WORKING PAPER

16-04

The NIME Economic Outlook for the World Economy

2004 - 2010

Also in this issue: oil price shocks

E. Meyermans
P. Van Brusselen

August 2004

Federal
Planning Bureau
Economic analyses and forecasts

Avenue des Arts 47-49 Kunstlaan
B-1000 Brussels
Tel.: (02)507.73.11
Fax: (02)507.73.73
E-mail: contact@plan.be
URL: http://www.plan.be

.be

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This Working Paper presents the 2004-2010 macro-economic outlook for the major economic areas of the world. The outlook is produced using NIME, the Belgian Federal Planning Bureau's (FPB) macro-econometric world model. The Working Paper also features an assessment of the effects of an oil price shock.

This World Economic Outlook may be viewed as a baseline projection, providing insights into potential developments linked to world macro-economic imbalances as well as a coherent basis for variant analyses. The reader should be aware however, that the FPB uses various sources for the assumptions it retains regarding the underlying international economic environment of its short-term forecasts and medium-term projections for the Belgian economy.

The **euro area** economy is projected to grow by 1.9 percent in 2004, driven mainly by private consumption and investment. In 2005, net exports and employment pick up and GDP growth comes out at 2 percent. On average, the economy grows by 2.1 percent per year throughout the projection period, and the unemployment rate falls to approximately 7.6 percent in 2010. Inflation remains below the ECB's 2.0 percent ceiling, as short-term interest rates rise to 4.4 percent in 2010, thus ensuring a more neutral monetary policy stance. Fiscal deficits fall from 2.8 percent of GDP in 2004 to 1.7 percent of GDP in 2010, while the debt-to-GDP ratio declines only slightly. The euro remains strong against other major currencies, as the euro's nominal effective exchange rate appreciates by an average 3.0 percent per year.

GDP growth averages 3.0 percent for the group of countries comprising the **United Kingdom**, **Sweden** and **Denmark**, and about 3.5 percent for the **New EU Member States**. The **United States**' economy is projected to expand at a robust 3.5 percent average rate, but fiscal and trade imbalances persist. GDP growth in **Japan** comes out on average at 2.3 percent per year, and the Japanese economy finally moves out of deflation as of 2006. The **Rest of the World** sees its GDP rise at an average rate of 4.8 percent.

The Working Paper also features an assessment of the macro-economic effects on the world economy of an **oil price shock**. The shock that is presented corresponds to a permanent 25 percent increase in the price of oil due to a rise in the risk premium on oil prices. For the euro area, such a shock leads to a long run 0.27 percent fall in private sector output, and a 0.25 percent rise in private sector output prices.

Table of Contents

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Executive Summary of the 2004-2010 NIME World Economic Outlook

Introduction

This Working Paper presents a medium-term macro-economic outlook for the major economic areas of the world. The outlook is produced using NIME, the Belgian Federal Planning Bureau's macro-econometric world model. The Working Paper also features an assessment of the effects of a permanent 25 percent increase in the price of oil, a description of the NIME model, and an appendix outlining the major technical assumptions of the outlook.

The Belgian Federal Planning Bureau (FPB) has a long tradition of using macro-econometric models, to study both the Belgian economy and the international economic environment. Alongside the MODTRIM[1] and HERMES[2] models, which are used regularly for detailed analyses and projections of the Belgian economy, the FPB also makes regular use of large-scale macro-econometric multi-country models such as NEMESIS[3] and NIME[4]. These models have helped the FPB broaden its understanding of international economic developments, and to assess the risks pertaining to the underlying international economic environment in the FPB's projections of the Belgian economy.

The outlook presented in this Working Paper builds on and complements the forecasts made by other institutions. Indeed, since the NIME model essentially focuses on the medium-term, it is currently calibrated to replicate the available business cycle data for 2004, as presented by the European Commission in its latest short-term Economic Forecasts[5]. The NIME outlook then goes on to provide a coherent model-based outlook up to 2010 for the major economic areas of the world.

The outlook presented in this Working Paper is also to be viewed as a baseline, providing insights into potential developments linked to world macro-economic imbalances as well as a coherent basis for variant analyses. The reader should be aware however, that the FPB uses various sources for the assumptions it retains regarding the underlying international economic environment of its short-term forecasts and medium-term projections for the Belgian economy.

1. See, for instance, Hertveldt, B. and I. Lebrun, 2003, "MODTRIM II : A quarterly model for the Belgian economy", Working Paper 06-03, Federal Planning Bureau, Brussels.
2. See, for instance, Bossier, F., Bracke, I., Gillis, S. and F. Vanhorebeek, 2004, "Een nieuwe versie van het HERMES-model, Une nouvelle version du modèle HERMES", Working Paper 05-04, Federal Planning Bureau, Brussels.
3. See, for instance, http://www.nemesis-model.net/
4. See the section "NIME Studies and Publications", at the end of this document.
5. This NIME Economic Outlook uses data for 2004 from the European Commission's Spring 2004 Economic Forecasts. However, as explained in the Outlook's "Technical Assumptions", these data have been updated for developments in financial markets over the first semester of 2004.

Summary of the 2004-2010 World Economic Outlook

In 2004, GDP growth picks up in the euro area, underpinned by renewed growth in enterprise sector investment, strong private consumption and rising net exports. Growth remains strong throughout the 2005-2010 period, and averages 2.1 percent per annum. Employment growth picks up in 2005 and rises strongly thereafter, with the employment rate reaching 67.8 percent of the working-age population in 2010, compared to 65.4 percent in 2004. Throughout the 2004-2010 period, inflation in the euro area stays below 2 percent, mainly due to the continued appreciation of the euro area's effective exchange rate, as well as to the gradual tightening of monetary policy, whereby the short-term interest rates are raised from 2.2 percent in 2005 to 4.4 percent in 2010. Strong output growth and falling unemployment lead to a stronger rise in government income than in government expenditure, and the area's public deficit gradually falls from 2.8 percent of GDP in 2004 to 1.7 percent in 2010, while government gross debt falls from 70.9 percent of GDP in 2004 to 69.6 percent of GDP in 2010.

After already strong growth in 2003, GDP growth accelerates in 2004 for the Western non-euro EU Member States, which comprise Denmark, Sweden, and the United Kingdom. Growth stems from robust consumer spending, as well as from the return to positive growth for enterprise sector investment. Building on significant real wage increases, private consumption remains strong in 2005, as does fixed capital investment. However, net exports continue to contribute negatively to overall growth. After 2005, GDP growth accelerates as net exports start to make a positive contribution to overall growth. Inflation edges up at the end of the forecast period, but remains below 2 percent. The government budget deficit falls from 2.2 percent of GDP in 2004 to 1.4 percent of GDP in 2010, though the government gross debt-to-GDP ratio remains approximately unchanged.

In the New EU Member States, GDP growth continues to increase in 2004, building on vigorous capital investment and private consumption. Between 2005 and 2010, output growth remains resilient, driven mainly by rising private consumption. Strong domestic demand fuels inflation which picks up in 2004 and 2005, before levelling off at 2.1 percent during the rest of the period.

In the United States, the economy continues to grow steadily in 2004, due to strong private consumption and investment growth. US exports benefit from a renewed effective depreciation of the dollar and strong foreign effective demand. GDP growth remains strong in 2005 as private consumption, investment and exports continue to post high growth rates. Inflationary pressures are contained through a gradual increase in the short-term interest rates which are raised from 1.6 percent in 2004 to 4.1 percent in 2010. Strong employment and real wage growth ensure that private consumption growth remains robust over the rest of the period, notwithstanding rising income tax rates. The US dollar depreciates vis-à-vis the euro on average by 1.9 percent over the 2004-2010 period, but the nominal effective US exchange rate appreciates on average by 1.4 percent, mainly reflecting higher inflation rates in the rest of the world than in the United States. The fiscal deficit reaches 4.7 percent of GDP by the end of the period, while the government gross debt-to-GDP ratio rises continuously, up from 66.3 percent in 2004 to 75.1 percent in 2010.

Japanese output growth is strong and rising in 2004, bolstered by high enterprise sector investment, and rising private consumption. Capital spending rebounds from the preceding low-investment period, while private consumption benefits mainly from rising real wages. Net exports also make a large positive contribution to growth, as foreign demand remains strong and export prices fall. Positive inflation sets in as of 2006, driving nominal interest rates up through 2010. Though growth remains high and stable over the rest of the period, government fiscal imbalances persist, pushing government gross debt ever higher.

Building on its high growth in 2003, the rest of the world's output continues to rise markedly in 2004. The area's output growth then declines slightly, before levelling out at a still robust growth rate over 2006-2010. At the same time, inflation slows down from 5.4 percent in 2003 to 5.1 percent over the rest of the period. After a temporary appreciation in 2004, the currencies of the rest of the world depreciate against those of the other major economic areas, reflecting higher inflation rates in the rest of the world than in the major economic areas.

Summary World Area Table - Main Results

	02	03	04	05	06	07	08	09	10
I. Euro area									
1. Gross domestic product	0.9	0.4	1.9	2.0	2.1	2.1	2.2	2.2	2.2
2. GDP deflator	2.5	2.1	1.7	1.6	1.5	1.4	1.3	1.3	1.3
3. Unemployment rate (level, % of labour force)	8.0	8.4	8.4	8.1	7.7	7.5	7.5	7.5	7.6
4. Nominal effective exchange rate (+ : depreciation)	-6.5	-11.5	-3.3	-2.1	-2.3	-2.8	-3.2	-3.5	-3.7
5. Short-term interest rate (level)	3.3	2.3	2.2	2.5	2.8	3.2	3.6	4.0	4.4
II. Western non-euro EU Member States									
1. Gross domestic product	1.2	1.9	2.6	2.4	3.0	3.2	3.3	3.3	3.2
2. GDP deflator	3.1	2.5	2.9	1.7	1.1	1.1	1.3	1.5	1.6
3. Unemployment rate (level, % of labour force)	4.9	4.9	5.0	5.1	5.3	5.2	5.1	4.9	4.9
4. Nominal effective exchange rate (+ : depreciation)	-4.8	-1.6	-6.6	-4.6	-2.9	-1.8	-1.2	-1.0	-1.1
5. Short-term interest rate (level)	4.0	3.6	4.5	4.4	4.2	4.2	4.2	4.4	4.7
III. New EU Member States									
1. Gross domestic product	3.3	3.6	4.2	3.3	3.3	3.3	3.4	3.4	3.4
2. GDP deflator	2.9	2.6	1.9	3.1	3.1	3.0	3.0	2.9	2.9
3. Nominal effective exchange rate (+ : depreciation)	-6.0	-4.1	-4.4	-0.3	-0.3	-0.4	-0.5	-0.6	-0.7
IV. United States									
1. Gross domestic product	2.2	3.1	4.0	4.2	2.8	3.4	3.4	3.2	3.1
2. GDP deflator	1.5	1.7	1.1	1.7	1.0	0.8	1.0	1.3	1.6
3. Unemployment rate (level, % of labour force)	5.3	5.5	5.2	5.0	5.3	5.5	5.7	6.0	6.3
4. Nominal effective exchange rate (+ : depreciation)	-2.6	7.0	3.3	-2.3	-2.5	-2.4	-2.2	-2.0	-1.8
5. Short-term interest rate (level)	1.8	1.2	1.6	2.8	3.4	3.7	3.9	4.0	4.1
V. Japan									
1. Gross domestic product	-0.4	2.7	3.4	2.2	2.3	2.4	2.2	2.2	2.0
2. GDP deflator	-1.2	-2.5	-1.2	-0.4	0.1	0.5	1.0	1.3	1.6
3. Unemployment rate (level, % of labour force)	5.2	5.1	4.8	4.6	4.3	4.1	3.9	3.9	3.8
4. Nominal effective exchange rate (+ : depreciation)	2.0	-2.6	-3.6	0.8	1.0	0.2	-0.7	-2.0	-3.0
5. Short-term interest rate (level)	0.1	0.1	0.1	0.5	0.9	1.4	2.0	2.6	3.2
VI. Rest of the World									
1. Output	4.7	5.7	5.8	4.7	4.6	4.6	4.7	4.7	4.7
2. Deflator of output	4.9	5.4	5.1	5.1	5.1	5.1	5.1	5.1	5.1
3. Nominal effective exchange rate (+ : depreciation)	9.2	6.8	4.8	3.7	3.4	3.5	3.7	4.0	4.3

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

The Euro Area

Investment and consumption rebound in 2004

In 2003, after two years of declining growth rates, the euro area gross domestic product (GDP) growth rate bottomed out and GDP rose by 0.4 percent. Building on this rebound in growth, the area's GDP increases by a further 1.9 percent in 2004, mainly reflecting renewed growth in enterprise sector investment, supported by a recovery of private consumption growth, as well as a strong turn-around in net exports.

Domestically, the rebound in activity is mainly characterised by the 3.6 percent rise in enterprise sector gross fixed capital formation (GFCF), which follows from the strong growth in private sector output and low interest rates.

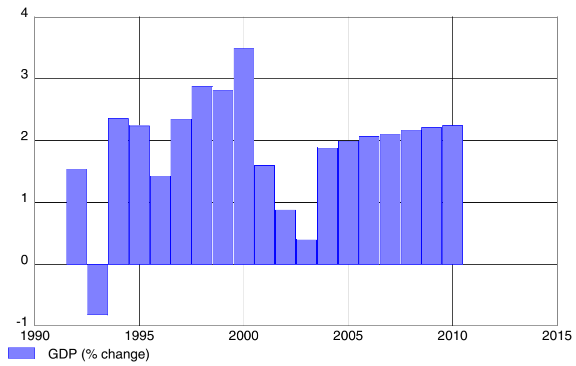
Private consumption growth increases from 1 percent in 2003 to 1.5 percent in 2004, in line with the increase in household real disposable income and sustained low interest rates. Investment in residential buildings also rebounds by 1.5 percent in 2004, after a 0.3 percent fall the year before.

After declining by 1.8 percent in 2003, exports of the euro area rise by 5.3 percent in 2004, due to the 4.9 percent growth in foreign effective demand. This growth is obtained despite the appreciation of the real effective exchange rate by 3.2 percent in 2004, and 11.5 percent the year before. Import growth also rises, jumping from 1.6 percent in 2003 to 4.9 percent in 2004. Imports recover from their previous low levels, due to the sharp rise in final demand, and a further 2.7 percent fall in euro-denominated import prices in 2003. On balance, net exports contribute 0.2 percentage points to GDP growth in 2004, after reducing GDP growth by 0.7 percentage points the year before.

