



**NATIONAL BANK  
OF GREECE**

**GREECE:**

## **ECONOMIC & MARKET ANALYSIS**

*September - November 2006*

*Real estate: A key growth engine of the Greek economy will remain strong, boosted by demographics*



- Real estate has long been one of the pillars of economic growth in Greece. Indeed, residential investment activity, combined with the effect of housing wealth on consumption, is estimated to have provided about 1.3 percentage points to annual GDP growth during 2000-2005.
- However, a gradual cooling in house prices is evident, as they have slowed considerably, from 11 per cent y-o-y, in real terms, in 2005 to an estimated 4½ per cent in mid-2006. Does this slowdown presage a softening in economic activity, especially as the ECB continues to raise interest rates?
- Increased sophistication in our analysis compared with previous work indicates that, unlike other European countries, demographics including immigration, a declining household size and a relatively old housing stock are providing significant support to housing prices, in addition to the classic drivers of strong disposable income growth and low real interest rates.
- Residential house prices are expected to increase by 2½ per cent per year in real terms in 2007-2008, due to a supply overhang arising from the surge in permit issuance in 2005, and subsequently rise by 4.2 per cent per year in real terms in 2009-2015. Thereafter, the positive demographic effects disappear altogether, eliminating their support to prices.
- In the medium term, the impact on activity from the two basic transmission mechanisms – the wealth effect of higher real estate prices on consumer behavior and the demand for housing on residential construction is estimated to be 1.1 percentage points per year for the period 2007-2008, and to decline to 0.8 of a percentage point during the 2009-2015 period, with this impact remaining about 2 times higher than that for the euro area average.

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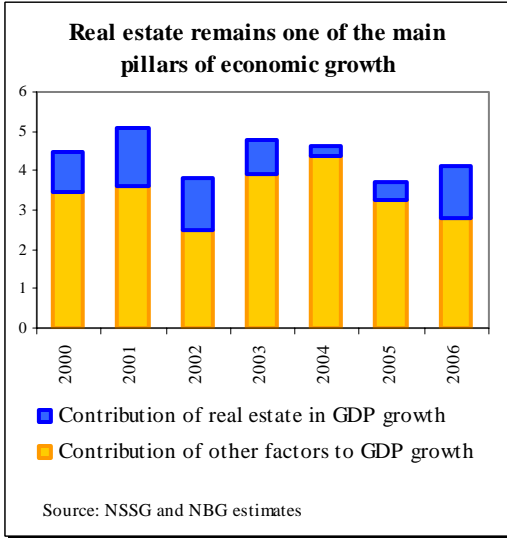
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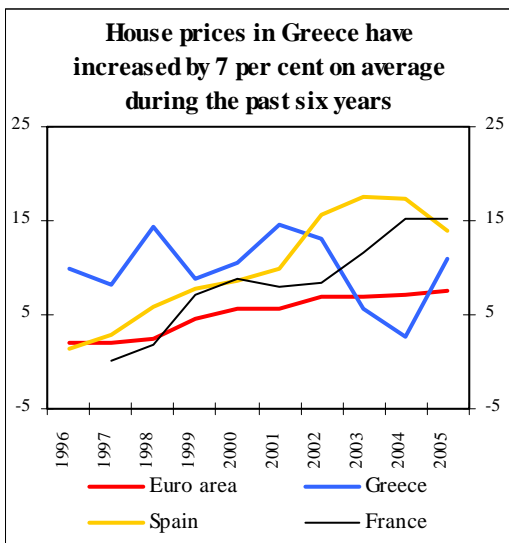
***The strength of the Greek real estate reflects several drivers unique to Greece***

Real estate has long been one of the pillars of economic growth in Greece. Indeed, the residential property market plays a relatively more important role in the Greek economy compared with other industrial countries: Household wealth held in residential estate is currently valued to be in the range of 6½ times GDP (4.9 times the revised GDP figure for 2005), compared with 4½ times GDP for the euro area as a whole, and private residential investment comprises about 39 per cent of gross fixed capital formation – a far larger share than that for the euro area average (28 per cent). Not surprisingly, employment figures further underscore the significance of this sector. A total of nearly 350,000 people work in property related sectors (11 per cent of total employment), a significantly larger share than the euro area average of 8 per cent.

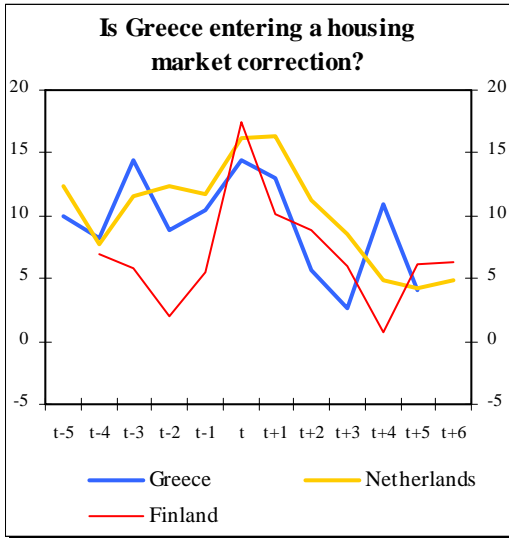


In view of the above, there are strong linkages between developments in the real estate market and the investment, saving, and consumption choices of households and businesses, which in turn are key drivers of the business cycle and economic growth. Indeed, private investment activity, combined with the effect of housing wealth on consumption, is estimated to have provided about 1.3 percentage points to annual GDP growth during 2000-2005, accounting for around 30 per cent of the total expansion in activity.

