The NIME Economic Outlook for the World Economy

A Medium-Term Outlook for the World Economy: 2006-2012

The January 2006 issue of the NIME Economic Outlook for the World Economy presents a 2006-2012 macroeconomic outlook for the major areas of the world. The outlook was produced using NIME, the Belgian Federal Planning Bureau's macroeconometric world model. The January 2006 issue also features an assessment of the response of the euro area economy to a shift away from the direct taxation of labour towards the indirect taxation of final demand. The major technical assumptions of this outlook as well as a brief description of the NIME model are presented in the appendix.

After a year of frail economic growth in 2005, euro area GDP growth should rebound in 2006 while the rise in the consumer price deflator is expected to remain well below the 2 per cent mark. The pick-up in growth is largely based on a further strengthening of employment growth and continued favourable monetary conditions. Over the 2007-2012 period, the area's GDP rises on average by 2 per cent per annum, notwithstanding the declining growth rate of the working-age population. At the same time consumer price inflation averages 1.8 per cent, edging up towards the end of the period. The short-term interest rate rises from 2.2 per cent in 2005 to 4.4 per cent in 2012, thus containing heightened inflationary pressures. Assuming no policy changes, the area's fiscal deficit recedes only gradually, falling from 2.6 per cent of GDP in 2006 to 1.6 per cent of GDP in 2012.

Over the 2006-2012 period, GDP growth averages 2.8 per cent per annum for the group of countries comprising the United Kingdom, Sweden and Denmark, and 3.6 per cent for the group comprising of the EU's recently acceded Member States. Real GDP in the United States is expected to grow on average by 2.6 per cent over the 2006-2012 period. However, growth will be uneven as, under current US laws and policies, the sunset of important tax cut provisions will weaken domestic demand significantly by the end of the projection period. At the same time, important fiscal and external imbalances should persist. Japanese real GDP is expected to grow on average by 1.7 per cent per annum over the 2006-2012 period, though growth should weaken notably by the end of the projection period as the labour supply falls due to the ageing of the population.

This issue also assesses the macroeconomic effects of a euro-wide reduction in social contributions, the fiscal effects of which are off-set by a parallel rise in indirect taxes on final demand. Simulations with the NIME model show that the output and employment effects of a tax shift equivalent to 1 per cent of GDP are limited, as such a measure would raise the euro area's output level by only 0.19 per cent and its level of employment by 0.13 per cent in the medium term.

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Executive Summary of the 2006-2012 NIME World Economic Outlook

Introduction

The January 2006 issue of the "NIME Economic Outlook for the World Economy" (NEO) presents a macroeconomic outlook for the major areas of the world economy for the period ranging from 2006 to 2012. This outlook was prepared using the latest version of the Belgian Federal Planning Bureau's NIME macroeconometric world model. It updates the August 2005 NEO, following the release of new data and the re-estimation of the model's equations.

This NIME Economic Outlook builds on the Autumn 2005 Economic Forecasts of the European Commission. Indeed, the NIME model is basically medium-term oriented and is thus calibrated to replicate the Commission's most recent business cycle estimates for 2005. However, as explained in the technical appendix to this outlook, the Commission's Autumn estimates for the year 2005 have been revised to take into account the developments in financial markets over the November-December period. As of 2006 and up to 2012, the NIME model then goes on to provide a coherent model-based outlook for the major economic areas of the world.

This NEO also features a *Focus* presenting NIME simulation results of the macroeconomic effects of a shift from the direct taxation of labour to indirect taxation of final demand in the euro area. Although the theoretical case for a tax shift may be clear-cut, it remains an empirical issue to determine the real-world implications of such a measure and the NIME model is a well-suited tool for such an empirical evaluation at the level of the euro area.

The NEO concludes with an appendix outlining the main assumptions of the outlook and a brief description of the NIME model.

Finally, the reader should be aware that the "NIME Economic Outlook" does not necessarily constitute the reference scenario for other work carried out within the Federal Planning Bureau. A case in point are the Bureau's short-term forecasts and medium-term projections for the Belgian economy, for which the underlying international economic scenarios are traditionally based on a variety of sources.

Summary of the 2006-2012 Economic Outlook

After having posted particularly strong growth and relatively moderate inflation in 2004, economic activity in the major areas of the world is estimated to have waned in 2005. Soaring oil prices and other adverse events such as hurricane Katrina dented the growth outcome for 2005, though measured responses by monetary authorities as well as the absence of second-round wage and price effects averted an acceleration in inflation.

Steady worldwide output growth is projected for the 2006-2012 period, while inflation is expected to remain contained. Throughout the whole period, output growth is primarily supported by robust productivity growth and relatively low nominal interest rates. Nevertheless, the overall growth prospects remain uncertain as high external deficits persist in the United States. The projection also indicates that demographic pressures are expected to begin to weigh on growth, particularly in Japan.

In the *euro area*, real gross domestic product (GDP) growth is expected to average 2 per cent per annum over the 2006-2012 period. Growth in the euro area is primarily underpinned by robust domestic demand as the contribution of net exports to overall growth gradually disappears. Moreover, economic growth gradually slows down by the end of the period as labour force growth falters in the face of a rapidly ageing population. Consumer price inflation averages 1.8 per cent per annum, picking up towards the end of the period as demand growth outpaces the rise in potential output. The nominal short-term interest rate is gradually raised from 2.3 per cent in 2006 to 4.4 per cent in 2012, while the long-term interest rate rises from 3.4 per cent in 2006 to 4.5 per cent in the medium term. The area's nominal effective exchange rate is projected to appreciate on average by 3.4 per cent per year, primarily because inflation in the rest of the world outstrips euro area inflation. Over the 2006-2012 period, only limited progress is expected with respect to fiscal consolidation and the area's fiscal deficit declines from 2.6 per cent of GDP in 2006 to 1.6 per cent in 2012.

Real GDP growth in the *Western non-euro EU Member States*[1] is projected to average 2.8 per cent per annum over the 2006-2012 period, while consumer prices are expected to increase on average by 1.7 per cent. Growth in this area is primarily supported by domestic demand, as the contribution of net exports to overall GDP growth remains modest. The average nominal short-term interest rate is expected to come out slightly below the 4 per cent mark over the period. The long-term interest rate should also remain relatively stable and average out at 4.1 per cent over 2006-2012. Progress in the area's fiscal position is limited, as the fiscal deficit-to-GDP ratio increases as of 2011 and comes out at 1.9 per cent of GDP in 2012.

In the *Eastern non-euro EU Member States*[2], real GDP growth is projected to average a strong 3.6 per cent per annum over the 2006-2012 period. Growth in the area is driven by domestic demand, as the net contribution of external trade should remain negative throughout the projection period. Domestic demand is underpinned by robust private consumption and by especially strong investment growth, as the area pursues its course towards real convergence with the rest of the European Union. Consumer price inflation stabilises, coming out at an average rate of 2.3 per cent per annum over the 2006-2012 period. The area's consolidated current account shows a significant deficit over the whole period, settling at 4 per cent of GDP in 2012.

In the *United States*, GDP growth is expected to average 2.6 per cent per annum over the 2006-2012 period, with a high of 3.4 per cent in 2006 and a trough of 1.8 per cent in 2011. At the same time, consumer price inflation is projected to average 2.1 per cent per annum. While net exports continue to weigh negatively on US growth, domestic demand is expected to weaken between 2008 and 2011 as, under current US laws and policies, a number of important tax cut provisions are due to expire. The nominal short-term interest rate is projected to come out at an annual average rate of 4.4 per cent, while the long-term interest rate remains stable around its average of 4.6 per cent on the period. The nominal effective exchange rate appreciates on average by 2.9 per cent per annum, while the real effective exchange rate remains approximately constant over 2006-2012. Although significant tax cut provisions expire over the projection period, the fiscal deficit-to-GDP ratio is expected to improve only gradually, falling from 3.9 per cent of GDP in 2006 to 2.7 per cent of GDP in 2012. Finally, under the assumption of no abrupt shock to the external value of the dollar, the US current account-to-GDP ratio is expected to pursue its ascending trend, rising from 5.9 per cent of GDP in 2006 to 6.9 per cent of GDP in 2012.

Japanese real GDP is expected to grow on average by 1.7 per cent per annum over the 2006-2012 period. However, the country's growth rate is projected to fall steadily from a high of 2.3 per cent in 2008 to just 1.2 per cent in 2012, as the Japanese working-age population and labour force decline in absolute terms. After having fallen uninterruptedly for seven straight years, consumer prices are expected to rise as of 2006, increasing on average by 1.3 per cent per annum over the 2006-2012 period. The nominal short-term interest rate should rise from a yearly average of 0.5 per cent in 2006 to 2.8 per cent in 2012, while the nominal long-term rate increases from 1.6 per cent in 2006 to 3.3 per cent in the medium term. Assuming no policy changes, the fiscal deficit is expected to remain high, standing at 6.1 per cent of GDP in 2006 and rising to 7 per cent of GDP in 2012.

The *risks* surrounding the current NIME Economic Outlook are definitely tilted to the downside, due to global trade imbalances that are clearly unsustainable in the long term and heightened pressures in energy markets.

Finally, the *Focus* in this issue of the NEO analyses the potential gains in output and employment of a tax shift away from social security contributions to indirect taxes on final demand. Simulations with the NIME model indicate that the potential gains could be rather limited for the euro area. Indeed, a shift from direct to indirect taxes equivalent to 1 per cent of GDP throughout the 2006-2012 period would initially raise euro area real GDP by 0.11 per cent above its baseline level, followed by further gains of up to 0.3 per cent above baseline in 2007, but these positive effects would then level off at just 0.19 per cent by 2012. The employment gains would be of 0.06 per cent in 2005 and 0.13 per cent in 2012. The potential effects on output and employment are rather small as the gains from the fall in the social contribution rate are mitigated by the rise in the indirect tax rate, which squeezes corporate profit margins and tempers labour demand.

1. "Western non-euro EU Member States" comprises Denmark, Sweden and the United Kingdom.
2. "Eastern non-euro EU Member States" comprises Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia, plus Bulgaria and Romania.

Summary World Area Table - Main results

	2006	2007	2008	2009	2010	2011	2012	Average 2006-2012	Average 1999-2005
I. Euro area									
1. Gross domestic product	2.3	2.3	2.4	2.0	1.8	1.7	1.6	2.0	1.9
2. GDP deflator	1.4	1.3	1.4	1.4	1.4	1.5	1.5	1.4	1.9
3. Unemployment rate (level, % of civilian labour force)	8.0	7.6	7.4	7.4	7.4	7.5	7.6	7.5	8.5
4. Long-term interest rate (level)	3.4	3.6	3.8	4.0	4.2	4.4	4.5	4.0	4.5
5. Nominal effective exchange rate (+ : depreciation)	-3.0	-3.1	-3.2	-3.5	-3.6	-3.8	-3.8	-3.4	-2.4
6. Government net lending (level, % of GDP)	-2.6	-2.3	-2.0	-1.8	-1.7	-1.6	-1.6	-2.0	-1.9
7. Current account (level, % of GDP)	0.4	0.6	0.8	0.9	0.9	0.8	0.6	0.7	0.3
II. Western non-euro EU Member States									
1. Gross domestic product	2.7	2.6	3.2	3.2	3.0	2.7	2.5	2.8	2.5
2. GDP deflator	1.9	1.1	1.0	1.2	1.4	1.6	1.7	1.4	2.2
3. Unemployment rate (level, % of civilian labour force)	4.8	4.9	4.9	4.9	4.9	5.0	5.0	4.9	5.2
4. Long-term interest rate (level)	4.3	4.1	4.0	4.0	4.0	4.2	4.3	4.1	4.8
5. Nominal effective exchange rate (+ : depreciation)	-3.1	-2.0	-1.1	-0.7	-0.7	-0.9	-1.2	-1.4	-1.9
6. Government net lending (level, % of GDP)	-2.0	-1.7	-1.6	-1.5	-1.5	-1.6	-1.9	-1.7	-0.3
7. Current account (level, % of GDP)	-0.3	-0.7	-0.7	-0.7	-0.6	-0.6	-0.7	-0.6	-0.7
III. Eastern non-euro EU Member States									
1. Gross domestic product	4.4	3.6	3.6	3.6	3.5	3.3	3.3	3.6	3.9
2. GDP deflator	3.4	2.7	2.6	2.7	2.8	2.8	2.9	2.9	3.6
3. Long-term interest rate (level)	5.2	5.4	5.4	5.3	5.4	5.5	5.6	5.4	10.9
4. Nominal effective exchange rate (+ : depreciation)	0.9	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.1	-1.8
5. Current account (level, % of GDP)	-3.0	-3.0	-3.1	-3.3	-3.5	-3.8	-4.0	-3.4	-3.5
IV. Unites States									
1. Gross domestic product	3.4	2.5	3.1	2.8	2.6	1.8	2.2	2.6	3.0
2. GDP deflator	2.4	2.0	1.9	1.9	2.0	2.0	2.1	2.1	2.2
3. Unemployment rate (level, % of civilian labour force)	5.0	5.2	5.3	5.5	5.7	6.8	7.2	5.8	5.1
4. Long-term interest rate (level)	4.5	4.6	4.6	4.6	4.6	4.5	4.5	4.6	4.8
5. Nominal effective exchange rate (+ : depreciation)	-3.2	-3.4	-3.2	-3.0	-2.7	-2.6	-2.4	-2.9	-1.2
6. Government net lending (level, % of GDP)	-3.9	-3.6	-3.5	-3.4	-3.3	-2.8	-2.7	-3.3	-2.2
7. Current account (level, % of GDP)	-5.9	-6.0	-6.1	-6.3	-6.5	-6.7	-6.9	-6.4	-4.5
V. Japan									
1. Gross domestic product	1.9	1.8	2.3	1.9	1.6	1.3	1.2	1.7	1.3
2. GDP deflator	0.2	0.5	0.9	1.2	1.4	1.6	1.7	1.1	-1.3
3. Unemployment rate (level, % of civilian labour force)	4.4	4.3	4.4	4.5	4.8	5.0	5.1	4.6	4.9
4. Long-term interest rate (level)	1.6	2.0	2.3	2.5	2.8	3.0	3.3	2.5	1.4
5. Nominal effective exchange rate (+ : depreciation)	2.0	1.0	-0.3	-1.9	-3.2	-4.1	-4.9	-1.6	-3.2
6. Government net lending (level, % of GDP)	-6.1	-5.9	-6.0	-6.1	-6.2	-6.5	-7.0	-6.3	-7.1
7. Current account (level, % of GDP)	3.8	4.0	4.4	4.6	4.7	4.7	4.5	4.4	2.9
VI. Rest of the World									
1. Gross output	4.9	5.1	5.1	5.1	4.9	4.8	4.7	5.0	5.2
2. Output deflator	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.8
3. Nominal effective exchange rate (+ : depreciation)	4.2	4.4	4.4	4.7	5.0	5.3	5.5	4.8	4.4

All figures are year-on-year average growth rates, unless specified otherwise.

"Western non-euro EU Member States" comprises Denmark, Sweden and the United Kingdom.

"Eastern non-euro EU Member States" comprises Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia, plus Bulgaria and Romania.

The Euro Area

After a year of frail economic growth in 2005, euro area GDP growth should rebound to 2.3 per cent in 2006, while the rise in the deflator of private consumption is expected to remain well below the 2 per cent mark. The pick-up in growth is largely based on a further strengthening of employment growth and accommodative monetary conditions. Over the 2007-2012 period, the area's GDP rises on average by 2 per cent per annum, notwithstanding the declining growth rate of working-age population. At the same time consumer price inflation averages 1.8 per cent, edging up towards the end of the period. The short-term interest rate rises from 2.2 per cent in 2005 to 4.4 per cent in 2012, thus containing mounting inflationary pressures. Assuming no policy changes, the area's fiscal deficit recedes only gradually, down from 2.6 per cent of GDP in 2006 to 1.6 per cent of GDP in 2012.

Lackluster economic growth but stubborn consumer price inflation in 2005

Real GDP growth in the euro area is estimated to have slipped from 2.1 per cent in 2004 to a mere 1.3 per cent in 2005. This poor performance is attributed to weakening domestic growth, as the impact of net exports on overall GDP growth is expected to have remained marginal. At the same time, inflation as measured by the deflator of private consumption is estimated to have come out close to the European Central Bank's (ECB) 2 per cent ceiling, while the area's fiscal stance is expected to have deteriorated slightly.

In 2005, private consumption rose by 1.3 per cent, compared with 1.5 per cent the year before. Consumption growth remained fairly modest due to moderate real income growth and flagging consumer confidence in the face of soaring energy prices, large fiscal deficits and persistent high unemployment.

Business sector investment is estimated to have grown by 2.1 per cent in 2005, following a 2.7 per cent increase in 2004. Business investment was underpinned by favourable monetary conditions, renewed business confidence and a noted decrease in real wage costs. Investment in residential buildings receded by 0.3 per cent in 2005, after rising by 2 per cent in 2004. Last but not least, inventory demand, which added 0.4 percentage-point to domestic demand growth in 2004, is estimated to have added another 0.4 percentage-point to the area's GDP growth rate in 2005.

After having failed to contribute significantly to overall growth since 2003, the euro area's consolidated net exports are estimated to have reduced it by 0.1 percentage-point in 2005. Indeed, though the recent significant nominal depreciation of the area's exchange rate reversed part of the loss in price-competitiveness incurred in recent years, the euro area's consolidated exports are estimated to have risen by only 3.2 per cent in 2005, compared with 6.5 per cent in 2004. At the same time, import growth slowed down from 6.7 per cent in 2004 to 4 per cent in 2005.

Despite weakening demand growth, total employment is estimated to have increased by 1 per cent in 2005, after having recorded a 0.6 per cent rise in 2004. This higher increase in employment resulted from improved business confidence, the introduction of several job creation programmes and a marked decline in real private sector wage costs in 2005. However, as the labour force increased by 0.8 per cent in 2005, the unemployment rate remained high at 8.6 per cent of the civilian labour force, which is only slightly down from the 8.9 per cent registered in 2004.

In 2005 the deflator of private consumption increased by 2.1 per cent, slightly up from the 1.9 per cent increase in 2004. Notwithstanding a further fall in real unit labour costs and a persistent negative output gap, a deceleration in inflation was thwarted by the rise in oil prices and by the effective depreciation of the euro.

The short-term nominal interest rate averaged 2.2 per cent in 2005, up a touch from the 2.1 per cent average recorded in 2004. The short-term interest rate remained fairly stable, despite a rate of inflation close to the ECB's 2 per cent ceiling and continued high government borrowing. The long-term interest rate fell from 4.1 per cent in 2004 to 3.4 per cent in 2005.

The euro area's nominal effective exchange rate is estimated to have depreciated by 1.9 per cent in 2005, after strengthening significantly over the course of the previous years. The slide in the euro's external value was chiefly due to the monetary tightening in the United States and the increased uncertainty in the foreign exchange markets following the political turmoil surrounding the French and Dutch rejection of the European Constitution. At the same time, the area's real effective exchange rate depreciated by 5.4 per cent as export prices increased at a very limited pace.

The euro area's fiscal stance deteriorated slightly and the public sector's net borrowing edged up from 2.6 per cent of GDP in 2004 to 2.7 per cent of GDP in 2005. This bleaker fiscal outcome was primarily caused by frailer economic growth and by reluctance to pursue resolute fiscal consolidation.

Employment growth strengthens and underpins growth in 2006

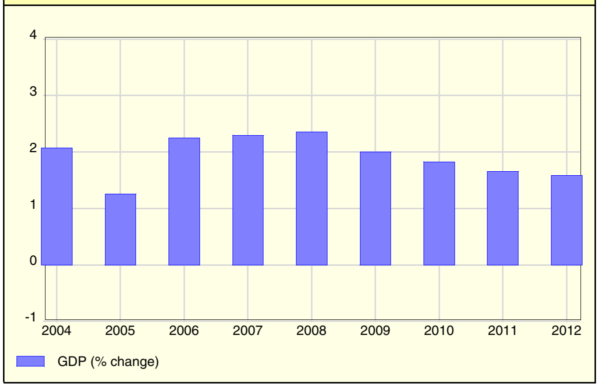
In 2006, euro area real GDP growth is projected to rise to 2.3 per cent, compared with 1.3 per cent in 2005. This higher growth stems from a rebound in domestic demand as well as from a notable positive contribution by net exports to overall GDP growth.

In 2006, private consumption growth should increase by 1.8 per cent as consumption rises from its particularly low levels of the previous years, and as it also benefits from continued favourable financing conditions and income growth. Though real short-term interest rates - deflated by the deflator of private consumption - are expected to increase significantly in 2006, they are expected to come out at no more than 0.9 per cent. Household real disposable income is expected to increase by 1.6 per cent, primarily reflecting a 1.3 per cent increase in total employment.

