in

Current Account Balances in CESEE

% of GDP, moving average over the last four quarters



Source: National central banks.

these countries, the recovery is still slightly more fragile than in the remaining CESEE countries, and the positive effects of the economic slack on the current account positions persist. But these positive effects are likely to fade out in the course of 2011. Current forecasts expect current account balances to deteriorate slightly in all CESEE countries in 2011 – a trend that is likely to continue over the medium term. However, as there are currently no indications of overshooting in lending, wages and public spending (like before the crisis), it is very unlikely that over the next few years, current account gaps will again widen to their extremely high pre-crisis levels.

3.3 Exit from Monetary Easing as Inflation Rates Rise

Inflation rates were rising (clearly, in part) across the entire CESEE region over the past few months. This was mainly attributable to surges in both processed and unprocessed food prices, which together account for almost the entire average rise in inflation in CESEE. In some countries, VAT hikes, which were implemented in a reaction to tight fiscal positions, fueled inflation

as well. This effect was most obvious in Romania, where a rise in the major VAT rate from 19% to 24% in the summer of 2010 caused the inflation rate to almost double in the second half of the year. VAT hikes took also place in the Czech Republic at the beginning of 2010 (from 19% to 20%) and in Poland and Slovakia at the beginning of 2011 (from 22% to 23% and from 19% to 20%, respectively). In Slovakia in particular, this rise had a significant effect on the inflation rate as early as in January 2011.

Although core inflation remains clearly below HICP inflation in most countries under consideration, several central banks in the region increased their key interest rates in response to rising price pressures, thereby starting the exit from the broadly accommodative monetary policy stance adopted during the crisis. Narodowy Bank Polski (NBP), for example, raised its key policy rate by 25 basis points to 3.25% in January 2011, while Magyar Nemzeti Bank (MNB) increased its key interest rate in three steps by 25 basis points each (November and December 2010 and January 2011) to currently 6%. In Poland, CPI inflation came to

3.6% in February 2011 and was thus clearly above the inflation target of 2.5% (CPI). Given high energy and food prices as well as the VAT hikes mentioned above, Poland is not expected meet its inflation target over the next few months. According to the NBP, accelerating price growth has begun to affect inflation expectations. The situation is similar in Hungary, where the central bank expects to clearly surpass the inflation target (3% CPI inflation) in the next few quarters. Rising food and oil prices as well as the potential pass-through of special sectoral taxes to consumer prices will have a short-term inflationary effect, while on the cost side, moderate wage developments are likely to slow down price growth at least in the short term. Inflation expectations, however, remain at a relatively high level (between 4.0% and 5.5%) and might – together with strengthening consumer demand – slow down the decrease in inflation as soon as the effects of short-term shocks have subsided. In addition, the higher risk premiums on Hungarian financial assets recorded in the period in ques-

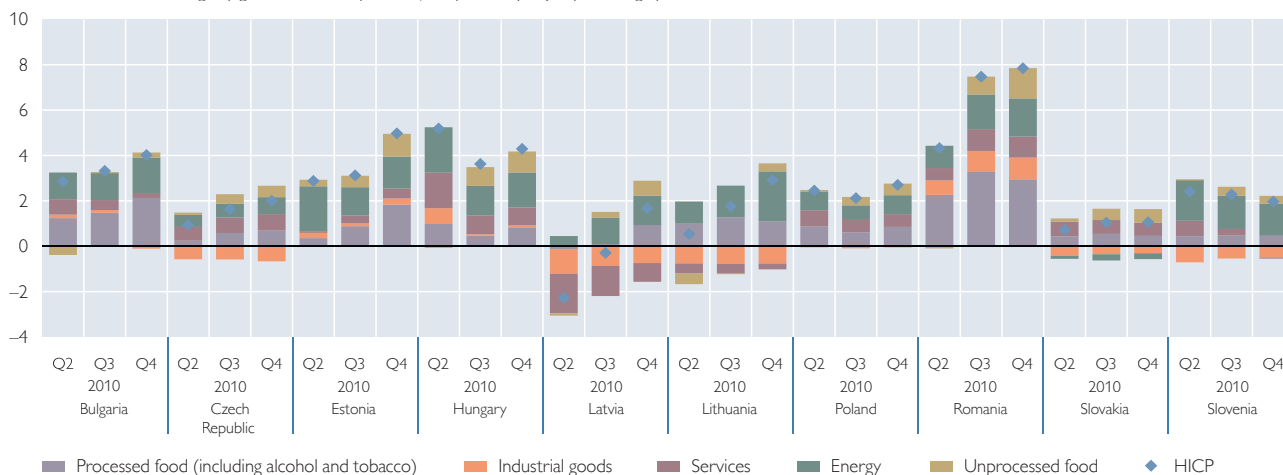
tion may have influenced the interest rate decisions of the MNB.

The trend toward some monetary tightening in periods of rising inflation rates can be observed in a number of non-EU CESEE countries. Thus in February 2011, the Central Bank of Russia (CBR) raised several interest rates (e.g. the refinancing rate, by 25 basis points to 8%) as well as the minimum reserve requirements (which it had slightly raised already in January 2011). At the same time, the trading band of the Russian ruble around its central rate against a U.S. dollar-euro currency basket consisting of the U.S. dollar and the euro was widened from RUB 4 to RUB 5. In Serbia, the key interest rate was raised in two steps in January and March 2011, by 50 basis points and 25 basis points, respectively, to 12.25%. Apart from fighting inflation, another objective of these measures may have been to stabilize the Serbian dinar, which had come under pressure over the past months and had to be supported through several interventions.

Chart 7

Inflation Developments in CESEE

Contributions to HICP changes (against the same quarter of the previous year) in percentage points, HICP in %



Source: Eurostat.

The Turkish central bank (TCMB), by contrast, lowered its key interest rate by 25 basis points to 6.25% in January 2011 despite the economic boom, following a reduction by 50 basis points in December 2010. Most likely, this step was aimed at containing (speculative) capital inflows and has to be seen in connection with a rise of several minimum reserve requirements agreed upon a few days after the interest rate reduction. According to the TCMB, this measure absorbed liquidity to the extent of EUR 4.9 billion from the market, which means that overall, these two monetary policy steps resulted in a certain tightening of monetary policy.

4 Austrian Economic Growth Remains Strong in Early 2011

4.1 Economic Growth Reaches 2.1% in 2010

After the severe economic slump in the course of the financial and economic crisis, Austria's economy returned to positive growth in 2010. The main drivers of economic recovery were the rebound of the world economy and in particular the robust economic growth observed in Germany, Austria's main trading partner. In the fourth quarter

of 2010, export activity slackened temporarily, but this development did not come as a surprise after the extraordinarily rapid growth rates recorded in previous quarters. The results of the OeNB's export indicator, which is based on truck mileage data provided by ASFINAG, Austria's highway operator, suggest that exports resumed their expansion in January and February 2011. As Japan plays only a minor role as a trading partner to Austria (e.g. accounting for only 0.8% of Austrian goods exports in 2009), the catastrophe in Japan is currently not expected to have direct adverse effects on the Austrian economy.

The dynamic growth in exports was especially beneficial to Austrian industry; by the end of 2010, this sector was able to offset nearly three-quarters of the drop in production by just under 20% brought about by the crisis. Thanks to growth in exports and industrial production, the contractionary phase of the investment cycle also came to an end in mid-2010. Manufacturers reported above-average levels of capacity utilization, and investments in plant and equipment began to climb again for the first time in nearly two years. At the same time, construction invest-

Table 1

Real GDP and Demand Components (in real terms; seasonally and working-day adjusted)

	GDP	Private consumption	Government consumption	Gross fixed capital formation	Exports	Imports	Total domestic demand (excluding inventories)	Net exports	Inventories	Statistical discrepancy
	Change on previous period in %				Contribution to GDP growth in percentage points					
Q1 10	0.2	0.2	-3.2	-1.1	3.2	2.4	-0.7	0.5	0.3	0.1
Q2 10	1.0	0.2	0.3	0.3	4.2	3.7	0.2	0.5	0.4	-0.2
Q3 10	1.1	0.2	0.1	1.2	3.2	2.7	0.4	0.5	0.4	-0.1
Q4 10	0.8	0.2	0.3	1.1	1.2	0.8	0.4	0.3	0.4	-0.3
2008	2.2	0.7	3.9	2.8	0.5	-1.7	1.7	1.2	-0.6	-0.1
2009	-3.9	1.2	0.4	-7.9	-15.6	-12.5	-1.0	-2.7	-0.9	0.8
2010	2.1	1.0	-2.4	-1.2	10.6	7.5	-0.2	2.0	0.9	-0.6

Source: WIFO.

ments showed disappointing development, as investments in both residential construction and civil engineering projects continued to fall. Despite positive quarterly growth rates in the last three quarters of 2010, gross fixed capital formation contracted further over the year as a whole. Although consumer spending rose moderately in 2010, domestic demand did not make a positive contribution to economic growth, which was mainly driven by net exports and restocking.

Some special temporary factors which had previously supported growth – such as the buildup of inventories depleted during the crisis and the (now expiring) expansionary fiscal policies introduced in response to the crisis – are currently fading out. This development has been accompanied by additional factors dampening economic growth: The fiscal consolidation measures required in response to the crisis

are putting pressure on households' disposable income. Combined with sharp increases in energy and commodity prices, this pressure has weakened private consumption.

However, the growth dynamics underlying the Austrian economy still appear to be robust. The highly favorable situation on the job market is having a positive effect on the household income situation. Employment is once again surging in Austria, which has led to declines in unemployment figures. Both the sharp rise in registered vacancies and the massive decline in the number of planned layoffs suggest that this trend is likely to continue in the coming months. In the near future, positive stimuli can be expected mainly from exports and investments. At the same time, the restocking phase has probably not yet come to an end and will therefore continue to drive growth as well.

Results of the OeNB Economic Indicator of March 2011¹

The Austrian economy is currently expanding at an above-average rate; this growth is primarily rooted in strong demand from abroad. For the first quarter of 2011, the OeNB's economic indicator points to real GDP growth of 0.6% (seasonally and working-day adjusted; compared to the previous quarter). In the second quarter of 2011, we can expect GDP growth to weaken to 0.5%. In the first and second quarters of 2011, growth will thus come to 3.5% and 3.0%, respectively, on a quarterly basis.

Short-Term Outlook for Austria's Real GDP in the First and Second Quarters of 2011 (seasonally and working-day adjusted)

2009				2010				2011	
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Year-on-year quarterly change in %									
-4.4	-5.4	-3.8	-1.8	0.5	2.3	2.7	3.1	3.5	3.0
Quarterly change in %									
-2.0	-0.8	0.7	0.4	0.2	1.0	1.1	0.8	0.6	0.5
Annual change in %									
-3.9				2.1					

Source: Results of the OeNB's Economic Indicator of March 2011, Eurostat.

¹ The next release of the OeNB's Economic Indicator is scheduled for July 2011.

4.2 New Employment Record Reached in February 2011

Thanks to the favorable development of the economy in recent quarters, the situation on the Austrian labor market has improved markedly. For a full year now, employment growth has been accelerating steadily. According to employment data provided by the Main Association of Austrian Social Security Institutions, payroll employment had risen by 72,100 (year on year) by February 2011, which represents a growth rate of 2.2%. A look at the seasonally adjusted data series indicates a new employment high in February 2011, with employment exceeding the previous record of June 2008 by a full 14,200. The continued surge in the number of registered vacancies also warrants expectations of a further rise in employment over the coming months.

According to the most recent figures available (January 2011), Austria and the Netherlands currently have the lowest unemployment rates (both at

4.3%) in the entire EU, where the overall average is 9.5%. Eurostat has made substantial downward revisions to Austria's unemployment figures for the past months, indicating that the rate of unemployment dropped from 4.8% in the crisis year 2009 to 4.4% in 2010. Considering the depth of the recession, the economic and financial crisis thus left only a faint mark on the Austrian labor market compared to many other countries. Nevertheless, total registered unemployment in February 2010 was still 40,800 higher than the low reached in February 2008, which can be attributed to rapid growth in the labor supply.

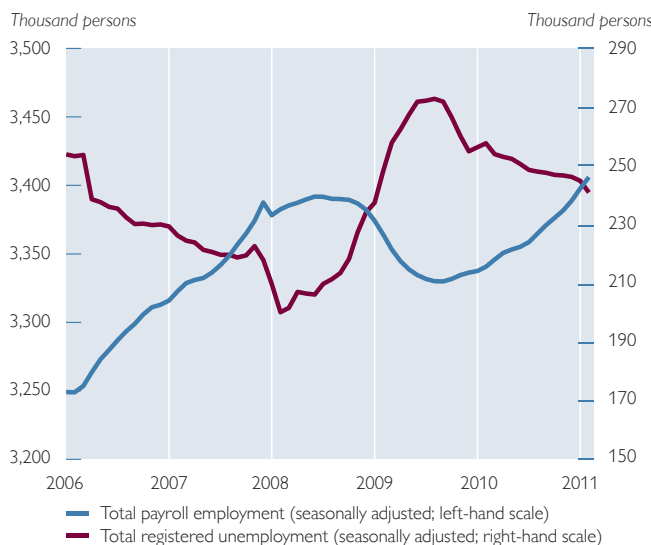
4.3 Energy Prices Fueling Inflation

Inflation accelerated steadily in the course of 2010 and reached a new high of 3.1% (HICP inflation rate) in February 2011. This development was primarily caused by the current surge in energy prices, which accounted for approximately one-third of the 0.6 per-

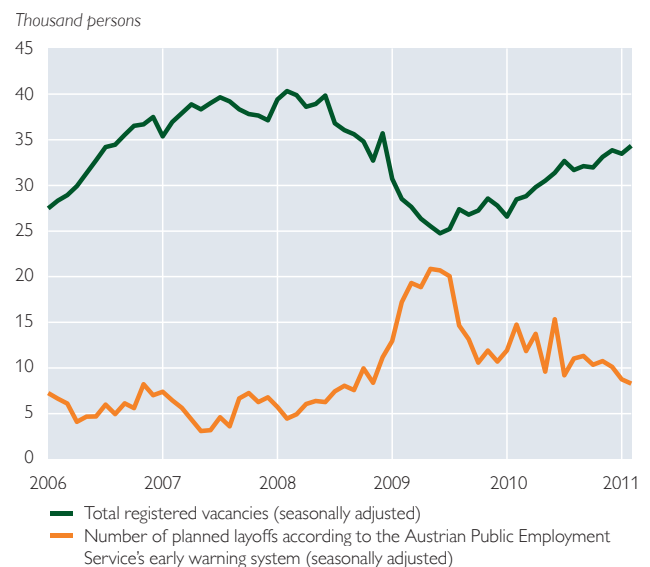
Chart 8

Austrian Labor Market Developing Very Favorably

Unemployment Still Above Pre-Crisis Level Despite Record Employment



Leading Indicators Point to Further Improvement on Labor Market



Source: Public Employment Service Austria, Main Association of Austrian Social Security Institutions, OeNB.

centage point rise in HICP inflation between January and February 2011. At 12.9%, inflation in the energy sector was clearly higher in February 2011 than in the previous month (10.6%). The prices of motor fuels and heating oil shot up due to developments on the crude oil markets. The rise in prices for other fuels (natural gas, solid fuels) was far less pronounced because those prices are not directly affected by changes in crude oil prices. According to the OeNB's projections, the hike in taxes on mineral oils, tobacco and airline tickets introduced in Austria's fiscal consolidation package will boost inflation by 0.4 percentage points in 2011. Food prices are also making a noticeable contribution to inflationary pressure at the moment; in February 2011, their contribution came to

0.7 percentage points. This can largely be put down to rising commodity prices, which have affected the prices of processed foods in Austria. The OeNB has now updated the inflation forecast published at the beginning of March 2011; on the basis of higher assumptions regarding the price of crude oil, the OeNB expects HICP inflation to amount to 2.7% for the year 2011 overall.