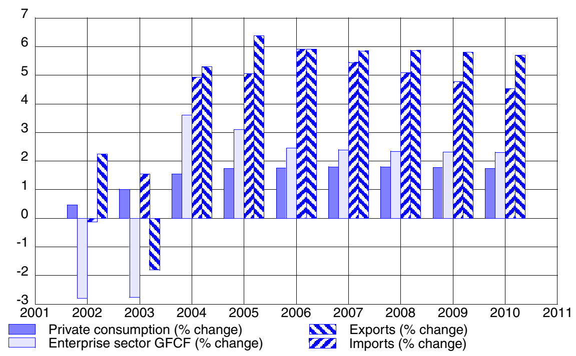
Employment growth remains weak, at 0.4 percent in 2004, despite the 2.4 percent increase in private output. However, strong productivity growth and a 0.9 percent fall in unit labour costs, set the conditions for a future pick-up in labour demand. At the same time, the labour supply also increases by 0.4 percent, leaving the unemployment rate at 8.4 percent of the labour force.

In 2004, euro area consumer price inflation comes out at 1.9 percent, the same as the year before. Inflation stays close to the 2 percent ceiling set by the European Central Bank (ECB), despite a fall in real unit labour costs, persistent below-trend growth in demand, and the appreciation of the effective exchange rate, which tempers the inflationary pressures arising from increasing dollar-denominated oil prices. Nevertheless, the moderate inflation allows for a further easing of monetary policy, and short-term interest rates fall from 2.3 percent in 2003 to 2.2 percent in 2004. Long-term interest rates increase slightly, edging up from 4.1 percent in 2003 to 4.3 percent in 2004.

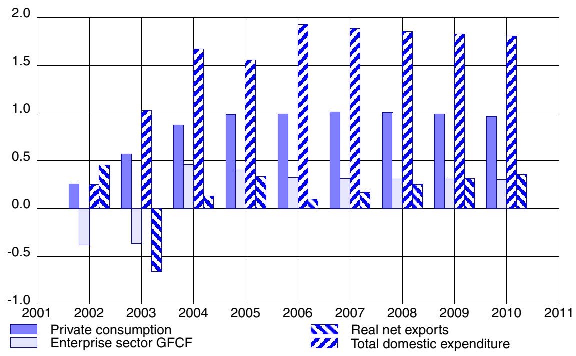
Graph 1 - GDP in the euro area



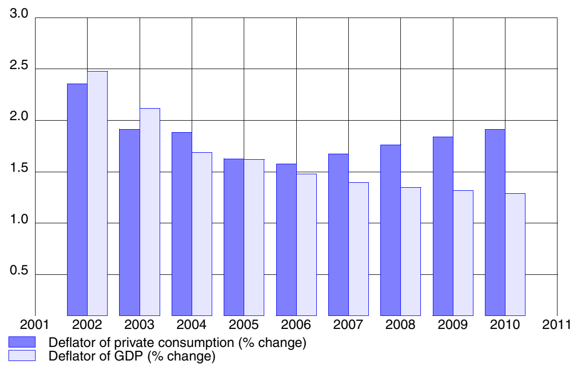
Graph 2 - Selected components of demand in the euro area



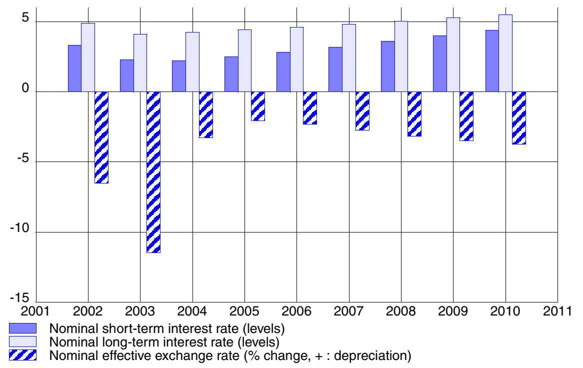
Graph 3 - Contributions to real GDP growth in the euro area *(percentage points)*



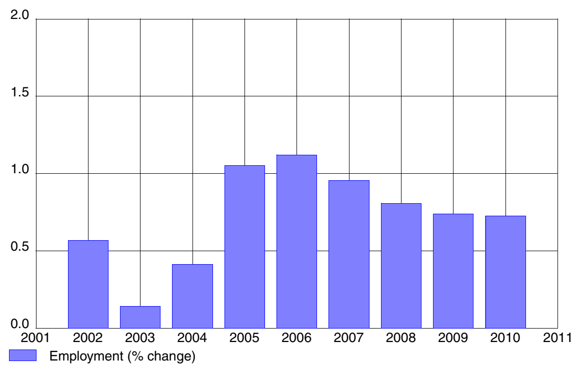
Graph 4 - Price deflators in the euro area



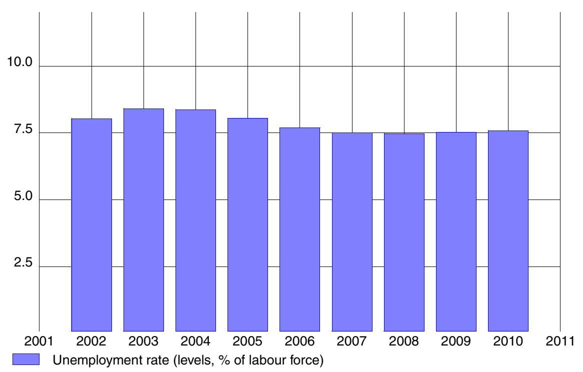
Graph 5 - Interest and exchange rates in the euro area



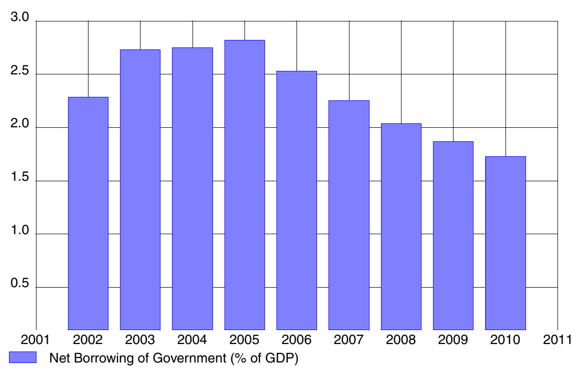
Graph 6 - Employment in the euro area



Graph 7 - Unemployment rates in the euro area



Graph 8 - Net borrowing of government in the euro area



The fiscal stance of the euro area as a whole remains weak, with a fiscal deficit equal to 2.8 percent of GDP, almost unchanged with respect to the year before, and reflecting a slow pick-up in employment and weak growth in direct income tax revenue. Gross government debt continues to increase, albeit modestly, and comes out at 70.9 percent of GDP, compared to 70.5 percent of GDP in 2003.

Net exports and employment pick up in 2005

In 2005, euro area GDP growth continues to rise, fuelled by rising private consumption, sustained growth in enterprise sector investment, and strong export growth.

Private consumption growth rises to 1.9 percent in 2005, as it continues to pick up from previous years' low levels, and as it adjusts to high disposable income growth. In 2005, real household wage growth is limited to just 0.5 percent, due to declining private sector labour productivity growth and moderate wage claims following high past unemployment rates. However, total employment rises by 1.1 percent, leading to a 1.5 percent rise in real household disposable income.

Enterprise sector investment rises by 3.1 percent in 2005, benefiting from strong output growth. However, investment growth is slightly down from the previous year, due to a slight rise in interest rates.

Although growth in foreign effective demand falls from 4.9 percent in 2004 to 4.2 percent in 2005, while the real effective exchange rate depreciates by only 0.5 percent, the euro area's exports grow by 6.4 percent in 2005, up from 5.3 percent in 2004, indicating that exports are still adjusting to the sharp increases in foreign effective demand over the previous years. Imports rise by 5.1 percent in 2005, responding to the rise in domestic output growth and the fall in euro-denominated import prices. Indeed, after falling on average over the three previous years, import prices fall yet again by 0.1 percent in 2005.

Labour demand increases by 1.1 percent in 2005, thereby responding with some delay to strong output growth and falling unit labour costs. Moreover, as the labour supply increases only by 0.7 percent, the unemployment rate falls from 8.4 percent in 2004 to 8.1 percent in 2005. At the same time, the euro area employment rate - defined as the ratio of total employment over active age population - rises from 65.4 percent of working-age population in 2004 to 65.9 percent of working-age population in 2005.

Consumer price inflation falls from 1.9 percent in 2004 to 1.6 percent in 2005, due to persisting low imported inflation and rising interest rates. Indeed, as interest rates are significantly below their equilibrium rates, and growth in effective demand is higher than growth in potential output, short-term interest rates are raised from 2.2 percent in 2004 to 2.5 percent in 2005. At the same time, long-term interest rates increase only marginally, from 4.3 percent in 2004 to 4.4 percent in 2005.

With government income growing roughly at the same pace as government outlays, the 2005 net borrowing requirement of government remains stuck at 2.8 percent of GDP, while the government gross debt burden rises to 71.3 percent of GDP.

Robust growth up to 2010

Over the 2006-2010 period, euro area GDP growth averages 2.2 percent per annum. Domestic demand is mainly driven by overall strong private consumption. However, total investment also remains vigorous, led by strong enterprise sector investment. External trade continues to contribute significantly to growth, and the surplus on the euro area's trade balance continues to widen.

Private consumption growth remains strong over the 2006-2010 period, coming out at an average rate of 1.8 percent. Private consumption tracks the steady 1.8 percent growth rate of household real disposable income between 2006 and 2010.

Although down somewhat from the 3.1 percent growth rate of 2005, enterprise sector investment growth remains robust over the 2006-2010 period, averaging 2.4 percent a year. Investment remains strong due to the relatively high private sector output growth, as well as moderate real interest rates.

Euro area exports grow at a sustained 5.8 percent per year over the 2006-2010 period, mainly led by foreign effective demand, which grows at an average rate of 4 percent per annum. However, export growth is also somewhat tempered by an average 0.2 percent per annum appreciation of the area's effective real exchange rate. Over the same period, imports grow by 5.1 percent, thereby responding to the steady growth in domestic output, as well as to the relatively moderate import price inflation.

Total employment continues to grow strongly in 2006 and 2007, mainly as a result of the 2.8 percent annual growth of private sector output. In the following years, sustained output growth, accompanied by a very limited rise in private sector real unit labour costs, leads to an average 0.7 percent rise in employment. The unemployment rate settles at 7.6 percent in 2010, while the euro area's employment rate rises from 66.4 percent in 2006 to 67.8 percent in 2010.

As effective demand grows somewhat faster than potential output, consumer price inflation picks up moderately, and inflation rises from 1.6 percent in 2006 to 1.9 percent in 2010.

As a result of rising inflationary pressures, short-term interest rates are raised from 2.8 percent in 2006 to 4.4 percent in 2010, while long-term interest rates increase from 4.6 percent in 2006 to 5.5 percent in 2010.

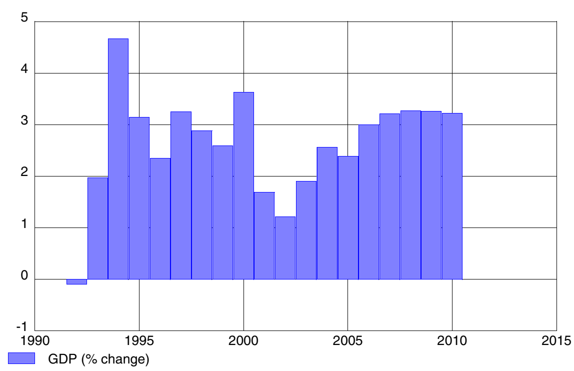
With steadily rising employment and output, government revenue increases more quickly than outlays, and net borrowing of government falls from 2.8 percent of GDP in 2005 to 1.7 percent of GDP in 2010. The reduction in public deficits and strong nominal GDP growth, allow for a fall in the public debt-to-GDP ratio, which declines from 71.4 percent in 2006 to 69.6 percent in 2010.

The Western Non-Euro EU Member States

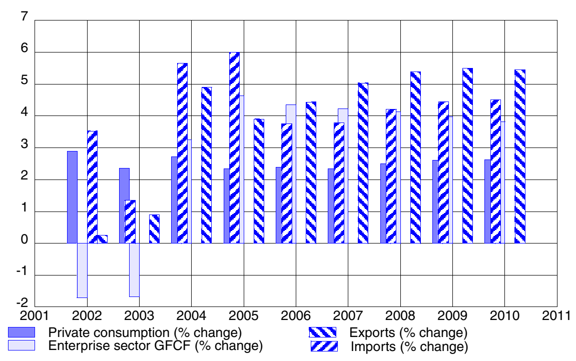
Robust growth in 2004, led by private consumption and investment

After reaching its trough in 2002 with a growth rate of 1.2 percent, GDP growth of the Western non-euro European Union (EU) Member States[1] picked up and grew by 1.9 percent in 2003, due to a strong rise in both private consumption and investment. Led once again by private consumption and investment, the pace of GDP growth further accelerates and GDP growth jumps to 2.6 percent in 2004.

Graph 9 - GDP in the Western non-euro EU Member States



Graph 10 - Selected components of demand in the Western non-euro EU Member States

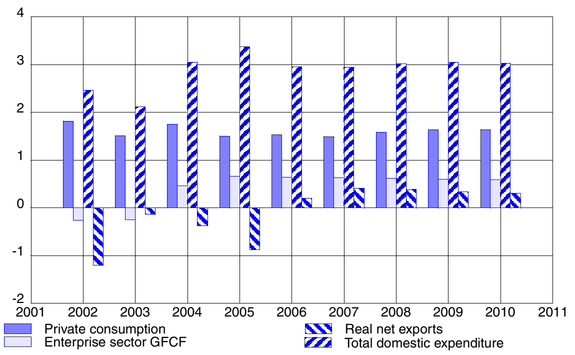


In 2004, private consumption grows by 2.7 percent, up from 2.4 percent the year before. Consumption growth tracks the 3 percent rise in household real disposable income, which results mainly from the 2.5 percent rise in real take-home wages, and a strong increase in asset and net other income.

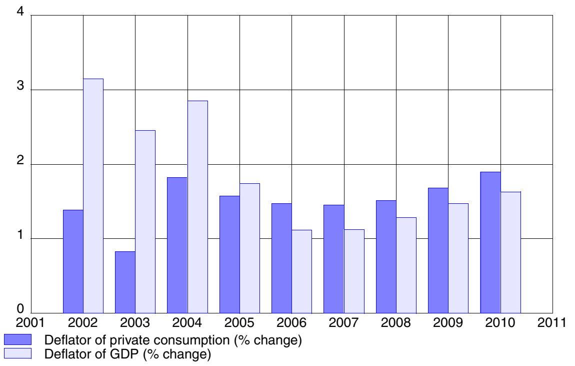
1. This group of countries comprises Denmark, Sweden and the United Kingdom.

After three consecutive years of decline, enterprise sector investment rises by 3.3 percent in 2004, reflecting renewed strong output growth. Household investment in residential buildings comes out at 5.9 percent in 2004, down from the previous two years which were characterised by unsustainably high growth rates.