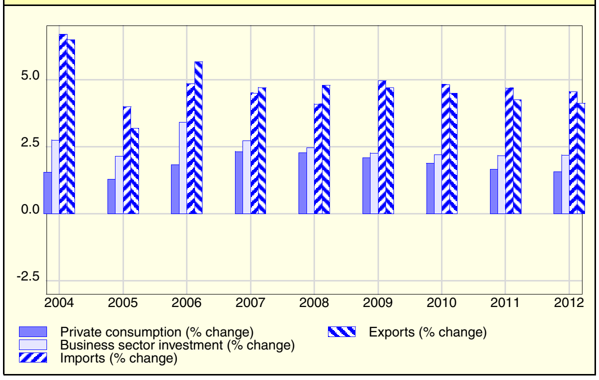
Business sector investment tracks the change in output and rises by 3.4 per cent in 2006. Public investment rises by 1.6 per cent, as it converges towards its trend growth rate. Growth in residential investment recovers somewhat from its fall the year before and progresses by 0.7 per cent in 2006.

The euro area's export growth should edge upwards from 3.2 per cent in 2005 to 5.7 per cent in 2006, primarily reflecting a lagged response to the significant depreciation of the area's real effective exchange rate in the previous year. Indeed, the real effective exchange rate is estimated to have depreciated by 5.4 per cent in 2005, and is expected to depreciate by a further 0.2 per cent in 2006. Import growth should increase from 4 per cent in 2005 to 4.9 per cent in 2006, as domestic output rebounds and the rise in oil prices becomes less pronounced. On balance, the area's net exports should contribute 0.3 percentage-point to overall GDP growth in 2006.

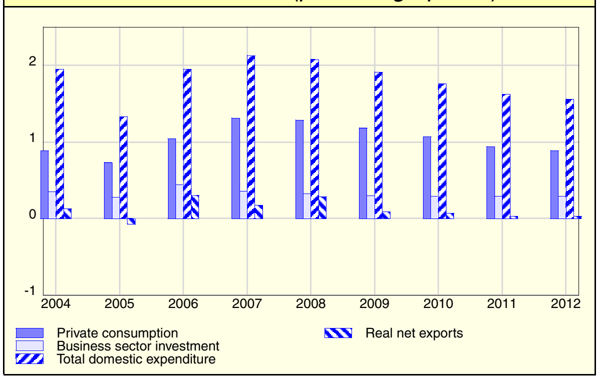
Graph 1 - Gross domestic product in the euro area



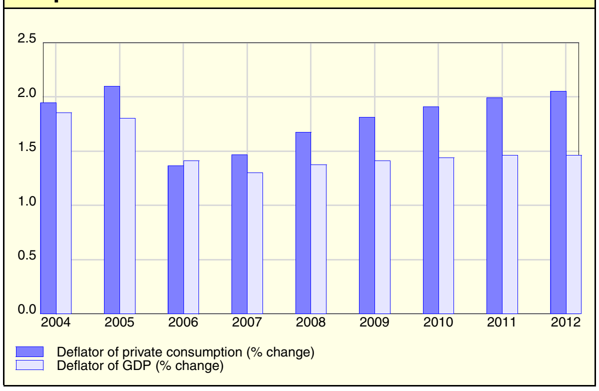
Graph 2 - Selected components of demand in the euro area



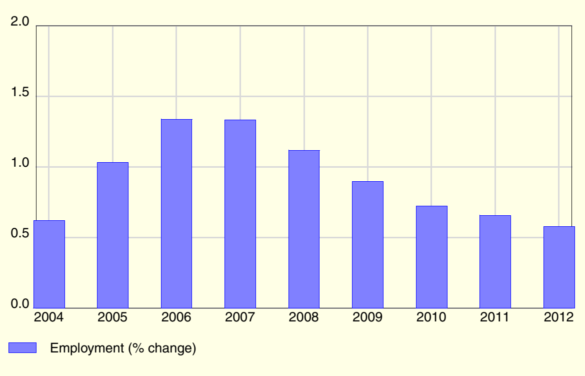
Graph 3 - Contributions to real GDP growth in the euro area *(percentage-points)*



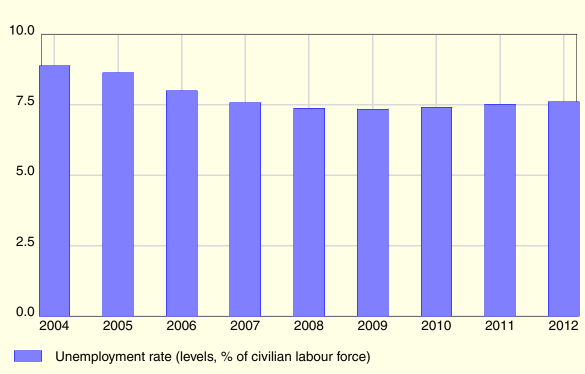
Graph 4 - Price deflators in the euro area



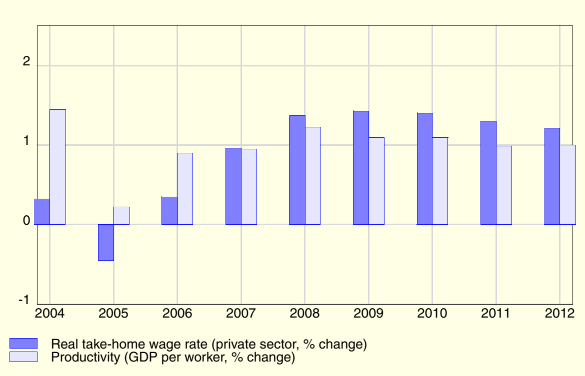
Graph 5 - Employment in the euro area



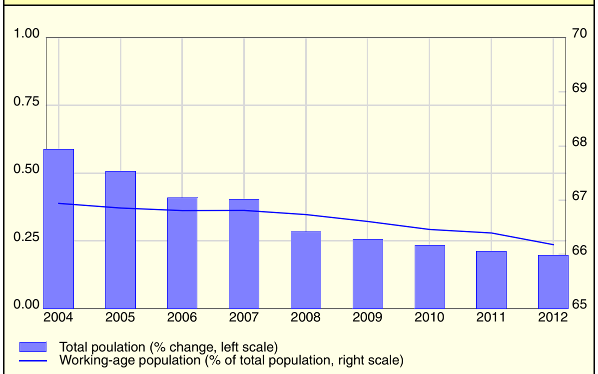
Graph 6 - The unemployment rate in the euro area



Graph 7 - Real wages and productivity in the euro area



Graph 8 - Population in the euro area



In 2006, employment reacts to the area's improving output growth, the favourable evolution of real unit labour costs since 2004, and the relatively meagre employment growth in 2003 and 2004. Consequently, total employment is expected to increase by 1.3 per cent in 2006, after rising by 1 per cent in 2005, and only 0.6 and 0.3 per cent in 2004 and 2003, respectively. Moreover, as employment expands more rapidly than the labour force, the unemployment rate falls from 8.6 per cent of the civilian labour force in 2005 to 8 per cent in 2006.

Nominal wages are projected to rise by 1.9 per cent in 2006, up from the lowish 1.6 per cent recorded in 2005. Nevertheless, overall real take-home wages should increase by only 0.3 per cent, while the real private sector wage costs increase by 0.8 per cent, reflecting a higher increase in consumer prices than in producer prices. Real wage growth continues to be modest as the unemployment rate remains at a fairly high 8 per cent of civilian population. In 2006, overall labour productivity growth gains momentum and is expected to come out at 0.9 per cent, which is once again above the growth rate of real producer wage costs.

After having remained stuck around the 2 per cent mark over the previous years, consumer price inflation finally decelerates to just 1.4 per cent in 2006. This decline in inflation stems from the sustained declines in real unit labour costs and from a potential output growth that has regularly outpaced the rise in effective demand several years in a row.

Despite the fall in inflation, the nominal short-term interest rate edges slightly upwards to an annual average of 2.3 per cent in 2006, as the monetary authorities continue to build up their anti-inflation credentials in the face of fairly high government borrowing. The nominal long-term interest rate remains steady around 3.4 per cent in 2006.

With government outlays growing somewhat less quickly than government revenue in 2006, the public sector net borrowing requirement edges slightly downwards from 2.7 per cent of the area's GDP in 2005 to 2.6 per cent of GDP in 2006.

Balanced domestic-led growth up to 2012

Over the 2007-2012 period, euro area real GDP still manages to post an average annual increase of 2 per cent, as the marked decline in working-age population growth is partly off-set by an increase in the labour participation rate. Over this period, domestic demand is driven mainly by private consumption and business sector investment. External trade fails to make any significant net contribution to the area's overall GDP growth rate after 2008.

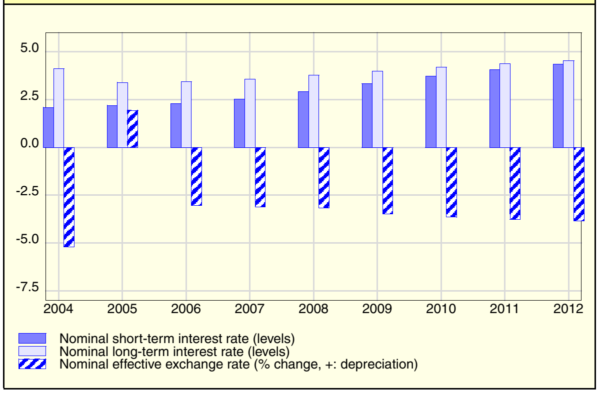
Though slowing towards the end of the projection period, private consumption growth remains relatively strong and comes out at an average rate of 2 per cent per annum. This rise in consumption is mainly due to the steady 0.9 per cent average increase in total employment and an average 1.2 per cent growth in overall real take-home wages. This growth in wages is itself underpinned by a steady 1.1 per cent average rise in labour productivity.

Business investment growth comes out at a robust average rate of 2.3 per cent per annum over the 2007-2012 period, chiefly due to sustained private sector output growth. Over the same period, investment in residential buildings rises at a modest average rate of 1.1 per cent, primarily reflecting slow population growth. All in all, total investment in gross fixed capital increases on average by 1.9 per cent per annum over the 2007-2012 period.

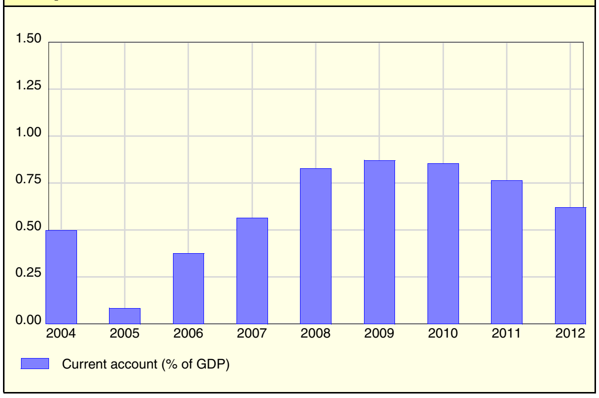
The euro area's exports post a robust 4.5 per cent annual growth rate between 2007 and 2012. Export growth is underpinned by an average 4.1 per cent annual increase in foreign effective demand and by modest increases in export prices. Exporters limit export price growth to an average rise of just 0.3 per cent per annum over the 2007-2012 period, in an attempt to remain competitive in world export markets. At the same time, the area's imports grow on average by 4.6 per cent over the 2007-2012 period, responding to the rise in domestic output, as well as to the limited rise in import prices. The rise in euro-denominated import prices is kept in check by the 3.5 per cent average appreciation of the area's nominal effective exchange rate and by a fall in the price of oil.

Underpinned by sturdy private sector output growth and limited increases in real unit labour costs, employment in the area's private sector should increase on average by 1 per cent over the 2007-2012 period. Employment growth is especially strong in 2007 and 2008, coming out well above the 1 per cent mark. Employment growth then slows down markedly over the remainder of the projection period, due to the rapidly ageing population in the euro area and the rise in unit labour costs. Indeed, as consumer prices rise more rapidly than producer prices, real producer wage costs come under pressure as households seek compensation for the rising cost of living; this leads to a 0.5 per cent annual average increase in overall real unit labour costs between 2007 and 2012. Nevertheless, with labour supply increasing at a slower pace than labour demand, the unemployment rate declines from 8 per cent of the civilian labour force in 2006 to 7.6 per cent in 2012, approaching the natural rate of unemployment. The latter declined notably in the early 2000s, when the overall tax burden on labour gradually declined in the area.

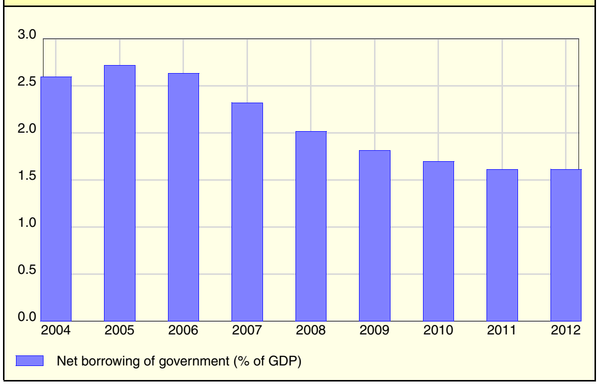
Graph 9 - Interest and exchange rates in the euro area



Graph 10 - Current account of the euro area



Graph 11 - Net borrowing of government in the euro area



As potential private sector output growth begins to trail behind growth in effective demand - partly reflecting the area's underlying demographic developments - inflationary pressures build up and consumer price inflation rises from 1.5 per cent in 2007 to 2.1 per cent in 2012. Consequently, the nominal short-term interest rate is raised from 2.5 per cent in 2007 to 4.4 per cent in 2012, while the nominal long-term interest rate rises from 3.6 per cent in 2007 to 4.5 per cent in 2012.

In a context of rising employment and firm output growth, the automatic fiscal stabilisers allow government revenue to rise more rapidly than public spending. As a consequence, the euro area's consolidated fiscal deficit falls from 2.3 per cent of GDP in 2007 to 1.6 per cent of GDP in 2012. Furthermore, robust nominal GDP growth leads to a fall in the euro area's public debt-to-GDP ratio, which declines from 71 per cent of GDP in 2007 to 68.5 per cent of GDP in 2012.

The Western Non-Euro EU Member States

Real GDP growth in the Western non-euro EU Member States[1] is estimated at a meagre 1.9 per cent in 2005, down from 3 per cent in 2004. Over the 2006-2012 period, the area's real GDP growth should average 2.8 per cent per annum, with domestic demand contributing almost all of the economic stimulus. At the same time consumer price inflation is projected to increase on average by 1.7 per cent per annum, edging up towards the end of the period as total demand progresses at a somewhat faster pace than potential output.

Domestic demand growth stumbles in 2005

Real GDP growth in the Western non-euro European Union Member States is estimated to have come out at a meagre 1.9 per cent in 2005, down from 3 per cent the year before. In 2005, GDP growth lost momentum as domestic demand faltered in the face of unfavourable developments in the international energy markets and, especially, the domestic housing market.

Private consumption growth in the Western non-euro EU Member States is estimated to have slowed sharply, falling from 3.4 per cent in 2004 to just 2 per cent in 2005. Consumer confidence waned in the face of a cooling housing market, and of high and volatile oil prices. At the same time, real disposable income growth lacked vigour and came out at only 2.1 per cent, compared with 2.6 per cent in 2004, primarily reflecting a noted decline in real wage growth.

After posting a 3.1 per cent growth rate in 2004, business investment is expected to have risen by no more than 1.8 per cent in 2005, chiefly due to lower private sector output growth. As efforts to improve public services intensified, government investment growth accelerated and came out at a whopping 16.4 per cent in 2005 after having posted an already massive 9.8 per cent increase in 2004. Investment in residential buildings moderated strongly and increased by a modest 2.2 per cent in 2005 compared with an exceptionally high 9.1 per cent rise in 2004.

While net exports curtailed overall GDP growth by 0.5 percentage-point in 2004, the negative contribution of net exports is estimated to have fallen to just 0.1 percentage-point in 2005. Exports grew by a robust 4.6 per cent in 2005, down from 5.5 per cent in 2004, as their progression was underpinned by the 2.5 per cent depreciation of the area's real effective exchange rate, though simultaneously hindered by the lower growth in foreign effective demand. At the same time, import growth stumbled from 6.4 per cent in 2004 to 4.5 per cent in 2005 as domestic output growth faltered and as import prices rebounded markedly after the previous year's decline.

After rising by a meek 0.4 per cent in 2004, total employment is estimated to have grown by 0.7 per cent in 2005. This rise in employment growth stemmed chiefly from the relatively contained past increases in real producer wage costs, and occurred despite the decline in output growth. Moreover, as the labour supply rose by only 0.6 per cent, the unemployment rate slipped from 5 per cent of the civilian labour force in 2004 to 4.9 per cent in 2005.

The area's deflator of private consumption came out at 1.5 per cent in 2004 and jumped to 2.2 per cent in 2005, as oil prices soared and the area's nominal effective exchange rate depreciated by 2 per cent. The GDP deflator, which is a broader measure of prices, stabilised in 2005 at its 2004 level of 2 per cent.

With GDP growth on the wane, the 2.2 per cent surge in the area's deflator of private consumption

1. "Western non-euro EU Member States" comprises Denmark, Sweden and the United Kingdom.

in 2005 proved to be insufficient to lead to a rise in the nominal short-term interest rate, which remained unchanged at 4 per cent. The long-term interest rate, which came out at 4.8 per cent in 2004, settled down at an average level of 4.2 per cent in 2005.

GDP growth spurred by net exports in 2006

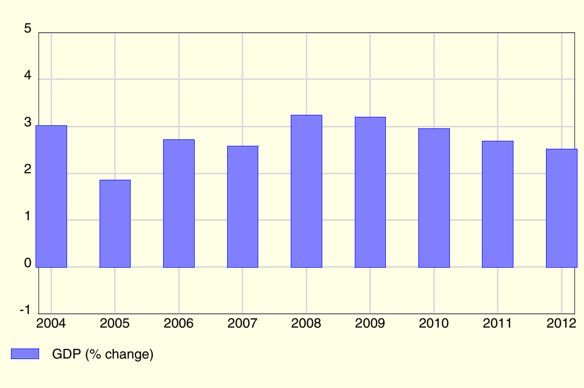
In 2006, real GDP growth of the Western non-euro EU Member States is expected to jump to 2.7 per cent, fuelled by stronger domestic demand and a noted positive 0.3 percentage-point contribution to overall GDP growth by net exports.

Private consumption is projected to grow by 2.1 per cent in 2006, compared with 2 per cent in 2005. This higher growth is underpinned by a 2 per cent rise in real take-home wages and a 0.6 per cent rise in total employment. Consumer spending is however somewhat negatively affected by smaller capital gains from financial assets and real estate.

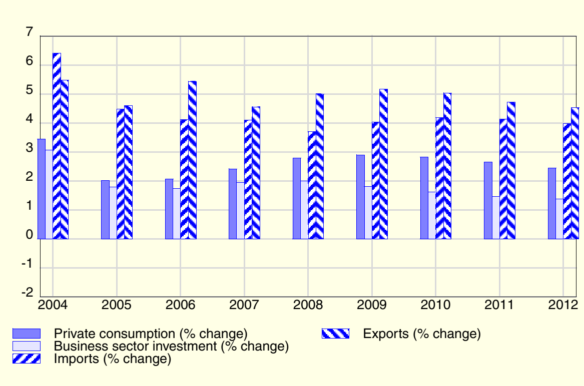
In 2006, business sector investment in gross fixed capital rises by 1.7 per cent. Growth in business sector investment remains relatively contained as real interest rates are on the rise and as the previous year's low output growth tends to discourage investment. Growth in residential investment weakens, falling from 2.2. per cent in 2005 to 1.8 per cent in 2006, thereby adjusting further to the substantial cumulative 23 per cent growth rate recorded between 2002 and 2004. Though growing at a slightly slower pace than the year before, government investment is expected to increase by a still massive 13 per cent in 2006.

The contribution of the area's net exports to overall GDP growth jumps from a negative 0.1 percentage-point contribution in 2005 to a positive contribution of 0.3 percentage-point in 2006. This turn-around in net exports is mainly linked to a sturdy upswing in the area's consolidated exports, which rise by 5.4 per cent in 2006, compared with 4.6 per cent in 2005. This stronger export growth is essentially a further response to the previous year's 2.5 per cent real effective exchange rate depreciation. At the same time, import growth notches down from 4.5 per cent in 2005 to 4.1 per cent in 2006, as the effects of the 2005 depreciation turn out to have a greater impact on the area's consolidated imports than the effects of the pick-up in domestic output growth.