At present, the development of wages cannot keep up with inflation. Wages per employee rose by 1.7% in the fourth quarter of 2010. In February 2011, the index of agreed minimum wages also increased by 1.7% year on year. As a result, workers are currently seeing their wages decline noticeably in real terms.

Austria's Tax Structure in International Comparison – A Statistical and Economic Analysis

For several reasons, tax levels and structures are currently at the forefront of the economic policy debate in Austria. We aim to contribute to the scientific basis of this discussion by analyzing the specifics of the tax system in Austria.

The meaningfulness of the overall tax rate as an indicator is limited, given that there are numerous options for financing market-related services and given that some economic or social policy goals can be achieved on the revenue or the expenditure side of the budget or both. The problems arising from these facts make it difficult to draw a meaningful international comparison of tax structures.

The taxation of labor is above average in Austria, which can be only partly attributed to high social security contributions and the associated high government benefits for employees. Revenues from taxes on property and wealth are exceedingly low in an international comparison, reflecting above all Austria's very low real property tax and below-average revenues from taxes on financial and property transactions.

JEL classification: H20, E01

Keywords: tax structure, overall tax ratio, national accounts

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The level and structure of taxes² are currently at the forefront of the economic policy debate in Austria. The reasons for this interest are manifold but above all connected to the fundamental question whether the inevitable consolidation of public finances should be achieved at least in part on the revenue side, and if so, which types of taxes can be raised without dampening growth over the medium to long term (e.g. Aiginger et al., 2010). There is also a long-standing discussion on whether high tax rates (as observed in several European countries) dampen growth as a rule.³ In addition, possible tax structure reforms have always featured prominently in the discussion on tax efficiency and fairness and the economic policy debate at large, as different taxes have different implications for growth and distribution (e.g. Aiginger et al., 2008).

The discussion on a country's overall tax burden or its tax structure is usually based on aggregated data, as compiled in accordance with the European System of Accounts (ESA) or very similar systems.⁴ The use of such data is subject to some caveats, though: The international comparability of tax ratios and tax structures is limited by several statistical and economic classification problems. As a result, data on implicit tax rates on labor and/or capital income in individual countries need to be interpreted with caution. Moreover, when international comparisons of tax structures are used for deriving policy recommendations in individual countries, it is also important to know what kinds of, say, capital taxes are actually charged in the countries under review. We aim to contribute to the discussion by analyzing the specifics of the Austrian

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² In this contribution, we use taxes to denote the sum of taxes in the narrow sense plus social contributions.

³ Schratzenstaller (2007) provides an overview of works on this issue.

⁴ For instance, the data used in the European Commission's Taxation Trends Report (2010) were compiled in line with ESA; those used in the OECD Revenue Statistics (2010a) were based on a slightly different concept.

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tax structure in an international comparison.

Section 1 explains the concept of an overall tax ratio and highlights its informative value and its limits. Section 2 provides a brief overview of Austria's tax system in an international comparison. Sections 3, 4 and 5 focus on the structure and level of taxes on, respectively, consumption, labor, and capital.⁵ In these sections, we also aim to provide explanations for well-known stylized facts of Austria's tax system, such as the very high tax burden on labor, or the very low revenues from taxes on property and wealth by international standards. Section 6 concludes with a summary of the key findings.

In addition to the literature cited in the text, our international comparisons

are based above all on the European Commission's Taxes in Europe database and the Taxation Trends Report as well as the OECD's Revenue Statistics.

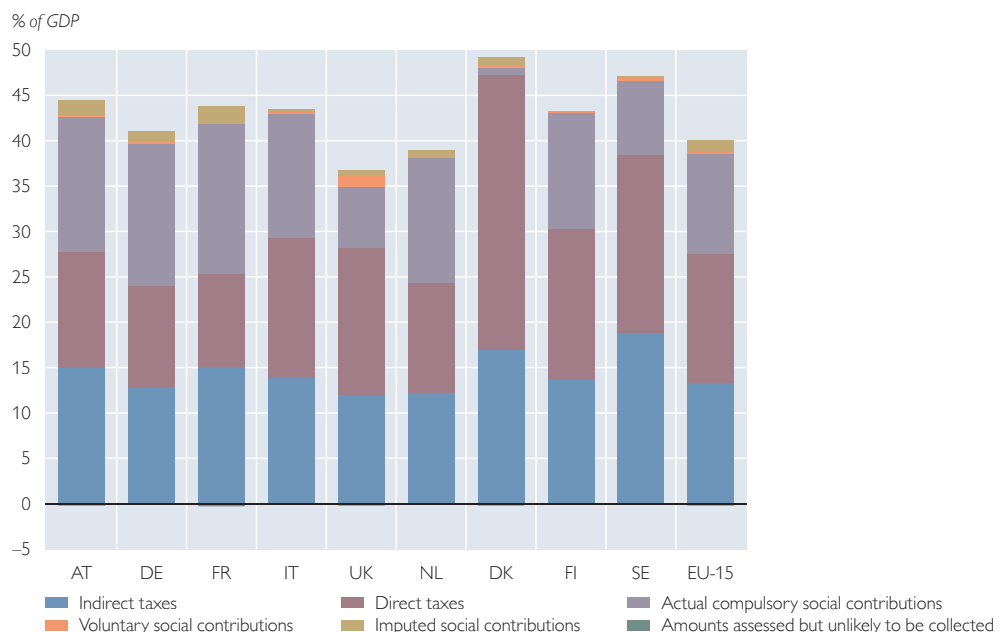
1 Informative Value of Overall Tax Ratios

1.1 Concepts for Measuring the Tax Burden

Our comparison of the tax burden in the individual EU Member States at the highest level of aggregation is based on comparing overall tax ratios according to ESA. In line with ESA 95, the overall tax ratio of an EU Member State is principally calculated as the share in GDP at current market prices of all taxes and social contributions paid by enterprises, households and the public sector to the state (minus irrecoverable

Chart 1

Tax Revenues in Selected Countries According to ESA



Source: Eurostat, European Commission (AMECO database).

Note: Indirect taxes are taxes on production and imports (ESA code D.2)

Direct taxes include current taxes on income, wealth etc. (D.5) and capital taxes (D.91)

EU-15 refers to the arithmetic mean.

⁵ Following European Commission (2010), we will use capital in a very broad sense, referring to both the production factor and to the sum of net savings including inheritances (real estate, cash, savings deposits, securities, etc.).

claims). This also includes the countries' compulsory contributions to the EU budget (VAT-based own resources, tariffs, import duties not collected on the national border, sugar levy, duty on exceeding the milk quota). A total of four tax burden indicators are used at the European level, which differ in that they include or disregard the following three types of taxes (Statistics Austria, 2010):

1. Actual social contributions payable to government units other than the social security sector; especially civil servants' pension contributions to their employers;
2. Voluntary social contributions, such as voluntary purchases of pension entitlement periods; and
3. Imputed social contributions that represent the counterpart to unfunded social benefits paid directly by public employers to their employees. In Austria, such contributions essentially reflect any pension payments by public legal entities to civil servants which are not covered by the civil servants' own pension contributions.

The scope of the underlying tax burden indicator is relevant both in international comparisons and in the political discussion in Austria. As a case in point, Austria had aimed to lower the overall tax ratio to below 40% of GDP in the years before the outbreak of the financial crisis. Naturally, the scope of the adjustment requirements associated with such a policy objective depends on the definition of the underlying tax

ratio. For instance, the overall tax ratio used in the updates to the Austrian Stability Programme – just like the ratio published in the European Commission's Taxation Trends Report (2010) – does not include imputed social contributions, which amounted to around 1.5% of GDP in Austria and to 1.1% of GDP at the EU-15 level in 2009 (chart 1).⁶

Table 1 shows that overall tax ratios also reflect tax revenues other than those reported by the Austrian Federal Ministry of Finance. There are substantial amounts of federal tax revenues which come from other budget chapters (above all contributions to the Family Burdens Equalisation Fund and various social security contributions) as well as tax revenues from social security funds and tax revenues collected by provinces (e.g. tax on radio and TV licenses), municipalities (mainly municipal tax and real property tax) and other public-sector entities (above all mandatory contributions to chambers). In addition, differences between the ESA-based tax revenues discussed here and the cash-based tax revenues reported by the Ministry result from the time adjustment of several tax categories⁷ and from differences in the treatment of tax refunds. These are transfers that are recorded as deduction items from wage, income and corporate income tax in the final budget accounts (child-related tax credits, bonus payments for building and loan contracts, research premiums, etc.), but are recorded as expenditure in the national accounts.

⁶ The other revenue categories mentioned tend to cause minor distortions, as most overall tax ratios published include the actual social contributions of public-sector employees, and voluntary social contributions are relatively small in most EU Member States (Austria: around 0.1% of GDP; see chart 1).

⁷ The national accounts are prepared on an accrual basis, i.e. transactions are recorded after an asset or a liability has been created. In contrast, cash-based accounting is used in the Ministry's administrative statistics. Therefore, revenues from VAT, the duty on vehicles based on fuel consumption and wage tax for a given period are recorded with a time lag of two months (VAT and motor vehicle tax) and one month (wage tax) in Austria (Statistics Austria, 2010).

As a result, tax revenues as reported in the national accounts are higher than those reported by the Ministry by the amount of these transfers (Statistics Austria, 2010); laterally reversed, this is also true of government expenditure according to the national accounts.

Table 1

Tax Receipts (Austrian Finance Ministry) vs. Fiscal Burden (ESA)

Net tax receipts reported by the Austrian Ministry of Finance

- + Federal tax revenues from other budget chapters
- + Import duties
- + Tax revenues collected by provinces and municipalities
- + Tax revenues of other public sector entities
- + Refunds
- +/- Time adjustments
- +/- Fees classified as taxes or output revenues

Tax revenues of Austria and EU institutions according to ESA

- + (part of) social contributions to the state according to ESA
- irrecoverable social contributions

Fiscal burden in Austria according to ESA

Source: Statistics Austria (2010), Austrian Federal Ministry of Finance.

1.2 Conceptual Problems with the Overall Tax Ratio⁸

The international comparability of overall tax ratios as a burden measure is limited by several economic and institutional features as well as statistical problems (see also Farny et al., 2010). For instance, market-related services provided by the public sector or social benefits with an insurance nature may be designed in such a way that the households' or companies' (compulsory) contributions are not included in the definition of taxes and social contributions as outlined in section 1.1:

- *Compulsory pension and/or health insurance where people choose a private insurer or insurance fund:* In some OECD countries, there is a statutory requirement for households

and companies (the latter with regard to their employees) to conclude private pension and/or health insurance policies that complement or even largely replace the public insurance systems (see also section 3). As the insurance premiums involved are not paid to units in the government sector, these payments – even though they are compulsory – are not considered government charges and are therefore not included in the overall tax ratio.

- *Market-related services* that are typically provided by government entities can be financed either indirectly through taxes or directly through fees (water, waste water and sewage fees, TV and radio fee, etc.). As these fees are typically classified as revenue from sales in ESA 95, they do not count as taxes and are thus not included in the tax ratio (Eurostat, 2010).

Another factor limiting the meaningfulness of overall tax ratios is that some economic or social policy objectives can be achieved through revenue- and/or expenditure-side measures:

- An international comparison shows significant differences in the taxation of certain social transfers, especially pension benefits (section 4.2).
- While taxes on the wages of private-sector employees are clearly government interventions in the market, those on the wages of public-sector employees are relevant only for the purpose of fiscal equalization at the domestic level, as in this instance the public sector pays taxes to itself. Still, differences in the tax treatment of public- and private-sector wages may lead to distortions in the overall tax ratio (section 4.2).

⁸ The following remarks apply exclusively to the overall tax ratio as indicated in the national accounts and ESA.

- Subsidies for research, further training and investment can be in the form of tax exemptions or direct grants. While the latter have to be financed, the former typically reduce the tax ratio.
- Certain distributive goals can be achieved through measures on the revenue side (tax progressivity, tax credits, etc.) or on the expenditure side (transfers). For instance, the distributional effects of family support measures in Austria (family allowance, child-related tax credit) could be more or less replicated through a combination of tax breaks (for higher-income groups) and income-related transfers (for low-income groups). This would lower the overall tax ratio in the national accounts by the tax breaks for higher-income groups.
- The state can also influence the pricing of certain product categories by either subsidizing them or by levying taxes on them (VAT, excise duties, taxes on insurance premiums). In Austria, for instance, travel by rail is subsidized because of transportation policy considerations. Financial support is provided both in the form of direct payments by the federal and provincial governments to ÖBB (the Austrian railway company) for infrastructure and public services and indirectly in the form of a lower VAT rate (10%), with the latter reducing the overall tax ratio.

Considering overall tax ratios as valid indicators of the tax burden is problematic, though. Regardless of what they comprise, and even if all the conceptual caveats did not apply, overall tax ratios would still be an inadequate metric for

determining the economic burden the state imposes on taxpaying citizens. The macroeconomic costs of taxation are not limited to actual tax payments; they also comprise income losses and the reduction in welfare associated with tax avoidance (Keuschnigg, 2005, p. 28ff) as well as the cost of tax enforcement. Moreover, when people pay taxes, they do not ultimately renounce their right to these funds, as tax revenues are used to finance public expenditure for the good of society (and thus the private sector). This applies not only to the expenditure items mentioned that benefit individuals or companies (subsidies, social transfers, market-related services), but also to the various public goods that benefit everyone (defense, protection of ownership rights, etc.). Overall tax ratios are thus rather a metric of redistribution and the gross burden than a measure of the ultimate net burden on taxpayers.

2 Austria's Tax Structure in International Comparison

Over the past decades, overall tax ratios have increased considerably in EU and OECD countries. Measured by the share in total tax revenues, above all social contributions and taxes on consumption have increased, whereas taxes on property and wealth have tended to become less important. Taxes influence or distort⁹ the decisions of economic agents in various ways, and they have different effects on growth and distribution. For the purpose of international comparisons of developed economies, the tax structure (i.e. the composition of the total tax ratio) is thus more relevant than the absolute level of the overall tax ratio.

⁹ *When the introduction or adaptation of a tax causes substitution effects, the tax is said to have an influencing or distorting effect on decision-making.*

There is a broad consensus in the theoretical discourse on taxation that levying taxes on corporate and capital income distorts savings and investment decisions,¹⁰ because making certain investments requires higher pre-tax returns. In contrast, taxes on labor income and VAT have a distorting effect on households' work-versus-leisure decisions. Contrary to the taxation of capital and labor, consumption taxes are generally considered growth-friendly mass taxes: Consumption taxes have a broader assessment base than taxes on labor income, as they also include consumption of profit and interest income. Their distorting effect on investment and consumption decisions is minimal, because investment (by companies that are eligible for input tax credit) and savings are exempt from VAT.

Johansson et al. (2008) analyzed the growth implications of tax structures in a comprehensive study. Their empirical results show that taxes on corporate profits have the most detrimental effect on economic growth, followed by personal income taxes (including taxes on interest and dividends)

and taxes on consumption. According to this analysis, specific taxes on property – above all inheritance and gift taxes as well as current taxes on immovable property – are the most growth-friendly (see also Pesendorfer, 2008).

In ESA 95, government revenues from compulsory contributions comprise indirect taxes (taxes on production and imports), direct taxes (current taxes on income, wealth, etc. as well as capital taxes) and social contributions and benefits (chart 1). While this distinction is highly important for the national accounts, a breakdown of taxes by their macroeconomic basis (i.e. taxes on labor, capital, and consumption) as made e.g. in European Commission (2010)¹¹ is much more relevant and meaningful for an international comparison of tax systems and for the analysis of their potential economic effects.