Reflecting the buoyancy of this market, real estate valuations in Greece have increased at a strong pace during the past six years, with house prices increasing by 9.3 per cent per year on average, in real terms between 2000 and 2005 compared with an average of 4.8 per cent for the euro area. However, a gradual cooling in house prices is evident, as they have slowed considerably, from 11 per cent y-o-y, in real terms, in 2005 to an estimated 4½ per cent in mid-2006. Moreover, real estate agencies state that sales take relatively longer, especially for newly-built – expensive houses, whereas a sizeable part of demand is directed towards the second-hand housing market with more affordable prices. Does this slowdown presage a softening in economic activity, especially as the ECB continues to raise interest rates?

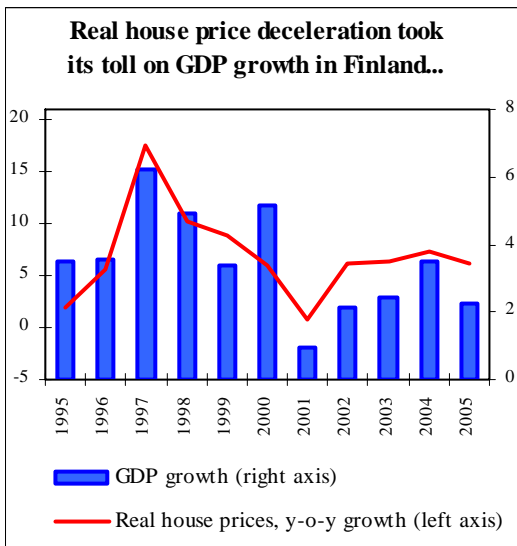


The phenomenon of a dynamic real estate market losing steam is not unique to Greece. Indeed, other euro area countries, like the Netherlands and Finland, experienced sharp house price inflation - with an annual average rate of real price increases exceeding 15 per

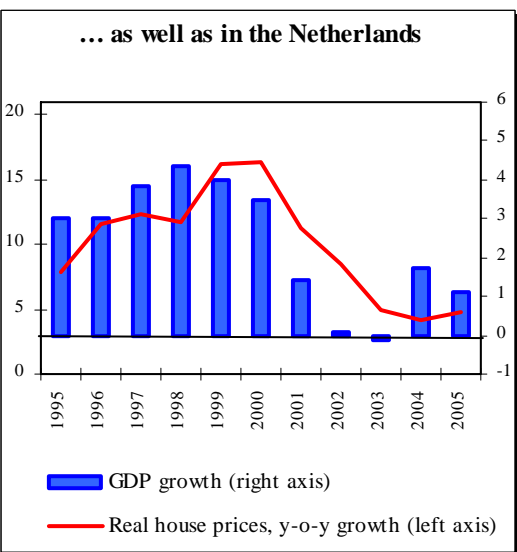


cent per year during the boom phase, and subsequently the growth rate in house prices, in real terms, dropped by more than 10 percentage points in the downward phase of their respective house market cycles. The result of this slowdown in real estate prices following a boom was a significant slowdown in activity. Indeed, GDP growth in both countries decelerated by more than 60 per cent in the years following the peak of the housing market cycle compared with the years of strong house price increases (see figures).

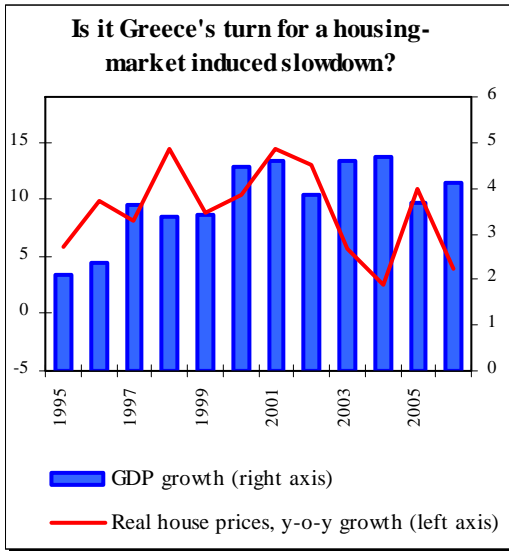
According to our analysis for the Greek housing market, an important difference with other countries is that positive demographic trends – which are reflected in the acceleration of the pace of new household formation – in addition to strong disposable income growth and low real interest rates, emerge as the major determinants of strong housing demand and higher residential real estate prices during the past seven years. More specifically, the purchasing power of households increased by a cumulative 17 per cent during the period 2000-2005 in terms of per capita disposable income, and at the same time real interest rates declined by 770 bps. It is a less known fact that the population growth in the household formation age group -- typically persons in their early 30s to mid-40s – actually rose strongly between 2000 and 2005 despite the low population growth, by a cumulative 6.7 per cent.



Moreover, the housing stock is old in comparison to other euro area countries (in large part due to the part which had been built in the construction boom of the late 1950s). The old stock corresponds to more than 20 per cent of the total volume of the housing stock, and has added significantly to residential investment demand, as it is replaced by newer and larger houses.