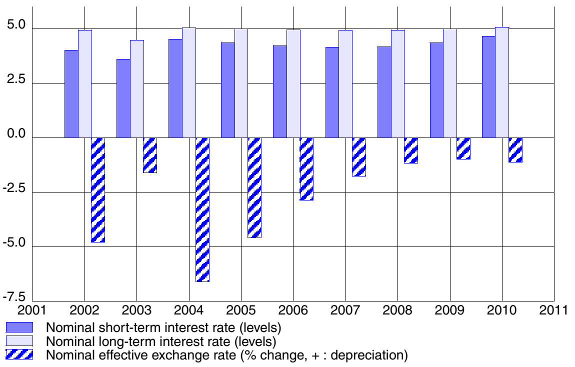
Graph 11 - Contributions to real GDP growth in the Western non-euro EU Member States
(percentage points)



Graph 12 - Price deflators in the Western non-euro EU Member States



Graph 13 - Interest and exchange rates in the Western-non-euro EU Member States



Exports expand at a brisk pace, rising from 0.9 percent in 2003 to 4.9 percent in 2004, partly due to a rise in foreign effective demand from 3.1 percent in 2003 to 4.2 percent in 2004. However, export growth is somewhat tempered by the 4.5 percent appreciation of the area's real effective exchange rate. Imports grow by 5.7 percent in 2004, up from 1.4 percent in 2003, thereby responding to rising private sector output and falling relative import prices. Import prices denominated in the local currency fall by 0.8 percent in 2004, thanks to the 6.6 percent appreciation of the area's nominal effective exchange rate. All in all, the area's net exports remain negative, reducing overall GDP growth by 0.5 percentage points in 2004, compared to 0.2 percentage points in 2003.

Total employment increases by 0.3 percent in 2004, while the labour supply grows by 0.4 percent. This leads to a slight rise in the unemployment rate, which moves from 4.9 percent of the labour force in 2003 to 5 percent of the labour force in 2004. At the same time, the area's employment rate drops marginally, from 76.8 percent of the working-age population in 2003 to 76.6 percent of the working-age population in 2004.

Inflationary demand pressures are on the rise, as growth in effective demand outstrips potential output growth. As a result, the GDP deflator increases by 2.9 percent in 2004, compared to 2.5 percent the year before.

The higher output growth and inflation lead the monetary authorities to increase short-term interest rates from 3.6 percent in 2003 to 4.5 percent in 2004. At the same time, long-term interest rates rise from 4.5 percent in 2003 to 5 percent in 2004.

In 2004, total nominal government income grows faster than total government current outlays, and the government net borrowing requirement drops from 2.4 percent of GDP in 2003 to 2.2 percent of GDP in 2004. This leaves the public debt-to-GDP ratio approximately unchanged, at 42 percent of GDP.

Negative net exports reduce GDP growth in 2005

In 2005, the Western non-euro EU Member States' GDP rises by 2.4 percent, led by a robust 3.4 percentage point contribution to growth from domestic demand, but once again hampered by a negative 1 percentage point contribution from net exports.

Private consumption rises by 2.3 percent in 2005, partly correcting for the high above-trend growth of the year before, but still supported by a 3.8 percent growth in household real disposable income. The latter increases mainly due to a 3.8 percent rise in real take-home private sector wages, accompanied by a 0.2 percent rise in total employment.

Total gross fixed capital formation continues to contribute vigorously to GDP growth, with residential investment rising by 3.3 percent and growth in enterprise sector capital investment accelerating to 4.6 percent. However, growth in public investment decelerates to 9.2 percent, down from an unsustainable 14.4 percent the year before.

In 2005, export growth slows down to 3.9 percent, due to declining growth in foreign effective demand and an appreciating real exchange rate. Imports post a 6 percent increase, leading to a notable increase in the area's current account deficit, which jumps from 0.8 percent of GDP in 2004 to 1.7 percent of GDP in 2005.

With private sector output growing at 3.6 percent, but with real producer wages rising by 4.2 percent, labour demand increases by only 0.2 percent. At the same time, the labour supply rises by 0.3 percent, thereby increasing the unemployment rate by 0.1 percentage point to 5.1 percent of the labour force.

Consumer price inflation falls from 1.8 percent in 2004 to 1.6 percent in 2005, allowing the monetary authorities to cut short-term interest rates from 4.5 percent in 2004 to 4.4 percent in 2005. The long-term interest rates remain unchanged at 5 percent.

In 2005, as government income increases more quickly than government expenditure, net borrowing of government falls from 2.2 percent of GDP in 2004 to 2 percent of GDP in 2005, while the public debt-to-GDP ratio increases to 42.4 percent.

Net exports contribute to GDP growth as of 2006

GDP growth picks up after 2005, rising to 3 percent in 2006 and averaging 3.2 percent per annum over the 2006-2010 period. This higher growth results from both an increase in domestic demand, which makes an annual average 3 percentage point contribution to GDP growth over the period, and also from a limited though positive 0.2 percentage point contribution to growth from net exports between 2006 and 2010.

Private consumption rises by an average rate of 2.5 percent over the 2006-2010 period, largely due to a 0.6 percent average rise in total employment, and a 2.8 percent average rise in real take-home private sector wages.

Total fixed capital investment increases by 3.8 percent over the 2006-2010 period, largely due to robust output growth and moderate interest rates.

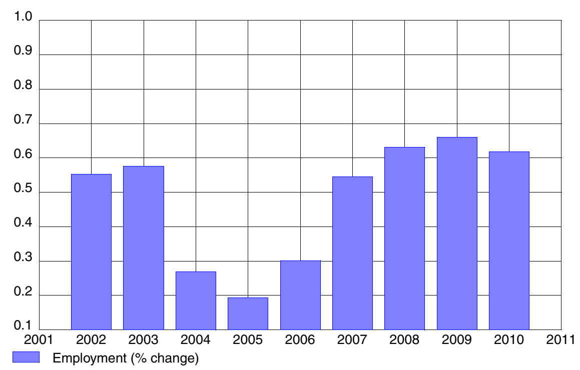
Exports rise on average by 5.2 percent over the 2006-2010 period, mainly due to relatively high foreign effective demand. Imports grow on average by 4.1 percent per annum, following robust output growth and falling relative import prices. On balance, the result of these developments in international trade is a positive 0.3 percent contribution from net exports to GDP growth in 2007, and net exports continue to post positive contributions to growth up to 2010.

Consumer price inflation accelerates slightly, rising from 1.5 percent in 2006 to 1.9 percent in 2010, as effective demand grows somewhat faster than potential output. However, at the same time, as real private sector wage costs rise in line with labour productivity, real unit labour costs stay approximately flat over the 2006-2010 period.

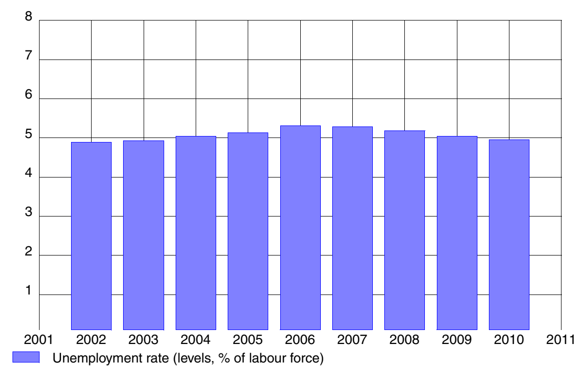
The above-trend rise in output and the rising inflation lead to a gradual tightening of monetary policy, and short-term interest rates progress from 4.2 percent in 2006 to 4.7 percent in 2010. Long-term interest rates remain almost unchanged, at approximately 5 percent.

Sustained growth in domestic demand, and more sustainable rates of public sector investment over the 2006-2010 period, result in a fiscal deficit that falls from 2 percent of GDP in 2006 to 1.4 percent of GDP in 2010, while the debt-to-GDP ratio declines slightly to reach 41.8 percent of GDP by 2010.

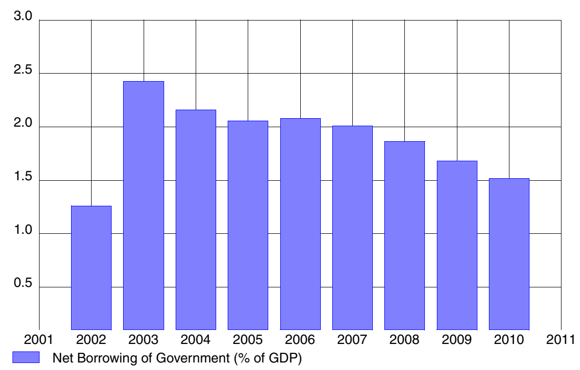
Graph 14 - Employment in the Western non-euro EU Member States



Graph 15 - Unemployment rates in the Western non-euro EU Member States



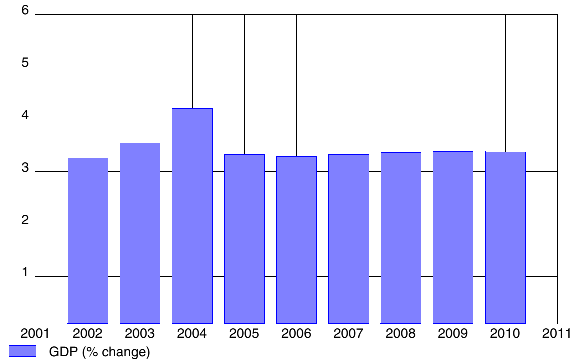
Graph 16 - Net borrowing of government in the Western non-euro EU Member States



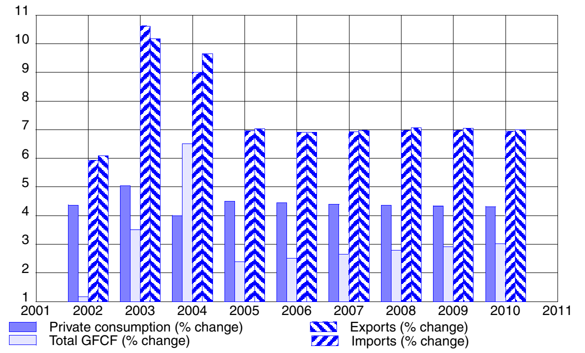
The New EU Member States

After two successive years of rising GDP growth, the New EU Member States see their GDP growth accelerate again in 2004, as GDP growth rises from 3.6 percent in 2003 to 4.2 percent in 2004. The renewed rise in GDP growth builds on a strong 6.5 percent rise in total gross fixed capital formation, as well as a 4 percent rise in private consumption. Import growth falls somewhat, from 10.6 percent in 2003 to 9 percent in 2004, and is thus outpaced by the rise in exports, which increase by 9.7 percent in 2004 after a 10.2 percent rise in 2003. At the same time, consumer price inflation rises by 2.7 percent in 2004, compared to 1.5 percent the year before.

Graph 17 - GDP in the New EU Member States



Graph 18 - Selected components of demand in the New EU Member States



In 2005, GDP growth falls back to 3.3 percent, and stabilises at an average rate of 3.4 percent over the 2006-2010 period. Growth is driven mainly by a 4.4 percent average increase in private consumption, while total gross fixed capital formation continues to progress, posting an average 2.8 percent yearly rise between 2006 and 2010. At the same time, consumer price inflation comes out at 2.5 percent in 2005, then gradually declines and settles at 2.1 percent in 2010.

As inflation stabilises in the area over the 2006-2010 period, both short-term and long-term nominal interest rates fall. The short-term rates come out at respectively 7.6 percent and 6.1 percent in 2004 and 2005, and level out at about 5 percent over the 2006-2010 period.

The area's nominal effective exchange rate appreciates by 4.4 percent in 2004. However, the area's currencies simultaneously depreciate by a moderate 0.5 percent relative to the euro. The rate of appreciation of the area's currencies then drops to 0.3 percent in 2005, and averages 0.5 percent between 2006 and 2010. Over the same period, the area's currencies continue to depreciate against the euro at an annual average rate of 3.1 percent.

The United States

US GDP continues to grow steadily in 2004

For the third straight year, US GDP growth continues to accelerate in 2004 and comes out at 4 percent, up from 3.1 percent the year before. The robust growth in 2004 is driven mainly by rising enterprise sector investment and private consumption.

In 2004, enterprise sector gross fixed capital formation rises by 8.8 percent, rebounding from lower - and even negative - growth rates over the 2001-2003 period. Total gross fixed capital formation comes out at 6.9 percent.

Private consumption rises by 3.5 percent in 2004, after rising by 3.1 percent the year before. Private consumption benefits from a strong rise in household real disposable income, resulting from a 0.8 percent rise in total employment, and a 1.9 percent rise in real take-home private sector wages. However, total real household means, including asset wealth and expected future income, rise by a more limited 2.8 percent.

Real private sector wage costs rise by 2.4 percent in 2004. However, labour productivity progresses by a strong 4.5 percent, outstripping the rise in wage costs, and reducing real unit labour costs by 2.2 percent. Nevertheless, the employment response remains weak, as employment expands by only 0.8 percent.

Foreign effective demand growth rises from 4.1 percent in 2003 to 4.8 percent in 2004. At the same time, the US nominal effective exchange rate depreciates by 3.3 percent, after the 7 percent depreciation of 2003. This opens the way for a significant 9.2 percent jump in US exports in 2004. Imports grow by 8.8 percent, reflecting a strong 5.4 percent increase in private sector output. Though exports rise more quickly than imports in 2004, the US current account remains strongly negative, posting a deficit equal to 5.2 percent of GDP, while net exports make a negative contribution of 0.5 percentage points to overall GDP growth in 2004.

Nominal short-term interest rates edge up, from 1.2 percent in 2003 to 1.6 percent in 2004, as effective demand grows faster than potential output, and as monetary authorities start to adjust to a more neutral stance. Long-term interest rates increase from 4 percent in 2003 to 4.3 percent in 2004.

In 2003, increased government military and security expenditures (including expenditures arising from the *Emergency Wartime Supplemental Appropriations Act*), as well as various measures aimed at reducing federal income tax rates (as provided for by the *Jobs and Growth Tax Relief Reconciliation Act*), pushed the federal government deficit to 4.8 percent of GDP. As growth of government income outpaces growth in outlays, partly due to the anticipated expiration of the tax cut provisions enacted in the *Economic Growth and Tax Relief Reconciliation Act* of 2001, the federal deficit comes out at 4.6 percent of GDP in 2004. At the same time, the public debt-to-GDP ratio increases with the new deficit, rising from 63.4 percent in 2003 to 66.3 percent in 2004.

Private consumption and enterprise investment continue to drive growth in 2005

In 2005, US GDP continues to grow at a steady 4.2 percent rate, once again driven by strong private consumption and high enterprise sector investment. Total domestic expenditures provide a 4.2 percentage point contribution to the year's overall GDP growth rate, while the negative contribution to growth from net exports falls from 0.5 percentage points in 2004 to 0.1 percentage point in 2005.