For instance, in the national accounts, indirect taxes include mainly consumption-related taxes (above all VAT and excise duties),¹² but some consumption-related taxes (such as the motor vehicle tax paid by households

¹⁰ While in a closed economy it does not make a difference whether the state imposes taxes on investment or on savings, in open economies the effects of imposing taxes on companies (i.e. investment) in the form of a corporate tax are distinctly different from the effects of taxes on shareholders (i.e. savings).

¹¹ See the appendix to European Commission (2010) for a detailed explanation of this allocation to economic functions (consumption, labor and capital). The breakdown of total tax revenues into these three categories leads to simplifications and approximations, as any "other taxes" have to be allocated to one of the three functions. In addition, the composition of tax revenues and implicit tax rates are subject to cyclical fluctuations, as revenues from taxes on capital tend to fluctuate more sharply than the revenues from other taxes. In Ireland and Spain, for instance, the implicit tax rates on capital declined very sharply between 2006-07 and 2008. In addition, for assessed taxes (above all taxes on corporate profits) there are in part substantial gaps between the time when the income is generated and the taxes due are actually paid.

¹² In ESA, indirect taxes are defined as follows: "Taxes in production and import (D.2) consist of compulsory payments (...) which are levied (...) in respect of the production and importation of goods and services, the employment of labour, the ownership or use of land, buildings or other assets used in production. These taxes are payable whether or not profits are made." According to traditional public finance theory, indirect taxes are collected from entities other than those who bear the ultimate economic burden of the tax, whereas direct taxes are paid directly by those individuals or households on whom they are imposed (Musgrave et al., 1993). In the modern literature on taxation, this definition is controversial, however. In contemporary usage, direct taxes are usually understood to refer to economic performance (such as income or wealth) and typically take into account the circumstances of those who are liable for personal income tax, whereas indirect taxes impose a burden on the use of income and on asset transactions and refer to anonymous transactions without taking account of personal circumstances (Keuschnigg, 2005).

Table 2

Tax Structure 2008 in Selected EU-15 Countries

	AT	DE	FR	IT	UK	NL	DK	FI	SE	EU-15 ¹
	% of GDP									
Total taxes	42.8	39.3	42.8	42.8	37.3	39.1	48.2	43.1	47.1	39.6
	% of tax revenues									
Consumption	27.3	27.0	25.0	22.9	28.5	30.6	32.2	29.8	27.3	28.9
of which: VAT	18.2	17.9	16.4	13.8	17.0	18.6	21.0	19.4	20.0	18.7
Excise taxes	5.8	6.5	4.6	4.5	8.6	6.0	6.6	7.8	5.8	6.7
Labor income of employees	50.0	48.8	51.2	44.8	37.2	45.0	43.2	47.3	52.8	44.7
of which: Social security contributions	29.5	32.0	35.0	26.9	17.7	29.9	2.0	26.0	23.4	25.9
Payroll taxes	5.9	0.0	2.9	0.0	0.0	0.2	1.1	0.0	9.4	1.3
Labor income of the nonemployed ²	5.8	6.7	1.5	5.8	0.5	7.1	10.1	6.0	7.7	4.8
Capital	17.1	17.4	22.8	26.6	33.8	17.3	14.8	16.9	12.2	21.7
of which: Capital income ³	14.8	14.8	12.3	20.8	18.9	12.5	8.8	13.8	9.2	15.3
Property and wealth	2.2	2.6	10.5	5.8	14.9	4.8	6.0	3.1	3.0	6.5
	% of the respective tax base									
Implicit tax rate										
on consumption	22.1	19.8	19.1	16.4	17.6	26.7	32.4	26.0	28.4	21.9
on labor	41.3	39.2	41.4	42.8	26.1	35.4	36.4	41.3	42.1	36.1
on capital ⁴	27.3	23.1	38.8	35.3	45.9	17.2	43.1	28.1	27.9	31.3

Source: OeNB, European Commission.

¹ Arithmetic mean.² Transfer recipients (pension or unemployment benefits, etc.).³ Including taxes on the income of self-employed people.⁴ EU-15 average excluding Luxembourg and Greece.

and various other tax-like charges) are classified as direct taxes. Indirect taxes also include wage-related taxes, such as the contribution to the Family Burdens Equalisation Fund or the municipal tax, as well as the most important taxes on capital stocks in Austria and in most of the other EU-15 countries (above all property tax and real property transfer tax). Taxes on capital and property income, however, are mainly classified as direct taxes (corporate income tax, interest and dividend taxes as well as capital gains tax, etc.).

Table 2 compares the overall tax ratios¹³ and tax structures of Austria with those of the four large EU countries (Germany, France, Italy, United Kingdom), other EU peers that are often compared with Austria (the Neth-

erlands, Denmark, Finland, Sweden) and the EU-15 average. The table shows that Austria has a higher overall tax ratio than the EU-15 average, which is primarily attributable to the fact that taxes on labor income of payroll employees and of the nonemployed (above all pensioners) are substantially above average.

3 Taxation of Consumption: Austria in the Middle Range

In the EU, the degree of regulation through harmonized assessment bases and minimum and maximum rates is much higher for the most important consumption taxes (VAT and excise taxes) than for taxes on labor and capital.

¹³ The figures are exclusive of voluntary and imputed social contributions but inclusive of compulsory payments to EU institutions (VAT-based own resources, taxes on imports).

Table 3

Taxation of Consumption in Selected EU-15 Countries

	AT	DE	FR	IT	UK	NL	DK	FI	SE	EU-15 ¹
Statutory VAT rate (as of January 2011)	20.0	19.0	19.6	20.0	20.0	19.0	25.0	23.0	25.0	20.8
Revenues (2008)	% of GDP									
VAT	7.8	7.0	7.0	5.9	6.3	7.3	10.1	8.4	9.4	7.4
Taxes on alcohol and tobacco	0.6	0.7	0.7	0.7	1.2	0.5	0.6	0.9	0.7	0.8
Environmental taxes ²	2.4	2.2	2.1	2.4	2.4	3.9	5.7	2.7	2.7	2.7

Source: European Commission.

¹ Arithmetic mean.

² These taxes are not all classified as consumption taxes; small deviations from national accounts data are possible for some countries.

Austria ranks in the medium range of the EU-15 regarding taxation of consumption: Both the GDP share of consumption-related taxes and the statutory VAT rate, at 20%, correspond roughly to the EU-15 average. In Austria, a relatively large number of products and services are subject to the reduced VAT rate of 10% (food, accommodation services, housing rent, passenger transport, various cultural services, etc.), which can be attributed to social policy considerations and historical reasons. Such reduced VAT rates are quite common in the EU (European Commission, 2011a), even though international organizations (e.g. OECD, 2010b) have voiced serious doubts whether this tool really benefits those who need it the most and have questioned its efficiency effect.

The share of consumption-related taxes is slightly below average, given that the overall tax ratio is rather high in Austria. Regarding specific excise duties, however, Austria ranks somewhat below the EU-15 average both in terms of tax rates and tax revenues (tables 2 and 3). Specific excise taxes are designed to impose a burden on the

use of certain public bads such as fuel, nicotine or alcohol, with the aim of making sure that consumers pay for negative externalities (i.e. costs for society) and thus dampening consumption, which is also associated with negative consequences for the individual (demerit effects).

Table 3 shows that Denmark stands out regarding consumption-related taxes: Denmark has the maximum statutory VAT rate of 25%, no reduced rates and relatively few exemptions (see also European Commission, 2011a).¹⁴ The other Northern European peers, too, impose significantly higher taxes on consumption than Austria: Finland and Sweden, like Denmark, have very high statutory VAT rates, while the Netherlands have substantial revenues from environmental taxes (table 3).

Several of the fees imposed in Austria (and other countries) that might be perceived as taxes on consumption are classified as revenue from sales in the national accounts (section 1). This applies especially to certain fees for municipal services, like water and sewage fees.

¹⁴ The extremely high revenues from environmental taxes as indicated in table 3 are partly due to taxes classified as taxes on capital in European Commission (2010).

4 Austria Imposes Very High Taxes on Labor, ...

An international comparison shows that labor taxes are very high in Austria. This is reflected not only in the large share of labor taxes in total tax revenues, but also in the comparatively high implicit tax rate on labor. The above-average revenues mainly result from high social security contributions and from payroll taxes (above all contributions to the Family Burdens Equalisation Fund and municipal taxes). Besides Austria, only Sweden and France report such a high share of these payroll-based taxes in total tax revenues (table 2).

While the effective tax rate on labor has remained broadly unchanged since 1995 in the EU-15 average, it has increased significantly in Austria. The share of wage-related taxes in GDP has remained roughly unchanged despite a decline in the wage share of GDP, which can be attributed mainly to a significant rise in revenues from withholding tax on employees (wage tax).¹⁵

4.1 ... But Many Wage-Related Taxes Entitle Taxpayers to Specific Benefits in Return

Taxes are compulsory payments to the government that do not entitle the taxpayer to specific returns, and tax revenues are not earmarked for specific purposes. While social security contributions are also compulsory payments, they do constitute a legal entitlement to

certain services that can be used if need be. The compulsory contributions to the public social security system provide government-guaranteed insurance coverage including benefit entitlements from health and accident insurance, unemployment insurance and pension insurance.

When analyzing the tax burden on labor, we must therefore keep in mind that part of the tax revenues is used to finance benefits that are exclusively available to employees and former employees (and their spouses and children).

Depending on whether or not they entitle the taxpayer to specific returns, taxes on labor in Austria can be assigned to the following four categories:¹⁶

1. *Taxes with specific contribution-based benefits that are relatively evenly distributed:* public pension insurance (around 36% of wage-related taxes);
2. *Taxes with specific contribution-based benefits that are highly unevenly distributed:* unemployment insurance, contributions to insurance against non-payment due to insolvency, accident insurance (around 10% of wage-related taxes);¹⁷
3. *Taxes with contribution-independent benefits that are exclusively available to those who pay them (and possibly their relatives):* Chamber of Labour contributions,¹⁸ health insurance (overall around 13% of wage-related taxes);¹⁹ and

¹⁵ Including data from 2009 (when the latest tax cuts took effect) does not change this picture, but still has a somewhat dampening effect on the medium-term uptrend.

¹⁶ These calculations are based on revenue data of 2009 and do not include imputed social security contributions by public-sector employers.

¹⁷ Higher contributions lead to higher benefits being paid out, but the risk of falling ill, having an accident, losing one's job or of one's employer becoming insolvent are highly unevenly distributed.

¹⁸ Chamber of Labour contributions and the contribution to housing subsidies are collected together with social security contributions and are therefore included in social security contributions in chart 2.

¹⁹ While a few benefits of the Austrian health insurance system are contribution-based (e.g. sick pay or maternity allowance), they account for just about 10% of public health insurance expenditures (Austrian Federal Ministry of Labour, Social Affairs and Consumer Protection, 2011).

4. *Taxes without specific direct benefits:* wage tax, contributions to the Family Burdens Equalisation Fund, part of the mandatory employers' contributions to the Austrian Economic Chamber, municipal taxes, the "Wohnbauförderungsbeitrag" (contribution to housing subsidies), the "U-Bahn-Abgabe" (Vienna Underground railways subsidy payable by Viennese companies per employee) (overall around 41% of wage-related taxes).

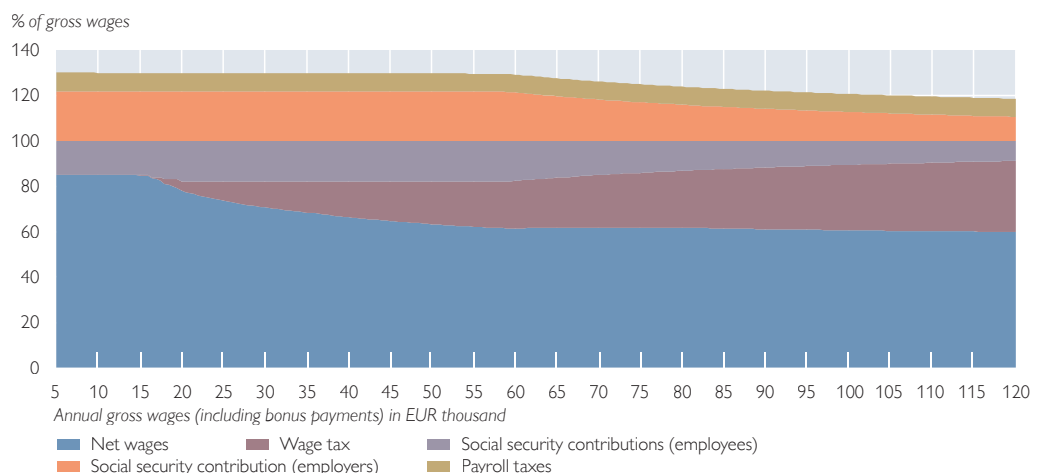
In Austria, the wage tax generates the largest tax revenues apart from VAT. While it is the only progressive tax among wage-related taxes, its revenues accounted for just around 28% of wage-related tax revenues in 2009. Taxes on labor with proportionate rates (especially contributions to the Family Burdens Equalisation Fund and municipal taxes) accounted for about 12%, and taxes with indirect regressive rates owing to contribution caps (above all social security contributions) made up around 60%. The wage tax only exceeds the sum of all other wage-related

taxes for annual gross incomes of around EUR 105,000 and higher (charts 2 and 3). Overall, this shows that wage-related taxes in Austria are only weakly progressive, and that the progression affects above all lower to medium incomes (gross annual incomes between EUR 15,000 and EUR 30,000; see chart 3).

Pension insurance contributions have a special role among wage-related taxes. They can be regarded as government-imposed savings; the yield achieved depends above all on legislative provisions and not so much on developments in financial markets. The principle of collective risk management forms the basis of Austria's public pension scheme. Accordingly, contributions to the government sector (which are used to finance this public scheme) are far above the OECD average, as replacement rates are high and people retire rather early in Austria (OECD, 2009). In addition, occupational pension plans (second pillar) and personal pension plans (third pillar) hardly play a role in Austria (Knell et al., 2006).

Chart 2

Net Wages and Taxes on Annual Gross Wages

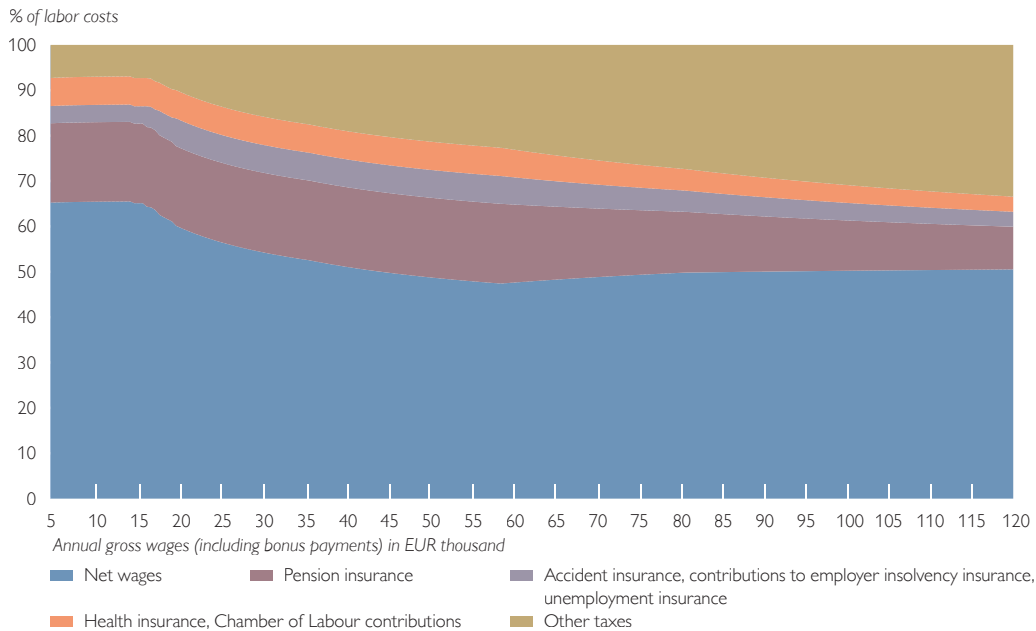


Source: OeNB, Austrian Federal Ministry of Finance.