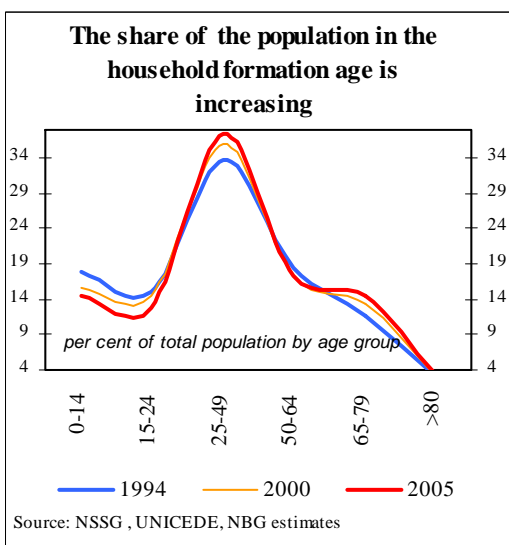
As a result of all four factors, an estimated 250,000 housing units have been demanded annually between 2000 and 2005 (both new and second hand homes -- about 30 per cent higher than the respective 15-year average). Under conservative estimates, this demand has resulted in 120,000 new housing units per year (survey data suggests that about one in two households opts to buy newly-built houses compared with an existing home). This translates into an estimated annual average of 14 new homes per 1,000 new inhabitants (or 1.6 homes per new household). This rate is high by international standards (the respective euro area average does not exceed 7 new homes per inhabitant during the past 6 years). Indeed, this volume is among the highest in the euro area and is only



surpassed by Ireland and is about equal to that of Finland and Spain. Moreover, demographics will remain a positive force on the real estate markets for several years to come.

In order to evaluate whether the expansion registered in real estate prices reflects macroeconomic factors or is overvalued and what the future prospects are for the sector and its impact on overall activity, we developed a more sophisticated analysis of the housing market (compared with the June-July 2003 edition). This model incorporates the standard macroeconomic determinants of the demand side of the market -- i.e. disposable income and real interest rates -- but also adds demographic trends, the depreciation of existing housing stock, and a short-term measure of supply fluctuations (supply gap) in the housing market to determine prices. Indeed, an important finding is that the strong growth in household formation emerges as a key determinant of healthy house price growth during the past six years, accounting for 26 per cent of the average annual increase in house prices. The analysis suggests that house prices are fairly valued, despite their strong increase during the past few years and indeed will continue to rise in real terms.

The analysis extends further to estimate the housing market's prospects in the medium term, and its impact on activity from the two basic transmission mechanisms – the wealth effect of higher real estate prices on consumer behavior and the demand for housing on residential construction. The analysis concludes that the prospects for the Greek housing market as a whole remain sanguine, and Greece is unlikely to experience a rapid deceleration in real house prices, similar to the fate of other dynamic real estate markets. The market will be supported by the growth momentum of the Greek economy, which is sustainable in the medium term, as well as demographic trends, which will remain relatively supportive in the coming years (though less positive in comparison to the 2000-2005 period). In fact, the growth in real house prices is expected to decelerate to a still healthy 2-3 per cent annually during 2007-2008.



Regarding new housing demand, it is expected to remain broadly stable at about 115,000 housing units per year during the next two years and decline to 100,000 units per year during the 2009-2015 period, compared with 120,000 on average during the past six years. These numbers correspond to an annual growth rate in residential construction activity of 6.0 per cent during 2007-2008 and of 4.9 per cent in the seven years to 2015. As a result of these two factors

Household formation and construction activity	
	2000-2005
<b>New Households</b> (cumulative change in thousands)	427.7
<b>New Households</b> (cumulative % change)	8.5
<b>Contribution from immigrants</b> (as per cent of growth in Households)	25
<b>New homes</b> (cumulative change in thousands)	690
<b>Estimated Housing Stock Depreciation</b> (in thousand housing units)	360
<b>New homes/new household</b>	1.6
<b>New homes per 1000 new inhabitants</b>	14

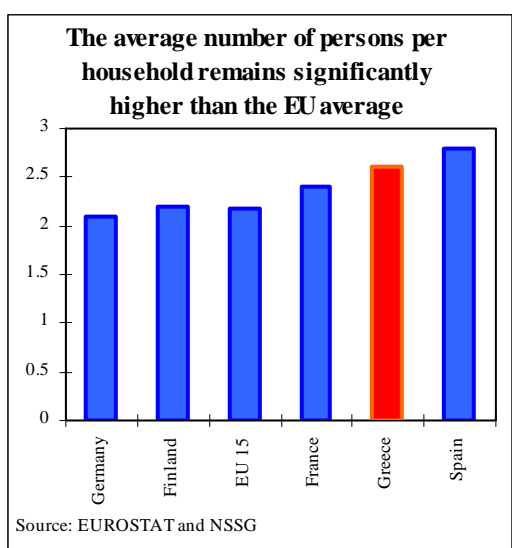
Source: NSSG and NBG estimates

– house prices and new house demand – overall activity is expected to be boosted by 0.8 percentage points per year in 2007-2008 and by 0.6 of a percentage point per year in 2009-2015.