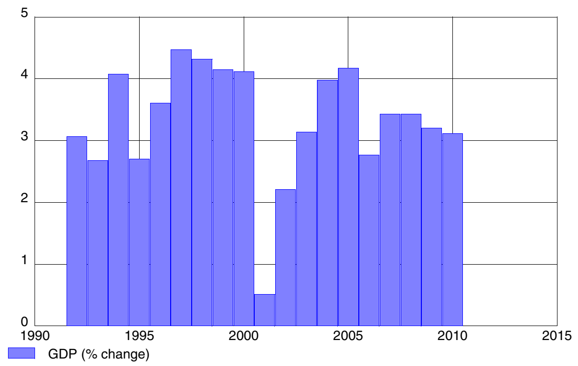
Total gross fixed capital formation rises by 5.9 percent in 2005, down from 6.9 percent the year before. Enterprise sector investment, slowing down in response to the interest rate hikes, rises by 6.7 percent in 2005, compared to 8.8 percent in 2004. Investment in residential buildings grows by 4.7 percent in 2005, compared to 3.9 percent in 2004.

Private consumption drops from 3.5 percent in 2004 to 3.2 percent in 2005, as disposable income growth falls and interest rates increase. Disposable income growth falls from 4.2 percent in 2004 to 3.1 percent in 2005, despite strong employment growth, but reflecting declining real wage growth, income tax increases due to the expiration in 2004 of the tax-cut provisions of a 2001 federal tax law, and falling interest income.

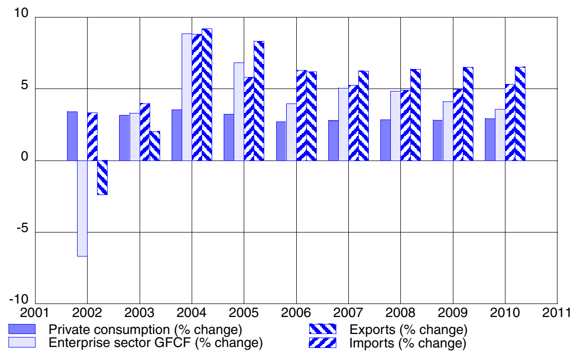
US exports continue to grow rapidly, rising by 8.3 percent in 2005. Strong export growth once again follows from the steady 4.1 percent growth in foreign effective demand, the relatively limited increases in dollar-denominated export prices, and the residual effect of the previous years' depreciation of the US dollar. Imports also continue to rise significantly, reacting to the strong growth in domestic output and the falling dollar-denominated import prices. The stronger rise in exports than in imports leads to a narrowing of the US current account deficit, which falls to 4.7 percent of GDP.

As the recovery continues, firms begin to create more jobs and total employment increases by 1.8 percent in 2005. At the same time, private sector real wage costs rise by 2.2 percent, which is somewhat higher than the 1.5 percent rise in real take-home wages due to a slight rise in income tax rates and a relative increase in consumer prices.

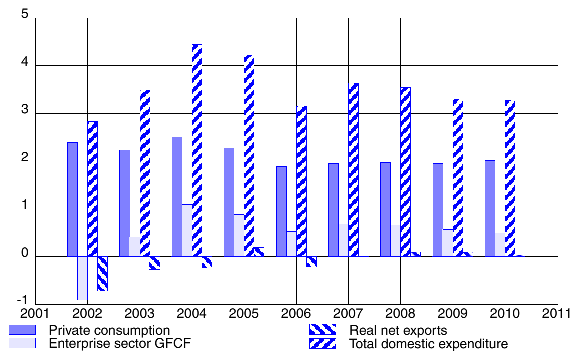
Graph 19 - GDP in the US



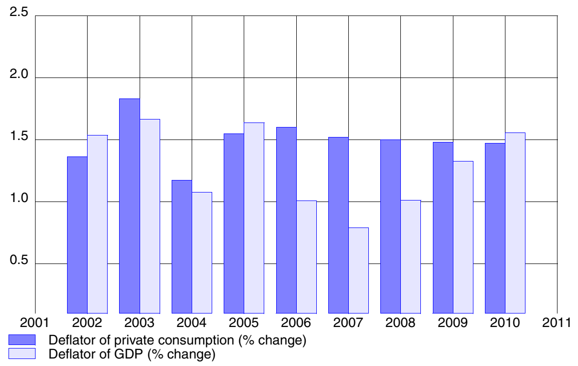
Graph 20 - Selected components of demand in the US



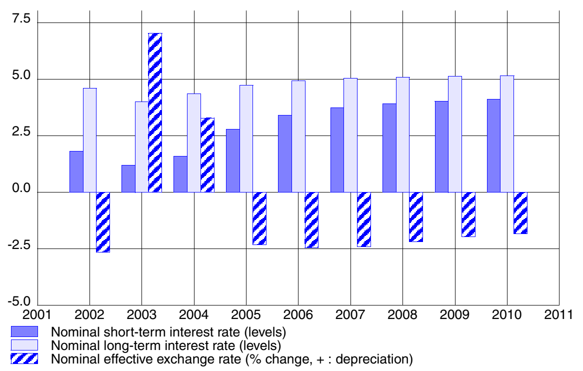
Graph 21 - Contributions to real GDP growth in the US
(percentage points)



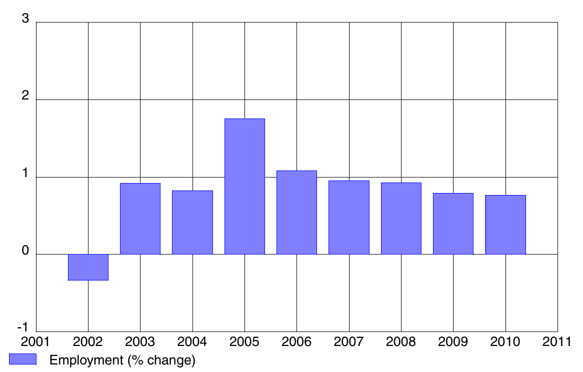
Graph 22 - Price deflators in the US



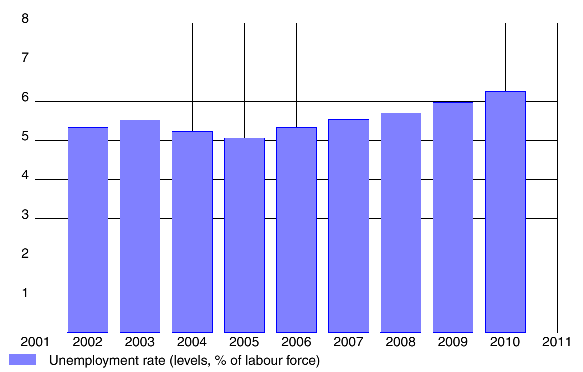
Graph 23 - Interest and exchange rates in the US



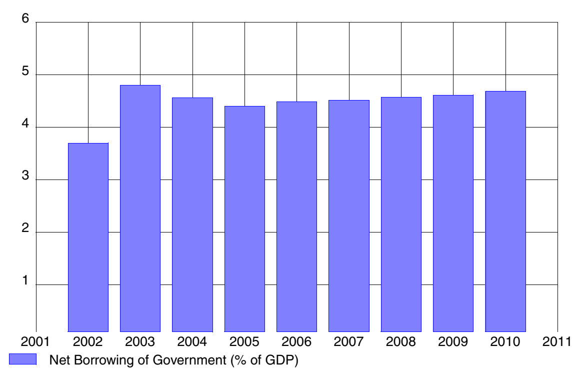
Graph 24 - Employment in the US



Graph 25 - Unemployment rates in the US



Graph 26 - Net borrowing of government in the US



However, rising wage costs are outpaced by the 2.7 percent increase in labour productivity, thus reducing private sector real unit labour costs by 0.6 percent. With the labour supply expanding by 1.6 percent and total employment growing by 1.8 percent, the unemployment rate comes out at 5 percent in 2005, down from 5.2 percent the year before.

As effective demand continues to rise faster than potential output, inflationary demand pressures strengthen, and monetary authorities raise short-term interest rates from 1.6 percent in 2004 to 2.8 percent in 2005.

As of 2005, the tax cuts enacted in the *Economic Growth and Tax Relief Reconciliation Act* start to expire and fiscal revenue increases, resulting in a 0.2 percentage point reduction in the federal budget deficit, which comes out at 4.4 percent of GDP. Though smaller than the previous year, the renewed budget deficit leads to a further rise in government gross debt, which reaches 67 percent of GDP in 2005.

Robust growth during the 2006-2010 period, while external and fiscal imbalances persist

After 2005, US GDP growth dips, only to rebound the following year and stabilise at an average rate of 3.2 percent per annum over the 2006-2010 period. Total domestic expenditure grows also at an average rate of 3.2 percent per year, driven by steady growth in private consumption and gross fixed capital formation, which are kept somewhat in check by the gradual tightening of monetary and fiscal policies.

Private consumption increases strongly over the 2006-2010 period, growing at an average rate of 2.8 percent due to a steady increase in household real disposable income. Real disposable income growth accelerates progressively over the period, going from 2.9 percent in 2006 to 3.5 percent in 2010, and averaging 3.3 percent growth per year. This follows from an average 1.8 percent growth in real private sector wages between 2006 and 2010, accompanied by an average 0.9 percent growth in total employment, though real income growth is somewhat tempered by tax increases. Indeed, with the gradual expiration of a number of tax cut provisions, income tax rates rise almost 2 percentage points between 2006 and 2010.

During the 2006-2010 period, enterprise sector investment and residential investment rise at an average rate of 4.3 percent and 5 percent, respectively. Enterprise sector investment is particularly strong during the first years of this period, underpinned mainly by high private sector output and labour productivity growth. Growth in residential investment is fuelled by the rise in household real disposable income.

US exports continue to progress notably over the 2006-2010 period, rising on average by 6.4 percent per annum. This continuous strong export performance can be pinned on the stable growth of foreign effective demand, and moderate increases in dollar-denominated export prices. Import growth also remains sturdy, due to the high domestic demand growth and relatively moderate dollar-denominated import price increases. Nevertheless, the US current account deficit remains high, at an average of 4.9 percent of GDP between 2006 and 2010.

Labour demand grows on average by 0.9 percent per annum over the 2006-2010 period, while the unemployment rate increases from 5.3 percent in 2006 to 6.3 percent in 2010, reflecting increases in the natural rate of unemployment linked to the federal income tax hikes. Growth in real producer wage costs accelerates from 2.2 percent in 2005 to 2.6 percent in 2010. However, as private sector labour productivity progresses somewhat more quickly, average real unit labour costs tend to decline.

Over the 2006-2010 period, with demand growing at about the same pace as potential output, inflationary demand pressures fall. Both private sector production price inflation and consumer price inflation remain subdued, posting average increases of 1.3 percent and 1.5 percent respectively.

After raising rates by 118 basis points in 2005, monetary authorities increase short-term interest rates by a further 63 basis points in 2006. In subsequent years, the interest rate hikes become less pronounced, going from 32 basis points in 2007 to 8 basis points in 2010, in an effort to keep growth in effective demand roughly in line with growth in potential output.

Though the US dollar depreciates in nominal terms against the euro over the 2006-2010 period, the United States' nominal effective exchange rate appreciates by an average annual rate of 2.2 percent, primarily due to higher inflation rates in the rest of the world. However, as the current account continues to show large imbalances, the country's real effective exchange rate begins to depreciate towards the end of the period.

As the unemployment rate increases from 5.3 percent in 2006 to 6.3 percent in 2010, the strong GDP growth and the increases in income tax rates are insufficient to keep government revenue in line with the growing government outlays. Hence, the fiscal deficit increases from 4.5 percent of GDP in 2006 to 4.7 percent of GDP in 2010. The upward movement in tax rates begins with the gradual expiration of the tax cut provisions of the *Economic Growth and Tax Relief Reconciliation Act* in 2004, and is further accelerated with the gradual expiration of the tax cut provisions of the *Jobs and Growth Tax Relief Reconciliation Act* in 2008. The persisting budget deficits lead to a continuous rise in government gross debt, and the debt-to-GDP ratio increases from 69 percent in 2006 to 75.1 percent in 2010.

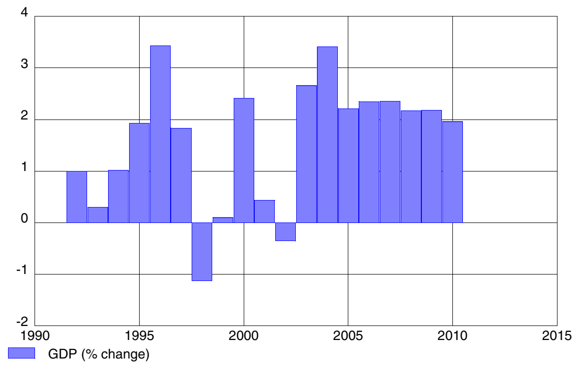
Japan

Rising enterprise investment growth and robust private consumption growth drive GDP in 2004

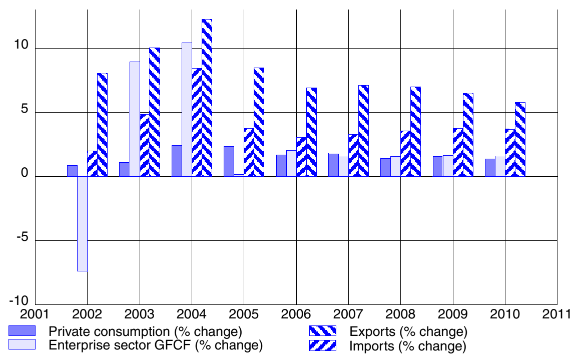
Japanese GDP growth accelerates in 2004, rising by 3.4 percent after a 2.7 percent growth rate the previous year. GDP is driven mainly by a high 10.4 percent rise in enterprise sector gross fixed capital investment, and by a 2.4 percent increase in household private consumption. The contribution to GDP growth from net exports levels off at 0.7 percentage points.

After increasing by 9 percent in 2003, enterprise gross fixed capital formation rises by 10.4 percent in 2004, pursuing on its rebound after the low economic growth and low investment of the 2001-2002 period. Investment growth is further underpinned by falling real interest rates, and falling investment prices. Investment in residential buildings also increases in 2004, following a strong rise in real take-home wages and the subsequent rise in real household means.