Note: This chart shows the case of an employee in Vienna who is subject to unlimited tax liability; his employer is a member of the Austrian Economic Chamber; flat tax credit for professional expenses; no tax credit for one-income families; excluding severance fund contributions.

Chart 3

Net Wages and Taxes on Annual Gross Wages



Source: OeNB, Austrian Federal Ministry of Finance.

Note: This chart shows the case of an employee in Vienna who is subject to unlimited tax liability; his employer is a member of the Austrian Economic Chamber; flat tax credit for professional expenses; no tax credit for one-income families.

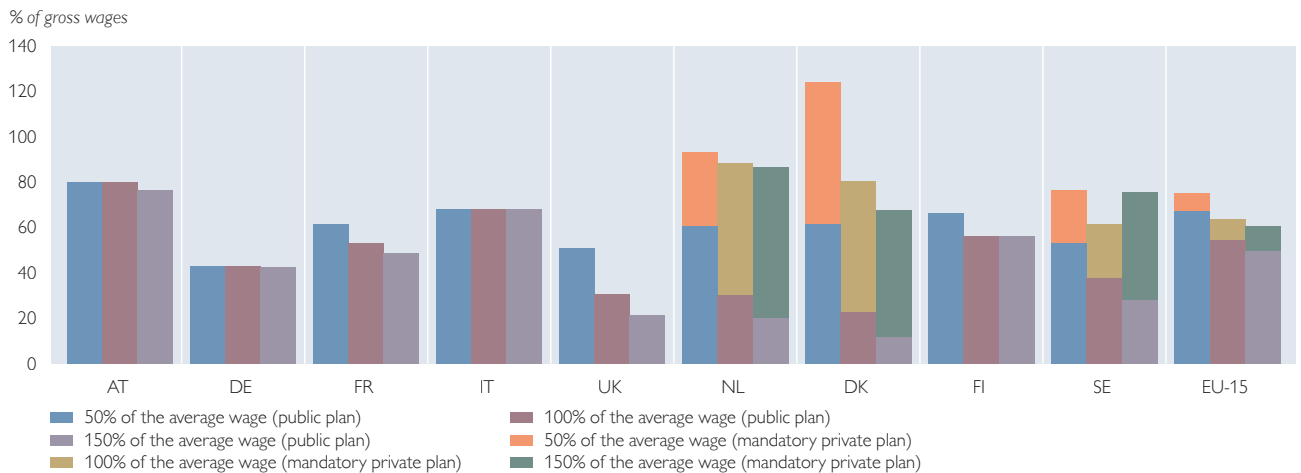
Labor costs = gross wages + employer contributions to social security + payroll-based taxes (excluding severance fund contributions)

Some OECD countries under review have alternative compulsory pension schemes in place, which require households and companies (for their employees) to pay into private pension funds (chart 4). Even though these contribu-

tions are mandatory, too, they are not counted toward government taxes and are thus not included in the tax ratio or in the implicit tax rate on labor (section 1.2).

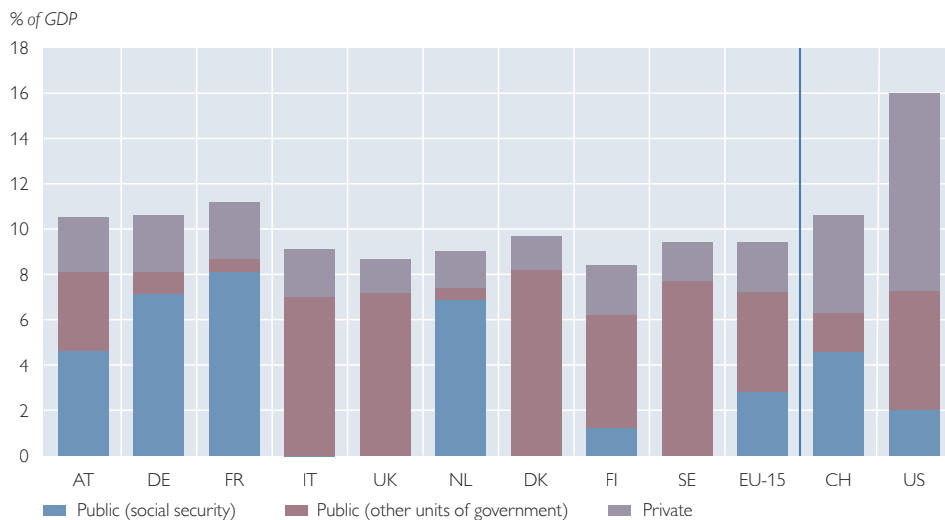
Chart 4

Gross Pension Replacement Rates by Earnings



Source: OECD (Pensions at a Glance 2009).

Health Expenditure Financing in Selected OECD Countries



Source: OECD.

Note: 2007 data for DK, GR, U.S.; 2006 data for PT; 2006 data on insured people for LU; excluding investment for BE and NL.

Similar differences across EU and OECD countries can be observed also in the field of health insurance: While some countries focus on public health insurance schemes or compulsory contributions to private health insurance funds, others let people choose between public or private insurers. Switzerland is a well-known example of a system with compulsory contributions to private health insurance funds, where (similar to the U.S.) private health expenditure plays a relatively large role by international standards (chart 5). According to OECD data, Greece is the only EU-15 country where the private sector covers more than 30% of overall health expenditure; there are, however, substantial differences across the EU-15 countries regarding expenditure distribution within the public sector between the

social security sector and other units of government. This fact also limits the meaningfulness of country comparisons of the level of social security contributions (as opposed to other wage-related taxes).

4.2 Institutional Characteristics Limit the Comparability of Tax Rates and Implicit Tax Rates

An analysis of the tax burden on labor, especially for the purpose of international comparisons, must take account of the tax treatment of pension benefits (and other social transfers). In Austria, taxes on pension benefits (income tax, health insurance contribution, pension contribution rates for retired civil servants) come to around 2.5% of GDP (table 2).²⁰ Levying taxes on pension income is customary internationally, but the associated revenues vary signifi-

²⁰ This share includes only those contributions and taxes that are deducted from gross pension income. Contributions transferred from public pension funds to health insurance funds are classified as intergovernmental transfers (Statistics Austria, 2010).

cantly across countries (e.g. because of the different treatment of social contributions on pension income; see OECD, 2009); this further limits the international comparability of overall tax ratios. Cutting gross pension income and taxes on this income while at the same time keeping net replacement rates constant would leave net pension incomes unaltered but would lead to an equivalent decline in tax revenues and government expenditure. Given that most statistics do not distinguish between income tax on pension income and wage tax, a superficial analysis of tax revenues may cause the implicit tax rate on labor to be overestimated.

An analysis of the situation in Austria has to take account of the fact that the different tax treatment of public- and private-sector wages leads to a distortion of the implicit tax rate on labor. There are substantial differences between the two sectors regarding the level of employer contributions to social security,²¹ above all because these contributions are very low for civil servants²² but pension replacement rates are high. As a result, the public sector's actual employer contributions are much lower than those of the private sector, but including imputed social contributions they would be significantly higher

than those in the private sector. In addition, for most of its employees, the public sector does not pay municipal tax or employer contributions to the Austrian Economic Chamber. If the imputed social contributions were counted toward taxes, and assuming that the public sector would have to pay the same level of payroll-based taxes as the private sector, the implicit tax rate on labor would rise by around 3 percentage points according to our estimations; this also distorts international comparisons.

5 Taxation of Capital Below Average in Austria

The term capital has many uses. According to European Commission (2010, p. 393), capital comprises “physical capital, intangibles and financial investments and savings”; as a consequence, taxes on capital include taxes on business income, taxes on capital and investment income and taxes on property and wealth (box 1).²³

Table 2 shows, among other things, that revenues from these taxes are rather low in Austria compared to the EU-15, which is above all due to low revenues from taxes on property and wealth.

²¹ According to national accounts data, public-sector employees accounted for almost 20% of employees' compensation in Austria in 2009.

²² While the public sector pays employer contributions for health insurance for civil servants, there are no such contributions to pension insurance.

²³ In the analysis by the European Commission (2010) – as opposed to taxes on property in OECD (2010a) – capital taxes comprise not only the traditional taxes on property and wealth summarized in box 1, but also a number of other taxes paid by corporations that fulfill the following criteria: not profit-related, not related to the factor labor (like payroll taxes), cannot be assigned to specific produced goods. In Austria, this is mainly tax-like charges and the motor vehicle tax paid by companies.

Taxes on Property and Wealth

An international comparison shows that the taxation of capital is far more heterogeneous than that of income or consumption. According to traditional concepts, taxes on capital include recurrent taxes on property and wealth as well as on capital/asset transactions and capital transfers.

Accordingly, we distinguish between the following types of taxes:

1. **Recurrent taxes on property and net wealth:** These taxes have to be paid irrespective of actual income from these assets.¹ Taxes on property and net wealth can be imposed on part of an individual's or a household's assets (non-personal tax) or on the individual's (household's) total net assets (gross assets minus debt), like the Swiss net wealth tax, which is only levied by canton governments today. Net wealth taxes have lost importance over the past decades and have been abolished in almost all European countries. They are based on the ability-to-pay principle. In contrast, the benefit principle underlying non-personal taxes on real property, above all the real property tax, is based on the assumption that the provision of specific public services raises the property value. This is why the real property tax is typically a local tax. The importance of the real property tax is still high in all countries under review, and even rising in some. Unlike taxes on labor, capital income and consumption, the real property tax has hardly any distortive effect, as it does not affect labor supply and investment decisions by households or companies. Instead, it provides a relatively stable source of tax revenues for local governments, given that the volatility of property values is generally low. Defining the assessment base (i.e. assessing the value of land, houses and flats) can be difficult, though. In Austria, the tax base for the real property tax is calculated using an assessment unit value,² which was defined on January 1, 1973, and has been raised only three times since (by a total of 35% by 1983). Real property tax design differs across countries, among other things, in whether or not it captures immovable property (houses) on a plot of land. While this is the case in Austria, Denmark, for instance, only imposes a land tax on the value of the plot.³
2. **Taxes on asset transactions** (land transfer tax, financial transaction taxes, etc.): These taxes have to be paid when purchasing/selling real estate (land transfer tax) or when making certain financial transactions. Taxation of financial transactions includes a wide range of taxes, such as the tax on stock transactions as introduced in the United Kingdom or in Sweden, or a general financial transaction tax for all types of financial instruments, which has been discussed in the context of the global economic crisis.
3. **Taxes on capital transfers** (taxes on inheritances and gifts): Inheritance taxes are similar to a net wealth tax, but are imposed only in case of capital transfers when someone has died and are collected from the heirs. Tax rates usually depend on the degree of kinship between the heirs and the testator. Another type of tax can be imposed on the transfer of the taxable estate before any assets are transferred to the heirs (e.g. the estate tax in the U.S.). Like with net wealth taxes, there are usually substantial exemptions for inheritance taxes.

¹ If no other income is available for covering the tax debt, the assets must be sold to meet the tax liabilities.

² The assessment unit value reflects the notion that this value (unlike the market value) is indicative of the capitalized value.

³ In Denmark, however, people have to pay a tax on the imputed rent of owner-occupied housing in addition to the land tax.

5.1 Taxes on Business Income and Current Property Income in Austria Roughly Equal to the EU-15 Average

Since the 1980s, extensive efforts have been made around the globe to reform

corporate taxation, with the aim of increasing the efficiency of tax systems and taking into account the rise in international capital mobility: While corporate taxes have been lowered considerably, the tax base has been wid-

ened substantially by eliminating tax credits and exemptions. In addition, starting in Northern Europe, several countries introduced a dual income tax (Sweden: 1987, Norway: 1992, Finland: 1993), thus renouncing the principle of synthetic taxation and shifting to a – systemically planned – system of schedular taxation.²⁴ Dual income taxation combines low proportional taxes on capital income with a progressive tax on labor income, with the proportional rate on capital income typically corresponding roughly to the initial rate of the progressive tax on labor income and transfers. This development in corporate taxation was also observed

in Austria: The corporate income tax has been cut in several steps since the late 1980s, down from 56% to currently 25%, and the tax base has been widened at the same time. The trade profit tax (“Gewerbeertragssteuer”) was abolished in the mid-1990s, following the earlier abolition of the trade capital tax in the mid-1980s (see also Knirsch and Niemann, 2005). Moreover, final taxation of capital income (primarily interest and distributed profits) was implemented in 1993-94. (Mooslechner, 1994).²⁵ At the same time, the taxation of property and wealth was changed substantially (section 5.2).

Box 2

Uniform Taxation of Labor and Capital Incomes?

The income tax is the backbone of all tax systems. One key question arising in the field of income taxation is how to gauge its fairness. In theory, there are two fundamental approaches to taxation: the benefit and the ability-to-pay principle. Tax systems today include elements of both.

The ability-to-pay principle means that taxes should be imposed on an economic entity according to its economic capacity, with income (in addition to consumption and wealth) being a key indicator of the entity's ability to pay taxes. Income taxes according to the ability-to-pay principle should be levied in accordance with an individual's total (net) income irrespective of the type of income (synthetic income taxation).¹

Historical experience shows, however, that no OECD country imposes uniform taxes on all types of income. In a system of comprehensive synthetic income taxation, problems with uniform taxation arise above all in the taxation of capital and property income, which is partly due to technical reasons such as valuation problems (e.g. in the case of income from owner-occupied housing²) and partly due to economic policy considerations (e.g. savings subsidies). A (politically desired) differential tax treatment of different types of savings violates the ability-to-pay principle in that it is a form of comprehensive synthetic income taxation and thus de facto a system of schedular taxation. The introduction of a dual or rudimentarily dual income tax in many OECD countries implied that these countries renounced the system of synthetic income taxation; progressive taxes on labor are complemented with lower proportional taxes on capital income.

¹ Under a comprehensive income tax approach, an individual's ability to pay taxes includes capital gains, which have to be treated as taxable income, regardless of whether any increases in value or capital gains have been realized, and irrespective of whether the income is regular or irregular (e.g. inheritances or gifts). Today's tax systems, however, tend to use only regular income as an indicator of a taxpayer's ability to pay income tax, whereas inheritances and gifts (as well as capital gains in some systems) are taxed separately. In addition, taxes are typically only imposed on capital gains realized.

² Only a few OECD countries impose taxes on imputed income from owner-occupied housing (e.g. Denmark or the Netherlands and formerly also Germany).

²⁴ *Schedular taxation means that specific taxes and tax rates are imposed on different types of income.*

²⁵ *Before that, the taxation of interest had been changed several times in the 1980s. For debt securities and deposits, final taxation applied not only to income taxes but also to taxes on inheritances and gifts (the latter have been abolished in the meantime).*

An argument in favor of a dual tax system and lower tax rates on capital income is that actual capital income is systematically overestimated because of the interplay of nominal tax bases and positive inflation (as observed e.g. in Austria). This problem arises for all types of income for which expenses typically precede income.³

In addition, governments try to keep capital income taxation low to prevent capital outflows given international competition, as capital is the most mobile production factor by far. Tax competition is the most powerful argument in favor of a low corporate income tax in small open economies, as corporate income taxation is source based. Even though this argument does not apply to the taxation of the resulting shareholder income (as this income is generally taxed according to the residence principle), imposing higher taxes on this income may not be easily enforceable (owing e.g. to banking secrecy). This would make a case for source taxation and a proportional tax rate for practicality reasons.