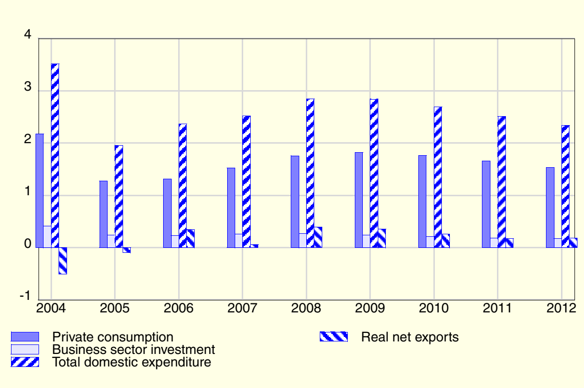
Graph 12 - Gross domestic product in the Western non-euro EU Member States



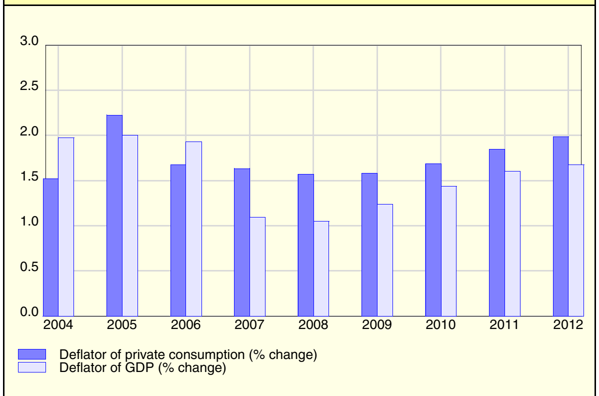
Graph 13 - Selected components of demand in the Western non-euro EU Member States



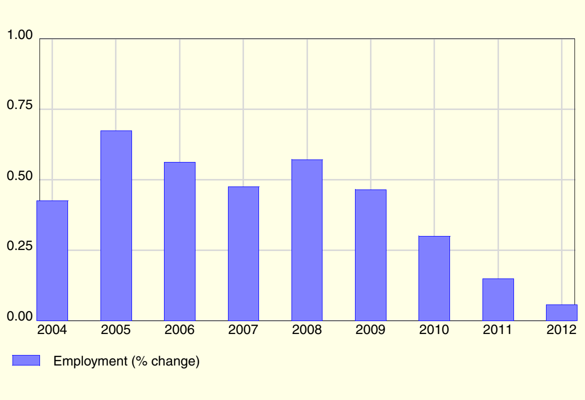
Graph 14 - Contributions to real GDP growth in the Western non-euro EU Member States *(percentage-points)*



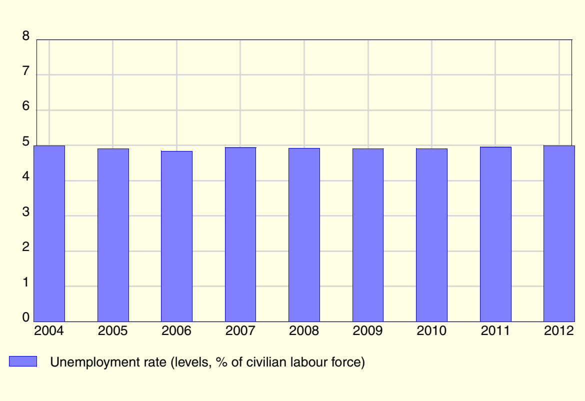
Graph 15 - Price deflators in the Western non-euro EU Member States



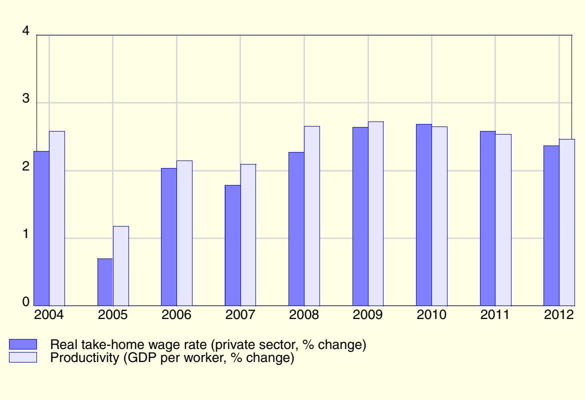
Graph 16 - Employment in the Western non-euro EU Member States



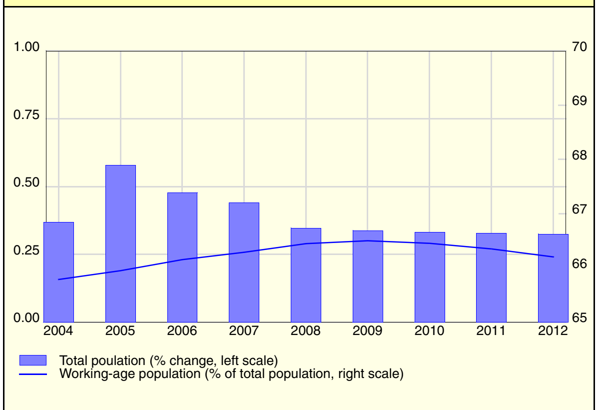
Graph 17 - The unemployment rate in the Western non-euro EU Member States



Graph 18 - Real wages and productivity in the Western non-euro EU Member States



Graph 19 - Population in the Western non-euro EU Member States



Labour demand is projected to rise by 0.6 per cent in 2006, slightly down from the 0.7 per cent increase of 2005. Employment growth slows as the effects of the increase in gross private sector output is insufficient to counter the negative effects of the 2.7 per cent increase in real producer wage costs. However, as the labour supply increases by only 0.5 per cent, the unemployment rate edges down by 0.1 percentage-point from 4.8 per cent of the civilian labour force in 2005 to 4.7 per cent in 2006.

Though gross private sector output rebounds, consumer price inflation decelerates from 2.2 per cent in 2005 to 1.7 per cent in 2006. This mild price development comes not only in response to the previous year's markedly slower growth in demand than in potential output, but also in response to the 3.1 per cent appreciation of the area's nominal effective exchange rate.

Even though contemporaneous inflationary pressures tend to subside, the monetary authorities raise the nominal short-term interest rate, albeit by just 0.1 percentage-point, to 4.1 per cent. Indeed, the rebound in 2006 output growth heralds the possible return of higher inflation, and the monetary authorities act to pre-empt the emergence of higher inflation expectations. The long-term interest rate follows suit and increases from 4.2 per cent in 2005 to 4.3 per cent in 2006.

The area's net public borrowing requirement declines from 2.2 per cent of GDP in 2005 to 2 per cent of GDP in 2006. This improved fiscal outcome is primarily due to the working of the automatic fiscal stabilisers in an environment where output growth rebounds and the real wage bill increases significantly.

Stable expansion of domestic demand as of 2007

Real GDP of the Western non-euro EU member states grows on average by 2.9 per cent per annum over the 2007-2012 period. Growth is primarily supported by domestic demand as the contribution of net exports to overall growth comes out on average at 0.2 percentage-point over the period. Nevertheless, real GDP growth weakens towards the end of the projection period, as labour supply growth decreases in the face of an ageing population.

Private consumption rises on average by a robust 2.7 per cent over the 2007-2012 period, backed up by a 2.9 per cent average annual increase in real disposable income and fairly moderate real interest rates. The rise in real disposable income mainly stems from a 2.3 per cent average rise in real take-home wages, which is itself underpinned by robust productivity growth.

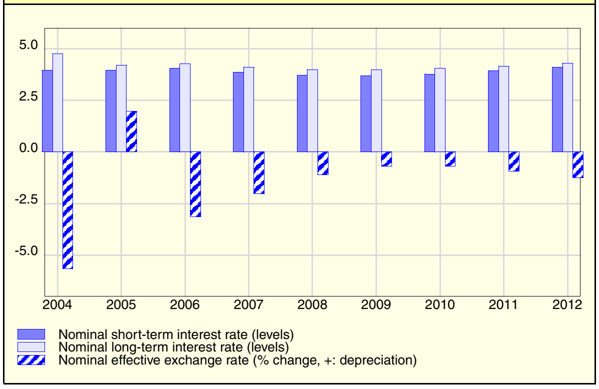
As employment growth falls off towards the end of the projection period, growth in business investment also eases off, thereby posting a very moderate average annual increase of 1.7 per cent over the 2007-2012 period. Investment in residential buildings follows the robust income growth and progresses on average by 3 per cent each year, while government investment declines to more sustainable growth rates. All in all, total investment in gross fixed capital increases on average by 2.1 per cent over the 2007-2012 period.

After making a marginal 0.1 percentage-point contribution to growth in 2007, the area's consolidated net exports rebound and add 0.4 percentage-point to GDP growth in 2008. However, in subsequent years this positive contribution tends to decline as export growth wanes and import growth stabilises. Indeed, though the area's consolidated exports rise on average by 4.8 per cent over the 2007-2012 period, export growth declines from 5 per cent in 2008 to 4.5 per cent in 2012 as growth in export markets trends downward over the projection period. Imports grow at a stable annual average rate of 4 per cent over the 2007-2012 period, as import demand is sustained by fairly robust domestic output growth and moderate price increases.

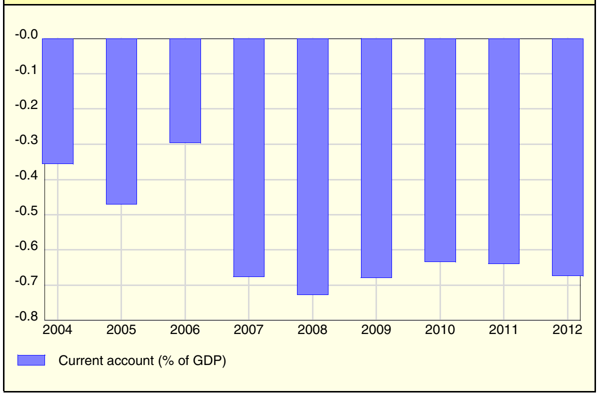
Employment rises on average by 0.3 per cent per annum over the 2007-2012 period. However, the employment gains tend to decline towards the end of the projection period, tracking the evolution of both the working-age population and the labour supply. Moreover, although real private sector producer wage costs increase on average by 2.8 per cent, real unit labour costs remain fairly contained thanks to a 2.5 per cent annual average rise in overall labour productivity. Because the labour supply grows at a pace similar to that of employment, the unemployment rate remains relatively stable between 2007 and 2012, coming out at 5 per cent of the civilian labour force in 2012.

Consumer price inflation averages 1.7 per cent per annum between 2007 and 2012, but tends to increase towards the end of the projection period as total demand increases somewhat more quickly than potential output.

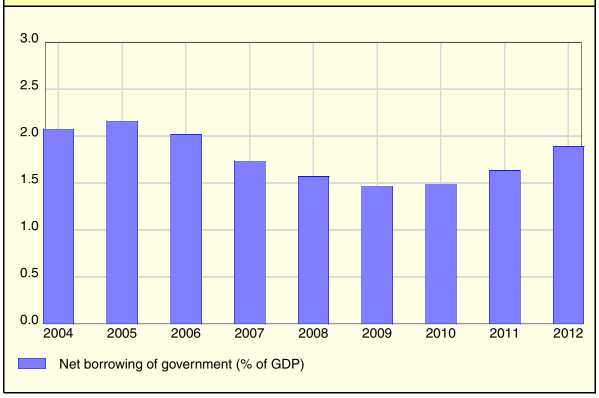
Graph 20 - Interest and exchange rates in the Western non-euro EU Member States



Graph 21 - Current account of the Western non-euro EU Member States



Graph 22 - Net borrowing of government in the Western non-euro EU Member States



The nominal short-term interest rate rises from 3.9 per cent in 2009 to 4.1 per cent in 2012, as inflationary pressures mount towards the end of the projection period. The nominal long-term interest rate settles at an average rate of 4.1 per cent over the 2007-2012 period. The area's nominal effective exchange rate sticks to its trend appreciation, gaining on average 1.1 per cent over the period, mainly reflecting relatively higher inflation rates in the other areas of the world economy.

The government fiscal balance tends to improve between 2006 and 2010, falling from 2 per cent of GDP to 1.5 per cent of GDP. It then deteriorates and, by 2012, the public sector shows a deficit of 1.9 per cent of GDP. This deterioration of the fiscal stance reflects a faster increase in public expenditure than in revenue, owing to a gradual slowdown in output growth and an ageing of the area's population.

The Eastern Non-Euro EU Member States

Real GDP growth in the Eastern non-euro EU Member States[1] is projected to average 3.6 per cent per annum over the 2006-2012 period. As the negative net contribution of foreign demand to overall growth becomes gradually larger over the projection period, growth is ever increasingly driven by private consumption and investment. Inflation should remain relatively stable, with the deflator of private consumption increasing on average by 2.3 per cent per annum.

Strong domestic demand in 2005

Real GDP growth in the Eastern non-euro EU Member States is estimated to have risen by 5.4 per cent in 2005, up from 4.8 per cent in 2004. This higher growth stems from a generally stable contribution to growth by domestic demand and an exceptional positive 0.2 percentage-point contribution to growth by the area's consolidated net exports.

Growth in private consumption and in total fixed capital investment are both estimated to have declined slightly in 2005. Private consumption growth is estimated at 4.7 per cent, compared with 4.8 per cent in 2004, while growth in total gross fixed capital formation is gauged at 7 per cent, down from 7.5 per cent the year before.

The rise in the area's overall GDP growth rate is mainly due to a significant improvement in the area's consolidated net exports. In 2004, net exports subtracted 0.4 percentage-point from the area's GDP growth rate. In 2005, however, net exports rebounded from their negative trend to provide a positive 0.2 percentage-point contribution to overall GDP growth. This noted turn-around in the performance of the area's external sector reflects import growth falling off from 12.4 per cent in 2004 to 7 per cent in 2005, compared with a fall from 13.1 per cent in 2004 to 7.9 per cent for export growth.

The rise in the private consumption deflator came out at no more than 2.2 per cent in 2005, compared with 3.6 per cent the year before, mainly due to a sharp appreciation of the area's nominal effective exchange rate. At the same time, the area's average nominal short-term interest rate fell from 7.2 per cent in 2004 to 5.1 per cent in 2005, while the long-term interest rate declined from 7.5 per cent in 2004 to 5.4 per cent in 2005. The area's nominal effective exchange rate appreciated by 4.1 per cent, while the real effective exchange rate appreciated by a more moderate 2.3 per cent, primarily reflecting stronger price increases elsewhere in the world than in the Eastern non-euro EU Member States.

Steady growth in 2006

Following the successful round of accessions to the European Union in May 2004 and in light of an expected further real convergence with the rest of the European Union, domestic output in the area is projected to continue to rise at a steady pace in 2006. Indeed, growth in private consumption should come out at 4.7 per cent in 2006. Moreover, though growth in gross fixed capital formation dipped slightly in 2005, it is forecast to rise once again to 7.7 per cent in 2006. At the same time, the area's GDP should also be boosted by a 2.7 per cent rise in overall public consumption, rising from a 2.2 per cent growth rate the year before. On balance, domestic demand is projected to rise by 5.5 per cent in 2006, up from 5.3 per cent in 2005.

In 2006, the contribution of the area's net exports to growth is expected to become negative once again, subtracting 1.1 percentage-points from the overall GDP growth rate. Export growth should rise from 7.9 per cent in 2005 to 8.4 per cent in 2006, following the up-tick in foreign effective demand and improved market access to the rest of the European Union ensuing accession. Import volumes should also continue to grow strongly, up from 7 per cent in 2005 to 9 per cent in 2006, mainly due to continued robust domestic demand and strong exchange rate appreciations in the past.

1. "Eastern non-euro EU Member States" comprises Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia, plus Bulgaria and Romania.

As of 2007, continued strong economic activity accompanied by widening current account deficits

Real GDP growth of the Eastern non-euro EU Member States is projected to average 3.5 per cent per annum over the 2007-2012 period, compared with 2 per cent in the euro area over the same period. During the 2007-2012 period, GDP growth is mainly underpinned by a robust 4.9 per cent annual average increase in domestic demand, but tempered by an annual average negative contribution of 1.4 percentage-points from net exports.

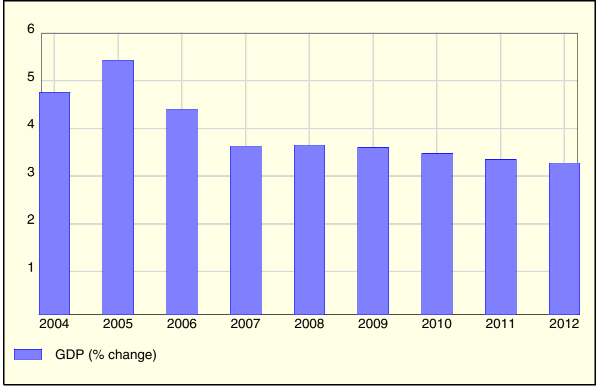
Private consumption grows on average by 3.8 per cent over the 2007-2012 period. Consumption growth rates remain relatively high, as the area's consumption pattern tends to catch up with average consumption levels in the rest of the European Union.

Growth in total gross fixed capital formation averages 6.9 per cent per annum. These high growth rates for investment reflect the efforts that continue to be made to facilitate the further transition of the area to a modern service-oriented, knowledge-based, market economy.

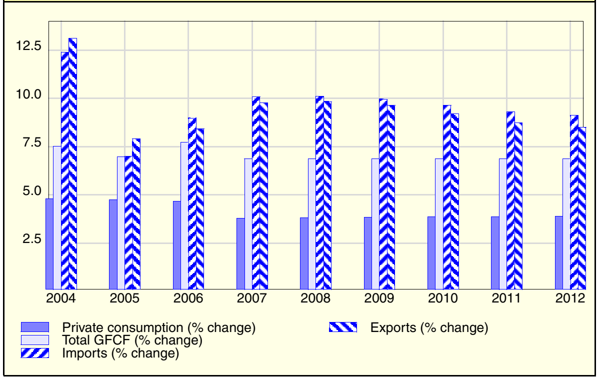
The area's nominal effective exchange rate appreciates at a mild 0.2 per cent per annum over the 2007-2011 period. At the same time, the relatively contained rise in the area's export price and strong price rises in the rest of the world lead to a real effective exchange rate depreciation of 0.3 per cent per annum over the same period. However, this real depreciation of the area's currencies is insufficient to curb the widening current account deficit, and the Eastern non-euro EU Member State's consolidated current account deficit comes out at 4 per cent of GDP in 2012.

As the nominal effective exchange rate follows an appreciating trend and as nominal interest rates come out at an average of 5.9 per cent over the 2007-2012 period, consumer price inflation stabilises around an average rate of 2.2 per cent per annum over the same period, compared with an average rate of just 1.8 per cent in the euro area. The inflation rate tends to converge to euro area inflation rates, as economic agents anticipate the area's future membership of the Economic and Monetary Union.

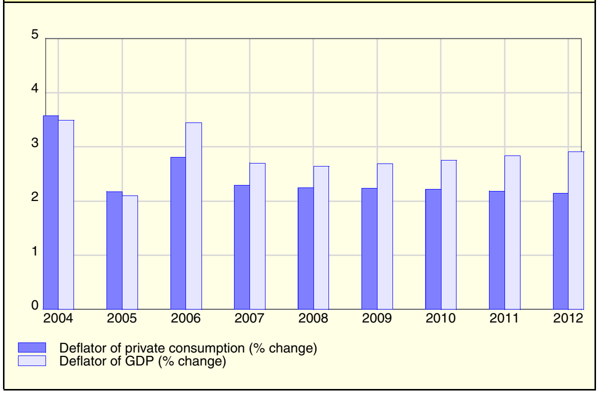
Graph 23 - Gross domestic product in the Eastern non-euro EU Member States



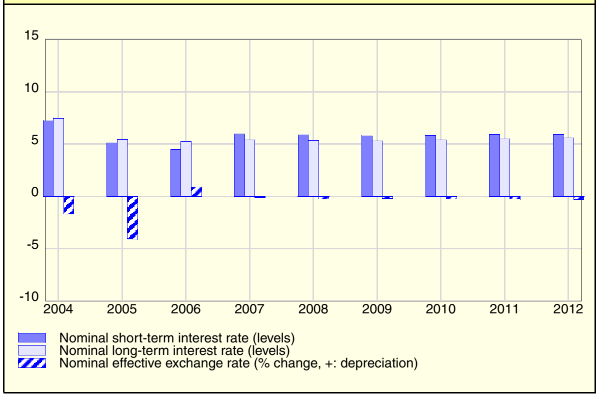
Graph 24 - Selected components of demand in the Eastern non-euro EU Member States



Graph 25 - Price deflators in the Eastern non-euro EU Member States



Graph 26 - Interest and exchange rates in the Eastern non-euro EU Member States



The United States

Real GDP in the United States (US) is expected to rise on average by 2.6 per cent over the 2006-2012 period. However, growth will be uneven as, under current US laws and policies, the sunset of important tax cut provisions will significantly weaken domestic demand growth by the end of the projection period. Moreover, with short-term interest rates expected to average 4.4 per cent over the projection period, monetary policy will be less accommodative than in recent years. Despite the expiration of significant tax cut provisions towards the end of the projection period, the fiscal deficit will remain high and is expected to slide only slowly down from 3.9 per cent of GDP in 2006 to 2.7 per cent of GDP in 2012. Last but not least, US trade imbalances continue to accumulate, putting not only the US economy but the whole world economy on an uneven footing.