Graph 27 - GDP in Japan



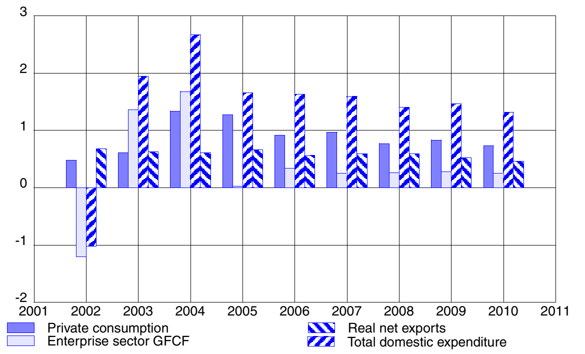
Graph 28 - Selected components of demand in Japan



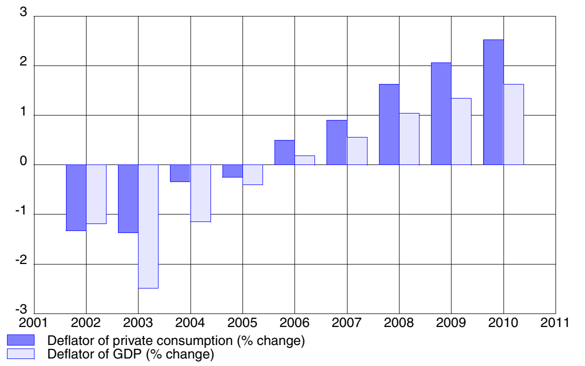
Private consumption growth picks up in 2004, growing by 2.4 percent compared to 1.1 percent in 2003. Private consumption benefits from lower real interest rates, and a 0.4 percent rise in total employment, accompanied by a 1.7 percent rise in real take-home wages. Rising real wages and employment allow for a 2.7 percent increase in household real disposable income, while total real means, including asset holdings and expected future earnings, increase by 2.1 percent.

In response to both the continuous drop in yen-denominated export prices, and the accelerating growth of foreign effective demand, Japanese exports rise by 10 percent in 2003, and by a further 12.3 percent in 2004. Import growth picks up in 2004 and rises by 8.4 percent, after growing by 4.8 percent in 2003. On balance, net exports make a positive 0.7 percentage point contribution to GDP growth, and the Japanese current account surplus rises to 3.4 percent of GDP in 2004.

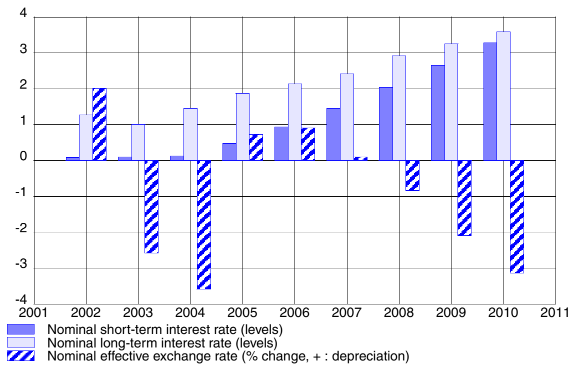
Graph 29 - Contributions to real GDP growth in Japan
(percentage points)



Graph 30 - Price deflators in Japan



Graph 31 - Interest and exchange rates in Japan



Employment rises by a limited 0.4 percent in 2004, notwithstanding strong output growth, while the labour supply increases by 0.1 percent. This leads to a decline in the unemployment rate from 5.1 percent in 2003 to 4.8 percent in 2004. Private sector real wage costs and labour productivity rise by, respectively, 2.1 percent and 3.5 percent in 2004, leading to a 1.4 percent decline in real unit labour costs.

In 2004, deflation continues to affect the Japanese economy, and consumer prices fall by 0.3 percent. However, as nominal short-term interest rates are kept constant, real short-term interest rates fall, from 1.5 percent in 2003 to 0.5 percent in 2004.

Japan's nominal effective exchange rate appreciates by 2.6 percent in 2003, and by another 3.6 percent in 2004. However, as domestic prices continue to fall in the face of increasing foreign effective output prices, the real effective exchange rate depreciates by 1.1 percent in 2004, following a 4.8 percent depreciation in 2003.

Though slightly down from the two previous years, net borrowing of government comes out at 7.4 percent of GDP in 2004, while the public debt-to-GDP ratio climbs to 161.6 percent.

Vigorous private consumption growth, but faltering investments in 2005

After growing by 3.4 percent in 2004, GDP growth falls to 2.2 percent in 2005. GDP growth is mainly supported by private consumption growth, while the contribution to growth from net exports increases marginally.

Private consumption rises by 2 percent in 2005, due to a 2.8 percent rise in real take-home wages, accompanied by a 0.4 percent rise in employment. High real wage growth springs from further strong growth in labour productivity.

Though residential investment growth increases from 1.2 percent in 2004 to 4.9 percent in 2005, total gross fixed capital formation rises by only 0.6 percent, weighed down by an almost unchanged enterprise sector investment level. Enterprise sector investment hardly grows in 2005, as the very high investment rates of the two previous years brought the capital stock approximately in line with its optimal trend level.

Exports rise at a brisk 8.6 percent rate, though this is down from the 12.3 percent rise in 2004. This drop in export growth follows the fall in foreign effective potential demand growth, which rises by 4.3 percent in 2005, after a 4.9 percent increase the year before. Exports are also underpinned by the further depreciation of Japan's real effective exchange rate. The real effective exchange rate depreciates as yen-denominated export prices continue to fall, hereby tracking the decline in production prices and real unit labour costs. As imports grow by 3.7 percent in 2005, the current account surplus widens to 3.7 percent of GDP, and net exports contribute a positive 0.8 percentage points to GDP growth.

In 2005, the relatively robust output growth and a further fall in real unit labour costs drive total employment up by 0.4 percent, thereby reducing the unemployment rate to 4.6 percent of the labour force.

Prices continue to fall in 2005, but their decline is limited. Indeed, private sector output prices decline by 0.2 percent, following a 1 percent decline the previous year.

Strong output growth, combined with the gradual disappearance of deflationary pressures, leads the monetary authorities to raise short-term interest rates from 0.1 percent in 2004 to 0.5 percent in 2005. At the same time, long-term interest rates increase, from 1.5 percent in 2004 to 1.9 percent in 2005. However, this rise in interest rates is smaller than the rise in interest rates abroad, leading to a 0.8 percent depreciation of the country's nominal effective exchange rate.

In 2005, government revenue is boosted by rising consumption and wages, and growth in total income outstrips growth in government current expenditure. The overall government balance remains in deficit, but net borrowing comes out at 7.1 percent of GDP, down from 7.4 percent in 2004. Gross government debt continues to climb however, jumping to 165.8 percent of GDP.

Inflation reappears as of 2006

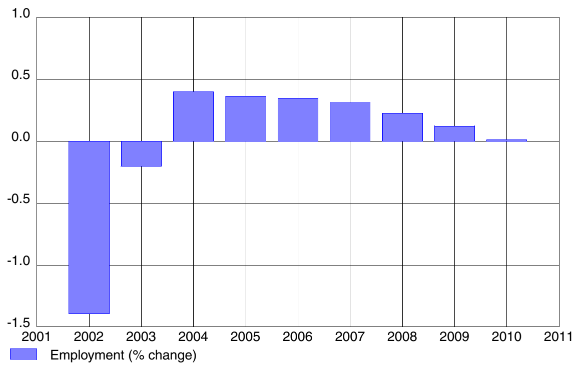
Over the 2006-2010 period, Japan's GDP growth rises to reach an annual average rate of 2.2 percent. Economic growth over this period is driven first and foremost by private consumption, with net exports making the second largest contribution to GDP growth between 2006 and 2010. Moreover, in accordance with recent forecasts and statements by the Japanese authorities, the NIME Economic Outlook assumes that the policy of quantitative easing succeeds in generating positive inflation (expectations) as of 2006. Thus, after declining by 0.2 percent in 2005, consumer prices increase by 0.4 percent in 2006, followed by a 1.5 percent increase per annum over the 2006-2010 period.

Private consumption rises by 1.8 percent in 2006, and levels out at a 1.6 percent annual average over the 2006-2010 period. After 2005, private consumption is tempered by declining growth rates of real disposable income, compounded by declining real asset wealth caused by rising prices and interest rates.

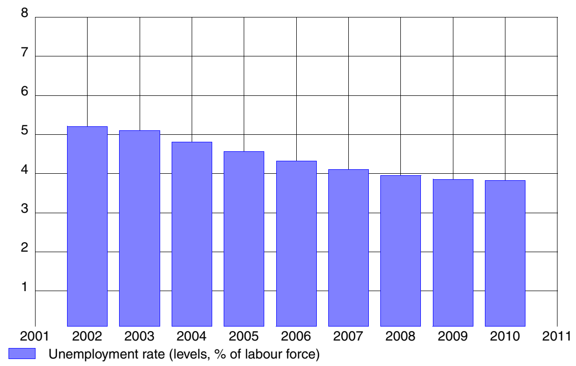
Household real disposable income growth falls from 2.3 in 2006 to 1.9 in 2010, due to slower growth in real take-home wages and employment. Real take-home wage growth falls from 2.2 percent in 2006 to 1.7 percent in 2010, while total employment increases by a yearly average of 0.2 percent over the 2006-2010 period. Total real household means, which include asset holdings and expected future earnings, increase by 1.3 percent in 2006, after rising by 1.7 percent the year before. Growth in total real means then declines, to settle at just 0.4 percent in 2010, as inflation erodes household financial wealth, and as households adjust their expectations regarding their future wages.

Enterprise sector investment rises on average by 1.7 percent over the 2006-2010 period, while residential investment achieves an average growth rate of 2.5 percent over the period. Enterprise sector investment then weakens towards the end of the period, as interest rates increase and real household income growth stalls.

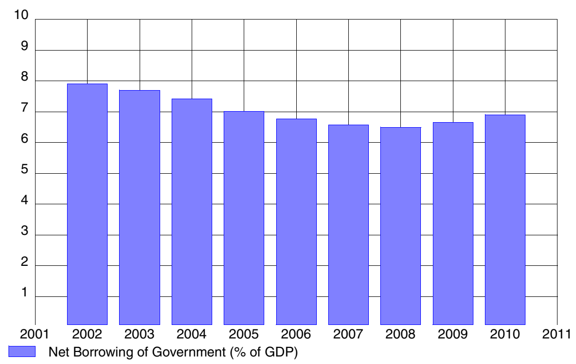
Graph 32 - Employment in Japan



Graph 33 - Unemployment rates in Japan



Graph 34 - Net borrowing of government in Japan



After the particularly high export growth of the previous years, Japanese export growth gradually falls back to a more sustainable rate, and comes out at an average annual rate of 6.7 percent between 2006 and 2010. Imports rise on average by 3.5 percent over the 2006-2010 period. With export growth outpacing the rise in imports, the Japanese current account surplus continues to widen over the period, jumping from 4 percent of GDP in 2006 to 5.2 percent of GDP by 2010.

As effective demand grows faster than potential output, and as interest rates remain below their equilibrium rates, the monetary authorities increase short-term interest rates from 0.5 percent in 2005 to 0.9 percent in 2006. Short-term interest rates then continue their progression, and come out at 3.2 percent in 2010. The long-term rates increase from 2.1 percent in 2006 to 3.6 percent in 2010.

Higher inflation abroad, as well as a closing interest rate differential, lead to an appreciation of Japan's nominal effective exchange rate over the 2006-2010 period. However, as the exchange rate appreciates, yen-denominated import and export prices come under pressure, falling on average by, respectively, 0.2 and 0.8 percent. The fall in export prices then ensures a continuing - albeit declining - real depreciation of the country's currency.

The Japanese fiscal deficit stays just below 7 percent of GDP throughout the 2006-2010 period, and government gross debt rises to 173.4 percent of GDP by 2010. However, as a large part of government debt is held by Japanese public institutions, and only a small fraction held by foreigners, the growing debt fails to trigger a confidence crisis.

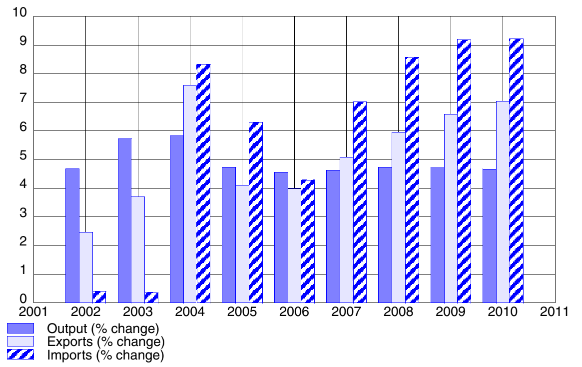
The Rest of the World

In the rest of the world, output growth rose steadily over the 2001-2003 period, jumping from 4 percent in 2001 to 5.7 percent in 2003. In 2004, the area's output continues to rise by a strong 5.8 percent, before levelling out at a 4.7 percent average annual growth rate over the 2006-2010 period. At the same time, inflation slows down, declining from 5.4 percent in 2003 to an average rate of 5.1 percent over the rest of the period.

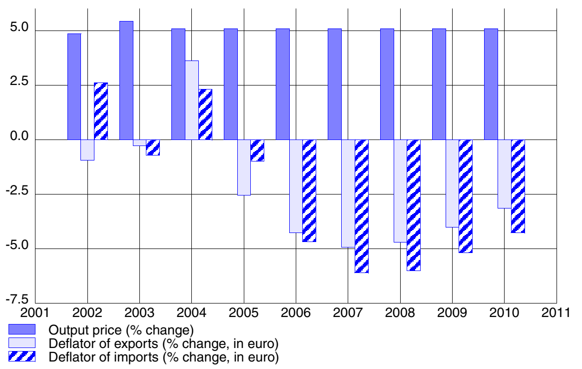
The area's imports rise by 8.3 percent in 2004. Subsequently, they continue to grow at a rate of 7.7 percent per annum, outstripping export growth, which reaches an annual average rate of 5.7 percent over the same period.

After an initial 4.7 percent depreciation in 2004, the area's nominal effective exchange rate depreciates at an annual average rate of 3.7 percent over 2006-2010, primarily reflecting much higher inflation in the rest of the world than in the other major areas.