The lifetime perspective provides another argument in favor of lower taxes on capital income. If the calculation is based on income over a person's lifetime, the application of the ability-to-pay principle requires that different tax rates be imposed on investment income and labor income. Consider the following example: In terms of net present values, two people (A and B) have identical labor incomes and consumption levels over their lifetimes, but one of them (A) spends a lot of money initially while the other (B) saves money initially. In the lifetime perspective, they have the same ability to pay taxes based on the present value of their labor income. In a system where capital income is taxed under an income tax, B has to pay higher taxes, even though his investment income merely results from the fact that he put the same labor income to a different use. If the taxes A and B pay in line with the ability-to-pay principle are to be independent of how they use their identical labor incomes, B's income from savings must not be taxed again. According to this economic perspective of the ability to pay, taxes have to be imposed consistently on other means of wealth accumulation, e.g. inheritances or gifts (Keuschnigg, 2004, p. 38).

Large differences in the taxation of labor and capital income can serve as an incentive to "transform" labor income into capital income. In theory, the distinction between the production factors labor and capital is relatively clear cut, whereas in practice, an exact allocation to one or the other is rather difficult. Self-employed work, for instance, can be highly capital intensive (e.g. in retail), but also highly labor intensive (e.g. business consultancy).

³ A typical example would be a savings account with an annual rate of interest of 3%. Assuming inflation at 2% and a tax rate of 25%, real earnings before taxes come to just under 1% and after taxes to almost ¼%, so that the tax burden accounts for 75% of real earnings.

The rationale for reducing the tax burden on companies (i.e. the production side) was based, on the one hand, on the finding that imposing taxes on capital has a dampening effect on investment demand and thus on long-term growth. In addition, the numerous tax exemptions (applicable to high tax rates) created dubious incentives from a structural policy perspective.²⁶ On the other hand, tax competition has become an important factor given the increasing openness of economies and

the liberalization of capital markets. Tax competition is especially relevant for the rates of corporate income tax and the definition of the tax base, as the corporate income tax is imposed by the source country in line with international taxation rules. As a result, especially small open economies have an incentive to impose low rates of corporate income tax to attract portfolio investment or direct investment from abroad.

²⁶ Above all profitable capital-intensive companies benefited from preferential tax treatment.

Generally speaking, low taxes on capital income serve as an incentive to transform labor income into capital income (e.g. by keeping salaries low and distributing high profits in family-owned limited companies). This explains the attempts made in Sweden, Norway and Finland to decompose business income (or profit distributions) into a labor income component and a capital income component (Sørensen, 2009): This is typically achieved by imputing a “normal” return on capital to which a concessionary tax rate is applied and imposing a higher tax rate (similar to that on labor income) on the remaining return. Such provisions contribute to the neutrality of business taxation for partnerships and limited companies. No such distinction is made in Austria, though, where a progressive income tax is levied on self-employed income (as well as employed income).²⁷ The European Commission (2010), however, allocates taxes on this income to the production factor capital (table 2).

Taxes on interest, dividend and royalty income as well as taxes on capital gains are part of the taxation of capital income. The distinction between this type of taxation and taxes on property and wealth is not always clear cut, though. In the Netherlands, for instance, a 4% gain is imputed for some types of net wealth (sum of savings deposits, securities and several other

financial assets, excluding consumer loans and an allowance) irrespective of the actual gains. These imputed gains are taxed at a rate of 30%²⁸ (European Commission, 2011b;²⁹ Bach et al., 2004), which corresponds to a net wealth tax of 1.2% (4% times 30%).³⁰ This goes to show that a relatively low tax rate on wealth imposes a considerable (additional) tax burden on capital gains. Unlike taxes on capital gains, wealth taxes have to be paid irrespective of whether or not gains have been realized.

5.2 Taxes on Property and Wealth Exceedingly Low in Austria

Taxes on property and wealth used to play an important role in Austria but have been replaced by income and consumption taxes over time. Today, however, Austria's revenues from taxes on property and wealth are especially low: In 2008, these taxes accounted for around 6.5% of revenues in the EU-15 average, but for a mere 2.2% in Austria (table 2).³¹

The main reason for this is that Austria's real property tax is very low by EU standards (table 4); among all taxes imposed in Austria, this tax shows the largest difference to the EU-15 average. It is a municipal tax, like in most OECD countries. In Austria, municipalities have a relatively low level of fiscal autonomy and receive part of the central government's tax

²⁷ However, income from self-employed work is not treated the same as that from employed work. There are significant differences in the calculation of the tax base (preferential tax treatment of earnings up to one-sixth of the annual income as well as various tax credits for employees, profit allowance and tax discretion for self-employed people) and in implicit tax rates (no payroll-related tax and lower pension insurance rates for the self-employed, but usually higher social security contribution basis).

²⁸ Certain assets are exempt from this imputed tax; for instance, imputed rent from owner-occupied housing and returns on large equity holdings in a company are taxed separately.

²⁹ ec.europa.eu/taxation_customs/taxinv/getcontents.do?mode=normal&kw1=*&kw2=-&kw3=-&year=2010&coll=NL+-+Personal+income+tax

³⁰ In the OECD tax statistics, this tax on imputed income is not included in taxes on net wealth (table 4).

³¹ For a more detailed discussion of taxes on property and wealth in Austria, see Schmidl and Schratzenstaller (2011).

Table 4

Taxes on Property and Wealth in Selected EU-15 Countries (2008)

	AT	DE	FR	IT	UK	NL	DK	FI	SE	EU-15 ¹
	% of GDP									
Taxes on property according to the OECD	0.5	0.9	3.4	1.9	4.2	1.6	2.0	1.1	1.1	1.9
of which: Immovable property	0.2	0.4	2.2	0.6	3.3	0.6	1.2	0.5	0.7	0.8
Net wealth	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Estate, inheritances and gifts	0.0	0.2	0.4	0.0	0.2	0.3	0.3	0.4	0.0	0.2
Financial and capital transactions	0.3	0.2	0.6	1.1	0.7	0.7	0.5	0.3	0.3	0.6
Memo item: Taxes on capital stocks according to the European Commission ²	1.0	1.0	4.5	2.5	5.6	1.9	2.9	1.3	1.4	2.5

Source: European Commission, OECD.

¹ Arithmetic mean.

² The European Commission's definition of taxes on capital stocks is somewhat more comprehensive than the OECD's definition of taxes on property.

revenues through fiscal equalization transfers. At the same time, municipalities have more important own sources of income, such as payroll-related municipal taxes and fees for typical municipal services (e.g. water and waste water). This fact seems to have somewhat mitigated the need for adapting the dated ratable values, at least until the outbreak of the global economic crisis.

According to Bach (2009), the situation is similar in Germany, where revenues from real property tax are also low compared to the EU-15 average. By contrast, land taxation is typically very important in the United Kingdom and the U.S.A.

Taxes on asset transactions, too, are very low in Austria compared with other EU countries: Since the abolition of the "Wertpapiersteuer" (tax on securities) and the "Börseumsatzsteuer" (tax on stock transactions), the "Gesellschaftssteuer" (equity duty for corporations) is the only capital transaction tax imposed in Austria. At the same time, the tax rate on real property transfer is rather moderate in Austria compared to the other EU-15 countries, and Austria has not experienced a real estate boom in recent years. The very high revenues from financial and asset

transactions observed in some countries (table 4) are above all attributable to revenues from real property transfer tax. The U.K. is one of the few OECD countries reporting significant revenues from financial transaction taxes (on average ¼% of GDP over the past years). The stamp duty (as it is called in the U.K.) is only imposed on the transfer of shares in companies registered in the U.K., and transactions carried out by professional stockbrokers are exempt from stamp duty (Hemmelgarn, 2011). Thus, the stamp duty does not have too much in common with a general financial transaction tax.

In Austria, the general (net) wealth tax and the inheritance tax equivalent were abolished in the mid-1990s (Schmidl and Schratzenstaller, 2011). Austria is not an outlier in this respect, though: Over the past few decades, many OECD countries abolished net wealth taxes because the administrative effort involved was high relative to revenues (especially problems with valuation and thus fairness) and because these taxes were in part unenforceable due to specific legal framework conditions (banking secrecy, numbered bank accounts, etc.). Within the OECD, current taxes on net wealth generate

revenues above ¼% of GDP only in Switzerland (a few cantons), Luxembourg and Norway.³²

The taxes on inheritances and gifts generated very low revenues in Austria and were abolished in early August 2008 (that year, revenues from these taxes were just below the average observed in past years). Among other things, the low revenues were due to numerous tax exemptions (savings accounts, debt instruments, holdings in limited companies below 1% of nominal capital) and the low valuation of real property (Berghuber et al., 2007). While quite many other OECD countries still impose inheritance taxes, the associated revenues tend to be rather low compared with those from taxes on immovable property and on asset transactions. According to the OECD, Belgium had by far the highest revenues from these taxes in 2008 (less than 2/3% of GDP), followed by France and Finland (around 0.4% of GDP each).

6 Summary and Conclusions

The informative value of ESA-based overall tax ratios is limited because of the different options for financing market-related public services and certain social benefits with insurance charac-

teristics. It is limited even further by the fact that certain economic or social policy objectives can be implemented via revenue or expenditure measures or both. Many of the associated challenges make it difficult to compare tax structures internationally.

Regarding the taxation of consumption, Austria ranks in the middle range of the EU-15, but revenues from taxes on public bads are rather low. The comparatively high taxation of labor in Austria can be partly explained with the high level of social security contributions and the associated high level of public benefits for employees (high public expenditure for healthcare, high gross replacement rates for pensions). However, another important reason is that payroll-related taxes are very high in Austria (above all the contributions to the Family Burdens Equalisation Fund and municipal taxes), and revenues are not earmarked for funding services or benefits for employees. The main reasons why Austria's revenues from taxes on property and wealth are exceedingly low in an international comparison are the very low real property tax and below-average revenues from taxes on financial and asset transactions.

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³² These are the three countries with the highest GDP per capita within the OECD (not adjusted for purchasing power).

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Administered Prices, Inflation and the Business Cycle – Selected Aspects

Friedrich Fritzer¹

The public sector plays a central role in price-setting in some markets for goods and services. Consequently, Eurostat began to publish a new series of inflation indices referred to as the HICP-AP in early 2010 that summarizes the development of publicly administered prices. This study presents a detailed account of the concept underlying the new series and provides a cross-country analysis for the euro area.

Administered prices are a key component of the HICP basket, currently accounting for 11.0% of the HICP (euro area average). This share has declined in the past decade in line with the liberalization of goods and service markets.

The inflation rates of administered prices and those of flexible prices (i.e. the HICP excluding administered prices) differ with respect to both their levels and their development over time. In many euro area countries, the average HICP-AP rate of inflation has surpassed the all-items HICP inflation rate over the past ten years.

In Austria, as in other euro area countries, flexible prices are found to be a leading indicator for the HICP rather than vice-versa. As public sector pricing takes place within a macroeconomic context, this study also represents a first effort to shed light on the main economic determinants of the development of the HICP-AP. The key findings are that cost-push shocks exercise a significant influence on the inflation of flexible prices, whereas their influence on administered prices is smaller or statistically not significantly different from zero.

JEL classification: E31

Keywords: price level, inflation, deflation

The objective of this study is to present the concept of administered price inflation, as measured by the HICP-AP, to a broader public. Additionally, the study examines and highlights differences in the development of the HICP-AP within the euro area. Finally, a first econometric analysis of administered prices is performed, in particular to examine the influence of cost-push and demand-pull shocks on the development of the HICP-AP and, to provide a comparison, on the development of flexible prices (the HICP without administered prices – HICP-Flex).

Previous analyses of the HICP-AP have concentrated on issues of index construction or composition (Branchi and Wirtz, 2006), but hardly any descriptive statistics on the development

of the index over time have been drawn up, nor have conclusions been drawn from them so far.²

As the HICP-AP is a new index series not well known to the public, this study deals at length with providing a description of the index series. In addition, HICP-AP results are examined for Austria, the euro area and individual euro area countries. Interestingly, the share of the HICP-AP in the aggregate index tends to be larger in those countries that joined the euro area more recently, i.e. in countries that are still in transition. As a case in point, the HICP-AP accounts for 12.6% of the aggregate index in Austria, whereas its share is nearly twice as high in Slovakia at 23.6%.

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² Apart from a few analyses in the ECB's Monthly Bulletin, the author is aware of only one published analysis (Nierhaus, 2007).

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In section 1, the basket of administered prices is defined. Goods and service prices in the Austrian basket are presented and the principles underlying the classification to “administered prices” are explained. Section 2 contains a descriptive statistical part and an econometric analysis of regulated prices. Section 3 concludes.

1 The Administered Prices Basket

The ECB and the Eurosystem NCBs prepared the ground for the HICP-AP index series over a period of nearly ten years. Predecessor indices of the HICP-AP now published by Eurostat were described in ECB Monthly Bulletins (March 2003, January 2004, May 2007).

Eurostat tested the indices prepared by the Eurosystem and first released its new HICP-AP series in early 2010 (Eurostat, 2010). The index currently in use has been labeled as “experimental” and will be subjected to a further verification round in early 2011.

1.1 Definition of Administered Prices

The HICP-AP basket contains the prices of all goods and services that are fully set or mainly influenced by the government (central, regional, local government including national regulators). The indices are produced monthly for all EU Member States and for the euro area as a whole. The HICP of administered prices is published with two subindices, namely the index of fully administered prices and the index of mainly administered prices.

Fully (“directly”) administered prices are the prices of goods and services directly set by the government. In Austria, public transportation charges or water supply and waste removal charges fall into this category. For the most part, classification of prices to this category is fairly straightforward.

In contrast, the range of items covered by the basket of mainly administered prices – *the prices of goods and services on which the government including any national regulator has a significant influence* – is less easy to define. The government may have a key influence on price-setting e.g. by making price changes subject to approval or by setting upper or lower price limits. The regulatory measures may have an impact both directly on final consumer prices as well as indirectly on the consumer prices through their influence on pricing in upstream production stages.

Various conventions and supplementary explanations provide guidance for determining whether the government influence on pricing is sufficient to incorporate prices into the HICP-AP. Even so, some room for interpretation will remain in many cases, mainly because the indirect effects of regulatory measures on consumer prices cannot be assessed reliably.

Hence, the following terms were established in the context of the HICP-AP (Eurostat, 2010):

- Governments or regulators set prices with the *explicit objective of influencing final consumer prices directly or indirectly*. Indirect influence on final consumer prices would exist if e.g. measures affected pricing in earlier production stages.
- The effect of *price regulation* is *long-term, not temporary*.
- *Price setting* is *subject to restrictions* such as price caps/floors.

Moreover, it was decided that the prices of the following goods and services should *not be included in the HICP-AP basket*:

- *Prices with a high share of indirect taxation and excise duties*, such as alcohol or tobacco. The influence the public sector has on inflation

developments through indirect taxes and excise duties is already reflected by the HICP at constant tax rates (HICP-CT).³

- Prices of *goods and services subject to safety or environmental standard regulations* are not to be included in the HICP-AP either, as their effect on consumer prices is extremely difficult to determine.
- *Prices subject to the Common Agricultural Policy in the EU* are not reflected by the HICP-AP either, as these regulations mainly have an influence on food products at an intermediate stage. Therefore, their impact on final consumer prices is very difficult to identify.
- Index-linked prices are not included in the HICP-AP basket unless the reference indicator for linking is an administered price or when the index linking is mandatory and enforced by regulation.