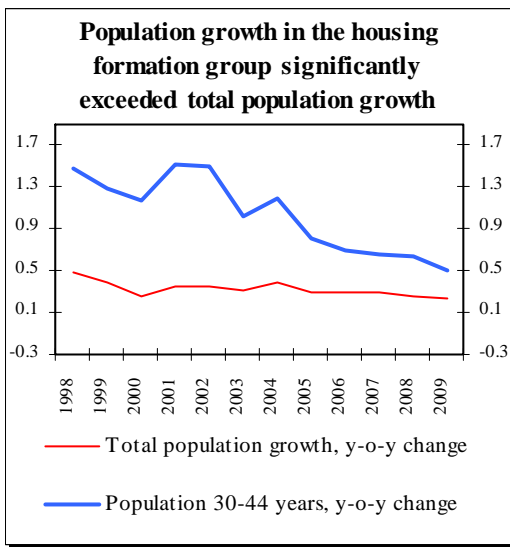
### *The Greek residential property market is benefiting from traditional as well as non-traditional drivers*

#### *In contrast to other European countries, the number of households has recorded impressive growth*

Demand for housing is underpinned by demographic trends, importantly the gradual increase in the share of the population in the main household purchasing group -- typically persons in their early 30s to mid-40s. Indeed, the population in the 25-44 age group increased by 6.7 per cent during the past seven years. Such growth has reflected, *inter alia*, increased immigration during the past 15 years. Further support for household formation has arisen from the continued decline in the average size of the Greek household. The average household size has decreased to 2.6 persons in 2005 compared with 2.8 in 1999 and 3.1 in 1994. This level is still far above the corresponding average for the EU of 2.2 persons. As a result of these two factors, the number of households has grown considerably more than the natural growth of the resident population which has been quite low; 8.5 per cent cumulatively from 2000 to 2005 compared with a growth rate of just 1.7 per cent for the population as a whole.



The rapid growth in the household formation age group reflects, *inter alia*, strong migration flows -- net immigration has exceeded 550,000 over the past 12 years, particularly in the household-forming age group. Indeed, immigrants have tripled their weight in the Greek population, and now account for 5.9 per cent of the inhabitants of Greece, or 750,000 people in 2005. The age structure of immigrant inhabitants differs greatly from the native population, with a greater share in the age group that traditionally seeks housing: 60 per cent of the immigrant population is concentrated in the ages between 25 and 44, compared with 30 per cent of the native population. As a result, they have played an important role in supporting housing demand -- adding an estimated 106,000 new households during the past six years, 2.8 per cent of total households in Greece – especially in the market for second-hand houses. Indeed, although in the initial stage immigrant demand was channeled to rental property, this demand has been increasingly shifted -- as indicated by real estate agencies transaction data --



mainly towards acquisition of second-hand homes, and mainly in low-cost areas contributing to the upward trend in house price stock valuations. Such transactions, in turn, facilitate the financing of more expensive new homes by higher-income Greek households.

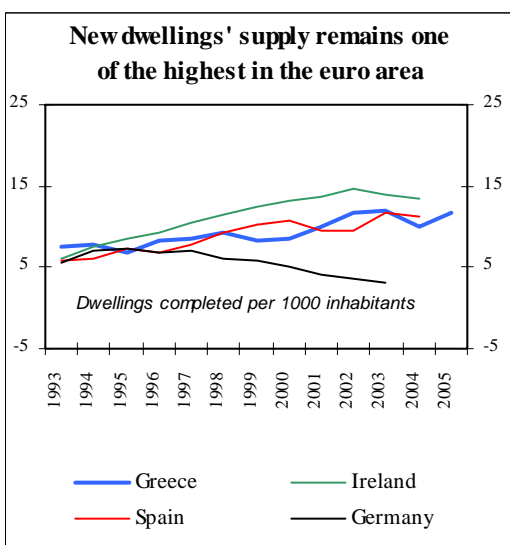
*Income and interest rates were also supportive of house prices*

During the 2000-2005 period, the Greek economy was characterized by a strong growth in real (deflated by GDP deflator) per capita disposable income (3.4 per cent y-o-y), which far exceeded the euro area average (by 1.8 percentage points). This trend mainly reflects strong real wage growth which exceeded 2.7 per cent annually, on average, during the past six years, as well as employment growth of 1.2 per cent annually during the same period. At the same time, the average increase in the total population was only 0.3 per cent.

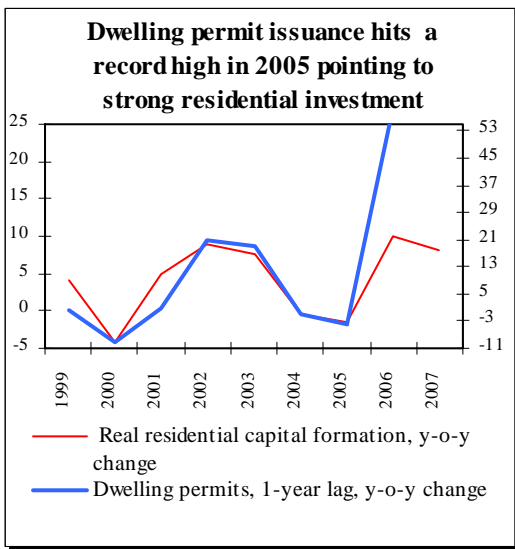
Moreover, on the road to EMU entry, Greece witnessed a once-in-a-generation fall in interest rates. Real interest rates declined by 800 basis points between 1999 and 2005. In fact, real interest rates in Greece remain among the lowest in the euro area due to the positive inflation differential of Greece in comparison to other euro area countries (the real interest rate in Greece in terms of the 3-month euribor was, on average, negative -0.3 per cent during the past six years compared with 1.4 per cent for the euro area).

*Construction activity responded only partially to demand, contributing to house price growth*

Irrespective of the strength of demand, property prices in the short run will clearly be greatly affected by the responsiveness of supply. Indeed, price increases during the past few years suggest that the construction sector struggled to provide an adequate flow of new construction to meet the increased demand. That being said, the surge in the issuing of building permits in H2:2005, due to the imposition of VAT in the construction of new houses in 2006, and the high level of permit issuance in H1:2006 raises concerns that the large supply in the market could exert downward pressure on house prices. Specifically, dwelling permits have increased by 55 per cent y-o-y in 2005 compared with a 6-year average of 6.9 per cent y-o-y.