Graph 35 - Output and trade in the rest of the world



Graph 36 - Price deflators in the rest of the world



Detailed World Area Tables - The Euro Area

	02	03	04	05	06	07	08	09	10
I. Aggregate supply and demand									
1. Private consumption	0.5	1.0	1.5	1.9	1.8	1.8	1.8	1.8	1.7
2. Public consumption	2.9	2.0	1.2	1.5	1.6	1.8	1.8	1.9	2.0
3. Gross fixed capital formation	-2.8	-1.1	2.5	2.3	1.9	2.0	2.0	2.0	2.0
of which enterprise sector gross fixed capital formation	-2.8	-2.8	3.6	3.1	2.4	2.4	2.3	2.3	2.3
4. Exports	2.2	-1.8	5.3	6.4	5.9	5.8	5.9	5.8	5.7
5. Imports	-0.1	1.6	4.9	5.1	5.9	5.4	5.1	4.8	4.5
6. Gross domestic product	0.9	0.4	1.9	2.0	2.1	2.1	2.2	2.2	2.2
7. Total private sector value added	0.7	0.3	1.9	2.2	2.2	2.2	2.2	2.3	2.3
8. Total private sector output	0.6	0.5	2.4	2.7	2.8	2.8	2.8	2.8	2.7
9. Contributions to real GDP growth									
a. Total domestic expenditure	0.3	1.0	1.7	1.6	1.9	1.9	1.8	1.8	1.8
b. Net exports	0.5	-0.7	0.2	0.4	0.1	0.2	0.3	0.4	0.4
II. Deflators									
1. Private consumption	2.4	1.9	1.9	1.6	1.6	1.7	1.8	1.8	1.9
2. Gross fixed capital formation	1.9	1.6	1.5	1.2	0.9	0.8	0.8	0.7	0.7
of which enterprise sector gross fixed capital formation	1.4	1.0	1.3	1.1	0.8	0.7	0.5	0.4	0.2
3. Exports	0.7	-1.3	0.9	0.7	0.6	0.4	0.3	0.2	0.1
4. Imports	-1.7	-2.7	0.8	-0.1	0.3	0.6	0.9	1.1	1.2
5. Gross domestic product	2.5	2.1	1.7	1.6	1.5	1.4	1.3	1.3	1.3
6. Total private sector value added	2.5	2.1	1.7	1.6	1.5	1.4	1.3	1.3	1.3
7. Total private sector output	1.8	1.3	1.5	1.3	1.2	1.2	1.2	1.2	1.2
III. Financial markets									
1. Short-term interest rate (level)	3.3	2.3	2.2	2.5	2.8	3.2	3.6	4.0	4.4
2. Long-term interest rate (level)	4.9	4.1	4.3	4.4	4.6	4.8	5.1	5.3	5.5
3. Spot exchange rate, local/euro (level)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
4. Spot exchange rate, local/euro (+ : depreciation)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. Nominal effective exchange rate (+ : depreciation)	-6.5	-11.5	-3.3	-2.1	-2.3	-2.8	-3.2	-3.5	-3.7
6. Real effective exchange rate (+ : depreciation)	-4.2	-7.2	-1.2	0.5	0.3	0.0	-0.3	-0.5	-0.6
IV. Labour market									
1. Labour supply	1.0	0.6	0.4	0.7	0.7	0.8	0.8	0.8	0.8
2. Employment	0.6	0.1	0.4	1.1	1.1	1.0	0.8	0.7	0.7
3. Unemployment rate (level, % of labour force)	8.0	8.4	8.4	8.1	7.7	7.5	7.5	7.5	7.6
4. Employment rate (level, % of working-age population)	65.3	65.3	65.4	65.9	66.4	66.8	67.2	67.5	67.8
5. Nominal wage rate, private sector	2.4	2.6	2.5	2.0	2.7	3.2	3.5	3.5	3.5
6. Real take-home wage rate, private sector	0.7	1.1	0.7	0.5	1.1	1.5	1.7	1.6	1.5
7. Real producer wage rate, private sector	0.9	1.6	1.1	0.7	1.5	2.0	2.2	2.3	2.3
8. Labour productivity, private sector value added	0.1	0.2	1.5	1.0	1.0	1.2	1.4	1.5	1.5
V. Household sector									
1. Total real means	2.2	2.1	2.1	1.6	1.5	1.4	1.3	1.3	1.3
a. of which: Real disposable income	0.8	0.9	1.7	1.5	1.7	1.8	1.9	1.9	1.9
2. Net saving by households (level, % of disposable income)	9.5	9.3	9.5	9.2	9.2	9.3	9.4	9.6	9.9
VI. Fiscal sector									
1. Net lending (+) or borrowing (-) (% of GDP)	-2.3	-2.7	-2.8	-2.8	-2.5	-2.3	-2.0	-1.9	-1.7
2. Government gross debt (% of GDP)	69.3	70.5	70.9	71.3	71.4	71.2	70.8	70.2	69.6
VII. International environment and trade									
1. Foreign effective output	3.4	4.1	4.9	4.2	3.8	3.9	4.0	4.0	4.0
2. Foreign effective output price	3.2	3.4	3.1	3.4	3.3	3.3	3.3	3.3	3.4
3. Foreign effective interest rate (level)	3.1	2.3	2.6	3.5	3.8	4.0	4.1	4.3	4.4
4. Current account (level, % of GDP)	1.1	0.4	0.5	1.1	1.4	1.7	1.9	2.1	2.2

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

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

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

	02	03	04	05	06	07	08	09	10
I. Aggregate supply and demand									
1. Private consumption	2.9	2.4	2.7	2.3	2.4	2.3	2.5	2.6	2.6
2. Public consumption	2.6	1.5	1.6	2.5	3.3	3.4	3.2	3.2	3.2
3. Gross fixed capital formation	1.5	1.4	4.9	5.0	4.1	3.9	3.9	3.7	3.6
of which enterprise sector gross fixed capital formation	-1.7	-1.7	3.3	4.6	4.4	4.2	4.1	4.0	3.8
4. Exports	0.2	0.9	4.9	3.9	4.4	5.0	5.4	5.5	5.4
5. Imports	3.5	1.4	5.7	6.0	3.7	3.8	4.2	4.4	4.5
6. Gross domestic product	1.2	1.9	2.6	2.4	3.0	3.2	3.3	3.3	3.2
7. Total private sector value added	1.2	1.8	2.7	2.6	3.0	3.2	3.3	3.3	3.2
8. Total private sector output	1.9	1.7	3.6	3.6	3.2	3.4	3.6	3.7	3.6
9. Contributions to real GDP growth									
a. Total domestic expenditure	2.5	2.1	3.0	3.4	2.9	3.0	3.0	3.1	3.0
b. Net exports	-1.3	-0.2	-0.5	-1.0	0.1	0.3	0.2	0.2	0.2
II. Deflators									
1. Private consumption	1.4	0.8	1.8	1.6	1.5	1.5	1.5	1.7	1.9
2. Gross fixed capital formation	0.4	1.0	2.9	2.3	1.8	1.4	1.1	1.0	0.9
of which enterprise sector gross fixed capital formation	-1.3	-0.1	2.5	2.0	1.7	1.4	1.2	1.1	1.0
3. Exports	0.1	0.5	0.6	0.8	1.1	1.3	1.5	1.5	1.5
4. Imports	-1.9	-0.2	-0.8	1.6	1.9	1.6	1.4	1.5	1.6
5. Gross domestic product	3.1	2.5	2.9	1.7	1.1	1.1	1.3	1.5	1.6
6. Total private sector value added	2.8	1.9	2.8	1.7	1.2	1.2	1.3	1.5	1.6
7. Total private sector output	1.5	1.4	1.8	1.5	1.3	1.2	1.3	1.4	1.5
III. Financial markets									
1. Short-term interest rate (level)	4.0	3.6	4.5	4.4	4.2	4.2	4.2	4.4	4.7
2. Long-term interest rate (level)	4.9	4.5	5.0	5.0	5.0	4.9	4.9	5.0	5.1
3. Spot exchange rate, local/euro (level)	5.4	5.8	5.6	5.5	5.4	5.5	5.5	5.6	5.7
4. Spot exchange rate, local/euro (+ : depreciation)	0.7	7.4	-3.2	-2.6	-0.9	0.3	1.2	1.5	1.6
5. Nominal effective exchange rate (+ : depreciation)	-4.8	-1.6	-6.6	-4.6	-2.9	-1.8	-1.2	-1.0	-1.1
6. Real effective exchange rate (+ : depreciation)	-2.1	0.8	-4.5	-2.6	-1.2	-0.3	0.2	0.3	0.2
IV. Labour market									
1. Labour supply	0.7	0.6	0.4	0.3	0.5	0.5	0.5	0.5	0.5
2. Employment	0.6	0.6	0.3	0.2	0.3	0.6	0.6	0.7	0.6
3. Unemployment rate (level, % of labour force)	4.9	4.9	5.0	5.1	5.3	5.2	5.1	4.9	4.9
4. Employment rate (level, % of working-age population)	76.8	76.8	76.6	76.6	76.6	76.8	77.1	77.4	77.6
5. Nominal wage rate, private sector	2.7	2.4	4.6	5.7	4.4	4.0	4.3	4.5	4.8
6. Real take-home wage rate, private sector	3.0	1.1	2.5	3.8	2.9	2.5	2.7	2.8	2.8
7. Real producer wage rate, private sector	1.4	1.1	2.7	4.2	3.1	2.7	2.9	3.1	3.2
8. Labour productivity, private sector value added	0.6	1.2	2.4	2.3	2.6	2.5	2.5	2.5	2.5
V. Household sector									
1. Total real means	4.3	2.6	2.6	2.4	2.6	2.5	2.4	2.3	2.1
a. of which: Real disposable income	4.5	2.9	3.0	3.8	3.5	3.3	3.4	3.4	3.3
2. Net saving by households (level, % of disposable income)	2.4	2.6	2.7	4.2	5.4	6.4	7.3	8.1	8.8
VI. Fiscal sector									
1. Net lending (+) or borrowing (-) (% of GDP)	-1.3	-2.4	-2.2	-2.0	-2.0	-1.9	-1.8	-1.6	-1.4
2. Government gross debt (% of GDP)	41.0	42.1	42.0	42.4	42.8	42.9	42.8	42.4	41.8
VII. International environment and trade									
1. Foreign effective output	2.5	3.1	4.2	3.8	3.6	3.6	3.7	3.7	3.6
2. Foreign effective output price	3.0	3.0	2.8	2.9	2.9	2.8	2.9	2.9	2.9
3. Foreign effective interest rate (level)	2.6	1.8	2.0	2.8	3.2	3.5	3.8	4.1	4.3
4. Current account (level, % of GDP)	-0.7	-0.6	-0.8	-1.7	-1.8	-1.6	-1.3	-1.0	-0.8

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

The Western non-euro EU Member States include Denmark, Sweden, and the United Kingdom.

Detailed World Area Tables - The United States

	02	03	04	05	06	07	08	09	10
I. Aggregate supply and demand									
1. Private consumption	3.4	3.1	3.5	3.2	2.7	2.8	2.8	2.8	2.9
2. Public consumption	4.0	4.0	2.1	2.5	4.6	4.6	3.8	3.0	2.6
3. Gross fixed capital formation	-2.6	3.8	6.9	5.9	3.9	4.8	4.8	4.2	3.9
of which enterprise sector gross fixed capital formation	-6.7	3.3	8.8	6.7	4.0	5.0	4.8	4.1	3.6
4. Exports	-2.4	2.0	9.2	8.3	6.2	6.2	6.4	6.5	6.5
5. Imports	3.3	4.0	8.8	5.9	6.3	5.2	4.9	5.0	5.3
6. Gross domestic product	2.2	3.1	4.0	4.2	2.8	3.4	3.4	3.2	3.1
7. Total private sector value added	2.0	2.9	4.7	4.5	2.5	3.3	3.4	3.3	3.2
8. Total private sector output	2.2	3.1	5.4	4.7	3.2	3.6	3.7	3.6	3.6
9. Contributions to real GDP growth									
a. Total domestic expenditure	2.8	3.5	4.4	4.2	3.2	3.6	3.5	3.3	3.3
b. Net exports	-0.8	-0.4	-0.5	-0.1	-0.4	-0.2	-0.1	-0.1	-0.1
II. Deflators									
1. Private consumption	1.4	1.8	1.2	1.6	1.6	1.5	1.5	1.5	1.5
2. Gross fixed capital formation	0.3	1.2	1.5	0.8	0.5	0.5	0.8	1.2	1.7
of which enterprise sector gross fixed capital formation	-1.4	-0.5	0.1	-0.8	-1.1	-0.7	0.1	1.2	2.1
3. Exports	-0.4	2.1	2.0	1.7	1.5	1.4	1.4	1.3	1.3
4. Imports	-1.0	3.6	3.5	-0.5	1.3	1.9	1.9	1.7	1.6
5. Gross domestic product	1.5	1.7	1.1	1.7	1.0	0.8	1.0	1.3	1.6
6. Total private sector value added	1.5	1.9	0.5	1.7	1.3	1.0	1.1	1.3	1.5
7. Total private sector output	1.2	2.1	0.8	1.4	1.2	1.1	1.2	1.4	1.5
III. Financial markets									
1. Short-term interest rate (level)	1.8	1.2	1.6	2.8	3.4	3.7	3.9	4.0	4.1
2. Long-term interest rate (level)	4.6	4.0	4.3	4.7	4.9	5.0	5.1	5.1	5.2
3. Spot exchange rate, local/euro (level)	0.9	1.1	1.2	1.2	1.2	1.2	1.2	1.3	1.3
4. Spot exchange rate, local/euro (+ : depreciation)	5.6	19.6	7.6	0.5	0.4	0.6	1.1	1.6	1.9
5. Nominal effective exchange rate (+ : depreciation)	-2.6	7.0	3.3	-2.3	-2.5	-2.4	-2.2	-2.0	-1.8
6. Real effective exchange rate (+ : depreciation)	1.0	8.4	4.7	-0.5	-0.5	-0.4	-0.1	0.2	0.4
IV. Labour market									
1. Labour supply	0.7	1.1	0.5	1.6	1.4	1.2	1.1	1.1	1.1
2. Employment	-0.3	0.9	0.8	1.8	1.1	0.9	0.9	0.8	0.8
3. Unemployment rate (level, % of labour force)	5.3	5.5	5.2	5.0	5.3	5.5	5.7	6.0	6.3
4. Employment rate (level, % of working-age population)	80.3	80.3	80.2	80.8	80.9	80.9	80.9	80.7	80.6
5. Nominal wage rate, private sector	0.7	1.9	3.2	3.5	3.4	3.6	3.7	4.0	4.1
6. Real take-home wage rate, private sector	1.9	1.0	1.9	1.5	1.3	1.7	1.8	1.9	2.1
7. Real producer wage rate, private sector	-0.3	-0.3	2.4	2.2	2.2	2.5	2.5	2.6	2.6
8. Labour productivity, private sector value added	2.3	2.0	3.9	2.5	1.4	2.3	2.4	2.4	2.4
V. Household sector									
1. Total real means	3.8	4.5	2.8	2.5	2.7	2.7	2.8	2.8	2.9
a. of which: Real disposable income	5.0	3.9	4.2	3.1	2.9	3.2	3.3	3.3	3.5
2. Net saving by households (level, % of disposable income)	2.5	3.2	3.8	3.7	4.0	4.5	5.0	5.5	6.0
VI. Fiscal sector									
1. Net lending (+) or borrowing (-) (% of GDP)	-3.7	-4.8	-4.6	-4.4	-4.5	-4.5	-4.6	-4.6	-4.7
2. Government gross debt (% of GDP)	60.9	63.4	66.3	67.0	69.0	70.7	72.3	73.7	75.1
VII. International environment and trade									
1. Foreign effective output	3.1	4.1	4.8	4.1	3.9	3.9	4.0	4.0	3.9
2. Foreign effective output price	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.7
3. Foreign effective interest rate (level)	1.8	1.3	1.6	2.5	3.1	3.4	3.7	3.9	4.2
4. Current account (level, % of GDP)	-4.5	-4.7	-5.2	-4.7	-4.8	-4.9	-4.9	-4.9	-4.9