The definition is implemented at the COICOP four-digit level. The precision of the concept of administered prices is restricted among other things by the fact that the four-digit COICOP partly includes additional goods and services for which a decision has to be made whether their prices are administered or not. Cultural services represent such a subgroup: The Austrian basket included a total of 12 elementary aggregates in this group in 2010, among them nonadministered prices (e.g. the price of movie theater tickets) and fully administered prices (TV/radio fees). Based on table 1 (section 1.2), about 85% of cultural services belonged to the administered prices category, 15% to the non-administered prices category in 2010. As more than 50% of the four-digit COICOP prices fall under the HICP-

AP definition, the entire COICOP category 09.42 is classified to the HICP-AP.

Another judgment call is required to decide whether regulators exercise a major influence on final consumer prices if effects feed through to final consumer prices from earlier production stages. While the final decision on whether to include (mainly) administered prices in the HICP-AP is taken by Eurostat, the scope of the national HICP-APs is mainly defined at the decentral level. Therefore, there is no guarantee that identical cases will be treated identically and that the index will indeed be fully harmonized across countries.

Thus, comparisons of national HICP-APs must be seen against the background of this fuzziness and of the difficulty in developing a harmonized index across countries. Moreover, as stated above, the conceptual framework of the HICP-AP is such that it also measures price developments that are not influenced by public sector administration.

1.2 The Basket of Goods and Services in Detail

The basket of administered prices is revised yearly and is adapted if necessary. This process is needed because goods and services provided mainly or wholly by public suppliers or public service providers can increasingly be supplied by private enterprises.

Table 1 lists the prices covered by the Austrian HICP-AP. In addition to classifying prices as fully or mainly administered, the table contains the author's reasoning why a price is classified in the HICP-AP. Occasional comparisons to other euro area countries' HICP-AP are also included.

³ The HICP-CT, which is harmonized across countries, was first released by Eurostat in October 2009.

Table 1

Basket of Administered Prices (October 2010)

COICOP		Type	Administered Products ¹	Brief Description of Price-Setting
Industrial goods excluding energy				
04.41	Water supply	DA	Water supply, variable and fixed costs	Water supply charges are set mainly by public suppliers (some 90% of water supply is provided by public-sector suppliers).
06.11	Pharmaceutical products	DA	Cold medicines, analgesics, oral contraceptives, vitamins and minerals, homeopathic medicine, prescription fees, skin and mucosa medicines	Retail prices are regulated by law or are subject to approval by public authorities.
Energy				
04.51	Electricity	DA	(up to October 2001); after that no longer administered	
04.52	Gas	DA	(up to October 2002); after that no longer administered	
Services				
04.42	Refuse collection	DA	Refuse collection (single family home)	Fees are set by local government.
04.43	Sewage collection	DA	Sewage collection fee (single family home)	Fees are set by public water suppliers or refuse collectors.
07.24	Other services in respect of personal transport equipment	DA	Parking fees/parking tax, toll, periodical assessment, driver's license fees, registration of a motor vehicle	Fees/prices are set by the federal government or by local governments.
07.31	Passenger transport by railway ²	DA	Railway ticket, adult; railway ticket, children; railway ticket, half price; benefit railcard, railcard (year, month, week); senior railcard	Prices are set by the Austrian Federal Railways.
07.32	Passenger transport by road	DA	Taxi ride by day, taxi ride by night	Prices set by regional governments.
07.35	Combined passenger transport	DA	Local passenger transport, day passes and long-term passes	Prices are set mainly by regional governments.
08.10	Postal services ²	DA	Inland postage, foreign postage	The Telekom regulation authority authorizes fees of Österreichische Post AG.
09.42	Cultural services	DA	Theaters, opera houses, concert halls, music halls, exhibitions, museums, Telekabel cable fees, TV broadcasting combination fee	Services are offered mainly by, and prices set by, public institutions.
06.21/3	Medical and paramedical services	MA	Physician (general practice and specialist practice), e-card	Prices are set by the social security institutions and the Austrian Medical Chamber.
06.22	Dental services	MA	Physician of choice (dentist)	Prices for medical services are negotiated by the Austrian Medical Chamber and the social security institutions.
06.30	Hospital services	DA	Nursing home costs, hospital costs	The public sector (regional and local governments) fix the amounts to be contributed by occupants or patients.

¹ Administered products classified within the four-digit COICOP aggregate.² Rail transport and postal services are no longer included in the HICP-AP from 2011.

(continued) Table 1

Basket of Administered Prices (October 2010)

COICOP		Type	Administered Products ¹	Brief Description of Price-Setting
Services				
10.00	Education	DA	Fees for kindergarten, school trips and university	Kindergarten, school and university fees are set by public authorities.
12.40	Social protection	DA	Retirement homes, afternoon care for children, nursery school, day care professional, home help	Fees determined by regional governments.
12.70	Other services n.e.c.	MA	Charge for a funeral service, fee for the cemetery, lawyer, payment of the services of estate agents, passport fees	Prices set by federal government (passport, agency fees for rental residences) or regional governments (burial costs, gravesite fees).

¹ Administered products classified within the four-digit COICOP aggregate.

Note: DA: directly administered; MA: mainly administered

Drinking water supply and pharmaceutical products, both classified under *nonenergy industrial goods*, are included in the HICP-AP (accounting for some 9% of administered prices).

Water supply (COICOP 04.41) and *sewage collection* (COICOP 04.43) are provided mainly by public suppliers (local governments) in Austria. The local governments also provide the connection to the water supply system and set the water use fees. The fees are generally linked to the national CPI. According to the Austrian Association for Gas and Water (OVGW, see references), public water suppliers serve some 90% of all Austrians; private water suppliers provide water to only about 10% of Austrians.

The retail prices of *pharmaceutical products* (COICOP 06.11) are regulated by law in Austria or are subject to approval. The wholesale trade prices of pharmaceuticals are also administered; markups are subject to a price cap.

Most administered prices – 91% – are in the *service sector*. These prices include residential (refuse collection), transport, health, social protection, education and postal services.

The local authorities are in charge of *refuse collection* (COICOP: 04.42), including price-setting.

Nearly two-thirds of the *other services in respect of personal transport equipment* (COICOP 07.24) are administered by public authorities (federal and local government).

This COICOP group includes e.g. parking fees/parking labels, toll facilities and driver's license fees. *Passenger transport by railway* (COICOP 07.31) is overwhelmingly provided by the Austrian Federal Railways (ÖBB), which also sets prices. While ÖBB constitutes a separate economic entity, it is 100% publicly owned. Consequently, the government has an influence on price-setting, but this influence cannot be unequivocally identified. Thus, classifying ÖBB-controlled prices to administered prices is a judgment call. Until 2010, the HICP-AP for Austria included passenger transport by railway, but this category has been excluded from 2011. Passenger transport by railway is treated differently in different euro area countries. It is not part of the HICP-AP in Germany and Spain, but is still in-

cluded in France's and other countries' HICP-AP.

Taxi fees in the COICOP category *passenger transport by road* (COICOP 07.32) and fees for local passenger transport combined passenger transport (COICOP 07.35) are set mostly by the regional authorities.

The fees for most *postal services* (COICOP 08.10) are set by Österreichische Post AG, with the Telecom regulation authority RTR having approval powers. The successive liberalization of postal services has opened the market to private postal service providers. Whereas postal services were still covered by the Austrian HICP-AP in 2010, they will be excluded from 2011 onward. In Germany, liberalization of the market for postal services led to the exclusion of postal services from the HICP-AP as early as 2007.

Cultural services (COICOP 09.24) are offered mainly by public providers. Pricing is partly administered, e.g. for theater, opera and music theater tickets. TV and radio fees are regulated by broadcasting law.

The fees for *medical and paramedical services* (COICOP 06.21/3) are negotiated between the Austrian social security sector and Austrian Medical Chamber.

Education (COICOP 10.00) contains the directly administered fees for kindergartens, schools, and universities, most of which are run by the public sector. The abolition of university tuition fees in 2010 applies only to Austrian citizens. Therefore, this COICOP sector remains covered by the HICP-AP. Kindergarten fees, too, have remained in the index, as only part of the fees parents have to pay for kindergarten attendance were waived in 2009.

Prices for *other services* (COICOP 12.70) are set by the federal government (passport fees, agency fees for rental residences) or by regional governments (burial costs, gravesite costs). Price caps apply for agency fees.

2 Cross-Country Analysis of Administered Prices

2.1 HICP Share of Administered Prices

The HICP share of administered prices varies strongly from one euro area country to another. In 2010, it was highest in Slovakia, Portugal, the Netherlands and Germany (chart 1) and ranged from 13.0% in Germany to 23.6% in Slovakia. Austria, with administered prices coming to 12.6% of the HICP basket, also exceeded the euro area average of 11.0%. The countries at the lower end of the range were Finland, Malta and Slovenia, with shares of 5.0% (Finland) to 6.4% (Slovenia).⁴

The relation of directly administered prices to mainly administered prices also differs strongly among euro area countries. Like Spain, Austria has mostly directly administered prices in the basket – the share is 80% in both countries. Vice-versa, the HICP-AP of Germany, Italy and France contains for the most part mainly administered prices. In Germany, the share of mainly administered prices in the HICP-AP is currently 78%; in France, mainly administered prices account for 71% and in Italy for 57%, respectively.

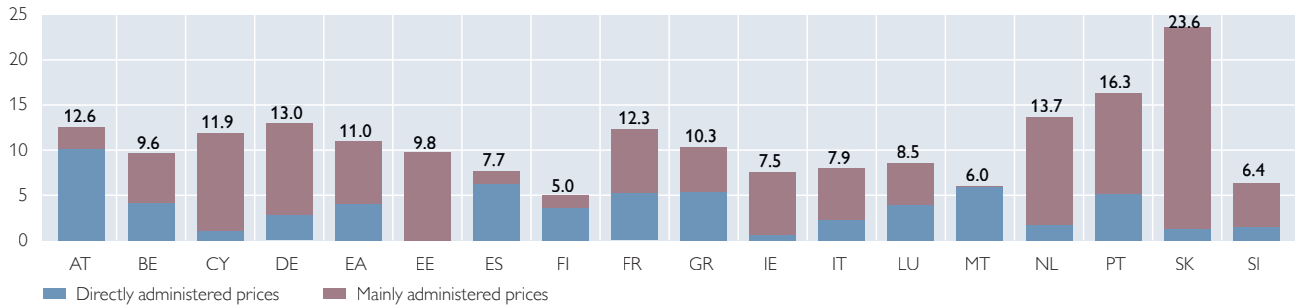
Different classifications of administered prices to either directly or partly administered prices were essentially found for hospital services, telephone and telefax services, road and rail transport services, refuse collection, sewage col-

⁴ As explained in section 1, the concept of administered prices contains scope for interpretation, which must be taken into account especially in cross-country comparisons. For example, the Austrian HICP-AP 2010 contains passenger transport by railway; the German one does not.

Chart 1

Weights of Administered Prices in the HICP Basket – Large Differences between Euro Area Countries' HICP-AP Shares

Percentage points



Source: Eurostat.

Note: Weights for 2010.

lection and postal services. Whereas the prices of the goods and services under these COICOP groups are typically classified as directly administered in Austria and Spain, they tend to be mainly administered prices in Germany, Italy and France.

The country weights of the HICP-AP have declined in the last decade.

The euro area average share of administered prices in the HICP dropped from 13.7% in 2001 to 11.0% in 2010 (chart 2), largely because energy markets were liberalized. As a result, some types of energy sources were no longer classified in the HICP-AP.

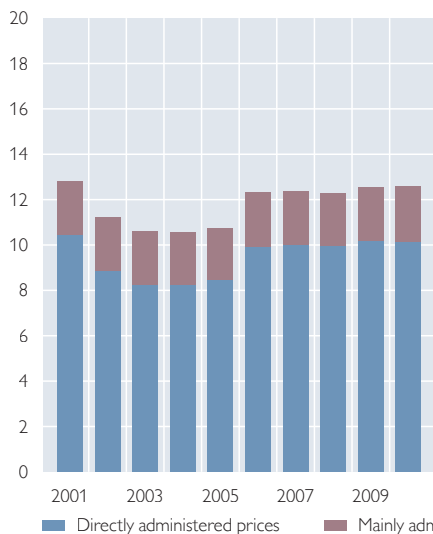
As a case in point, Germany's electricity market was liberalized in 2007,

Chart 2

Market Liberalization Reduces Share of Regulated Prices

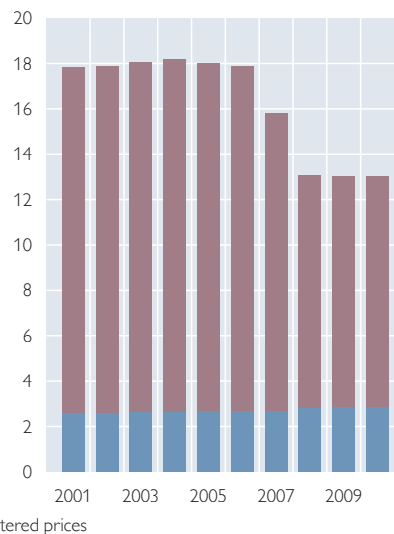
(a) Austria

HICP share in %



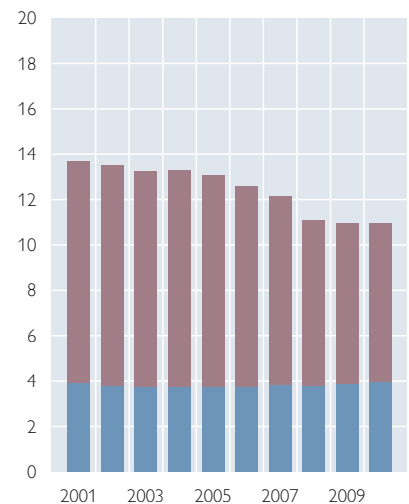
(b) Germany

HICP share in %



(c) Euro Area

HICP share in %



Source: Statistics Austria, Eurostat.

a circumstance reflected in the reduction of the share of directly administered prices in the HICP. The electricity market was already liberalized in 2001 in Austria. The gas market followed in 2002. As a result, the share of administered prices in the HICP declined markedly in Austria. The renewed rise of the weight of the HICP-AP in Austria in 2006 was above all caused by a statistical effect: Administered goods and services were accorded a greater weight in the basket to reflect the results of the new consumer survey.

2.2 Development of Prices, Inflation Rates and Inflation Contributions

2.2.1 Price Indices and Inflation Rates

Chart 3 shows the inflation rates of administered prices (HICP-AP) and of flexible prices (HICP-Flex) for Austria and the euro area since the availability of the basket of goods and services.

The data show that HICP-AP and HICP-Flex patterns differ sharply in Austria and in the euro area as a whole. Moreover, the annual rate of inflation

of administered prices is far more persistent than that of flexible prices.⁵ This trend was particularly apparent during the commodity price shock in 2007 to 2008, when HICP-Flex rates jumped, whereas HICP-AP rates moved largely sideways. Econometric evidence supports the interpretation of these two time series. Lünemann and Mathä (2005) demonstrate that for Austria and the euro area, the HICP rate excluding regulated prices has a higher persistence than the all-items HICP. While the index of administered prices in Lünemann and Mathä (2005) is not fully identical with the definition presented in this study, the two indices are largely consistent.