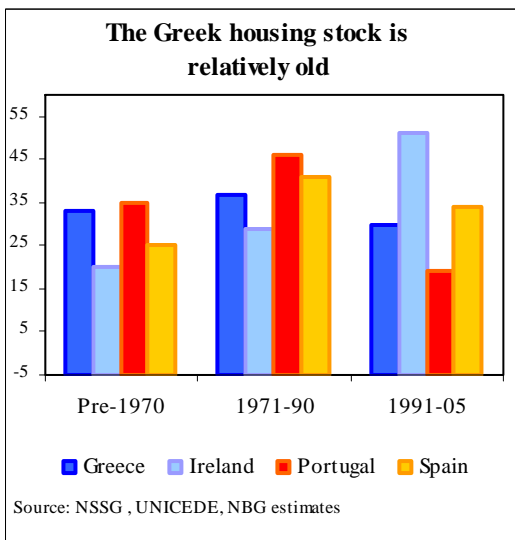
Alleviating somewhat the problem of the large supply, the average age of the stock of residential property is, on average, older than the stock in other comparable euro area countries such as Spain and Portugal (25 years in Greece compared with 19 and 22 years in these two countries, respectively). According to the 2001 census



and on the basis of NBG's projections, 25 per cent of Greece's housing stock in 2005 is older than 45 years (i.e., constructed prior to 1960); 49 per cent was constructed between 1961 and 1990; and only 26 per cent since 1991. Since the amortization period for buildings is usually 40 to 50 years, a large part of the real estate stock in Greece is close to its useful life, which will absorb approximately 35 per cent of the new construction activity from the recent boom in permits.

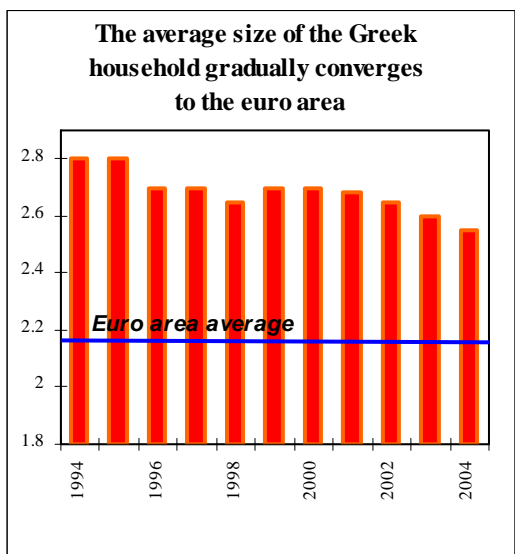
*Short-term price dynamics reflect both macroeconomic, as well as demographic, factors*

In view of the significant increase in house prices in Greece during the past ten years, it is important to determine the degree to which they are in line with their respective fundamental determinants (such as income, interest rates and demographic trends) and thus the potential correction that could be in store for the economy. It is also important to see if housing will continue to provide a critical boost to the economy. To this end, NBG Research estimated a short-term house price equation for the past 12 years, reflecting the joint equilibrium of supply and demand in the residential real estate market (see box). According to this relationship, demand is a function of the real interest rate and the growth in real per capita disposable income, as well as changes in household formation. Supply is a function of the amortization of the existing housing stock, and a term that captures short-term supply fluctuations (supply gap). The latter is constructed from the deviation of new house completions per household from its long-term trend (with the former approximated by dwelling permit issuance, lagged by one year, and the latter by the population growth in the 30-44 age group adjusted for the average size of a household).



The above-described depiction of the housing market captures historical developments very well (see Box). It suggests that prices are mainly affected by per capita income (the respective elasticity of 0.8 is broadly in line with estimates for other euro area countries), while the sensitivity to interest rates is higher than comparable analysis for other European countries (-0.02 vs -0.008). The elasticity with respect to household formation is above unity, underscoring the importance of this new variable that has been added to the analysis. The supply gap also plays a significant role in determining prices, especially in view of the recent period of supply shortages.

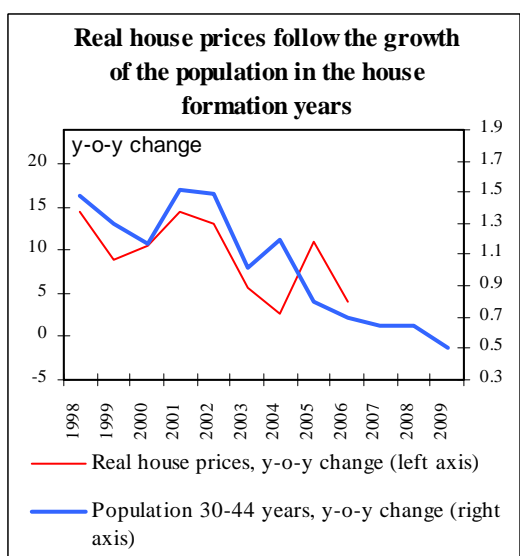
In sum, real disposable income appears to be the main determinant

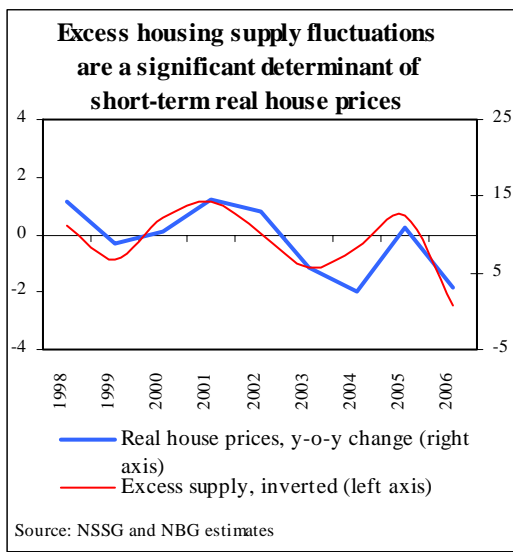


of real house price movements over the past 12 years, explaining about 35 per cent of real house price movements. Real interest rate movements and the pace of household formation explain 30 and 26 per cent respectively, of annual house price growth, whereas the remaining 9 per cent is attributed to short-term dwelling supply fluctuations captured by the “supply-gap” term.