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

Detailed World Area Tables - Japan

	02	03	04	05	06	07	08	09	10
I. Aggregate supply and demand									
1. Private consumption	0.9	1.1	2.4	2.0	1.8	1.8	1.5	1.6	1.4
2. Public consumption	2.4	1.2	1.5	1.3	1.5	1.6	1.7	1.7	1.8
3. Gross fixed capital formation	-6.1	3.2	4.4	0.6	1.8	1.5	1.5	1.5	1.2
of which enterprise sector gross fixed capital formation	-7.4	9.0	10.4	0.0	2.0	1.5	1.6	1.7	1.6
4. Exports	8.0	10.0	12.3	8.6	6.9	7.1	7.1	6.6	5.9
5. Imports	2.0	4.8	8.4	3.7	3.1	3.3	3.6	3.8	3.7
6. Gross domestic product	-0.4	2.7	3.4	2.2	2.3	2.4	2.2	2.2	2.0
7. Total private sector value added	-1.8	3.3	3.5	3.2	2.4	2.2	2.2	2.2	2.0
8. Total private sector output	-1.5	3.5	3.9	3.2	2.5	2.5	2.3	2.4	2.1
9. Contributions to real GDP growth									
a. Total domestic expenditure	-1.0	1.9	2.7	1.4	1.7	1.6	1.4	1.5	1.3
b. Net exports	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.6
II. Deflators									
1. Private consumption	-1.3	-1.4	-0.3	-0.2	0.4	0.8	1.6	2.0	2.5
2. Gross fixed capital formation	-1.6	-4.1	-2.3	-0.2	0.4	0.6	0.8	0.9	1.0
of which enterprise sector gross fixed capital formation	-1.7	-4.8	-2.5	-0.3	0.5	0.8	0.9	0.9	0.9
3. Exports	-1.7	-4.2	-2.3	-0.2	-0.4	-0.7	-0.9	-1.0	-1.0
4. Imports	-1.9	-1.8	-1.2	0.3	0.2	-0.4	-0.5	-0.4	-0.1
5. Gross domestic product	-1.2	-2.5	-1.2	-0.4	0.1	0.5	1.0	1.3	1.6
6. Total private sector value added	-1.1	-3.1	-1.0	-0.2	0.2	0.6	1.1	1.4	1.7
7. Total private sector output	-1.2	-2.9	-1.0	-0.2	0.2	0.5	0.9	1.2	1.5
III. Financial markets									
1. Short-term interest rate (level)	0.1	0.1	0.1	0.5	0.9	1.4	2.0	2.6	3.2
2. Long-term interest rate (level)	1.3	1.0	1.5	1.9	2.1	2.4	2.9	3.2	3.6
3. Spot exchange rate, local/euro (level)	118.1	131.0	132.8	135.9	139.5	142.5	144.7	145.6	145.3
4. Spot exchange rate, local/euro (+ : depreciation)	8.6	10.9	1.4	2.4	2.6	2.1	1.6	0.6	-0.2
5. Nominal effective exchange rate (+ : depreciation)	2.0	-2.6	-3.6	0.8	1.0	0.2	-0.7	-2.0	-3.0
6. Real effective exchange rate (+ : depreciation)	6.5	4.8	1.1	3.7	3.9	3.5	2.8	1.7	0.6
IV. Labour market									
1. Labour supply	-1.1	-0.3	0.1	0.1	0.1	0.1	0.1	0.0	-0.0
2. Employment	-1.4	-0.2	0.4	0.4	0.3	0.3	0.2	0.1	0.0
3. Unemployment rate (level, % of labour force)	5.2	5.1	4.8	4.6	4.3	4.1	3.9	3.9	3.8
4. Employment rate (level, % of working-age population)	76.2	76.3	76.9	77.0	77.2	77.3	77.3	77.3	77.2
5. Nominal wage rate, private sector	-2.2	-0.7	1.1	2.3	2.6	3.1	3.6	4.0	4.3
6. Real take-home wage rate, private sector	-0.3	0.8	1.7	2.8	2.2	2.2	2.0	2.0	1.7
7. Real producer wage rate, private sector	-1.2	2.2	2.1	2.5	2.4	2.6	2.7	2.8	2.7
8. Labour productivity, private sector value added	-0.4	3.5	3.1	2.8	2.0	2.1	1.9	2.0	1.9
V. Household sector									
1. Total real means	1.8	1.7	2.1	1.7	1.3	1.2	0.7	0.6	0.4
a. of which: Real disposable income	0.3	2.0	2.7	2.7	2.3	2.3	2.1	2.1	1.9
2. Net saving by households (level, % of disposable income)	6.3	7.3	8.0	8.8	9.3	9.9	10.5	11.0	11.6
VI. Fiscal sector									
1. Net lending (+) or borrowing (-) (% of GDP)	-7.9	-7.7	-7.4	-7.1	-6.8	-6.6	-6.5	-6.7	-6.9
2. Government gross debt (% of GDP)	149.4	157.3	161.6	165.8	168.6	170.5	171.7	172.5	173.4
VII. International environment and trade									
1. Foreign effective output	2.8	3.5	4.9	4.3	3.6	3.8	3.8	3.8	3.8
2. Foreign effective output price	2.6	3.0	2.4	2.7	2.6	2.5	2.6	2.6	2.7
3. Foreign effective interest rate (level)	2.3	1.6	1.9	2.9	3.4	3.7	3.9	4.1	4.2
4. Current account (level, % of GDP)	2.8	3.1	3.4	3.7	4.0	4.4	4.7	5.0	5.2

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

Detailed World Area Tables - The New EU Member States

	02	03	04	05	06	07	08	09	10
I. Aggregate supply and demand									
1. Private consumption	4.4	5.0	4.0	4.5	4.4	4.4	4.4	4.3	4.3
2. Total gross fixed capital formation	1.2	3.5	6.5	2.4	2.5	2.7	2.8	2.9	3.0
3. Exports	6.1	10.2	9.7	7.0	6.9	7.0	7.1	7.0	7.0
4. Imports	5.9	10.6	9.0	7.0	6.9	6.9	7.0	7.0	7.0
5. Gross domestic product	3.3	3.6	4.2	3.3	3.3	3.3	3.4	3.4	3.4
II. Deflators									
1. Private consumption	2.3	1.5	2.7	2.5	2.4	2.3	2.2	2.2	2.1
2. Gross fixed capital formation	0.6	1.6	2.3	2.8	2.5	2.3	2.3	2.4	2.4
3. Exports	-1.8	0.6	-1.4	3.7	3.7	3.6	3.5	3.4	3.3
4. Imports	-2.3	0.4	0.4	2.4	2.4	2.4	2.4	2.4	2.4
5. Gross domestic product	2.9	2.6	1.9	3.1	3.1	3.0	3.0	2.9	2.9
III. Financial variables									
1. Nominal exchange rate, local/euro (+ : depreciation)	2.4	7.7	0.5	2.8	2.7	2.9	3.1	3.3	3.5
2. Nominal effective exchange rate (+ : depreciation)	-6.0	-4.1	-4.4	-0.3	-0.3	-0.4	-0.5	-0.6	-0.7
3. Real effective exchange rate (+ : depreciation)	-0.6	-0.6	0.9	0.0	0.0	0.0	0.0	0.0	0.0

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

The New EU Member States include Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, plus Bulgaria and Romania.

Detailed World Area Tables - The Rest of the World

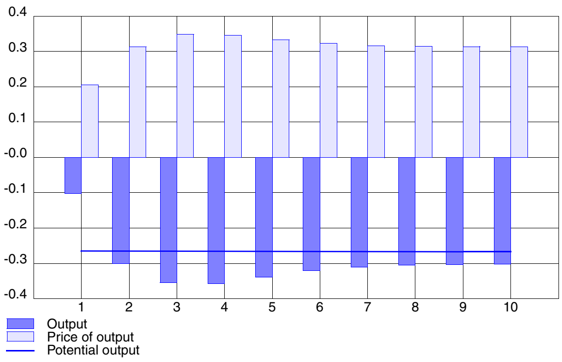
	02	03	04	05	06	07	08	09	10
I. Aggregate supply and demand									
1. Output	4.7	5.7	5.8	4.7	4.6	4.6	4.7	4.7	4.7
2. Exports	2.5	3.7	7.6	4.1	4.0	5.1	5.9	6.6	7.0
3. Imports	0.4	0.4	8.3	6.3	4.3	7.0	8.6	9.2	9.2
II. Deflators									
1. Output	4.9	5.4	5.1	5.1	5.1	5.1	5.1	5.1	5.1
2. Exports, in euro	-0.9	-0.3	3.6	-2.5	-4.3	-4.9	-4.7	-4.0	-3.1
3. Imports, in euro	2.6	-0.7	2.3	-1.0	-4.7	-6.1	-6.0	-5.2	-4.3
III. Financial variables									
1. Nominal exchange rate, local/euro (+ : depreciation)	12.0	15.5	6.9	4.4	4.2	4.5	4.9	5.3	5.7
2. Nominal exchange rate, local/US$ (+ : depreciation)	6.6	-2.4	-0.4	3.9	3.9	3.9	3.8	3.8	3.8
3. Nominal effective exchange rate (+ : depreciation)	8.8	6.6	4.7	3.6	3.3	3.4	3.6	3.9	4.3
4. Real effective exchange rate (+ : depreciation)	-0.7	-7.2	-4.7	3.3	5.0	5.5	5.1	4.3	3.4

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

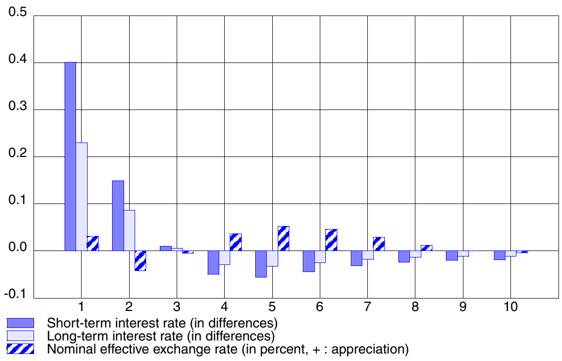
The Macro-Economic Effects for the Euro Area of an Oil Price Shock

In recent months, the price of oil increased significantly, up from 29.9 US dollars per barrel of Brent at the end of 2003 to an average of 38.2 US dollars per barrel of Brent in July 2004. Economists have attributed this recent surge in oil prices to several factors, amongst which the strong rise in demand for oil due to high economic growth in the United States and China, as well as fears of disruptions to the supply of oil following terrorist attacks.

Graph 37 - Private sector output and output prices
(deviations from baseline in percent)



Graph 38 - Interest rates and the exchange rate
(deviations from baseline)



As a sharp and prolonged increase in the price of oil can affect the macro-economic outlook significantly, it was considered useful to supplement the present Economic Outlook with an analysis of the macro-economic effects of an oil price shock. The shock that is simulated here is a permanent, 25 percent increase in the price of oil, assumed to be caused by an increase in the risk premium on oil prices[1].

In the long run, such an oil price shock reduces potential output of the euro area by 0.27 percent and increases the price of output by the same proportion. At the same time, the real producer wage rate also falls by 0.27 percent so that, in the face of falling factor productivity, total employment remains basically unchanged with respect to baseline levels.

Convergence to the new equilibrium takes several years. In the first year, euro area private sector output falls by 0.10 percent, and reaches a trough at 0.36 percent below baseline after four years. As of the fifth year, private sector output starts to converge gradually to its new equilibrium. This gradual adjustment of aggregate supply reflects the evolution of each of the components of aggregate demand, which are affected by adjustment costs, as well as by monetary and fiscal policy.

On impact, the monetary authorities raise the short-term interest rates by 0.40 percentage points in order to contain the mounting inflationary pressures. As of the fourth year, as aggregate demand lies below potential output and inflationary pressures are subdued, interest rates fall below baseline. Simultaneously, the euro area's nominal effective exchange rate remains close to its baseline level, reflecting the fact that the equilibrium exchange rate, the inflation differential, and the interest rate differential, all remain close to their baseline levels.

The most affected component of demand is imports, which immediately fall by 0.43 percent. Moreover, as the impact of the oil price shock becomes greater on the demand for oil and as output continues to contract, imports pursue their fall and bottom out in the third year, at 2.21 percent below baseline. Imports then gradually converge to their new equilibrium level, at 1.91 percent below baseline.

Euro area exports rise immediately by 0.08 percent, due to a 0.08 percent increase in foreign effective demand. Foreign effective demand increases in the first year as a result of a 0.28 percent increase of aggregate demand in the oil-exporting countries. However, in subsequent years, as economic activity in the major economic areas wanes, and oil-exporting countries' export revenues start to decline, euro area exports fall to 0.29 percent below baseline in the fifth year, and then level out at 0.26 percent below baseline in the long run.

Private consumption in the euro area falls by 0.24 percent in the first year, mainly due to a decrease in (expected) disposable income and wealth of the household sector. Disposable income falls by 0.07 percent in the first year, as real take-home wage rates fall by 0.01 percent, total employment falls by 0.05 percent, and the unanticipated 0.30 percent increase in consumer prices lowers the real value of income from interest-bearing

1. In the Economic Outlook presented in the previous section, the price of oil is assumed constant in real terms throughout the simulation period. However, it was also assumed that the recent increases in the price of oil are accompanied (in the long run) by proportional increases in energy efficiency.
The present variant is run with the NIME model, applying the oil price shock to a technical steady state baseline. We focus mainly on the effects for the euro area, but similar qualitative results are found for the other oil-importing areas.
Note that the variant presented in this section is of a purely illustrative nature, and does not reflect necessarily future developments in the oil markets.