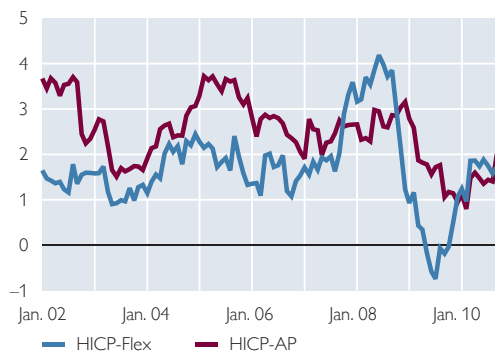
A further characteristic of both time series seems to be that the rate of inflation of administered prices is higher than that of flexible prices during phases of “normal” inflationary developments; the relationship is inverted during periods of sharply rising aggregate inflation. This phenomenon is partly due to the higher persistence of administered prices, but is also partly

Chart 3

Inflation of Administered Prices Exceeds Inflation of Flexible Prices on Average

Austria

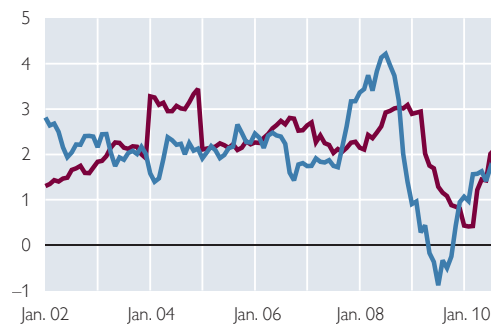
Annual change in %



Source: Statistics Austria, Eurostat.

Euro Area

Annual change in %



⁵ HICP-AP inflation surged or plummeted in some periods. This development may be the consequence of changes in regulated prices and/or of a change in the basket. For example, the share of administered prices in the entire basket diminished substantially in fall 2001 when gas and electricity were dropped from the HICP-AP.

Table 2

Descriptive Statistics of Various Inflation Rates – Averages for the Period from January 2001 to October 2010

	AT	BE	CY	DE	EA	EE	ES	FI	FR
	%								
Inflation HICP-Flex	1.7	2.2	2.4	1.5	2.0	3.7	2.9	1.5	1.8
Inflation HICP-AP	2.5	1.2	3.5	2.3	2.2	8.7	2.0	3.5	2.6
Inflation HICP	1.8	2.0	2.5	1.6	2.0	4.1	2.8	1.6	1.9
Inflation HICP-AP – inflation HICP-Flex	0.8	-1.0	1.2	0.8	0.2	5.0	-0.9	2.0	0.8

	GR	IE	IT	LU	MT	NL	PT	SK	SI
	%								
Inflation HICP-Flex	3.4	1.8	2.4	2.7	2.1	1.8	2.1	2.4	3.8
Inflation HICP-AP	2.9	7.1	1.0	3.1	7.9	2.2	3.0	8.6	4.3
Inflation HICP	3.4	2.1	2.2	2.7	2.4	1.8	2.2	3.8	3.8
Inflation HICP-AP – inflation HICP-Flex	-0.5	5.3	-1.3	0.4	5.8	0.4	0.8	6.2	0.5

Source: Author's calculations.

Note: Euro area changing composition (EA11–2000, EA12–2006, EA13–2007, EA15–2008, EA16–2010); HICP-Flex: HICP excluding administered prices, HICP-AP: HICP for administered prices.

due to the waiver of price increases for regulated prices during such periods.

Different inflation rate developments for administered prices in the euro area are frequently contingent on measures taken in some of the larger countries. For example, the temporary surge in the HICP-AP rate of inflation in the euro area in 2004 (chart 3) was caused mainly by the increase in German administered prices following a health reform.

Table 2 compares the average inflation rates of the HICP-AP, the HICP-Flex and the HICP from January 2001 to October 2010 for all euro area countries.

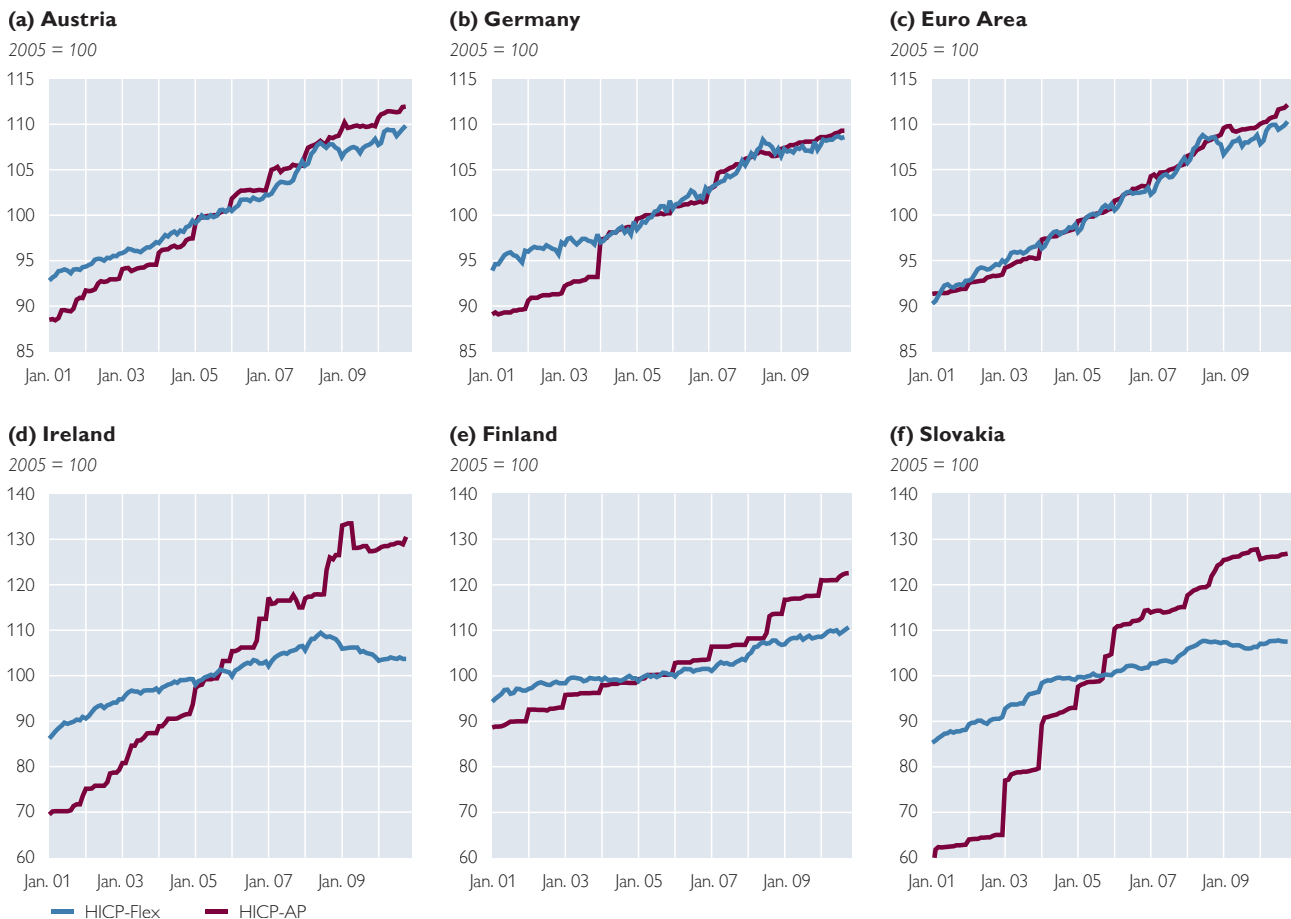
Since 2002 (the HICP-AP index series begins in January 2001, which is why there are no inflation rates for the HICP-AP for the period prior to 2002), the average inflation rate of administered prices (HICP-AP) of most euro area countries has been higher than that of the total index excluding administered prices (HICP-Flex). Belgium, Spain, Greece and Italy are exceptions. The rate of HICP-AP inflation came to

2.2% on average for the euro area, that of the HICP-Flex to 2.0%. In Austria as well as Germany, the gap between the HICP-AP and the HICP-Flex came to 0.8 percentage points. The gap was far smaller in the euro area, averaging 0.2 percentage points. This feature – the HICP-AP being higher than the HICP-Flex – is likely to be related to the fact that price changes of the HICP-AP are generally price increases and that, as Lünemann and Mathä (2005) have demonstrated for euro area countries, regulated prices are usually raised more than flexible prices.

Over time, the dynamics of administered prices have been far more pronounced than those of flexible prices in many countries – above all smaller countries like Ireland, Slovakia, Malta or Finland – as the patterns of the HICP-AP and HICP-Flex index series clearly show (chart 4).

The relatively stronger uptrend of administered prices apparent in chart 4 does not apply to all countries.

In addition to their stronger upward trend, administered prices are raised at

HICP-Flex and HICP-AP – Regulated Prices Exhibit a Clear Upward Trend

Source: Statistics Austria, Eurostat.

fairly regular intervals, frequently early every year. This pattern is quite prevalent in Finland and Slovakia, but also applies to Germany and Austria.

Whereas HICP-AP developments usually point upward, the HICP-Flex exhibits upward and downward movements.

In a different perspective, the differing development trends in the index series are also reflected in the correlation coefficients of inflation rates.

The correlation between the HICP inflation rate and the HICP-AP inflation rate averages 0.43 for the euro area and slightly more for Austria, i.e. 0.48.

Spain, Belgium and the Netherlands all diverge strongly from this average, with the Netherlands posting a coefficient close to zero, and Spain exhibiting an average that is less than half the euro area average. The correlation between HICP inflation and HICP inflation is in fact negative in Belgium.

The descriptive statistics in table 2 as well as the correlations in table 3 signal that the levels and the patterns of administered and of flexible price indices differ. Moreover, the connection between the price indices differs sharply among euro area countries.

Table 3

Correlation of HICP Inflation with Various Inflation Rates

	AT	BE	CY	DE	EA	EE	ES	FI	FR
HICP-Flex	0.99	0.99	0.97	0.94	1.00	0.99	0.99	1.00	0.99
HICP-AP	0.48	-0.03	0.68	0.34	0.43	0.66	0.16	0.35	0.41
HICP-APM	0.47	0.23	0.25	0.12	0.30	x	0.26	0.35	0.28
HICP-APP	0.10	-0.36	0.69	0.35	0.38	0.66	-0.41	0.07	0.46
	GR	IE	IT	LU	MT	NL	PT	SK	SI
HICP-Flex	0.99	0.99	0.96	0.99	0.96	0.97	1.00	0.88	1.00
HICP-AP	-0.20	0.45	0.41	0.34	0.49	0.06	0.38	0.90	0.49
HICP-APM	-0.31	0.48	-0.17	0.03	0.49	0.34	-0.02	0.83	0.60
HICP-APP	0.07	0.40	0.48	0.49	-0.35	-0.03	0.43	0.88	0.28

Source: Author's calculations.

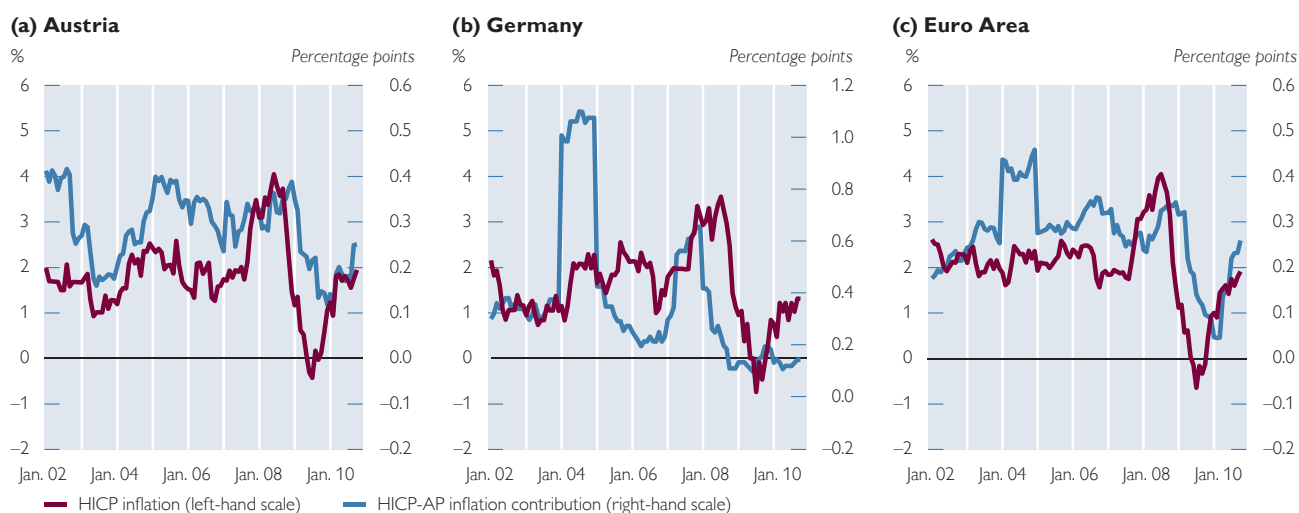
Note: Euro area changing composition (EA11–2000, EA12–2006, EA13–2007, EA15–2008, EA16–2010); HICP-Flex: HICP excluding administered prices, HICP-AP: HICP for administered prices, HICP-APM: HICP for fully administered prices, HICP-APP: HICP for mainly administered prices

2.2.2 Inflation Contributions of Administered Prices

In most euro area countries, administered prices contribute substantially to overall inflation (weight of the HICP-AP multiplied by the inflation rate of the HICP-AP). The contributions in Austria have fluctuated between 0.10 and 0.42 percentage points since 2002;⁶

the range in Germany is from 0.10 to 1.10 percentage points. Administered prices made the highest contribution to overall inflation in Germany in the wake of the health reform of 2004. The euro area fluctuation range in the same period came to between 0.04 and 0.46 percentage points.

Chart 5

HICP Inflation and Contributions by Administered Prices

Source: Eurostat, Statistics Austria.

⁶ January 2002 to October 2010.

Over time, inflation contributions exhibit a conspicuously parallel development to HICP inflation, a trend which is spectacularly broken at certain intervals, as in the case of the health reform in Germany in 2004. This special pattern even feeds through to the inflation contribution of the euro area aggregate.

2.3 To What Extent Do Administered Prices Influence Inflation Developments?

Are regulated prices a factor that accelerates inflation? To establish the causality link between the HICP inflation rate and the HICP-Flex inflation rate or the HICP-AP inflation rate at the purely statistical level, bivariate Granger causality tests were performed. The results are presented below. The tests were conducted in both directions, evaluating the influence of HICP inflation as well as HICP-Flex inflation on HICP-AP inflation and vice versa. These tests were performed on the basis of monthly data for monthly time lags up to 13 months. A prerequisite for the validity of the tests is that the time series to which they are applied are stationary. Taking into account structural breaks in inflation developments, it may be assumed that this characteristic applies for most euro area countries (Kyung So et al., 2010).

Table 4 shows the results of the Granger causality tests for lags 1, 6, 12 and 13.⁷

Some interesting observations about causality may be made: For Austria, the direction of causality clearly runs from

the HICP-Flex inflation rate (and the all-items HICP⁸) to the HICP-AP. At the 5% significance level, this causality has been confirmed for all monthly lags up to one year other than the three-month and six-month lags. The fact that this direction of causality does not hold beyond 12 months may be attributable to the fact that some administered prices in Austria are indexed to the national CPI. In most cases, indexation is based on the average inflation rate of the previous year, with the adjustment usually being made once a year rather than continuously.

In the euro area as well as in Spain (in particular the lags from the fourth month onward), Belgium, the Netherlands (lags 3 to 6), Portugal (lags 1 and 2), Cyprus, Estonia, Finland, France (at the 10% confidence level) and Slovenia, the direction of causality runs from the HICP-Flex inflation rate to the HICP-AP inflation rate. The causality is reversed for Italy, running from HICP-AP inflation to HICP-Flex inflation (for lags 9 to 12). Countries for which the direction of causality appears to be unclear were Germany, Luxembourg, Slovakia and Ireland.