**Macroeconomic factors remain positive contributors to real estate prices looking forward**

- Expectations about the growth performance of the Greek economy remain buoyant over the medium term in comparison with the euro area as a whole -- with GDP expected to grow by 3½ - 4 per cent per year during 2007-2008, while euro area GDP growth is not expected to exceed 2¼ per cent. As a result, in the next 2 years, both employment and real wage growth rates are expected to exceed their 5-year average, supporting a real disposable income growth in the vicinity of 3.5 per cent annually.
- At the same time, the average population growth is expected to slow to 0.2 per cent annually during the 2007-2008 period (from 0.3 per cent y-o-y during the past six years) leading to an average real per capita disposable income growth of 3.3 per cent annually.
- Reflecting a normalization of euro area interest rates from their current low levels, real interest rates are expected to peak in Q2:2007, increasing by about 0.5 of a percentage point from their current levels (as a result of the expected ECB rate increases) whereas the pass-through to lending rates is expected to be only partial due to stiff competition in the mortgage market).
- Regarding household formation, the average household size is projected to decrease to 2.4 members per household, bringing it closer to the euro area average of 2.2 members per household. At the same time, the growth in the population in the household formation age group is expected to slow to 0.7 per cent y-o-y in the next 2 years (nevertheless, remaining more than 3 times higher than total population growth). This slowdown reflects, *inter alia*, lower migration flows. These two factors together are expected to bring the annual household formation rate to levels consistent with its 20-year average by end-2009 -- 2.5 per cent annually.
- On the basis of the dwelling permit issuance during the past 1½ years, we can infer that the growth in new house completions





during the 2007-2008 period will continue to exceed its 10-year average by about 25 per cent (standing at 155,000 units annually), resulting in a positive supply gap. The translation of the demand for housing units into residential investment activity is based on the strong correlation between building permit issuance (with a one-year lag) and current-year residential investment activity (see Figure). As a result, residential investment activity is projected to accelerate and grow by more than 6½ per cent annually.

When the above-mentioned projections are imported into our housing model, it predicts that house prices will decelerate, and are not expected to exceed 3 per cent in real terms during the next two years, down from 9.3 during the past six years.

#### *Medium-term house prospects also remain positive*

The use of permits to proxy the creation of new homes is accurate only for a short period ahead – about one year. To project residential construction over the medium term, NBG Research modified the above-described model by assuming: i) there is no excess supply gap in the medium term as supply will always adjust to meet demand, and ii) price developments reflect changes in home quality (as derived from higher per capita income and a lower discount rate). Thus, the quantity of new houses is the result of depreciation of the housing stock, demographics and house prices (see Box).

Greece: Determinants of Real House Price Growth					
	in percentage points				
	Disposable Income	Int. rate	Demo-graphics	Excess Supply	Real house prices y-o-y growth
Elast/ty	0.8	0.02	1.3	0.012	
2000	1.5	7	3.2	-1.2	10.5
2001	4.8	6.2	3.6	-0.1	14.5
2002	3.7	3.9	3.9	1.5	13.0
2003	2.0	0.1	1.5	2.1	5.7
2004	1.3	0	0.6	0.7	2.6
2005	3.5	1.3	1.9	4.0	10.7
2006	4.6	-0.2	1.3	-1.8	3.9
2007-08	4.4	-0.1	0.8	-2.6	2.5
2009-15	3.9	0	0.3	...	4.2

For the 2009-2015 period, house price dynamics and house construction trends reflect the following projections: (i) average real disposable per capita income growth will slow and stabilize at around 3.3 per cent per year (reflecting potential GDP growth of 3.5 per cent and a total population growth of 0.2 per cent annually), and (ii) the pace of household formation will slow to its 15 year average (reflecting the combined influence of the strong slowdown in the growth of the household formation age group -- to about 0.3 per cent y-o-y from 1.3 during the past six years -- and the continuing convergence of the average household size to that of the euro area average). As a result, house price appreciation in the period 2009-2015 will be about 4 per cent per year. Moreover, according to NBG Research empirical estimates, housing demand is expected to exceed 100,000 new housing units annually during this period -- compared with 120,000 over the past six years.

Around 50 per cent of the total housing demand for the 2009-2015

Decomposition of real house prices by determinant 1994-2005					
	Disposable Income	Int. rate (percentage points)	New H/holds	Excess Supply	Real house prices y-o-y growth
Elast/ty	0.8	0.02	1.3	0.012	
cumulative change 1994- 05 in percent	36.8	16.0	15.6	...	117
% total	35	30	26	9	100

period will be due to stock replacement needs, which will require at least 48,000 new housing units annually in order to preserve a constant dwelling supply. Overall, the increase in the housing stock corresponds to an average annual growth rate of about 4.9 per cent in real private residential investment over the 2009-2015, which is a rate only marginally lower in comparison to that of the past 7 years.