Sturdy growth and higher interest rates in 2005

Real GDP in the United States is estimated to have progressed by 3.6 per cent in 2005, down from the strong 4.2 per cent increase registered in 2004. This somewhat lower output growth primarily reflects a slowdown in domestic demand, caused by the measured but steady interest rate hikes and soaring energy prices. However, the somewhat weaker domestic demand was partly off-set by a smaller negative contribution of net exports to overall growth.

Growth in private consumption is estimated to have come out at 3.5 per cent in 2005, compared with 3.9 per cent in 2004. More specifically, consumer spending benefited from a very strong 1.7 per cent increase in employment and further increases in house prices, but it also suffered from the 2 percentage-points interest rate hike (in terms of average yearly interest rates) since 2004, from the continued sharp increase in oil prices, and from flat equity prices.

In 2005, US business sector investment is estimated to have risen by an impressive 7.9 per cent, coming after an even more impressive 9.6 per cent increase in 2004. These high growth rates are to a large extent related to firms' attempts to catch up with the below-trend investment rates of the preceding years, and to continued robust output growth. Growth in residential building investment is expected to have decelerated from an unsustainable 10.3 per cent in 2004 to 6.7 per cent in 2005. Moreover, inventory demand, which contributed a positive 0.4 percentage-point to total domestic demand growth in 2004, is estimated to have subtracted 0.4 percentage-point from the overall growth in 2005.

The negative contribution of net exports to overall GDP growth receded from 0.9 percentage-point in 2004 to 0.3 percentage-point in 2005. Indeed, US exports continued to benefit from the robust growth in the world economy, rising by 7.1 per cent in 2005, after an 8.4 per cent increase in 2004. At the same time, import growth is expected to have declined from 10.7 per cent in 2004 to 6 per cent in 2005, chiefly due to the sharp increase in oil prices, which compounded the effects of the mild slowdown in domestic demand. Nevertheless, the US trade balance continued to deteriorate as import prices increased by 5.7 per cent while export prices progressed by only 3.7 per cent. Consequently, the current account deficit came out at 6.2 per cent of GDP in 2005, compared with 5.6 per cent of GDP in 2004 and 4.6 per cent in 2003.

As the economy operated above potential and the danger existed that the surge in oil prices might lead to second-round effects and feed through into core inflation, the US monetary authorities pushed the short-term interest rate up from an annual average of 1.6 per cent in 2004 to an average rate of 3.6 per cent in 2005. Nevertheless, despite the rising short-term interest rate and the heightened inflationary pressures, the long-term interest rate remained flat at 4.3 per cent.

After depreciating by 5.6 per cent in 2003 and by 4.4 per cent in 2004, the US dollar's nominal effective exchange rate is estimated to have depreciated by another 2.4 per cent in 2005, partly due to the implementation of more flexible exchange rate arrangements by major Asian trading partners.

In 2005, the US economy continued to churn out new jobs at a brisk pace and employment is estimated to have risen by 1.7 per cent, after the already respectable 1.1 per cent increase in 2004. This high employment growth follows the prolonged decline in real unit labour costs and the sustained output growth of recent years. However, as productivity growth failed to keep up with real wage costs, real unit labour costs increased by 0.3 per cent in 2005. Moreover, the labour supply increased by only 1.3 per cent in 2005, leaving the US unemployment rate at 5.1 per cent of the civilian labour force in 2005, compared with 5.5 per cent in 2004.

Following a temporary surge in tax revenue from corporate and personal income, the US government budget deficit came out at 3.9 per cent of GDP in 2005. Though still high, the deficit was markedly lower than the 4.7 per cent recorded in 2004.

Less accommodative monetary and fiscal policies begin to weigh on domestic demand in 2006

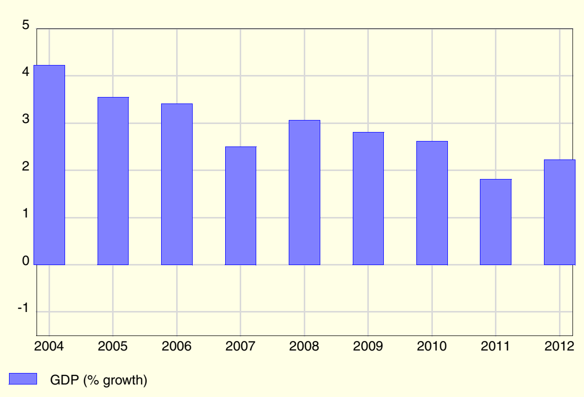
US GDP is projected to increase by 3.4 per cent in 2006, only slightly down from the 3.6 per cent registered for 2005. In 2006, GDP growth slows as the deceleration in private consumption and investment growth outweighs the more favourable impact of net exports on overall growth.

Private consumption growth slips from 3.5 per cent in 2005 to 2.8 per cent in 2006, as households start to increase their savings in the face of sharp interest rate hikes and future tax liabilities. Indeed, after rising by 2 full percentage-points in 2005, the short-term interest rate is projected to rise by an additional 0.6 percentage-point in 2006, to 4.2 per cent. Moreover, future tax liabilities are expected to rise as under current laws and policies certain important existing tax cut provisions will gradually sunset as of 2006.

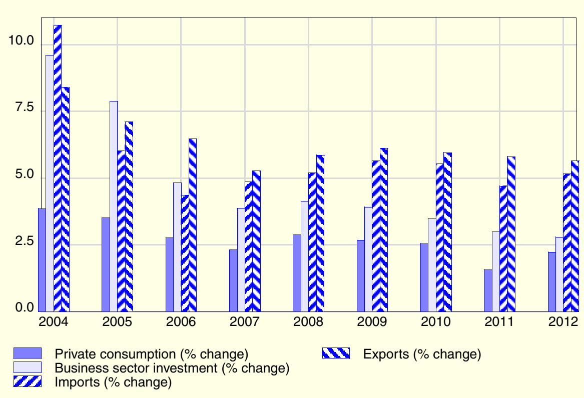
Growth in business sector investment falls from 7.9 per cent in 2005 to a more sustainable 4.8 per cent in 2006, in the wake of rising interest rates and particularly high investment growth registered for the two previous years. Growth in residential investment comes out at 3.7 per cent, thereby continuing the gradual slide from the record 10.3 per cent increase recorded in 2004.

US exports increase by 6.5 per cent in 2006, benefiting from fairly robust global demand and from the substantial dollar depreciation of the three previous years. Import growth slows from 6 per cent in 2005 to 4.4 per cent in 2006, chiefly reflecting a deceleration in private sector output growth. On balance, the deficit on the US current account improves only marginally, dropping from 6.2 per cent of GDP in 2005 to 5.9 per cent of GDP in 2006.

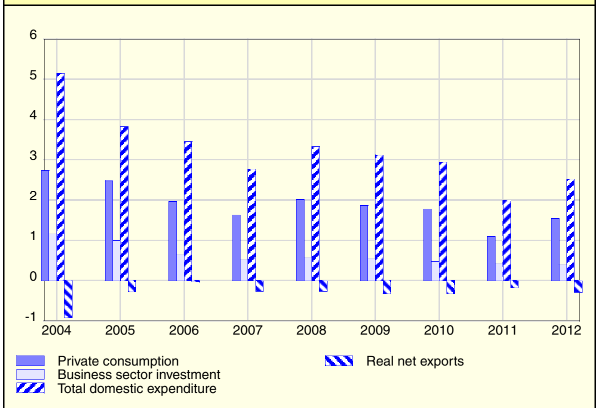
Graph 27 - Gross domestic product in the US



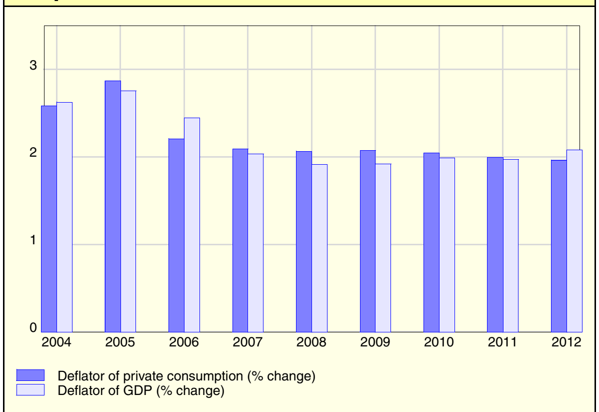
Graph 28 - Selected components of demand in the US



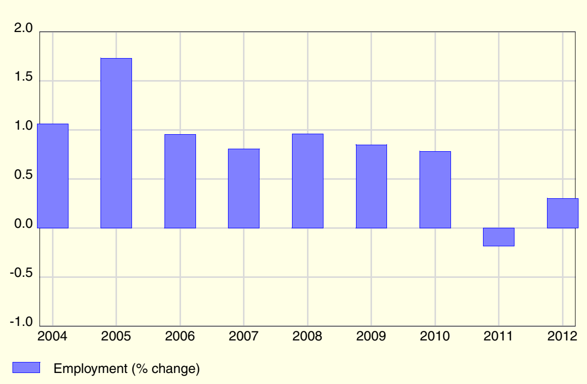
Graph 29 - Contributions to real GDP growth in the US *(percentage-points)*



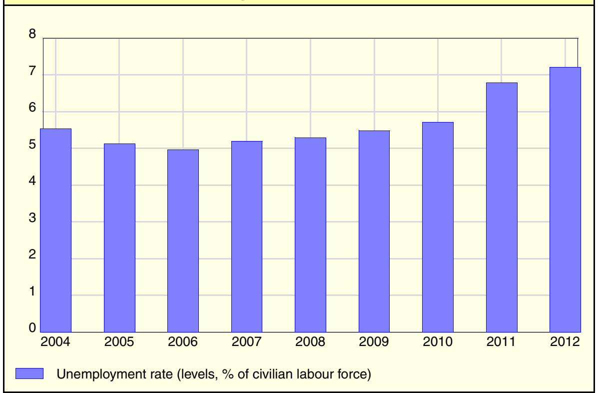
Graph 30 - Price deflators in the US



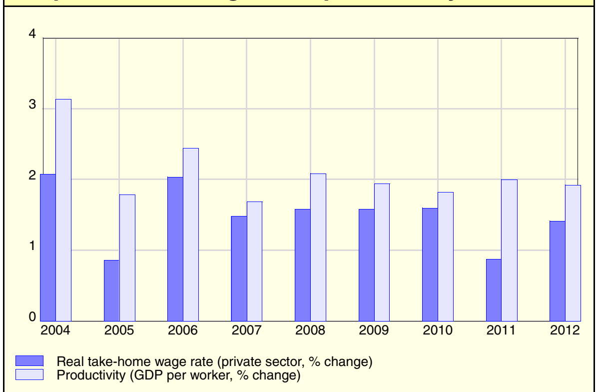
Graph 31 - Employment in the US



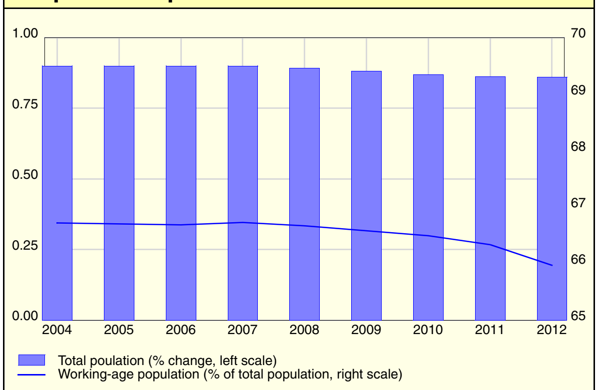
Graph 32 - Unemployment rates in the US



Graph 33 - Real wages and productivity in the US



Graph 34 - Population in the US



After having increased by an exceptionally strong 1.7 per cent in 2005, total employment expands at a more sustainable pace of 1 per cent in 2006. At the same time, the labour supply increases by 0.8 per cent in 2006, leaving the unemployment rate down by only 0.1 percentage-point at 5 per cent of the civilian labour force. Moreover, though overall real take-home wages grow by 1.9 per cent and private sector real wage costs increase by 2.3 per cent, overall real unit labour costs fall by 0.5 per cent in 2006, as labour productivity growth increases by a robust 2.4 per cent.

The US monetary authorities maintain their measured pace of monetary tightening, raising the nominal short-term interest rate from an average of 3.6 per cent in 2005 to 4.2 per cent in 2006. At the same time, the nominal long-term interest rate increases by just 0.2 percentage-point, from 4.3 per cent in 2005 to 4.5 per cent in 2006. This continuous rise in US interest rates is larger than the rise in interest rates elsewhere in the world, leading to a 3.2 per cent appreciation of the nominal effective exchange rate, hereby reversing the course of three consecutive years of significant depreciation.

Despite a further tempered rise in oil prices, consumer price inflation falls from 2.9 per cent in 2005 to 2.2 per cent in 2006, indicating that the gradual tightening of monetary and fiscal policy is succeeding in bringing the expansion of domestic demand more into line with the economy's long-term growth potential.

Thanks to a slight rise in tax rates, public outlays rise in step with fiscal revenue leaving the US fiscal deficit unchanged in 2006, at 3.9 per cent of GDP.

Growth stumbles as significant tax cut provisions expire between 2007 and 2011

US real GDP growth follows a declining trend over the 2007-2012 period, as tax cut provisions expire[1], monetary policy adopts a neutral stance, and as demographic pressures start to constrain aggregate supply growth.

GDP growth dips to 2.5 per cent in 2007, as domestic demand is adversely affected by high interest rates and rising tax rates, and as net exports deteriorate once again in the wake of a further effective appreciation of the dollar. Although real GDP growth rebounds to 3.1 per cent in 2008, the economy fails to maintain its growth momentum and real GDP falls to just 2.6 per cent in 2010. Tax rates rise yet again in 2011 and 2012, leaving US real GDP

1. See the technical appendix for details regarding the baseline assumptions for US fiscal policy.

growth at just 1.8 per cent and 2.2 per cent, respectively.

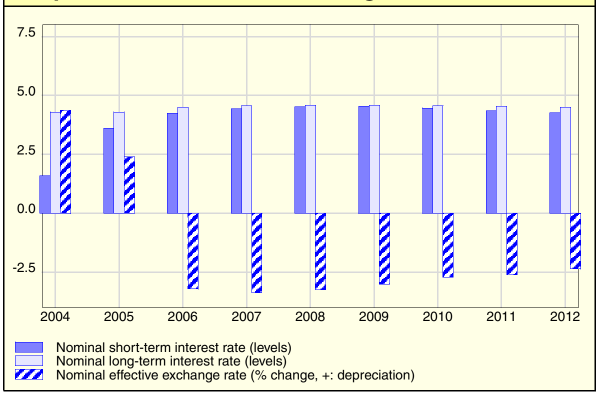
Over the 2007-2012 period, private consumption grows at an average rate of 2.4 per cent. Annually however, consumption growth follows a declining trend between 2008 and 2011, falling from a high of 2.9 per cent to 1.6 per cent, and then rising to 2.2 per cent in 2012. Initially, consumption is underpinned by a robust increase in household real disposable income. Indeed, between 2007 and 2010 real disposable income growth reflects the 0.9 per cent average rise in employment and the 1.6 per cent average increase in real take-home wages. However, the expiration of a number of significant tax cut provisions in 2011 and 2012 cuts into household disposable income and limits the rise in consumer spending.

Business sector investment increases on average by 3.5 per cent over the 2007-2012 period. Growth in business investment reaches its peak in 2008, fuelled by the still robust private sector output growth. However, as tax rates continue to rise and growth rates begin to drop off, investment growth also decelerates, falling from 4.1 per cent in 2008 to 2.8 per cent in 2012.

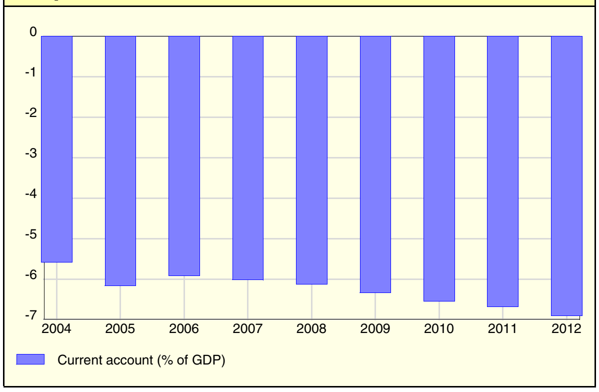
Net exports make no significant contribution to GDP growth in 2006, after which they begin to weigh negatively on growth, subtracting about 0.3 percentage-point from each year's overall growth rate up to 2012. Indeed, over the 2007-2012 period, exports grow on average by 5.8 per cent, reflecting slowing foreign effective demand growth and minor depreciations of the effective real exchange rate. At the same time, US import growth tracks to a large extent the changes in domestic economic activity, peaking in 2009 at 5.6 per cent and then decelerating to a low of 4.7 per cent in 2011. Import prices increase on average by 1.7 per cent over the 2007-2012 period, while export prices rise at an average rate of 0.8 per cent; all in all, this makes for a persistent US current account deficit over the entire projection period, with the deficit coming out at 6.9 per cent of GDP in 2012.

Although private sector employment growth averages 0.8 per cent over the 2007-2010 period, employment growth falters towards the end of the projection period as demographic pressures increase significantly and important tax cut provisions start to expire. Indeed, the rise in tax rates reduces aggregate demand, through its effect on disposable income, but it also puts pressure on real producer wages as employees bargain for higher nominal wages in an effort to reduce their income loss. The tax increases peak in 2011, leading to a limited 0.9 per cent growth in private sector real take-home wages and a strong 2.8 per cent increase in real private sector producer wages. These developments precipitate a 0.4 per cent fall in private sector employment, which then rebounds by 0.2 per cent in 2012.

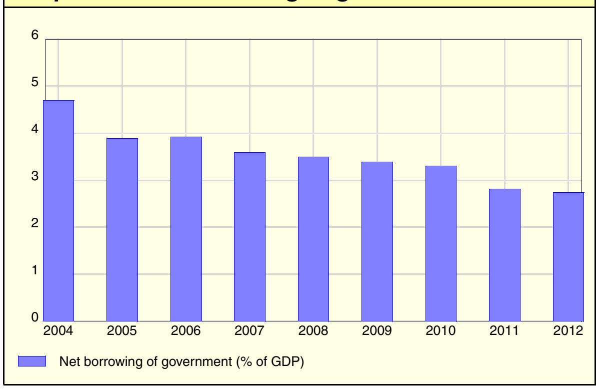
Graph 35 - Interest and exchange rates in the US



Graph 36 - US current account



Graph 37 - Net borrowing of government in the US



Over the 2007-2012 period, the US labour force increases on average by 1 per cent per annum. This rise in the labour supply, combined with a relatively lower average rise in employment, pushes the unemployment rate up from 5.2 per cent of the civilian labour force in 2007 to 7.2 per cent in 2012.

Growth in real private sector producer wage costs comes out at an average rate of 2.3 per cent over the 2007-2012 period, compared with a 1.4 per cent rise in real take-home wages over the same period. Simultaneously, overall labour productivity - measured in terms of GDP per worker - increases at an average rate of 1.9 per cent, leading to moderate increases in real unit labour costs.

Both private sector producer price inflation and consumer price inflation remain relatively subdued over the 2007-2012 period, posting average increases of 2 per cent each. These relatively tame inflation rates indicate that monetary and fiscal policies succeed in gradually bringing aggregate demand growth into line with the evolution of potential output growth.

After the significant increases of 2005 and 2006, the nominal short-term interest rate peaks at 4.5 per cent in 2008 and changes only marginally over the subsequent years, averaging 4.4 per cent over 2007-2012. At the same time, the long-term interest rate remains close to its equilibrium rate and averages 4.6 per cent over the same period. As inflation expectations for the coming years remain both subdued and well-anchored, real interest rates also remain relatively flat.

Assuming no sudden reversal in market sentiment or retrenchment by Asian central banks, which have been major buyers of US Treasury securities in recent years, the dollar's nominal effective exchange rate is projected to appreciate at an average annual rate of 2.9 per cent over 2007-2012, primarily due to the higher inflation in the rest of the world. At the same time, the real effective exchange rate depreciates by only 0.2 per cent, which is insufficient to produce a significant turn-around in the country's mounting current account deficits.

Notwithstanding the rise in fiscal revenue due to the expiration of significant tax cut provisions over the projection period, the US fiscal deficit-to-GDP ratio improves only very slowly. The net public borrowing requirement falls from 3.9 per cent of GDP in 2006 to 3.3 per cent of GDP in 2010. A more rapid improvement in public finances is hindered by the rise in government outlays for unemployment benefits and interest payments on public debt. However, as tax rates increase significantly in 2011 and 2012, government revenue surges and the deficit-to-GDP ratio falls to 2.8 per cent in 2011 and to 2.7 per cent in 2012.