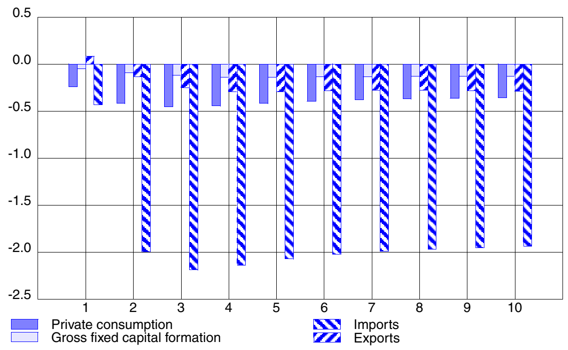
assets. At the same time, the unanticipated inflation also erodes the purchasing power of households' nominal assets, while the decline in potential output depresses expectations regarding future labour income. As disposable income and the wealth of the household sector fall further and interest rates remain above the baseline, private consumption falls to a low of 0.45 percent below baseline in the third year. As of the fifth year, as disposable income and household wealth stabilise and monetary policy is relaxed, private consumption recovers somewhat, and gradually converges to its new equilibrium level at 0.32 percent below baseline.

Total gross fixed capital formation falls only moderately, down by 0.14 percent after four years, and by 0.06 percent in the long run. However, each component of total investment has its own specific adjustment path. In response to the decline in household income and the sharp rise in interest rates, investment in residential buildings initially overshoots its new equilibrium level. Residential investment falls by 0.48 percent in the first year, and by 0.65 percent in the second year, before stabilising at 0.28 percent below baseline in the long run. Gross fixed capital formation by the public sector follows developments in real GDP. Enterprise sector gross fixed capital formation increases by 0.07 percent during the first year, and stays close to baseline thereafter. The initial rise in enterprise investment and the subsequent moderate fall are primarily caused by the fall in the relative price of capital, despite of the fall in output and the temporary increase in interest rates. This fall in the relative price of capital is due to the fact that, although the output level decreases in the long run, the amount of capital (as well as the amount of labour) needed to produce the lower output level does not change, since total factor productivity has fallen. Thus, in order to induce the holding of the same stock of enterprise capital for a smaller output level, the price of capital must fall vis-à-vis the producer price.

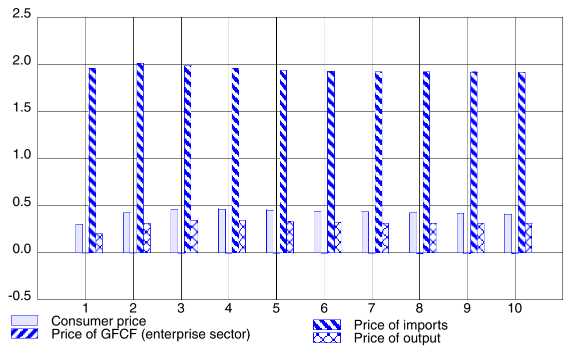
Prices increase in line with costs, and as the nature of the shock is assumed to be known at negligible cost by all the economic agents, the price setters are quick to respond to the perceived changes in their cost structure. For instance, output prices increase immediately by 0.20 percent in the euro area, thereby adjusting to a large extent to the 0.25 percent long run increase. At the same time, relative prices adjust also, with the most notable change occurring in the relative price of imports and enterprise sector investment. The relative price of private consumption also increases, in order to balance demand and supply in the long run.

The real producer wage rate initially rises by 0.09 percent, mainly in response to changes in the price of private consumption (relative to the producer price). Indeed, in the first year, private consumption prices increase by 0.30 percent, while producer prices increase by only 0.20 percent. This implies that households - who use consumer prices to deflate their nominal wage - attempt to negotiate a nominal wage rate increase that is larger than what producers - who use the producer price to deflate their nominal wage costs - will accept to pay. However, the resulting effective increase in real producer wage costs simultaneously reduces labour demand, and increases labour supply. This then leads to a higher unemployment rate, and puts downward pressure on wages. In the long run, the real producer wage and the real take-home wage settle at respectively 0.27 and 0.33 percent below baseline. This reflects the overall fall in total factor productivity, and the change in the relative price of private consumption.

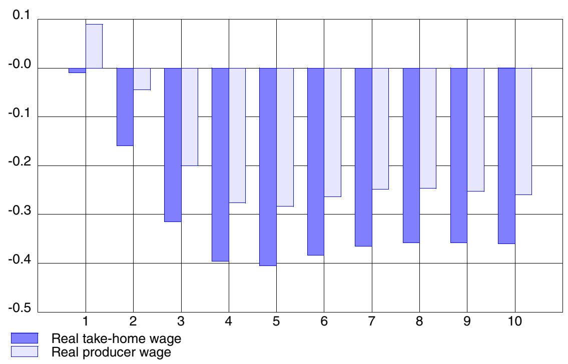
Graph 39 - Selected components of aggregate demand
(deviations from baseline in percent)



Graph 40 - Selected prices in the euro area
(deviations from baseline in percent)

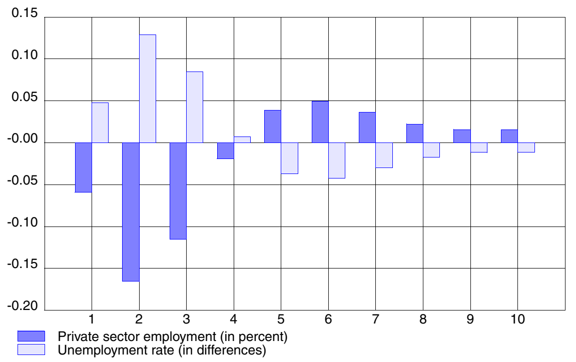


Graph 41 - Private sector wage rate in the euro area
(deviations from baseline in percent)

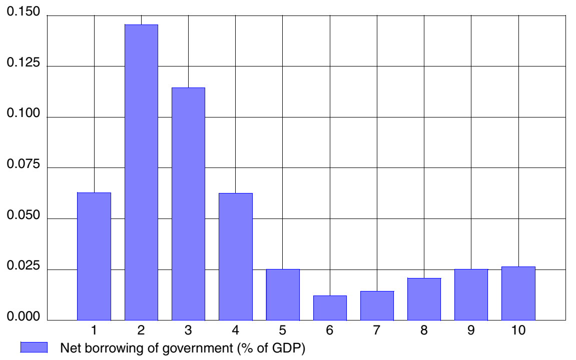


Private sector labour demand falls during the first four years, reaching a low of 0.17 percent below baseline in the second year. The initial reduction in labour demand stems from stickiness in real producer wage rates, as well as from the fact that aggregate demand falls below potential output as of the second year. Correspondingly, the unemployment rate increases immediately, peaking at 0.13 percentage points above baseline in the second year, before falling back gradually to its baseline level.

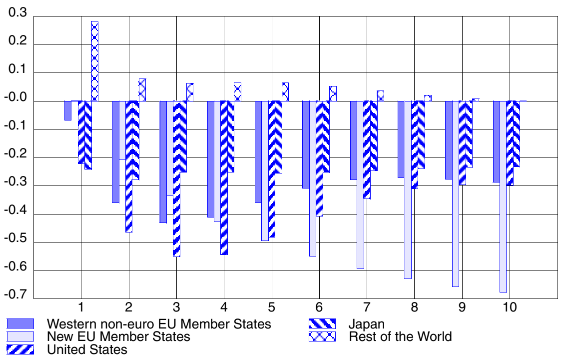
Graph 42 - Private sector employment and unemployment rates in the euro area *(deviations from baseline)*



Graph 43 - Net borrowing of government in the euro area *(deviations from baseline in differences)*



Graph 44 - Output in the other areas *(deviations from baseline in percent)*



As the automatic fiscal stabilisers (which include outlays for unemployment benefits) are free to operate, the fiscal deficit-to-GDP ratio increases by 0.06 percentage points in the first year, and by 0.15 percentage points in the second year, before falling back somewhat the following four years. At the same time, the fiscal authorities of the euro area start to accumulate debt, so contributing to unsustainable pressures in public finances. In the long run, the debt-to-GDP ratio returns to its baseline level, as the direct tax rate is increased by 0.01 percentage points.

Results similar to those presented for the euro area are to be found for the other oil-importing areas. In the Western non-euro EU Member States, private sector output falls by 0.07 percent in the first year, bottoms out at 0.43 percent in the third year and reaches 0.30 percent below baseline in the long run. In the New EU Member States, output falls by 0.21 percent in the first year, and reaches 0.71 percent below baseline in the long run. In the United States, private sector output falls by 0.22 percent in the first year, and reaches a low of 0.55 percent in the fourth year, and finally levels out at 0.33 percent below baseline in the long run. In Japan, private sector output falls by 0.24 percent in the first year, and stabilises at 0.23 percent below baseline in the long run. In the rest of the world, output initially increases by 0.28 percent, as the oil price shock leads to a temporary income transfer from oil-importing countries to oil-exporting countries. However, as oil export revenues start to fall, aggregate demand in these countries also falls and output finally returns to its baseline level.

Underlying Technical Assumptions of the NIME Forecast

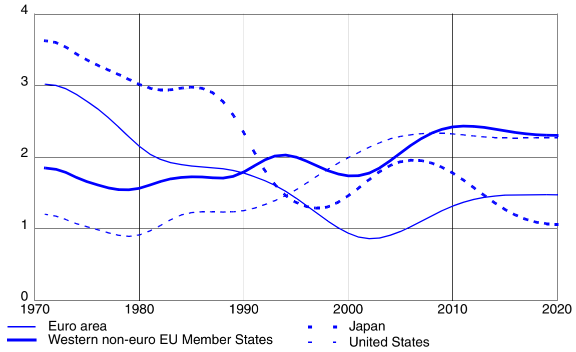
This NIME Economic Outlook is constructed with a version of the NIME model which is based on data coming from the most recent AMECO database of the European Commission, as well as the Direction of Trade Statistics and the International Financial Statistics of the International Monetary Fund. The AMECO database includes data estimates and forecasts for 2004, as published in the European Commission's Spring 2004 Economic Forecasts[1].

The initial conditions of the simulation were adjusted as follows. In June 2004, we updated the Commission's Spring 2004 interest and exchange rate data, and a first-run computation was made of the impact of these changes on overall macro-economic conditions for 2004. Once the initial conditions for 2004 had been determined, the model was simulated over the 2005-2010 period.

The underlying trend values, such as trend productivity (i.e. private sector output per employee), the equilibrium real interest rate (i.e. the long-term nominal interest rate deflated by the consumer price index), the demographic structure and population growth, and secular inflation (with the exception of secular inflation in Japan), were set to their latest available estimates and were held constant over the forecast period. These estimates are obtained by applying a Hodrick-Prescott filter to the historical data series.

With respect to the conduct of fiscal policy, we use a 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 law, certain important tax provisions are scheduled to start to expire in 2004 and 2008. With respect to monetary policy, we assume that the short-term interest rates follow a Taylor rule, embedded in a partial adjustment scheme.

Graph 45 - Trend productivity growth
(GDP per employee - HP filtered series)



1. See: http://europa.eu.int/comm/economy_finance/publications/european_economy/forecasts_en.htm

The NIME Model of the World Economy

The NIME model is a macro-econometric world model developed at the Belgian Federal Planning Bureau. This model is used to make medium-term forecasts for the international economy, as well as to study the transmission mechanisms of economic policies and exogenous shocks[1].

In the current version of the NIME model, the world is divided into six blocs: the euro area; a bloc consisting of Denmark, Sweden and the United Kingdom, i.e., the Western EU Member States that do not belong to the euro area; the New 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 the New EU Member States are aggregated in a common synthetic currency unit.

In all of these blocs but two, i.e., the New EU Member States and the Rest of the World, we distinguish a household sector, a private enterprise sector, a public 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 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 the expenditure plans of the household sector. Moreover, in the short run, the household sector is liquidity-constrained, implying that a fraction of its expenditures must be financed by disposable income.

The enterprise sector maximizes its profits by hiring production factors and selling its output to final users. Supply to final demand 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.

Public sector 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 a Taylor principle. This implies that the monetary authorities increase the short term nominal interest rate more than proportionally to changes in inflation, thus increasing real interest rates when inflationary pressures arise. 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. An area's effective exchange rate is determined by a weighted average of the equilibrium exchange rate and the lagged observed exchange rate, by the interest rate differential, and by the expected inflation differential.

1. Technical details concerning the model can be found in Meyermans and Van Brusselen (2000.a, 2000.b, and 2001), and Meyermans (2003 and 2004).

NIME Studies and Publications

Scenario analyses

Several studies have been made with the NIME model. 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 medium-term. Finally, Meyermans and Van Brusselen (2003) examined with the NIME model the impact on the Belgian international environment of a temporary world-wide 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 world-wide fall in stock markets.

Available publications

Meyermans, E. (2002.a), "Automatic Fiscal Stabilisers in the Euro Area. Simulations with the NIME Model", Working Paper 5-02, Federal Planning Bureau, Brussels. Internet: http://www.plan.be/nl/pub/WP/detail_WP.php?pub=WP0205

Meyermans, E. (2002.b), "Monetary Policy in the Euro Area. Simulations with the NIME Model", Working Paper 11-02, Federal Planning Bureau, Brussels. Internet: http://www.plan.be/nl/pub/WP/detail_WP.php?pub=WP0211

Meyermans, E. (2003), "The International Transmission of Shocks. Some Selected Simulations with the NIME Model", Working Paper 9-03, Federal Planning Bureau, Brussels. Internet: http://www.plan.be/nl/pub/WP/detail_WP.php?pub=WP0309

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, Brussels. Internet: http://www.plan.be/nl/pub/wp/WP0412/WP0412en.pdf

Meyermans, E. and P. Van Brusselen (2000), "The NIME Model: Specification and Estimation of the Enterprise Sector", Working Paper 10-00, Federal Planning Bureau, Brussels. Internet: http://www.plan.be/nl/pub/WP/detail_WP.php?pub=WP0010

Meyermans, E. and P. Van Brusselen (2000), "The NIME Model: Specification and Estimation of the Demand Equations of the Household Sector", Working Paper 8-00, Federal Planning Bureau, Brussels. Internet: http://www.plan.be/nl/pub/WP/detail_WP.php?pub=WP0008

Meyermans, E. and P. Van Brusselen (2001), "The NIME Model: A Macroeconometric World Model", Working Paper 3-01, Federal Planning Bureau, Brussels. Internet: http://www.plan.be/nl/pub/WP/detail_WP.php?pub=WP0103

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, Brussels. Internet: http://www.plan.be/nl/pub/WP/detail_WP.php?pub=WP0312

Selected web links of interest

European Central Bank: AWM, the ECB's area-wide model for the euro area.
See: http://www.ecb.int/pub/wp/

European Commission: QUEST, the Commission's multi country business cycle and growth model.
See: http://europa.eu.int/comm/economy_finance

Federal Reseve Board: FRB/Global, the Federal Reserve's global macro-economic model.
See http://www.federalreserve.gov

International Monetary Fund: MULTIMOD, the IMF's multi country model. See: http://www.imf.org

National Institute of Economic and Social Research: NiGEM, the NIESR's macro-economic model.
See: http://www.niesr.ac.uk

Organisation for Economic Cooperation and Development: SMALL, the OECD's global forecasting model.
See: http://www.olis.oecd.org