#### *Real estate: a catalyst for output growth until 2015*

The total effect of the real estate market developments in economic activity can be decomposed in two parts. The first, as described in the previous section, is related to the increased residential construction activity in response to increasing demand whereas the second refers to the response of consumption spending to changes in the value of households' real estate wealth.

With respect to the so-called "wealth effect", the surge in house values has produced a substantial positive spending effect for homeowners, as housing is the single biggest component of household wealth, comprising around 90 per cent of total household wealth (in comparison to 40-50 per cent in the euro area and 25 per cent in the US). The main question is how much the envisaged real estate price slowdown – to 2½ per cent and 4 per cent y-o-y over the 2007-2008 and 2009-2015 periods respectively -- will affect consumers, whose spending accounts for more than two-thirds of the economy.

Wealth effect of real house prices on GDP growth (in percentage points)		
	Wealth effect (old GDP)	Wealth effect (new GDP)
2000	0.5	0.4
2001	1.0	0.6
2002	0.7	0.5
2003	0.3	0.2
2004	0.1	0.1
2005	0.5	0.4
2006	0.2	0.1
2000-06	0.5	0.3
2007-09	...	0.1
2010-15	...	0.2

NBG Research has estimated the marginal propensity to consume out of a one euro increase in real house prices to be 5.6 cents compared with a marginal propensity to consume of approximately 1.5 cents for other euro area countries (estimated by the OECD) and a marginal propensity to consume of around 5 cents for the USA and the UK. The larger elasticity reflects, *inter alia*, the fact that household wealth comprises a far larger share of disposable income in Greece (6½ times versus 4½ times in the euro area). Thus, the 7.3 per cent average rate of increase in house prices in constant terms in the 2000-2005 period is estimated to have increased private consumption by around 0.6 of a percentage point per year, adding 0.5 of a percentage point per year to annual GDP growth. By taking into account the recent GDP revision, the elasticity declines to 3.9 and the contribution of the wealth effect in GDP growth to 0.3 per cent annually during the 2000-2005 period. For the following 2 years and according to the revised GDP numbers, the wealth effect is expected to add about 0.1 of a percentage point in annual GDP growth and stabilize to 0.2 of a percentage point in the 2009-2015 period.

Regarding the second transmission channel, our short-term and medium-term estimates for new housing demand are expected to add 0.7 percentage points to annual GDP growth during 2007-2008 and 0.4 percentage points during 2009-2015.

All in all, after taking into account the joint effect of gross fixed investment in residential structures and the wealth effect on consumption, the net contribution to GDP growth from the housing sector is expected to be 0.8 of a percentage point per year for the period 2007-2008, which albeit lower than average of 1.3 percentage points during the previous six years, remains very significant in comparison to the euro area average (an estimated 0.4 per cent) and to decline to 0.6 of a percentage point during the 2009-2015 period.

### BOX: Housing Market Model

#### *Short term: Historical house price decomposition*

The growth in (i) real per capita disposable income ( $y$ ), (ii) household formation ( $hf$ ), (iii) real house prices ( $P_s$ ) and (iv) the annual change in real interest rate ( $r$ ) are the main factors affecting the demand for houses in the short run. The main determinants of the short-run supply equation are the rate of depreciation of the housing stock ( $dep$ ), together with a measure of excess supply ( $es$ ), and real house prices.

$$D_s = f(y, r, hf, P_s) \quad (1)$$

$$S_s = g(dep, es, P_s) \quad (2)$$

Our analysis of real house price dynamics is based on the estimation of the following reduced form describing the demand-supply equilibrium in the short run:

$$(1)-(2) \quad P_s = b_0 + b_1 y + b_2 r + b_3 hf + b_4 es \quad (3)$$

$$\text{or } P_s = 2.3 + 0.8y + 0.02r + 1.3hf + 0.012es \quad \text{with } R^2 : 0.89$$

#### *Long term: Equilibrium house prices and investment in housing*

To determine medium term housing market trends, we estimate a house price equation (eq.4) which is a function only of the real per capita disposable income and real interest rate (reflecting respectively developments in purchasing power - i.e. demand for higher quality houses and of the opportunity cost investing in real estate) and use this price estimate ( $P_L$ ) as an input into a long-term supply equation (eq.5) which is also a function of depreciation and of household formation, to derive long-term housing construction (which by assumption equal demand).

Equilibrium price equation:

$$P_L = c_0 + c_1 y + c_2 r \quad (4)$$

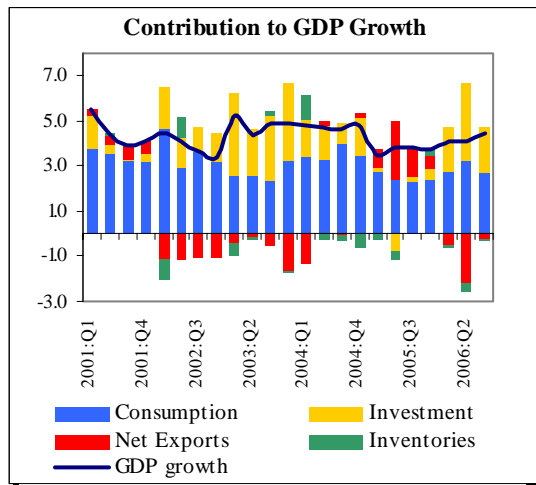
Equilibrium quantities

$$\begin{aligned} S_L = (D_L) = h(dep, hf, P_L) = \\ \dots = d_0 + d_1 y + d_2 hf + d_3 P_L \end{aligned} \quad (5)$$