Japan

Japanese real GDP is expected to rise on average by 1.7 per cent per annum over the 2006-2012 period, though growth is projected to weaken notably by the end of the period as the labour supply falls due to the ageing of the population. The fiscal deficit is expected to remain high over the projection period, while deflation disappears as of 2006 and gives way to an average inflation rate of 1.3 per cent over 2006-2012. Nevertheless, over this period the Japanese economy runs the risk that premature monetary or fiscal tightening could stifle the domestic recovery and push Japan back into a deflationary spiral.

Deflationary pressures persisted in 2005

Real GDP in Japan is estimated to have risen by 2.6 per cent in 2005, only slightly down from the strong 2.7 per cent increase recorded in 2004. Growth was primarily supported by strong domestic demand while the contribution of net exports to GDP growth fell sharply in 2005.

In 2005, private consumption is estimated to have grown by 1.9 per cent, compared with 1.5 per cent in 2004. Private consumption continued to pick up from fairly low growth rates in previous years, benefiting from robust income growth as well as the prospect of price increases as of 2006.

Business sector investment growth is estimated to have jumped by an exceptionally strong 9.3 per cent in 2005, compared with a 5.6 per cent rise the year before. Public investment, which declined by 7.3 per cent in 2005, continued to weigh negatively on overall growth as large fiscal imbalances put public outlays under ever mounting pressure.

Export growth fell from a whopping 14.4 per cent in 2004 to only 5.8 per cent in 2005, indicating that the previous growth rates were unsustainable in the face of increasing competitive pressures in the Asia/Pacific rim. In line with rising import prices, import growth is estimated to have decelerated from 8.9 per cent in 2004 to 6.4 per cent in 2005. On balance, Japanese net exports should have contributed only 0.2 percentage-point to the country's overall growth in 2005, after contributing a full percentage-point in 2004.

In 2005, deflationary pressures persisted and the deflator of private consumption fell by another 0.5

per cent, notwithstanding zero interest rates supplemented by a monetary policy of quantitative easing. At the same time, the GDP deflator declined by a full per cent in 2005, after having fallen by 1.2 per cent in 2004.

In 2005, the nominal short-term interest rate remained at its lower bound, while the nominal long-term interest rate slipped from 1.5 per cent in 2004 to 1.4 per cent. Japan's nominal effective exchange rate depreciated by 3.5 per cent in 2005, after appreciating by 3.8 per cent in 2003 and by 4 per cent in 2004. The real effective exchange rate depreciated by 4.2 per cent in 2005, reflecting not only the depreciation of the nominal exchange rate but also the fall in domestic prices.

In 2005, total employment is estimated to have risen by a 0.3 per cent, which is the strongest increase since 1997. This rise follows the strong rebound in investment and the sturdy output growth recorded in 2004 and 2005. Moreover, as the labour force increased by only 0.1 per cent, the unemployment rate fell from 4.7 per cent of the civilian labour force in 2004 to 4.5 per cent in 2005.

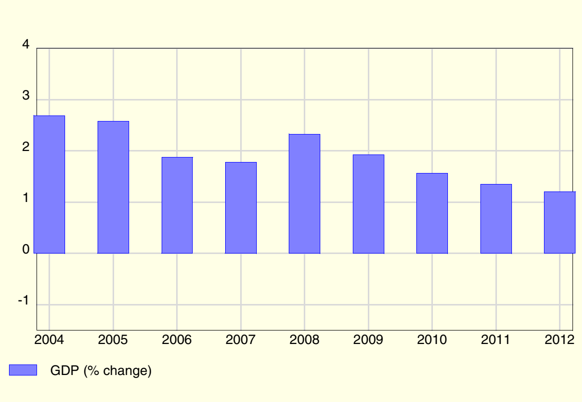
Though showing a downward trend in recent years, net borrowing by the government came out at a massive 6.5 per cent of GDP in 2005, down from 7 per cent of GDP the year before.

Growth weakens but inflation reappears in 2006

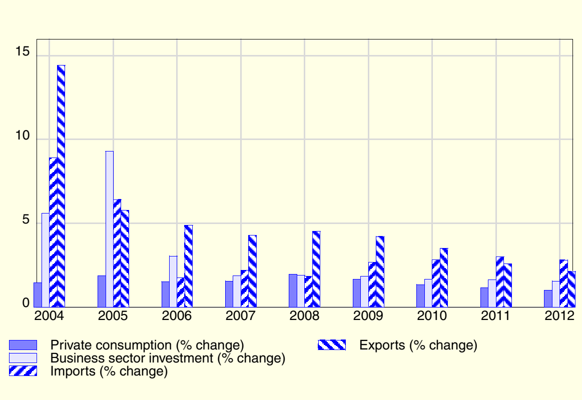
Despite a noted rebound in net exports, Japanese real GDP growth is projected to weaken in 2006 due to a strong decline in the growth of both private consumption and business investment. However, a seven-year streak of deflation is finally brought to an end, with the deflators of private consumption and GDP increasing by 0.3 per cent and 0.2 per cent, respectively.

In 2006, private consumption growth comes out at 1.5 per cent, compared with 1.9 the year before. This smaller consumption growth primarily reflects lower disposable income growth. Indeed, as growth in real interest income and other income remains feeble, the 1.6 per cent increase in real take-home wages only allows for a 1.4 per cent rise in household real disposable income, compared with a 1.7 per cent rise the year before.

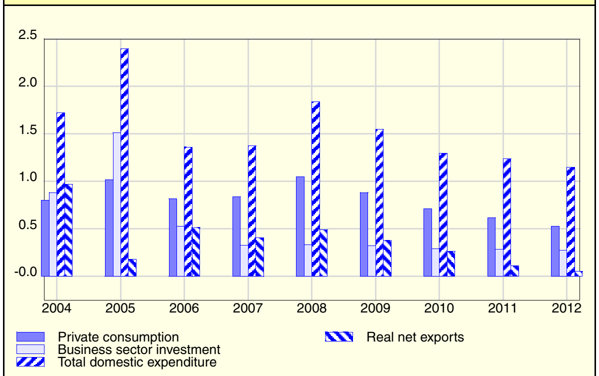
Graph 38 - Gross domestic product in Japan



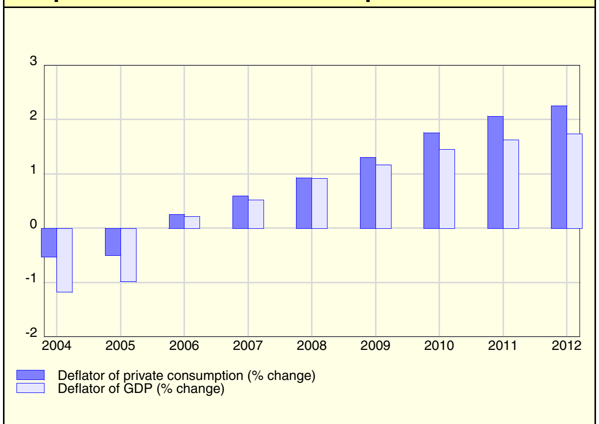
Graph 39 - Selected components of demand in Japan



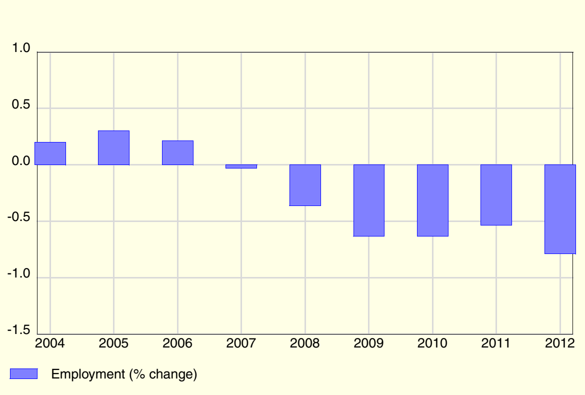
Graph 40 - Contributions to real GDP growth in Japan *(percentage-points)*



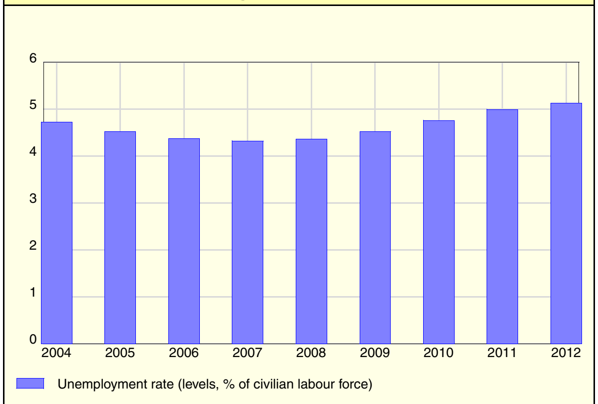
Graph 41 - Price deflators in Japan



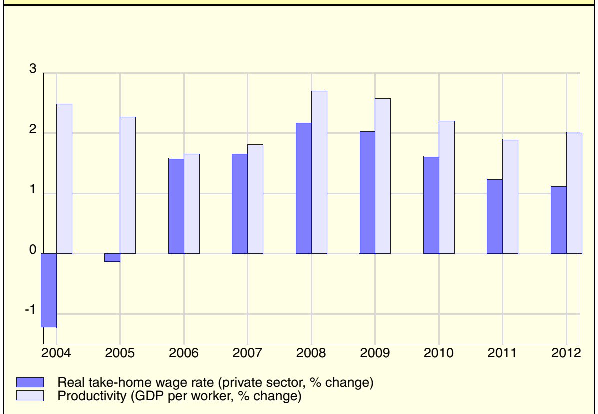
Graph 42 - Employment in Japan



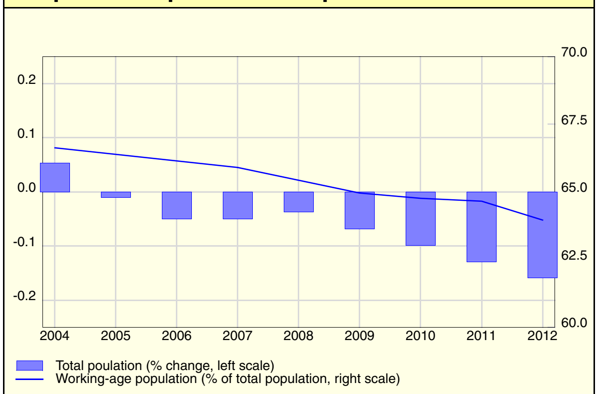
Graph 43 - Unemployment rates in Japan



Graph 44 - Real wages and productivity in Japan



Graph 45 - Population in Japan



Growth in business sector investment decelerates sharply, falling from 9.3 per cent in 2005 to just 3 per cent in 2006. This significant decline in fixed capital formation comes partly in response to slowing of Japan's output growth; it also comes after the exceptional spike in business sector investment in 2005, which is unsustainable in view of the evolution of the business sector's long-run capital requirement. Investment in residential buildings increases by 4 per cent in 2006, marking a stabilisation after a number of declines over the previous years. Public investment is cut by 2.1 per cent in 2006, after falling by more than 7 per cent in each of the three previous years.

Exports are projected to grow by 4.9 per cent in 2006 compared with 5.8 per cent in 2005, mainly because of a further slowdown in the growth of foreign effective demand. Nevertheless, despite the fall in export growth, the contribution of net exports to overall GDP growth rises from 0.2 percentage-point in 2005 to 0.5 percentage-point in 2006, as import growth decelerates from 6.4 per cent in 2005 to just 1.8 per cent in 2006. Import growth declines sharply in response to the lower domestic output growth and the sharp rise in import prices recorded in 2004 and 2005, when oil prices soared.

In 2006, deflation finally loses its grip on the Japanese economy; the deflator of private consumption increases by 0.3 per cent, while the GDP deflator rises by 0.2 per cent. Deflation comes to an end thanks to several years of a zero-interest-rate policy, supplemented by a policy of quantitative easing.

Total employment grows by 0.2 per cent in 2006, despite the strong rise in real producer wages. After falling over the previous two years, real producer wages rise by 1.7, per cent primarily in response to tighter labour market conditions and a further strong increase in overall labour productivity. The productivity increase, however, is strong enough to generate a further decline in real unit labour costs. As the labour force increases by a very marginal 0.1 per cent in 2006, the unemployment rate edges slightly downwards, from 4.5 per cent of the civilian labour force in 2005 to 4.4 per cent in 2006.

In 2006, the nominal short-term interest rate rises above its lower bound for the first time since 2001, reaching an average rate of 0.5 per cent on the year. The long-term interest rate rises to 1.6 per cent.

Moreover, as deflation has finally come to an end and the price increases prove to be more rapid than the up-tick in nominal interest rates, real interest rates - deflated by the deflator of private consumption - decline in 2006.

Japan's nominal effective exchange rate depreciates by 2 per cent in 2006, as interest rate hikes in the rest of the world are larger than the still relatively modest interest rate hikes in Japan. Furthermore, the real effective exchange rate depreciates by a noted 4.6 per cent, as prices in the rest of the world tend to rise more rapidly than prices in Japan.

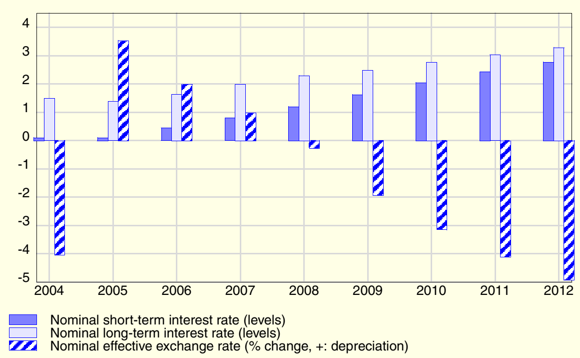
As of 2007 growth falters in the face of ever mounting pressures from an ageing population

Japan's real GDP grows at an annual average rate of 1.7 per cent over the 2007-2012 period. Economic growth stems primarily from private consumption and investment in residential buildings, while the positive contribution to growth from net exports evaporates by the end of the projection period. At the same time, deflation is completely eradicated and the deflator of private consumption increases on average by 1.5 per cent per annum. However, government deficits continue to compound at a very strong rate over the entire period, posing a serious downward risk to the medium-term outlook.

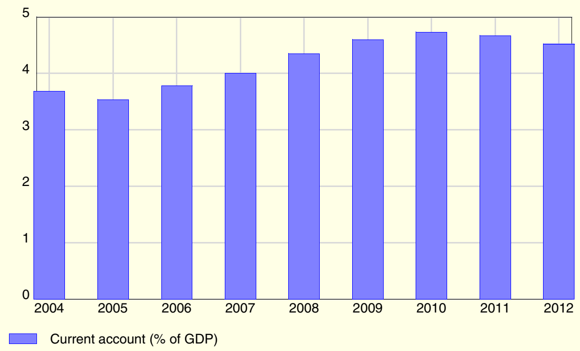
Private consumption is expected to rise by 1.6 per cent in 2007, following a further 1.7 per cent increase in real take-home wages and a stable employment level. The higher real wages reflect further strong gains in labour productivity, while the stabilisation of employment constitutes the first clear sign of a rapidly ageing population. Nevertheless, real take-home wages go on to grow by a strong 2.2 per cent in 2008, thereby causing consumption growth to increase by an even higher 2 per cent. However, after this temporary rebound consumption growth stumbles and comes out at just 1 per cent in 2012. This steady fall in private consumption growth results from the declining growth of expected future income linked to the rapidly shrinking Japanese labour force.

Business sector investment rises on average by a limited 1.7 per cent over the 2007-2012 period, reflecting the fact that the contracting labour supply and declining output growth require fewer new capital inputs. In line with the evolution in real disposable household income and falling real interest rates, investment in residential buildings grows strongly up to 2010. However, as income growth slows markedly as of 2010, investment in residential buildings wavers, yielding an average annual growth rate of 2.7 per cent over the entire 2007-2012 period.

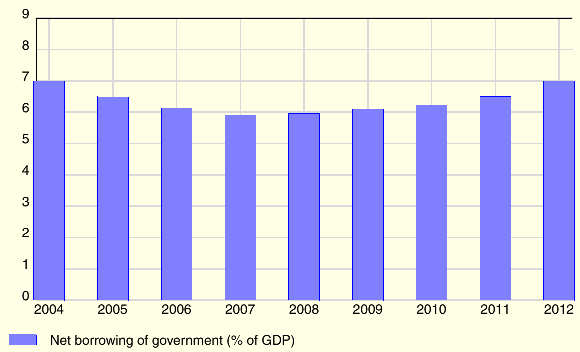
Graph 46 - Interest and exchange rates in Japan



Graph 47 - Current account of Japan



Graph 48 - Net borrowing of government in Japan



The contribution of net exports to overall growth gradually declines, from a high of 0.5 percentage-point in 2008 to just 0.1 percentage-point in 2012. This weakening contribution stems from a strong deceleration in export growth and a mild rebound in import growth. Although exports rise on average by 3.6 per cent over the 2007-2012 period, their growth rate declines from 4.3 per cent in 2007 to 2.1 per cent in 2012. Furthermore, import growth rebounds notably in 2009 and remains fairly stable thereafter as the fall in domestic output is partly off-set by the effect of the yen's effective appreciation. Export growth loses momentum due to the strengthening of the Japanese currency and the softening of world demand.

Over the 2007-2012 period, population growth declines and the Japanese labour force contracts on average by 0.4 per cent per year. However, overall labour productivity growth remains quite strong, at 2.2 per cent per year, resulting in both a fairly strong growth in real producer wages and a reduction in real unit labour costs. Nevertheless, as consumer prices tend to rise more quickly than producer prices, real take-home wage growth declines markedly between 2008 and 2012.

The GDP deflator increases on average by 1.2 per cent per year between 2007 and 2012, while the deflator of private consumption rises at an annual average rate of 1.5 per cent per annum. Consumer prices progress rapidly in order to contain aggregate demand, which tends to expand more quickly than potential output growth in the face of the steady decline in the working-age population and the rising number of older persons.

As growth in domestic demand outstrips growth in potential output over the 2007-2012 period, the Japanese monetary authorities increase the nominal short-term interest rate from 0.8 per cent in 2007 to 2.8 per cent in 2012. The long-term interest rate also reacts to these rate hikes, as well as to the surge in inflation, rising from 2 per cent in 2007 to 3.3 per cent in 2012. At the same time, Japan's nominal effective exchange rate appreciates as of 2008 due to higher inflation abroad as well as to a steady narrowing of the interest rate differential.

After falling in 2007, the Japanese fiscal deficit starts to widen again as of 2009, coming out at 7 per cent of GDP in 2012. This poor fiscal outcome is largely due to the effects of the underlying demographic developments, which tend to reduce the tax base and increase public transfers to households. Though government gross debt remains high, it is assumed not to trigger a confidence crisis, as a large part of this debt is held by Japanese public institutions, and only a small fraction by foreigners.

The Rest of the World

Gross output of the rest of the world is expected to grow at an average rate of 5 per cent over 2006-2012. Inflation is projected to remain contained at about 5.5 per cent per year.

Robust output growth in 2005 and 2006

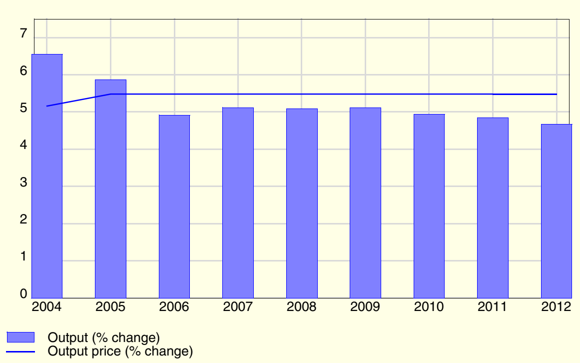
After a peak growth rate of 6.6 per cent in 2004, followed by a slightly more measured rate of 5.9 per cent in 2005, gross output of the rest of the world is projected to rise by 4.9 per cent in 2006. At the same time, the area's rate of inflation is expected to stabilise at 5.5 per cent in 2006. The area's export growth slips from 5.5 per cent in 2005 to 4.5 per cent in 2006, following the stabilisation of aggregate demand in its major export markets and the previous year's strong rise in export prices, including oil prices. Import growth should increase from 5.2 per cent in 2005 to 6.9 per cent in 2006 as markets open further and import prices increase at a very modest pace.

Sustained output growth and stable inflation as of 2007

Assuming no major shocks to the area's economy over the 2007-2012 period, growth in the rest of the world is projected to remain robust. The area's aggregate output growth is expected to average 5 per cent per annum over the 2007-2012 period, gradually converging towards a long-run trend growth of about 4.6 per cent. Over the same period, prices rise on average by 5.5 per cent per annum.