Overall, these results would imply that public sector pricing significantly influences overall inflation and the development of the inflation of flexible prices in Austria and in some other euro area countries, but that it is not a leading indicator for the future development of inflation.

The section below focuses on identifying other important determinants of the cost side and the demand side.

⁷ The complete results (among other things for the lags for every month) are available on request.

⁸ Table 4 does not contain the statistics of the Granger causality tests between total inflation and administered price inflation, but they are available on request.

Table 4

Pairwise Granger Causality Tests (January 2001 to October 2010)

	AT	BE	CY	DE	EA	EE	ES	FI	FR
First lag									
Null hypothesis:									
Infl-Flex is not caused by Infl-AP: P-value	0.24	0.01	0.85	0.10	0.03	0.00	0.00	0.06	0.05
Infl-AP is not caused by Infl-Flex: P-value	0.03	0.05	0.03	0.13	0.00	0.00	0.00	0.00	0.00
	GR	IE	IT	LU	MT	NL	PT	SK	SI
Null hypothesis:									
Infl-Flex is not caused by Infl-AP: P-value	0.22	0.01	0.00	0.98	0.12	0.13	0.11	0.91	0.92
Infl-AP is not caused by Infl-Flex: P-value	0.63	0.01	0.00	0.46	0.04	0.32	0.02	0.24	0.57
	AT	BE	CY	DE	EA	EE	ES	FI	FR
Null hypothesis:									
Infl-Flex is not caused by Infl-AP: P-value	0.72	0.69	0.48	0.35	0.65	0.58	0.10	0.28	0.47
Infl-AP is not caused by Infl-Flex: P-value	0.04	0.02	0.00	0.94	0.01	0.00	0.01	0.00	0.06
	GR	IE	IT	LU	MT	NL	PT	SK	SI
Null hypothesis:									
Infl-Flex is not caused by Infl-AP: P-value	0.32	0.39	0.02	0.25	0.01	0.48	0.21	0.42	0.97
Infl-AP is not caused by Infl-Flex: P-value	0.87	0.00	0.01	0.86	0.41	0.02	0.10	0.04	0.00
	AT	BE	CY	DE	EA	EE	ES	FI	FR
Null hypothesis:									
Infl-Flex is not caused by Infl-AP: P-value	0.60	0.14	0.75	0.42	0.36	0.97	0.21	0.03	0.92
Infl-AP is not caused by Infl-Flex: P-value	0.08	0.00	0.00	0.98	0.02	0.02	0.00	0.00	0.26
	GR	IE	IT	LU	MT	NL	PT	SK	SI
Null hypothesis:									
Infl-Flex is not caused by Infl-AP: P-value	0.02	0.00	0.06	0.05	0.19	0.00	0.21	0.09	0.65
Infl-AP is not caused by Infl-Flex: P-value	0.82	0.01	0.34	0.66	0.70	0.00	0.22	0.00	0.08
	AT	BE	CY	DE	EA	EE	ES	FI	FR
Null hypothesis:									
Infl-Flex is not caused by Infl-AP: P-value	0.18	0.15	0.96	0.30	0.59	0.38	0.55	0.27	0.97
Infl-AP is not caused by Infl-Flex: P-value	0.16	0.02	0.01	0.91	0.15	0.00	0.03	0.00	0.28
	GR	IE	IT	LU	MT	NL	PT	SK	SI
Null hypothesis:									
Infl-Flex is not caused by Infl-AP: P-value	0.03	0.01	0.15	0.06	0.24	0.00	0.47	0.00	0.85
Infl-AP is not caused by Infl-Flex: P-value	0.64	0.00	0.85	0.75	0.80	0.39	0.63	0.02	0.03

Source: Author's calculations.

Note: Shaded values indicate the rejection of the null hypothesis. Infl-AP: Inflation rate of administered prices; Infl-Flex: Inflation rate of total inflation excluding administered prices.

2.4 Cost Shocks Influence Flexible Prices More Strongly and Administered Prices Less Strongly

A more in-depth analysis of the causal relationships was attempted on the basis of an impulse-response functions derived from an unrestrictive VAR model (vector autoregressive model). This econometric approach captures

the interaction between the administered inflation rates and the macroeconomic environment, making it possible to take into account the direct and the indirect inflation effects of cost and demand shocks on the endogenous variables. Administered prices and flexible prices are subject to different mechanisms. Frequently, official or legislative

measures play a key role and significantly influence both the frequency and the size of price adjustments.

The VAR model contains the variables crude oil prices, the gap between the long-term and the short-term interest rate, the output gap, and the HICP-AP. In a further variant, the HICP-AP is replaced by the HICP-Flex⁹ to determine the difference between cost and demand shocks on regulated versus flexible prices. Given the rather short time series (the HICP-AP is available only from January 2001), two variants of VAR models with three variables each were specified. The VAR systems differ only with respect to the use of inflation as measured by the HICP and inflation as measured by the HICP-AP. Crude oil prices were used as a proxy for macroeconomic costs, and the output gap served as an indicator of demand effects.

All variables with the exception of the output gap, which is fed into the VAR model without having been transformed, are included in the model in logarithmic form and in quarterly differences. Therefore, the transformed variables may be interpreted as quarterly growth rates.

The sequencing of the variables in the VAR system plays a fundamental role for the impulse-response analysis. The order in this analysis was: crude oil prices, interest rate spread, output gap, HICP-AP (or HICP-Flex in the second model variant). The consequences of this technical assumption for the results are fully plausible: The assumption is that a crude oil price shock has contemporaneous effects on all other variables, but at the same time, crude oil prices are not influenced by any of the other

residuals in the same period. The same applies by analogy to all other determinants. For instance, monetary policy measures – these are captured by the interest rate spread – have a contemporaneous impact on the output gap and the HICP-AP (or the all-items HICP), but not on the crude oil price.

2.4.1 Cost Shocks

Based on the standard deviation of monthly changes in crude oil prices, one-standard-deviation shocks are clearly found to have a significant effect on total inflation as well as HICP-Flex inflation in the first two quarters in most euro area countries.¹⁰

The impulse response of HICP-AP inflation goes in the same direction as the impulse response of HICP-Flex inflation, but the impact of the crude oil price shock on the HICP-AP is not statistically significantly different from zero in most cases. For Austria, the impulse response is significantly positive in the first quarter (chart 6).

The following observation applies with reference to the magnitude of the response: The size of the crude oil price shock is one standard deviation of the quarterly rates of change. In the period from the first quarter of 2002 to the third quarter of 2010, the standard deviation came to 0.17 percentage points. This corresponds to an increase of about 15% in the price of crude oil.

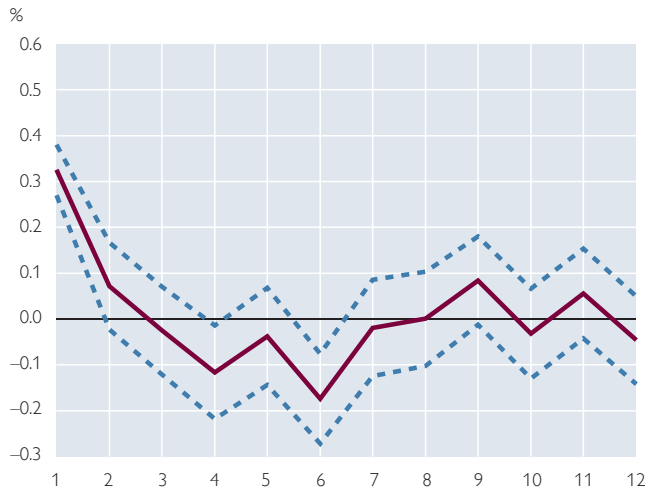
For Austria, the contemporaneous effect on the quarterly inflation rate is 0.33 percentage points, somewhat more than the effect for Germany at 0.29 percentage points (chart 6). The effect of the crude oil price shock lasts for only two quarters, after which it is no longer significant. Other studies

⁹ VAR models were also estimated with overall inflation rather than HICP-AP inflation or HICP-Flex inflation.

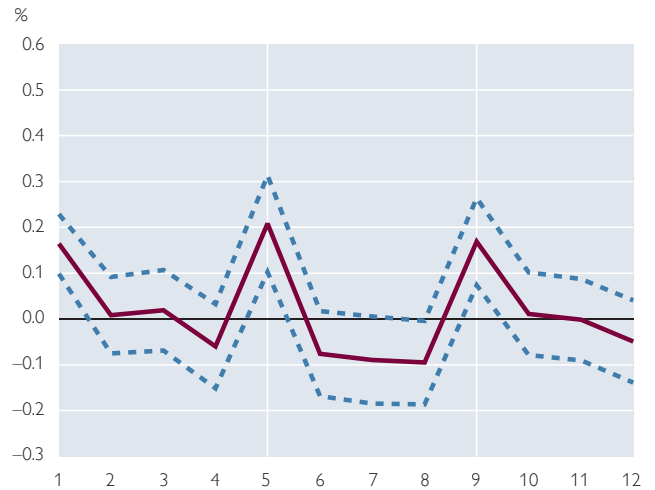
¹⁰ Malta is the sole exception; here, various impacts that are statistically not significantly different from zero were measured.

Smaller Reaction of Administered Prices to a Crude Oil Price Shock

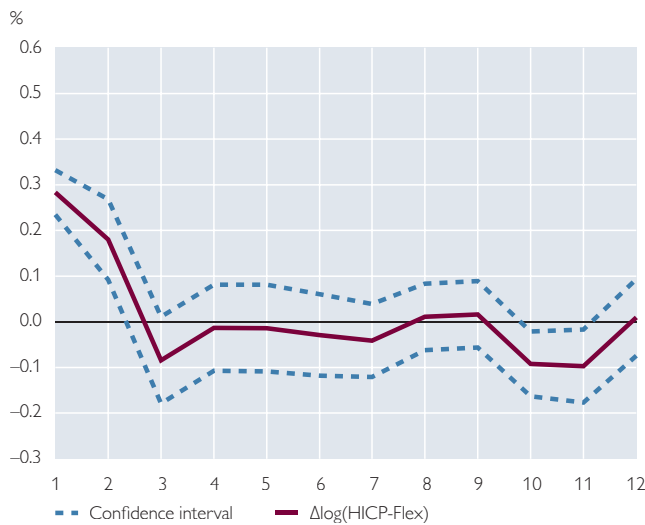
Austria: Impulse Response of HICP-Flex Inflation



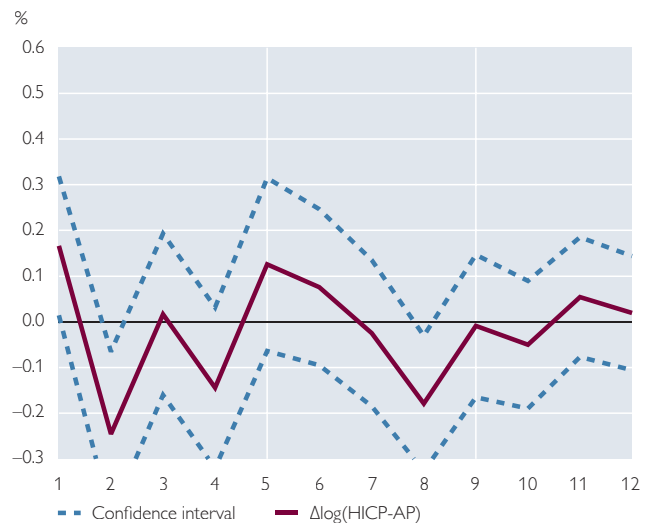
Austria: Impulse Response of HICP-AP Inflation



Germany: Impulse Response of HICP-Flex Inflation



Germany: Impulse Response of HICP-AP Inflation



Source: Author's calculations.

about euro area countries come to similar conclusions (Galesi and Lombardi, 2009).

The impulse response of HICP-AP inflation is smaller than that of HICP-Flex inflation. For Germany, it is not significantly different from zero, whereas it is significantly positive for Austria for the first quarter (+0.16 percentage points). The “aftereffect” of the crude oil price shock on Austrian

administered prices is still evident after five and after nine quarters. This effect could be linked to the indexation of many regulated prices to the national CPI. Indexation is especially prevalent for federal government fees, partly also for fees set by regional authorities, and consists in the adjustment of administered prices for the inflation rate of the previous year.

2.4.2 Demand shock

An impulse-response analysis was also made for demand shocks; it measures the effect on HICP-AP inflation and HICP-Flex inflation of changes in the domestic output gap. The output gap shock is shown not to have a significant influence on price variables. This means that the effect of demand developments on inflation – at least those demand developments that are measured with the output gap – is less important than that of cost shocks. This outcome may be contingent on the fact that inflation expectations in the euro area were firmly anchored during the observation period (from 2001 to 2010), so that demand effects on price developments had no effect or only a weak effect on price developments.

It must be emphasized, however, that this result is considered controversial in the literature. While other studies have been able to prove that demand effects on inflation have increasingly lost ground in recent years, it has not been established that the output gap has become completely unimportant as a determinant of inflation developments. For example, in Rumler and Valderama (2008), the question of demand effects on inflation developments in euro area countries is examined with the help of Phillips curve estimates. The authors demonstrate that the output gap ceased to have statistically significant effects on inflation developments in several euro area countries in the 1990s. However, this is not the case for all countries. Moreover, the estimation results are not unambiguous for Austria: The diminishing importance of the output gap can be proved on the basis of the traditional Phillips curve, but these results are not confirmed by the results on the basis of the New Keynesian Phillips Curve. A further study by Musso et al. (2009) deals with

the issue of the instability of the Phillips curve for the euro area. The authors determine that the output gap continues to have a significant effect for the euro area as soon as the instabilities are explicitly modeled, in particular the reduction in the mean shift of the inflation rate and the varying steepness of the Phillips curve.

3 Conclusions

Administered prices are a key component of the HICP basket, accounting for 11.0% of the HICP (euro area average). Among euro area countries, this share ranges from 5.0% in Finland to 23.6% in Slovakia. With a share of 12.6%, Austria surpasses the euro area average. Market liberalization tends to reduce the weight of regulated prices in the HICP. Their share declined by nearly 3 percentage points in the euro area in the past decade. The share of regulated prices in the HICP basket declined moderately in Austria in the same period.

The inflation rates of administered prices and those of flexible prices (i.e. the HICP excluding administered prices) differ with respect to both their levels and their development over time. In Austria, Germany and France, the average HICP-AP inflation rate has been noticeably higher since 2002 than average HICP-Flex inflation rates, whereas the situation was reversed in Italy and Spain.

Overall, the link between both administered and flexible price inflation and headline inflation is small (Spain) or there is even no evidence of such a link (Belgium, the Netherlands).

The examination of the direction of the effect also raised interesting aspects in this study: Administered prices may represent a significant part of the rate of inflation, but they are not necessarily to be seen as an accelerator of inflation. Granger causality tests were used to

prove that flexible prices are a leading indicator for Austria and a number of other euro area countries, not vice versa.

As public sector pricing also reacts to the macroeconomic environment, an attempt was made to identify key macroeconomic determinants. It was found that above all, cost determinants – an oil price shock – are important for price developments. In most euro area countries, overall inflation as well as the inflation of flexible prices displays a statistically significant rise after a shock to crude oil prices. As a rule, the effect is short-term. A statistically significant impact can no longer be determined after two quarters. It is also interesting

that the impulse response of HICP-AP inflation is smaller than that of HICP-Flex inflation, and that it is not even significant for the most part.

This study finds that unlike cost shocks, demand shocks do not have statistically significant effects on prices. Changes in the output gap have no statistically significant impact on either HICP-AP inflation or HICP-Flex inflation. The literature does not provide unambiguous confirmation of this result. Whereas some studies prove that the importance of the output gap for inflation developments declines, the extreme of statistical insignificance remains controversial.

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Notes

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