The area's consolidated imports are expected to come out at an annual average growth rate of 5.9 per cent over the entire 2007-2012 period, thereby outstripping both the area's growth and export performance, which come out at average growth rates of 5 per cent and 5.6 per cent, respectively. Export growth over the period remains sturdy, despite a slight weakening of foreign effective demand towards the end of the projection period. At the same time, export prices - denominated in euro - are projected to grow by a very moderate 1.7 per cent per annum over the 2007-2012 period, while import prices - denominated in euro - should increase by just 1.3 per cent per annum over the period. All in all, the area's consolidated current account posts significant surpluses right up to the end of the projection period.

Graph 49 - Output and prices in the rest of the world



Finally, the area's nominal effective exchange rate should pursue its steady trend depreciation, declining at an annual average rate of 4.9 per cent over the 2007-2012 period, primarily due to higher overall inflation in this area than in the other major areas of the world.

Risks and uncertainties surrounding the NIME World Economic Outlook

The balance of risks to the January 2006 NIME Economic Outlook is definitely tilted to the downside, due to widening global trade imbalances and the continued rise in energy prices.

Rebalancing trade flows

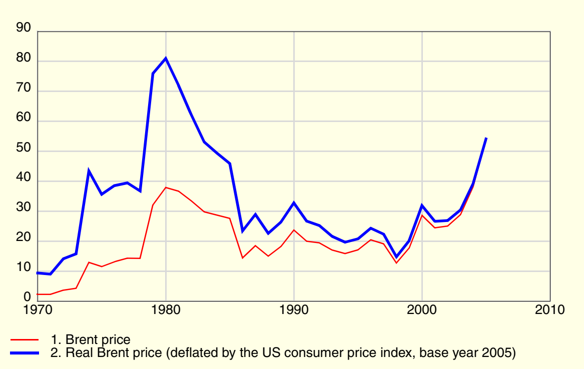
Despite widening global trade imbalances in 2005, nominal exchange rates were fairly stable and nominal long-term interest rates remained relatively low. However, a sudden reversal in market sentiment or a retrenchment by the Asian central banks, which have been major buyers of US Treasury securities in recent years, could trigger a sharp depreciation of the US dollar and a parallel rise in US interest rates. Such an outcome could severely curtail the growth prospects described in this medium-term economic outlook.

Although a number of shocks could act as catalysts for a disorderly and abrupt rebalancing of trade flows, the likelihood of such an unfavourable outcome could be reduced significantly if authorities bolstered market confidence by implementing appropriate policies in a coordinated way. Such measures should be conducive to higher saving in the United States, enhance financial reform and exchange rate flexibility in Asia, be supportive of higher domestic-led growth in the euro area, and promote the recycling of oil revenue from oil-exporting countries to oil-importing countries.

Containing the second-round effects of oil prices

Over the last decade, the price of Brent oil fell to an annual average low of 12.8 US dollars per barrel ($US/Bbl) in 1998, only to spike to an average of 54.5 $US/Bbl in 2005, reaching a high in real terms not seen since the early 1980s.

Graph 50 - The price of oil ($US/Bbl, year averages)



If world oil consumption growth consistently outpaces the rise in oil production and refining capacity, the risk exists that persistently higher oil prices could reduce global output growth and increase prices more than projected in this outlook[1], especially if second-round effects materialise in the form of higher prices and wage claims. It currently seems that the probability of the emergence of such second-round effects is low, as major central banks have established strong anti-inflationary credentials in recent years and as stiff international competition keeps a firm lid on excessive wage and price increases. Moreover, recent surging oil inventory data indicate that there is now a possibility that the world could experience an oil glut and a decline in oil prices over the latter half of this decade. Indeed, oil and gas production and refining capacity could expand rapidly as major increments are due to come on stream in areas such as Russia, the Caspian, Canada, Brazil and Angola, at a time when overall energy intensities look set to decline in reaction to the sharp rise in oil prices over the 2002-2005 period[2].

1. The NIME projection for oil prices is based on oil futures data, as quoted on NYMEX in early December 2005.
2. See the CERA's most recent medium-term energy outlook at: http://www.cera.com/news/details/print/1,2317,7453,00.html See also the US Energy Information Administration's medium-term energy projection at: http://www.eia.doe.gov/oiaf/aeo/index.html

Detailed World Area Tables - The Euro Area

	04	05	06	07	08	09	10	11	12
I. Aggregate demand and supply									
1. Private consumption	1.5	1.3	1.8	2.3	2.3	2.1	1.9	1.7	1.6
2. Government consumption	1.0	1.2	2.0	1.8	1.9	1.7	1.6	1.6	1.6
3. Gross fixed capital formation	2.1	1.3	2.5	2.2	2.1	1.9	1.8	1.8	1.8
. of which business sector	2.7	2.1	3.4	2.7	2.5	2.3	2.2	2.2	2.2
4. Exports	6.5	3.2	5.7	4.7	4.8	4.7	4.5	4.2	4.1
5. Imports	6.7	4.0	4.9	4.5	4.1	5.0	4.8	4.7	4.6
6. Gross domestic product	2.1	1.3	2.3	2.3	2.4	2.0	1.8	1.7	1.6
7. Private sector value added	2.2	1.3	2.5	2.4	2.5	2.1	1.9	1.7	1.6
8. Gross private sector output	3.0	1.8	3.0	2.8	2.8	2.6	2.5	2.3	2.2
9. Output gap (deviation of GDP from trend GDP, in %)	-1.6	-2.1	-1.3	-0.8	-0.3	-0.1	0.0	-0.1	-0.1
10. Contributions to real GDP growth									
a. Total domestic expenditure	1.9	1.3	1.9	2.1	2.1	1.9	1.8	1.6	1.6
b. Net exports	0.1	-0.1	0.3	0.2	0.3	0.1	0.1	0.0	0.0
II. Deflators									
1. Private consumption	1.9	2.1	1.4	1.5	1.7	1.8	1.9	2.0	2.1
2. Gross fixed capital formation	2.6	2.7	2.1	1.6	1.2	1.0	0.8	0.7	0.6
. of which business sector	1.6	1.8	1.6	1.4	1.2	1.0	0.8	0.7	0.6
3. Exports	0.7	0.6	0.5	0.5	0.4	0.4	0.3	0.2	0.2
4. Imports	1.3	3.3	1.0	0.7	0.6	0.7	0.8	0.9	1.0
5. Gross domestic product	1.9	1.8	1.4	1.3	1.4	1.4	1.4	1.5	1.5
6. Private sector value added	1.8	1.8	1.2	1.3	1.5	1.4	1.4	1.4	1.4
7. Gross private sector output	1.7	2.0	1.2	1.2	1.3	1.3	1.3	1.3	1.3
III. Financial Markets									
1. Short-term interest rate (level)	2.1	2.2	2.3	2.5	2.9	3.3	3.7	4.1	4.4
2. Long-term interest rate (level)	4.1	3.4	3.4	3.6	3.8	4.0	4.2	4.4	4.5
3. Nominal effective exchange rate (+ depreciation)	-5.2	1.9	-3.0	-3.1	-3.2	-3.5	-3.6	-3.8	-3.8
4. Real effective exchange rate (+ : depreciation)	-2.4	5.4	0.2	0.0	0.0	-0.2	-0.3	-0.3	-0.3
IV. Labour Market									
1. Labour supply	0.8	0.8	0.7	0.9	0.9	0.9	0.8	0.8	0.7
2. Employment	0.6	1.0	1.3	1.3	1.1	0.9	0.7	0.7	0.6
. of which private sector	0.7	1.1	1.5	1.4	1.2	1.0	0.8	0.7	0.7
3. Unemployment rate (level, % of civilian labour force)	8.9	8.6	8.0	7.6	7.4	7.4	7.4	7.5	7.6
4. Nominal wage rate, private sector	2.2	1.6	1.9	2.5	3.1	3.3	3.3	3.3	3.3
5. Real take-home wage rate, private sector	0.3	-0.5	0.4	1.0	1.4	1.4	1.4	1.3	1.2
6. Real producer wage rate, private sector	0.6	-0.4	0.8	1.4	1.7	2.0	2.0	2.0	2.0
7. Labour productivity (GDP per worker)	1.4	0.2	0.9	1.0	1.2	1.1	1.1	1.0	1.0
V. Household sector									
1. Total real means	3.1	2.8	2.3	2.1	1.8	1.4	1.1	0.8	0.7
. of which real disposable income	1.3	1.1	1.6	1.7	1.8	1.8	1.7	1.5	1.5
2. Net saving by households (level, % of disposable income)	9.4	9.1	8.9	8.4	8.0	7.8	7.8	7.8	7.9
VI. Fiscal sector									
1. Net lending (+) or borrowing (-) (% of GDP)	-2.6	-2.7	-2.6	-2.3	-2.0	-1.8	-1.7	-1.6	-1.6
2. Government gross debt (% of GDP)	70.2	71.1	71.2	71.0	70.5	69.9	69.4	68.9	68.5
VII. International environment									
1. Foreign effective output	5.7	4.8	4.3	4.1	4.3	4.3	4.1	3.9	3.8
2. Foreign effective output price	3.7	4.0	3.9	3.7	3.7	3.7	3.8	3.8	3.8
3. Foreign effective short-term interest rate (level)	2.0	3.4	4.0	4.2	4.3	4.3	4.3	4.3	4.3
4. Current account (level, % of GDP)	0.5	0.1	0.4	0.6	0.8	0.9	0.9	0.8	0.6
VIII. Memo items									
1. Total population	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2
2. Working-age population (% of total population)	66.9	66.9	66.8	66.8	66.7	66.6	66.5	66.4	66.2

All figures are year-on-year average growth rates, unless specified otherwise.

The euro area includes Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

Exports and imports: consolidated trade flows.

The real effective exchange rate of the area is defined here as the ratio of the area's foreign effective output price to its export price, measured in the area's own currency.

Detailed World Area Tables - The Western Non-Euro EU Member States

	04	05	06	07	08	09	10	11	12
I. Aggregate demand and supply									
1. Private consumption	3.4	2.0	2.1	2.4	2.8	2.9	2.8	2.7	2.5
2. Government consumption	2.1	1.0	2.1	2.6	3.1	3.0	2.7	2.5	2.5
3. Gross fixed capital formation	4.8	3.6	3.3	2.5	2.4	2.2	2.1	1.9	1.7
. of which business sector	3.1	1.8	1.7	1.9	2.0	1.8	1.6	1.5	1.4
4. Exports	5.5	4.6	5.4	4.6	5.0	5.2	5.0	4.7	4.5
5. Imports	6.4	4.5	4.1	4.1	3.7	4.0	4.2	4.1	4.0
6. Gross domestic product	3.0	1.9	2.7	2.6	3.2	3.2	3.0	2.7	2.5
7. Private sector value added	3.2	1.9	2.9	2.5	3.2	3.2	3.0	2.7	2.5
8. Gross private sector output	4.2	2.7	3.3	3.0	3.4	3.5	3.4	3.2	3.0
9. Output gap (deviation of GDP from trend GDP, in %)	-0.1	-0.9	-0.8	-0.9	-0.5	-0.1	0.2	0.3	0.4
10. Contributions to real GDP growth									
a. Total domestic expenditure	3.5	2.0	2.4	2.5	2.8	2.8	2.7	2.5	2.3
b. Net exports	-0.5	-0.1	0.3	0.1	0.4	0.4	0.3	0.2	0.2
II. Deflators									
1. Private consumption	1.5	2.2	1.7	1.6	1.6	1.6	1.7	1.8	2.0
2. Gross fixed capital formation	2.6	1.7	1.6	1.5	1.5	1.5	1.4	1.4	1.4
. of which business sector	1.1	1.2	1.1	1.1	1.1	1.2	1.3	1.4	1.4
3. Exports	-0.6	3.0	0.7	0.8	1.0	1.1	1.1	1.2	1.2
4. Imports	-0.1	3.3	0.6	1.9	1.9	1.6	1.4	1.5	1.6
5. Gross domestic product	2.0	2.0	1.9	1.1	1.0	1.2	1.4	1.6	1.7
6. Private sector value added	1.9	1.8	1.8	1.1	1.2	1.2	1.4	1.6	1.7
7. Gross private sector output	1.2	2.1	1.5	1.2	1.3	1.3	1.4	1.5	1.6
III. Financial Markets									
1. Short-term interest rate (level)	4.0	4.0	4.1	3.9	3.7	3.7	3.8	3.9	4.1
2. Long-term interest rate (level)	4.8	4.2	4.3	4.1	4.0	4.0	4.0	4.2	4.3
3. Spot exchange rate, local/euro (+ : depreciation)	-1.4	0.6	-0.7	0.3	1.2	1.7	1.8	1.7	1.5
4. Nominal effective exchange rate (+ : depreciation)	-5.7	2.0	-3.1	-2.0	-1.1	-0.7	-0.7	-0.9	-1.2
5. Real effective exchange rate (+ : depreciation)	-2.0	2.5	-0.8	0.2	1.0	1.3	1.3	1.0	0.7
IV. Labour Market									
1. Labour supply	0.3	0.6	0.5	0.6	0.5	0.5	0.3	0.2	0.1
2. Employment	0.4	0.7	0.6	0.5	0.6	0.5	0.3	0.1	0.1
. of which private sector	0.5	0.7	0.6	0.5	0.6	0.5	0.3	0.2	0.1
3. Unemployment rate (level, % of civilian labour force)	5.0	4.9	4.8	4.9	4.9	4.9	4.9	5.0	5.0
4. Nominal wage rate, private sector	4.5	3.8	4.2	3.9	3.9	4.3	4.4	4.5	4.4
5. Real take-home wage rate, private sector	2.3	0.7	2.0	1.8	2.3	2.6	2.7	2.6	2.4
6. Real producer wage rate, private sector	3.3	1.5	2.7	2.7	2.5	2.9	3.0	2.9	2.8
7. Labour productivity (GDP per worker)	2.6	1.2	2.1	2.1	2.7	2.7	2.6	2.5	2.5
V. Household sector									
1. Total real means	3.6	3.1	2.7	2.2	2.5	2.4	2.2	1.9	1.7
. of which real disposable income	2.6	2.1	2.6	2.5	2.8	3.1	3.2	3.1	2.9
2. Net saving by households (level, % of disposable income)	0.5	0.6	1.1	1.3	1.4	1.7	2.1	2.6	3.1
VI. Fiscal sector									
1. Net lending (+) or borrowing (-) (% of GDP)	-2.1	-2.2	-2.0	-1.7	-1.6	-1.5	-1.5	-1.6	-1.9
2. Government gross debt (% of GDP)	42.8	43.4	43.5	43.7	43.5	43.1	42.7	42.6	42.8
VII. International environment									
1. Foreign effective output	4.8	3.9	3.9	3.8	3.8	3.8	3.6	3.4	3.3
2. Foreign effective output price	3.3	3.5	3.1	3.1	3.2	3.1	3.2	3.2	3.2
3. Foreign effective short-term interest rate (level)	1.7	2.7	3.1	3.4	3.7	3.9	4.1	4.2	4.3
4. Current account (level, % of GDP)	-0.4	-0.5	-0.3	-0.7	-0.7	-0.7	-0.6	-0.6	-0.7
VIII. Memo items									
1. Total population	0.4	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.3
2. Working-age population (% of total population)	65.8	65.9	66.2	66.3	66.4	66.5	66.5	66.4	66.2

All figures are year-on-year average growth rates, unless specified otherwise.

"Western non-euro EU Member States" includes Denmark, Sweden and the United Kingdom.

Exports and imports: consolidated trade flows.

The real effective exchange rate of the area is defined here as the ratio of the area's foreign effective output price to its export price, measured in the area's own currency.

Detailed World Area Tables - The United States

	04	05	06	07	08	09	10	11	12
I. Aggregate demand and supply									
1. Private consumption	3.9	3.5	2.8	2.3	2.9	2.7	2.5	1.6	2.2
2. Government consumption	2.5	1.9	4.2	3.2	3.1	3.1	2.9	2.7	2.5
3. Gross fixed capital formation	8.3	7.1	4.3	3.2	4.0	3.8	3.4	2.3	2.7
. of which business sector	9.6	7.9	4.8	3.9	4.1	3.9	3.5	3.0	2.8
4. Exports	8.4	7.1	6.5	5.3	5.9	6.1	6.0	5.8	5.6
5. Imports	10.7	6.0	4.4	4.9	5.2	5.6	5.5	4.7	5.2
6. Gross domestic product	4.2	3.6	3.4	2.5	3.1	2.8	2.6	1.8	2.2
7. Private sector value added	4.6	3.8	3.6	2.4	3.0	2.7	2.5	1.7	2.2
8. Gross private sector output	5.6	4.2	3.7	2.9	3.4	3.2	3.1	2.2	2.7
9. Output gap (deviation of GDP from trend GDP, in %)	0.1	0.2	1.0	0.6	0.8	0.8	0.6	0.4	0.4
10. Contributions to real GDP growth									
a. Total domestic expenditure	5.1	3.8	3.5	2.8	3.3	3.1	2.9	2.0	2.5
b. Net exports	-0.9	-0.3	-0.0	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3
II. Deflators									
1. Private consumption	2.6	2.9	2.2	2.1	2.1	2.1	2.0	2.0	2.0
2. Gross fixed capital formation	3.1	2.9	2.8	2.3	2.4	2.4	2.5	2.4	2.8
. of which business sector	1.1	1.2	1.4	1.2	1.5	2.0	2.6	3.1	3.6
3. Exports	3.6	3.7	1.9	0.9	0.5	0.5	0.7	0.9	1.0
4. Imports	5.0	5.7	1.9	1.6	1.5	1.6	1.7	1.7	1.8
5. Gross domestic product	2.6	2.8	2.4	2.0	1.9	1.9	2.0	2.0	2.1
6. Private sector value added	2.5	2.7	2.4	2.1	2.0	2.0	2.0	2.0	2.1
7. Gross private sector output	2.7	3.1	2.3	1.9	1.9	1.9	1.9	1.9	2.0
III. Financial Markets									
1. Short-term interest rate (level)	1.6	3.6	4.2	4.4	4.5	4.5	4.5	4.4	4.3
2. Long-term interest rate (level)	4.3	4.3	4.5	4.6	4.6	4.6	4.6	4.5	4.5
3. Spot exchange rate, local/euro (level x 100)	124.4	125.0	125.6	126.0	126.3	127.1	128.4	129.9	131.8
4. Spot exchange rate, local/euro (+ : depreciation)	10.0	0.5	0.5	0.3	0.3	0.6	1.0	1.2	1.5
5. Nominal effective exchange rate (+ : depreciation)	4.4	2.4	-3.2	-3.4	-3.2	-3.0	-2.7	-2.6	-2.4
6. Real effective exchange rate (+ : depreciation)	4.5	2.8	-1.4	-0.5	0.1	0.4	0.4	0.5	0.6
IV. Labour Market									
1. Labour supply	0.6	1.3	0.8	1.0	1.1	1.0	1.0	1.0	0.7
2. Employment	1.1	1.7	1.0	0.8	1.0	0.8	0.8	-0.2	0.3
. of which private sector	1.1	1.7	1.0	0.8	0.9	0.8	0.8	-0.4	0.2
3. Unemployment rate (level, % of civilian labour force)	5.5	5.1	5.0	5.2	5.3	5.5	5.7	6.8	7.2
4. Nominal wage rate, private sector	4.9	5.3	4.6	4.0	4.1	4.1	4.1	4.7	4.3
5. Real take-home wage rate, private sector	2.1	0.9	2.0	1.5	1.6	1.6	1.6	0.9	1.4
6. Real producer wage rate, private sector	2.0	2.0	2.3	2.0	2.2	2.2	2.2	2.8	2.3
7. Labour productivity (GDP per worker)	3.1	1.8	2.4	1.7	2.1	1.9	1.8	2.0	1.9
V. Household sector									
1. Total real means	4.2	4.4	2.3	2.4	2.4	2.3	2.3	1.6	2.0
. of which real disposable income	4.1	2.8	3.2	2.5	3.3	3.2	3.1	2.1	2.8
2. Net saving by households (level, % of disposable income)	3.3	2.5	3.1	3.3	3.8	4.3	4.9	5.3	5.9
VI. Fiscal sector									
Net lending (+) or borrowing (-) (% of GDP)	-4.7	-3.9	-3.9	-3.6	-3.5	-3.4	-3.3	-2.8	-2.7
VII. International environment									
1. Foreign effective output	5.4	4.6	4.2	4.2	4.3	4.3	4.1	3.9	3.8
2. Foreign effective output price	3.7	4.0	3.9	3.9	4.0	4.0	4.0	4.1	4.1
3. Foreign effective short-term interest rate (level)	1.4	2.4	3.0	3.4	3.6	3.8	4.0	4.0	4.1
4. Current account (level, % of GDP)	-5.6	-6.2	-5.9	-6.0	-6.1	-6.3	-6.5	-6.7	-6.9
VIII. Memo items									
1. Total population	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
2. Working-age population (% of total population)	66.7	66.7	66.7	66.7	66.7	66.6	66.5	66.3	66.0

All figures are year-on-year average growth rates, unless specified otherwise.

The real effective exchange rate of the country is defined here as the ratio of the country's foreign effective output price to its export price, measured in the country's own currency.

Detailed World Area Tables - Japan

	04	05	06	07	08	09	10	11	12
I. Aggregate demand and supply									
1. Private consumption	1.5	1.9	1.5	1.6	2.0	1.7	1.3	1.2	1.0
2. Government consumption	2.7	1.8	1.0	1.1	1.3	1.0	1.1	1.7	1.8
3. Gross fixed capital formation	1.6	4.2	2.2	1.3	2.3	2.0	1.6	1.4	1.3
. of which business sector	5.6	9.3	3.0	1.9	1.9	1.9	1.7	1.6	1.6
4. Exports	14.4	5.8	4.9	4.3	4.5	4.2	3.5	2.6	2.1
5. Imports	8.9	6.4	1.8	2.2	1.8	2.7	2.8	3.0	2.8
6. Gross domestic product	2.7	2.6	1.9	1.8	2.3	1.9	1.6	1.3	1.2
7. Private sector value added	2.9	2.7	2.2	1.9	2.5	2.0	1.6	1.3	1.2
8. Gross private sector output	3.4	3.1	2.2	1.9	2.4	2.1	1.7	1.5	1.3
9. Output gap (deviation of GDP from trend GDP, in %)	0.0	0.7	0.6	0.5	1.1	1.4	1.3	1.0	1.0
10. Contributions to real GDP growth									
a. Total domestic expenditure	1.9	2.4	1.4	1.4	1.8	1.6	1.3	1.2	1.1
b. Net exports	1.0	0.2	0.5	0.4	0.5	0.4	0.3	0.1	0.1
II. Deflators									
1. Private consumption	-0.5	-0.5	0.3	0.6	0.9	1.3	1.8	2.1	2.3
2. Gross fixed capital formation	-0.7	-0.8	-0.0	0.2	0.5	0.7	0.8	0.9	1.0
. of which business sector	-0.9	-0.8	-0.0	0.4	0.6	0.7	0.8	0.9	1.0
3. Exports	-1.6	3.4	1.0	1.1	1.3	1.3	1.2	1.0	0.8
4. Imports	2.2	5.8	1.1	0.6	0.5	0.5	0.6	0.7	0.8
5. Gross domestic product	-1.2	-1.0	0.2	0.5	0.9	1.2	1.4	1.6	1.7
6. Private sector value added	-1.2	-1.0	0.0	0.6	1.1	1.2	1.5	1.7	1.8
7. Gross private sector output	-0.8	-0.2	0.1	0.6	1.0	1.1	1.4	1.6	1.7
III. Financial Markets									
1. Short-term interest rate (level)	0.1	0.1	0.5	0.8	1.2	1.6	2.0	2.4	2.8
2. Long-term interest rate (level)	1.5	1.4	1.6	2.0	2.3	2.5	2.8	3.0	3.3
3. Spot exchange rate, local/euro (level)	134.4	137.3	143.7	148.9	152.3	153.7	153.5	152.0	149.6
4. Spot exchange rate, local/euro (+ : depreciation)	2.6	2.1	4.7	3.6	2.3	0.9	-0.1	-0.9	-1.6
5. Nominal effective exchange rate (+ : depreciation)	-4.0	3.5	2.0	1.0	-0.3	-1.9	-3.2	-4.1	-4.9
6. Real effective exchange rate (+ : depreciation)	1.1	4.2	4.6	3.4	1.9	0.1	-1.0	-1.8	-2.4
IV. Labour Market									
1. Labour supply	-0.3	0.1	0.1	-0.1	-0.3	-0.5	-0.4	-0.3	-0.7
2. Employment	0.2	0.3	0.2	-0.0	-0.4	-0.6	-0.6	-0.5	-0.8
. of which private sector	0.2	0.3	0.2	-0.0	-0.4	-0.6	-0.6	-0.6	-0.8
3. Unemployment rate (level, % of civilian labour force)	4.7	4.5	4.4	4.3	4.4	4.5	4.8	5.0	5.1
4. Nominal wage rate, private sector	-1.1	-0.2	1.8	2.3	3.1	3.4	3.4	3.3	3.4
5. Real take-home wage rate, private sector	-1.2	-0.1	1.6	1.7	2.2	2.0	1.6	1.2	1.1
6. Real producer wage rate, private sector	-0.3	-0.2	1.7	1.7	2.1	2.2	2.0	1.7	1.7
7. Labour productivity (GDP per worker)	2.5	2.3	1.7	1.8	2.7	2.6	2.2	1.9	2.0
V. Household sector									
1. Total real means	0.6	1.0	1.6	1.6	1.5	1.1	0.9	0.8	0.4
. of which real disposable income	1.7	1.7	1.4	1.4	2.1	1.9	1.5	1.4	1.3
2. Net saving by households (level, % of disposable income)	7.6	7.9	7.9	7.8	8.0	8.3	8.5	8.8	9.1
VI. Fiscal sector									
Net lending (+) or borrowing (-) (% of GDP)	-7.0	-6.5	-6.1	-5.9	-6.0	-6.1	-6.2	-6.5	-7.0
VII. International environment									
1. Foreign effective output	5.6	4.6	4.2	3.9	4.1	4.1	3.9	3.5	3.6
2. Foreign effective output price	3.7	4.0	3.6	3.5	3.5	3.5	3.5	3.5	3.5
3. Foreign effective short-term interest rate (level)	1.8	3.4	3.9	4.1	4.2	4.3	4.3	4.3	4.3
4. Current account (level, % of GDP)	3.7	3.5	3.8	4.0	4.4	4.6	4.7	4.7	4.5
VIII. Memo items									
1. Total population	0.1	-0.0	-0.0	-0.0	-0.0	-0.1	-0.1	-0.1	-0.2
2. Working-age population (% of total population)	66.6	66.4	66.1	65.9	65.4	65.0	64.8	64.7	64.0

All figures are year-on-year average growth rates, unless specified otherwise.

The real effective exchange rate of the country is defined here as the ratio of the country's foreign effective output price to its export price, measured in the country's own currency.

Detailed World Area Tables - The Eastern Non-Euro EU Member States

	04	05	06	07	08	09	10	11	12
I. Aggregate demand and supply									
1. Private consumption	4.8	4.7	4.7	3.8	3.8	3.8	3.9	3.9	3.9
2. Gross fixed capital formation	7.5	7.0	7.7	6.9	6.9	6.9	6.9	6.9	6.9
3. Exports	13.1	7.9	8.4	9.8	9.8	9.7	9.2	8.7	8.5
4. Imports	12.4	7.0	9.0	10.1	10.1	10.0	9.6	9.3	9.1
5. Gross domestic product	4.8	5.4	4.4	3.6	3.6	3.6	3.5	3.3	3.3
II. Deflators									
1. Private consumption	3.6	2.2	2.8	2.3	2.2	2.2	2.2	2.2	2.1
2. Gross fixed capital formation	2.2	1.4	3.2	2.0	2.0	2.0	2.0	2.0	2.0
3. Exports	4.8	1.4	1.2	2.6	2.4	2.4	2.4	2.4	2.4
4. Imports	4.5	1.1	1.0	2.0	2.0	2.0	2.0	2.0	2.0
5. Gross domestic product	3.5	2.1	3.4	2.7	2.6	2.7	2.8	2.8	2.9
III. Financial variables									
1. Short-term interest rate	7.2	5.1	4.5	6.0	5.9	5.8	5.9	5.9	5.9
2. Long-term interest rate	7.5	5.4	5.2	5.4	5.4	5.3	5.4	5.5	5.6
3. Nominal exchange rate (local/euro, + : depreciation)	1.6	-5.2	2.9	1.9	1.8	2.0	2.1	2.2	2.2
4. Nominal effective exchange rate (+ : depreciation)	-1.7	-4.1	0.9	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3
5. Real effective exchange rate (+ : depreciation)	-3.4	-2.3	2.6	0.1	0.3	0.3	0.3	0.3	0.2
IV. International environment									
1. Foreign effective output	4.5	3.5	3.8	3.7	3.7	3.7	3.5	3.3	3.2
2. Foreign effective output price	3.0	3.4	2.9	2.8	2.9	2.9	2.9	2.9	2.9
3. Foreign effective short-term interest rate (level)	1.9	2.8	3.1	3.3	3.6	3.8	4.0	4.2	4.3
4. Current account (level, % of GDP)	-3.3	-2.8	-3.0	-3.0	-3.1	-3.3	-3.5	-3.8	-4.0

All figures are year-on-year average growth rates, unless specified otherwise.

“Eastern non-euro EU Member States” comprises Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia, plus Bulgaria and Romania.

Exports and imports: consolidated trade flows.

The real effective exchange rate of the area is defined here as the ratio of the area’s foreign effective output price to its export price, measured in the area’s own currency.

Detailed World Area Tables - The Rest of the World

	04	05	06	07	08	09	10	11	12
I. Aggregate demand and supply									
1. Gross output	6.6	5.9	4.9	5.1	5.1	5.1	4.9	4.8	4.7
2. Exports	11.8	5.5	4.5	5.4	4.5	5.5	5.8	5.9	6.3
3. Imports	11.7	5.2	6.9	6.1	5.8	5.9	5.8	5.9	5.9
II. Deflators									
1. Gross output	5.2	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
2. Exports, in euro	-1.5	4.4	0.7	2.2	2.5	2.1	1.5	1.1	0.8
3. Imports, in euro	-2.8	0.6	0.2	1.7	2.0	1.6	1.3	0.9	0.5
4. Price of oil (Brent, US$/bbl)	38.3	54.1	58.2	58.5	56.9	55.5	54.3	53.4	53.0
III. Financial variables									
1. Nominal exchange rate (local/euro, + : depreciation)	8.1	-3.1	5.3	5.3	5.1	5.5	5.7	6.0	6.2
2. Nominal exchange rate (local/US$, + : depreciation)	-1.7	-3.6	4.8	5.0	4.9	4.8	4.7	4.7	4.6
3. Nominal effective exchange rate (+ : depreciation)	4.1	-3.1	4.2	4.4	4.4	4.7	5.0	5.3	5.5
4. Real effective exchange rate (+ : depreciation)	-0.5	-2.2	-0.1	-1.5	-1.5	-1.1	-0.6	-0.1	0.3
IV. International environment									
1. Foreign effective output	4.2	3.3	3.3	2.8	3.1	2.9	2.8	2.3	2.5
2. Foreign effective output price	1.8	2.1	1.7	1.5	1.6	1.6	1.7	1.7	1.8
3. Foreign effective short-term interest rate (level)	1.6	3.6	4.2	4.4	4.5	4.5	4.5	4.4	4.3

All figures are year-on-year average growth rates, unless specified otherwise.

Exports and imports: consolidated trade flows.

The real effective exchange rate of the area is defined here as the ratio of the area’s foreign effective output price to its export price, measured in the area’s own currency.

The Macroeconomic Effects of a Shift from Direct to Indirect Taxes in the Euro Area

This Focus assesses the macroeconomic effects of a euro-wide reduction in social contributions, the fiscal effects of which are off-set by a parallel rise in indirect taxes. The simulation results show that the employment effects of a tax shift equivalent to 1 per cent of GDP are limited, as such a measure would raise euro area GDP by just 0.19 per cent while reducing the unemployment rate by only 0.12 percentage-point in the medium term.

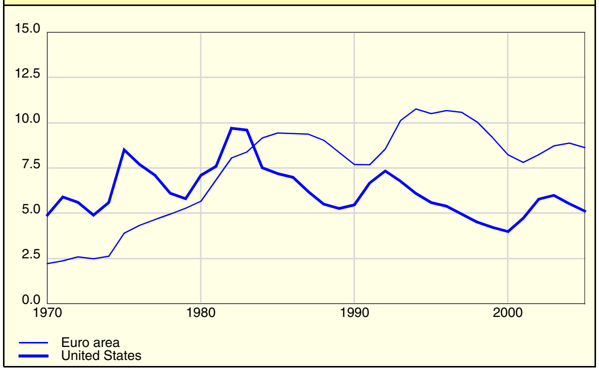
Introduction

It is a frequently made claim that the euro area's labour market has been under-performing in recent decades. Indeed, the euro area's unemployment rate edged up from 2.2 per cent of the civilian labour force in 1970 to 9.4 per cent in 1985. Between 1986 and 2005, the unemployment rate fluctuated around an average rate of 9.1 per cent, reaching a low of 7.7 per cent in 1991 and a high of 10.8 per cent in 1994. Moreover, while the unemployment rate was significantly lower in the euro area than in the United States until 1983, the US unemployment rate then fell below the EU unemployment rate, averaging only 5.6 per cent between 1986 and 2005 with a low of 4 per cent in 2000. Furthermore, though the employment rate stood at about 68 per cent of the working-age population in both the euro area and the United States in 1970, employment prospects in these areas began to diverge as of 1978. This led to an employment rate of only 65 per cent of the working-age population in the euro area in 2000, compared with a rate of 74 per cent in the United States. It is only since the turn of the century, with the fall in US employment rates, that the gap has begun to narrow. Finally, after growing on average by 0.6 per cent over the 1970-1985 period, the euro area's labour supply expanded on average by 1.3 per cent over the 1986-2005 period. Over these same periods, US labour supply growth came out at 2.2 per cent and 1.3 per cent, respectively.

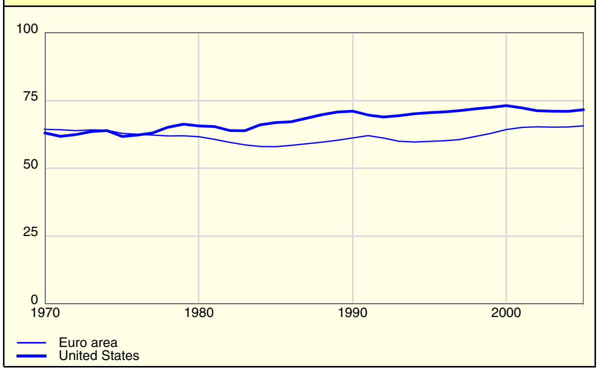
High direct taxes on labour and insufficient labour market flexibility in the face of adverse macroeconomic shocks are often cited as the main culprits behind the low resilience of the euro area's labour markets. In this Focus, we use the NIME model to investigate the macroeconomic consequences of a shift from direct to indirect taxes in the euro area. Such a shift in taxation is viewed as one possible step in the direction of reducing the fiscal burden weighing on overall employment costs.

The policy variant is constructed as follows. As of 2006, we simulate a cut in the euro area's average rate of social security contributions such that it generates an ex ante fall in revenue from social contributions equal to 1 per cent of euro area GDP. This loss in public revenue is off-set ex ante by an increase in the euro area's indirect tax rate that raises indirect tax revenue by 1 per cent of GDP.

Graph 51 - Unemployment rates: 1970-2005
(% of civilian labour force)



Graph 52 - Employment rates: 1970-2005
(% of working-age population)

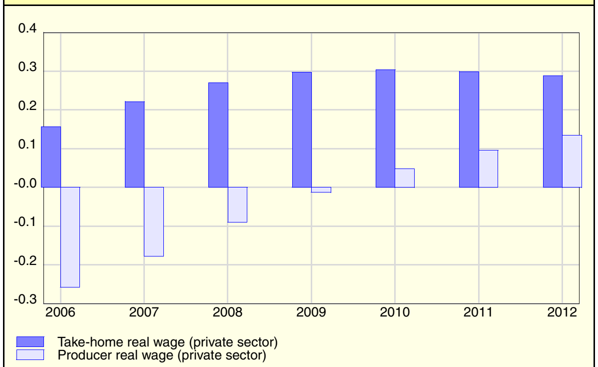


The supply-side effects of a shift to indirect taxes in the euro area

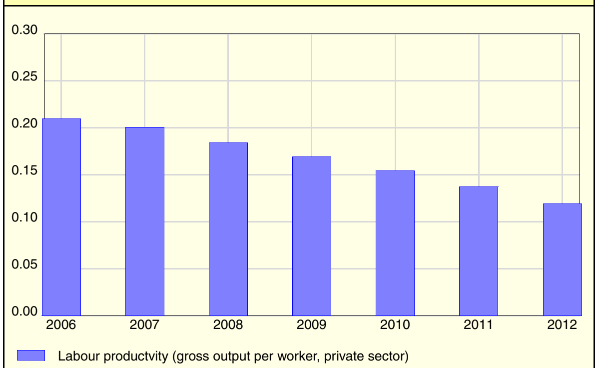
In the long run, the reduction in social contributions accompanied by a matching rise in indirect taxes reduce the natural rate of unemployment. Indeed, the cut in social contributions allows for an increase in employees' take-home wages without raising employers' overall wage costs. The rise in indirect taxes - which tends to reduce workers' take-home wages - is borne not only by workers but by all tax payers. The combined measure leaves workers better off, attracting more persons into employment and reducing the unemployment rate in the medium term.[1]

The higher employment level and the unchanged trend factor productivities lead to a rise in the economy's potential output level, which itself requires a matching increase in the quantities of capital and intermediary imports that are used in the production process. Moreover, long-run real factor prices[2] should remain unchanged, as factor prices are determined by their - unchanged - trend factor productivities. However, this outcome is only a long-run equilibrium solution, which will not immediately be attained due to the presence of rigidities in factor adjustment and stickiness in price setting mechanisms.

Graph 53 - Euro area real wage rates: 2006-2012
(deviations from baseline, in per cent)



Graph 54 - Euro area productivity: 2006-2012
(deviations from baseline, in per cent)



Moreover, monetary policy and inflation expectations are also crucial in determining the adjustment paths of the nominal factor prices. Indeed, assuming that monetary authorities have built up a credible anti-inflationary reputation and do not revise their inflation targets, producers will limit the pass-through of the indirect tax hike to the price that they charge in the market for goods and services. This implies that the indirect tax hike will come mainly at the expense of firms' profit margins and not be paid for in full by the consumer. This will induce producers to restore their profitability by exerting downward pressure on the prices of their production factor inputs, up to the point where the fall in the relative factor prices finally reduces overall production costs by an amount that is equal to the initial fall in profits incurred by firms from the rise in indirect tax rates.

The following NIME simulation results illustrate the adjustment process of such a measure, assuming that the tax shift is implemented over the 2006-2012 period.

In 2006, the producer nominal wage rate falls 1.42 per cent below baseline. Employees accept this immediate fall in the nominal wage, as the cut in the social security contributions still allows their real take-home wage to rise by 0.16 per cent above its baseline level. While the nominal wage rate falls by 1.42 per cent below baseline in 2006, the pre-tax producer price falls by only 1.16 per cent, reducing the producer real wage rate by 0.26 per cent in 2006. In subsequent years, the producer real wage rate rebounds and comes out at 0.13 per cent above its baseline level in 2012. However, contemporaneous private sector labour productivity also rises and ensures that real unit labour cost growth remains at or below baseline over 2006-2012. At the same time, the real take-home wage rate increases from 0.16 per cent above baseline in 2006 to 0.29 per cent above baseline in 2012, inducing a greater number of unemployed to move into employment. Total employment rises, coming out at 0.06 per cent above baseline in 2006 and at 0.13 per cent above baseline in 2012.

Business sector investment falls 0.22 per cent below baseline in 2006 and 0.4 per cent in 2007. Investment then begins to recover and rises to 0.04 per cent above baseline in 2012. The initial decline in investment is primarily due to the slow adjustment of the price of capital. Indeed, the price of business sector investment falls on impact by 0.09 per cent, while the pre-tax producer price falls by 1.16 per cent. However, as time progresses the relative price of capital declines further, thereby allowing business sector investment to recover.

In the long run, intermediary imports must also increase in proportion to the rise in potential output.[3] This rise is ensured by the long-run

1. The NIME model does not distinguish between employers' and employees' social contributions. The natural rate of unemployment is determined by the tax wedge, the real interest rate and a measure of product market competitiveness. The tax wedge includes income taxes, social security contributions and indirect taxes.
2. I.e. factor prices deflated by the pre-tax producer price. The pre-tax producer price is defined as the market price of gross output excluding indirect taxes and subsidies.

decline in the euro-denominated import price, which must fall in line with the drop in the pre-tax producer price[1]. However, as the import price adjusts more slowly than the producer price, the full adjustment of import volumes requires time. In 2006, import volumes start by rising 0.24 per cent above baseline, due to the rise in private sector gross output and the slow reaction of import volumes to changes in import prices. Nevertheless, in 2007, the previous year's strong rise in the relative price of imports reduces imports by 0.36 per cent. Then, as the import price adjusts towards its new long-run equilibrium level, imports gradually recover and come out just above baseline in 2012.

The demand-side effects of the shift to indirect taxes in the euro area

Private consumption initially rises 0.31 per cent above baseline as the real take-home wage and employment rise, and as nominal interest rate responses are limited. In subsequent years, private consumption remains resilient as household real disposable income remains above its baseline level and as further interest rate hikes remain negligible. In 2012, private consumption settles at 0.40 per cent above baseline. Investment in residential buildings also benefits from the higher real disposable income and from the limited rise in interest rates, and comes out 0.32 per cent above baseline in 2006 and 0.67 per cent above baseline in 2012.

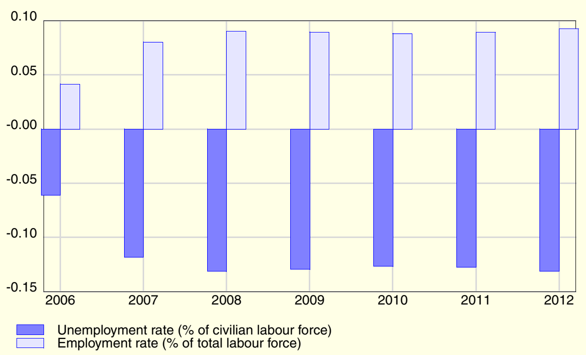
It is assumed that real aggregate public consumption remains at its baseline level throughout the simulation period, while real public investment rises in line with real GDP in the long run.

Euro area exports are affected by the appreciation of the real effective exchange rate and fall gradually from 0.04 per cent below baseline in 2006 to 0.30 per cent below baseline in 2012. The nominal effective exchange rate appreciates on impact by 0.15 per cent but continues to appreciate to 0.91 per cent below baseline in 2012. In the long run, an appreciation of the nominal exchange rate is necessary to accommodate the fall in euro-denominated import prices. Immediate full exchange rate adjustment is hindered by the presence of backward-looking chartists in the foreign exchange market.

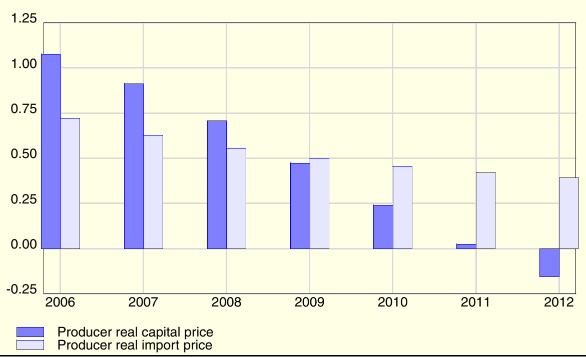
3. In the NIME model, imports are used as inputs in a constant returns-to-scale Cobb-Douglas production function.

1. In the NIME model, the main economic areas are price setters for their imports, except for the imports of oil. Import prices, deflated by the pre-tax producer price, are function of their local long-term productivity.

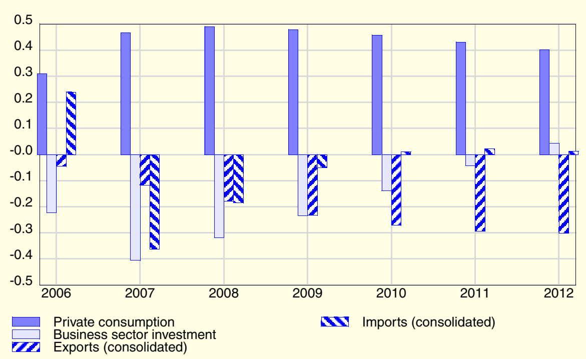
Graph 55 - Euro area unemployment and employment rates: 2006-2012
(deviations from baseline, in percentage-points)



Graph 56 - Euro area real price of capital and imports, deflated by the pre-tax producer price: 2006-2012 (deviations from baseline, in per cent)



Graph 57 - Demand in the euro area: 2006-2012
(deviations from baseline, in per cent)



The market price of output does not change substantially following the rise in indirect tax rates.[2] This muted response is due to the fall in nominal factor prices, which reduces the pre-tax production price. All in all, the GDP deflator rises 0.12 per cent above baseline in 2006 and remains close to that level in subsequent years. The price of private consumption rises somewhat more strongly, reaching 0.18 per cent above baseline in 2012, in the wake of temporarily stronger growth in demand than in supply. As inflation remains well contained, the nominal short-term interest rate rises by a maximum of 0.10 percentage-point above baseline over the whole simulation period.

2. The short term results for inflation are sensitive to the underlying assumptions; alternative assumptions regarding monetary policy and inflation expectations could lead to notably higher inflation.

As this policy variant was designed so as to keep the ex ante fiscal deficit equal to its baseline level, it comes as no surprise that the fiscal deficit-to-GDP ratio remains close to its baseline level throughout the simulation period. However, as the measure raises nominal GDP, the public debt-to-GDP ratio is reduced, down by 0.15 percentage-point in 2006 and by 0.19 percentage-point in 2012.

Conclusion

The simulation results show that the gains resulting from a shift from direct to indirect taxes and equivalent to 1 per cent of GDP are limited in the euro area. The potential output and employment gains from the fall in social contributions rates are mitigated by the rise in indirect tax rates, which squeezes corporate profit margins and tempers labour demand. Real GDP increases initially to 0.11 per cent above baseline, but levels off at about 0.19 per cent by 2012. The employment gains are also limited, rising to 0.06 per cent above baseline in 2006 and 0.13 per cent above baseline in 2012.

Finally, note that the fiscal measure discussed in this Focus is of a general nature. As indicated by other studies[1], the employment effects of tax cuts could be increased significantly by targeting specific groups of workers.

1. For the effects of targeted tax cuts in Belgium, see for instance: Bassilière, D. et al. (2005), "Variantes de réduction des cotisations sociales et de modalités de financement alternatif. Socialezekerheidsbijdrageverminderingen en alternatieve financiering van de sociale zekerheid: simulaties van beleidsvarianten", Planning Paper 97, Federal Planning Bureau.

Macroeconomic effects of a euro-wide shift from direct to indirect taxes

	2006	2007	2008	2009	2010	2011	2012
I. Aggregate demand and supply							
1. Private consumption	0.31	0.47	0.49	0.48	0.46	0.43	0.40
2. Public consumption	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
3. Gross fixed capital formation	-0.05	-0.08	-0.01	0.04	0.10	0.15	0.20
.of which business sector	-0.22	-0.41	-0.32	-0.23	-0.14	-0.04	0.04
4. Exports	-0.04	-0.12	-0.18	-0.23	-0.27	-0.29	-0.30
5. Imports	0.24	-0.36	-0.19	-0.05	0.01	0.02	0.01
6. Gross domestic product	0.11	0.30	0.27	0.23	0.21	0.19	0.19
7. Gross output (private sector)	0.27	0.32	0.32	0.30	0.28	0.27	0.25
II. Prices							
1. GDP deflator	0.12	0.11	0.10	0.09	0.07	0.04	0.02
2. Consumption price	0.06	0.06	0.08	0.09	0.10	0.11	0.12
3. Export price (in local currency)	-0.02	-0.05	-0.09	-0.14	-0.20	-0.26	-0.33
4. Import price (in local currency)	-0.44	-0.55	-0.65	-0.73	-0.81	-0.87	-0.93
5. Gross output (market prices, private sector)	0.04	0.02	-0.00	-0.03	-0.07	-0.11	-0.14
6. Gross output (net of indirect taxes, private sector)	-1.16	-1.18	-1.20	-1.23	-1.26	-1.29	-1.32
III. Labour market							
1. Total employment	0.06	0.12	0.13	0.13	0.13	0.13	0.13
. of which private sector employment	0.06	0.12	0.13	0.13	0.13	0.13	0.13
2. Unemployment rate *	-0.06	-0.11	-0.12	-0.12	-0.12	-0.12	-0.12
3. Nominal wage (private sector)	-1.42	-1.36	-1.29	-1.24	-1.22	-1.20	-1.19
4. Take-home real wage (private sector)	0.16	0.22	0.27	0.30	0.30	0.30	0.29
5. Producer real wage (private sector)	-0.26	-0.18	-0.09	-0.01	0.05	0.10	0.13
6. Contemporaneous productivity (gross output per worker)	0.21	0.20	0.18	0.17	0.15	0.14	0.12
IV. Financial markets							
1. Short-term interest rate *	0.05	0.05	0.06	0.06	0.06	0.05	0.05
2. Long-term interest rate *	0.02	0.03	0.03	0.03	0.03	0.03	0.03
3. Nominal effective exchange rate (- : appreciation)	-0.15	-0.33	-0.49	-0.63	-0.75	-0.84	-0.91
4. Real effective exchange rate (- : appreciation)	-0.14	-0.30	-0.41	-0.50	-0.56	-0.59	-0.59
V. Fiscal sector							
1. Deficit-to-GDP ratio * (+ : surplus)	-0.01	0.01	0.02	0.01	0.01	0.01	0.01
2. Debt-to-GDP ratio *	-0.15	-0.29	-0.30	-0.27	-0.24	-0.21	-0.19
VI. Household sector							
1. Household total available means	0.37	0.36	0.33	0.29	0.25	0.21	0.18
. of which real disposable income	0.38	0.50	0.55	0.56	0.56	0.55	0.54
VII. International environment							
1. Foreign effective output	0.02	0.02	0.03	0.02	0.02	0.02	0.01
2. Foreign effective price level	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
3. Foreign effective interest rate *	-0.00	0.00	0.00	0.00	0.00	0.00	0.00
4. Current account-to-GDP ratio *	0.03	0.14	0.10	0.07	0.06	0.05	0.05

Deviation from baseline; without *: deviation in per cent; with *: deviation in percentage-points.

Underlying Technical Assumptions of the 2006-2012 NIME Economic Outlook

The January 2006 issue of the NEO is produced with a version of the NIME model which is based on data from the most recent AMECO database of the European Commission, data from the Direction of Trade Statistics and the International Financial Statistics of the International Monetary Fund, and the World Population Prospects of the United Nations as well as demographic projections from various national institutions. The AMECO database[1] provides us with historical data for the 1970-2004 period and estimates for 2005, as published in the European Commission's Autumn 2005 Economic Forecasts[2].

Calibration of the projection for 2005

In December 2005, we reviewed the assumptions retained in the NIME model for the year 2005, and updated the model's financial variables such as interest and exchange rates on the basis of both the latest available historical data and financial futures data. A first-run computation was made of the impact of all these changes on the overall macroeconomic conditions for 2005. Once these revised initial conditions for 2005 had been determined, the model was run to generate the projection for the 2006-2012 period.

Medium-term trends

The NIME model's underlying medium-term trend values, such as trend productivity growth (i.e. growth in private sector gross output per worker), the equilibrium real interest rate (i.e. the long-term nominal interest rate deflated by the consumer price index) and secular inflation (with the exception of secular inflation in Japan, which is assumed to rise gradually as of 2006), were set to their latest available estimates and maintained constant over the projection period. These estimates were obtained by applying a Hodrick-Prescott filter to the historical data series. Trend values for population are based on the latest official data from national sources and from the 2004 revision of the United Nations' "World Population Prospects"[3]. Oil price projections are based on oil futures, as quoted in commodity markets in December 2005.

1. The AMECO database is available on the Commission's website at: http://europa.eu.int/comm/economy_finance/indicators/annual_macro_economic_database/ameco_en.htm
2. The Commission's Autumn 2005 Economic forecasts are available on the Commission's website at: http://europa.eu.int/comm/economy_finance/publications/european_economy/forecasts_en.htm

The table below shows the medium-term trend values for labour productivity growth, the equilibrium real interest rate, secular inflation, population growth, labour supply growth and the price of oil. These trend values are kept constant throughout the simulation period, except for oil prices, population data and trend inflation in Japan, for which averages are shown.

Main medium-term trend values for the 2006-2012 NIME World Economic Outlook

	Euro area	Western non-euro EU	United States	Japan
Labour productivity growth [a, b]	0.9	2.3	2.0	2.0
Equilibrium real interest rate	1.9	2.6	2.4	2.0
Secular inflation	1.9	1.8	2.1	0.5 [b]
Population growth [b]	0.3	0.4	0.9	-0.1
Trend labour supply growth [b]	0.8	0.4	1.0	-0.5
Price of oil (US$ per barrel) [b]	55.7	55.7	55.7	55.7

[a] GDP per worker
[b] 2006-2012 average

Finally, due to the limited scope of the available data for the Eastern non-euro EU Member States, the 2007-2012 projections of this area's gross investment and public consumption are set equal to the 2003-2007 average of the values available in the latest AMECO database.

Monetary and fiscal policies

With respect to the conduct of fiscal policy, we use a standard constant policy assumption. However, whenever possible, the anticipated effects of existing legislation are taken into account. This is of particular relevance for the United States where, under current laws and policies, certain important tax cut provisions are assumed to sunset over the projection's horizon[4]. With respect to monetary policy, we assume that short-term interest rates follow a Taylor rule, embedded in a partial adjustment scheme.

3. For EU countries, the latest Eurostat population projections were used. These projections are available on the Eurostat website at: http://epp.eurostat.cec.eu.int/portal/page?_pageid=1090,30070682,1090_30298591&_dad=portal&_schema=PORTAL
For other areas, see:
- the US Bureau of the Census world population data, available at: http://www.census.gov/population/www/projections/popproj.html
- the Japanese National Institute for Population and Social Security Research's long-term population projections, available at: http://www.ipss.go.jp/pp-newest/e/ppfj02/top.html
- the UN's latest world population projections, available at: http://www.un.org/esa/population/unpop.htm
4. See the US Congressional Budget Office, "CBO's Current Budget Projections", August 2005. The projections are available at: http://www.cbo.gov/showdoc.cfm?index=1944&sequence=0

The NIME Model of the World Economy

The NIME model is a macroeconometric world model developed by economists at the Belgian Federal Planning Bureau. The model is used to make medium-term projections for the international economy, as well as to study the transmission mechanisms of economic policies and exogenous shocks.

In the current version of the NIME model, the world is divided into six blocs, i.e. the euro area, the bloc consisting of the Western EU Member States that do not belong to the euro area, the Eastern non-euro EU Member States, the United States, Japan and a bloc representing the rest of the world. All these country blocs are linked together by trade and financial flows. Data for the euro area is aggregated using ECU/euro exchange rates. Data for the Western non-euro EU Member States and for the Eastern non-euro EU Member States are aggregated in a synthetic currency unit.

In all of these blocs but two, i.e. the Eastern non-euro EU Member States and the rest of the world, we distinguish a household sector, an enterprise sector, a government sector and a monetary sector. A similar set of behavioural equations and accounting identities is specified for each sector across blocs, while the parameter values of the equations are obtained using econometric techniques applied to the aggregated, annual data of the different blocs.

The household sector allocates its total available means over goods and services, real money balances, residential buildings and other assets as a function of the nominal interest rate, the real interest rate, the user cost of residential buildings and a scale variable. This scale variable consists of the household sector's assets (including bonds and residential buildings), its current income from assets, its current and expected future take-home labour income and its transfers. Error correction mechanisms and partial adjustment schemes are used to capture sluggish adjustment in household's expenditure plans. Moreover, households are liquidity-constrained in the short-run, implying that a fraction of its expenditures must be financed by disposable income.

The enterprise sector maximises its profits by hiring production factors and selling its output to final users. Gross output consists of goods for private consumption, investment and exports. There are three production factors: labour, fixed capital and intermediary imports. Error correction mechanisms and partial adjustment schemes are used to model the short-run demand for the production factors. In these demand schemes, the long-run factor demand equations are derived from a Cobb-Douglas production function with constant returns to scale.

Prices and wages are not fully flexible and clear the markets only in the long run. Moreover, country blocs are engaged in multilateral trade where importers are price setters and exporters are price takers, except for the price of oil which is determined outside the model. The (equilibrium) real wage rate is a weighted average of labour productivity and the reservation wage, while the natural rate of unemployment is determined by the gap between the take-home wage and the reservation wage of the employees.

Government income is determined by endogenous tax bases and predetermined tax rates, while its expenditures are to a large extent determined by the business cycle and trend growth. The automatic fiscal stabilisers operate on the expenditure side mainly through unemployment benefits and interest payments on government gross debt and, on the revenue side, mainly through direct wage income taxes, profit taxes, social security contributions and indirect taxes.

Short-term interest rates are set according to the Taylor principle. This implies that the monetary authorities increase (decrease) the short-term nominal interest rate more than proportionally to increases (decreases) in inflation, thus increasing (decreasing) real interest rates when inflationary pressures arise (subside). It also implies that the monetary authorities keep the short-term interest rate below (above) the equilibrium interest rate if demand is below (above) potential output. Long-term interest rates are determined by the term structure theory of interest rates. In this outlook, changes in an area's nominal effective exchange rate are determined by changes in the interest rate differential and the (expected) inflation differential. The risk premia in the financial markets are kept constant.

NIME Studies and Publications

Case studies and technical variants

Several studies have been carried out with the NIME model[1]. Meyermans (2002.a and 2002.b) used the NIME model to investigate to what extent the working of the automatic fiscal stabilisers and monetary policy can contribute to the full realisation of potential output and price stability. Meyermans (2003) used the NIME model to assess the transmission of shocks from the United States to the euro area under alternative exchange rate policies. Meyermans (2004) studied how a cut in the social security contribution rate and an increase in the labour participation rate affect economic activity in the euro area in the medium term. Meyermans and Van Brusselen (2003) examined the impact on the Belgian international environment of a temporary worldwide autonomous drop in private consumption, a further monetary easing by the European Central Bank, a fiscal consolidation in the euro area and of a prolonged worldwide fall in stock markets. Meyermans and Van Brusselen (2005.b) assessed the impact of an oil price shock on the world economy, while Meyermans and Van Brusselen (2005.d) studied the interactions between monetary policy, asset prices and economic growth in the world economy over the 1995-2004 period. Finally, Meyermans and Van Brusselen (2004, 2005.a and 2005.c) used the NIME model to prepare economic outlooks for the world economy for the periods 2004-2010 and 2005-2011.

Selected NIME publications

Meyermans, E. (2002.a), “Automatic Fiscal Stabilisers in the Euro Area. Simulations with the NIME Model”, in Banca d'Italia (2002), The Impact of Fiscal Policy, pp. 389-416.

Meyermans, E. (2002.b), “Monetary Policy in the Euro Area. Simulations with the NIME Model”, in Bayar, A. and A. Dramais (eds., CD-ROM) (2002), EcoMod2002, International Conference on Policy Modeling, Proceedings, Brussels.

Meyermans, E. (2003), “The International Transmission of Shocks. Some Selected Simulations with the NIME Model”, Working Paper 9-03, Federal Planning Bureau.

Meyermans, E. (2004), “The Macro-Economic Effects of Labour Market Reforms in the European Union. Some Selected Simulations with the NIME Model”, Working Paper 12-04, Federal Planning Bureau.

Meyermans, E. and P. Van Brusselen (2000.a), “The NIME Model: Specification and Estimation of the Demand Equations of the Household Sector”, Working Paper 8-00, Federal Planning Bureau.

Meyermans, E. and P. Van Brusselen (2000.b), “The NIME Model: Specification and Estimation of the Enterprise Sector”, Working Paper 10-00, Federal Planning Bureau.

Meyermans, E. and P. Van Brusselen (2001), “The NIME Model: A Macroeconometric World Model”, Working Paper 3-01, Federal Planning Bureau.

Meyermans, E. and P. Van Brusselen (2003), “An Assessment of the Risks to the Medium-Term Outlook of the Belgian International Economic Environment. Simulations with the NIME Model”, Working Paper 12-03, Federal Planning Bureau.

Meyermans, E. and P. Van Brusselen (2004), “The NIME Economic Outlook for the World Economy: 2004-2010. Also in this issue: oil price shocks”, Working Paper 16-05, Federal Planning Bureau.

Meyermans, E. and P. Van Brusselen (2005.a), “The NIME Economic Outlook for the World Economy: 2005-2011. Also in this issue: The Lisbon Strategy”, Working Paper 02-05, Federal Planning Bureau.

Meyermans, E. and P. Van Brusselen (2005.b), “The Macroeconomic Effects of an Oil Price Shock on the World Economy. A Simulation with the NIME Model”, Working Paper 6-05, Federal Planning Bureau.

Meyermans, E. and P. Van Brusselen (2005.c), “The NIME Economic Outlook for the World Economy: 2005-2011. Focus: Monetary Policy, Asset Prices and Economic Growth”, August 2005, Federal Planning Bureau.

Meyermans, E. and P. Van Brusselen (2005.d), “Monetary Policy, Asset Prices and Economic Growth in the World Economy over the 1995-2004 Period. A Counterfactual simulation with the NIME Model”, Working Paper 17-05, Federal Planning Bureau.

1. The technical details concerning the NIME model are primarily discussed in Meyermans and Van Brusselen (2000.a, 2000.b, and 2001).