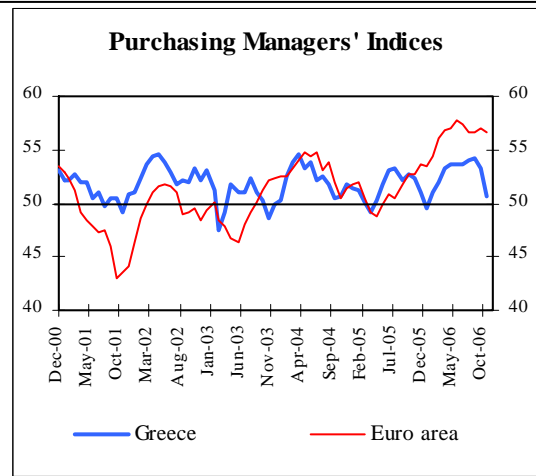
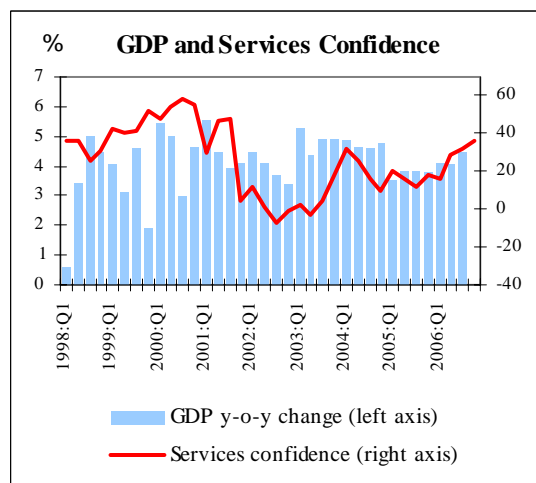
## Activity remains strong in a relatively less supportive, albeit good, environment

- **The Greek economy continued to grow sharply** through Q3:2006 (with an annual rate of 4.4 per cent - a pace almost twice that of the euro area), as investment has bounced back and consumer spending remained solid. Specifically, despite a series of shocks (mainly increased oil prices and fiscal consolidation), consumer spending is supported by real wage increases of the order of 3 per cent, increased household wealth and rapid credit expansion. Furthermore, strong investment reflects the rigorous pace of the construction sector and buoyant business confidence. On the other hand, net exports remain a drag on growth, as solid domestic demand has resulted in strong import growth, which has significantly outpaced an improved export performance. Although tourism is reviving from the downward trend witnessed during the second half of 2005, shipping's contribution to GDP growth is shrinking under the burden of the correction in freight rates from their very high levels (mainly due to the catch-up of newbuildings to increased demand).
- Despite the envisaged tightening of monetary conditions both through interest rates and exchange rates, **growth prospects remain strong** (a projected 3.9 per cent in 2007). The main drivers will be private consumption (partly due to cuts in personal income tax rates, solid wage growth and positive terms of trade effects) and fixed investment (supported by the gradual lowering of company tax rates and the strength of residential investment) as well as exports due to the continued strength of the euro area and the neighboring SEE economies. In this context, the unemployment rate is expected to drop towards 8.5 per cent for the first time in some years. The main risks to this outlook stem from a further strengthening of the euro exchange rate, and a sharp slowdown in world growth, beginning with the US economy.
- Turning to **price developments**, lower oil prices and the appreciation of the euro contain inflationary pressures. In fact, headline inflation is expected to decline to below 3 per cent next year, while core inflation will remain virtually unchanged, on the back of strong domestic demand and a relatively generous collective bargaining agreement (as wages are set to keep rising above productivity boosting unit labor costs).
- As far as the imbalances of the Greek economy are concerned, the **fiscal outcome** has improved in 2006, albeit more needs to be done. In particular, the general government deficit is expected to decline to 2.6 per cent of GDP from 5.2 per cent in 2005, mainly due to a sharp fall in capital expenditure, and secondly due to restrained primary spending. The fiscal adjustment effort is expected to continue in 2007 with a target of 2.4 per cent of GDP for the deficit of general government (below 2 per cent after taking into account the revisions in GDP), despite the envisaged cuts in both personal and corporate tax rates.
- On a negative note, the **current account deficit** will exceed 11 per cent of GDP in 2006 (9.1 per cent under the revised GDP), reflecting strong domestic demand and external factors, such as high oil prices and the purchase of ships. Correcting for these transitory factors, the current account deficit as a per cent of GDP is only marginally higher than its long-term average. In 2007, the current account is expected to widen further due to the continued growth differential with the euro area and the sluggishness in shipping rates, which work to offset lower oil prices.

## GROWTH OUTLOOK



- Buoyant consumer spending (3.6 per cent y-o-y in Q3:2006) and strong investment (7.6 per cent y-o-y, largely backed by strong residential investment activity), are driving Greece's impressive economic performance in 2006 to a pace almost twice that of the euro area.
- On the other hand, the external balance remained a net drag on growth (0.2 percentage points in Q3:2006) -- although lower compared with the previous quarter (2.2 percentage points in Q2:2006).
- GDP growth in 2007 is likely to slow to around 3.9 per cent - though remaining considerably above the euro area average - on the back of the ongoing momentum in private consumption and residential investment, which will offset, to a significant extent, the impact of the fiscal consolidation and the negative terms of trade shocks (mostly from shipping).

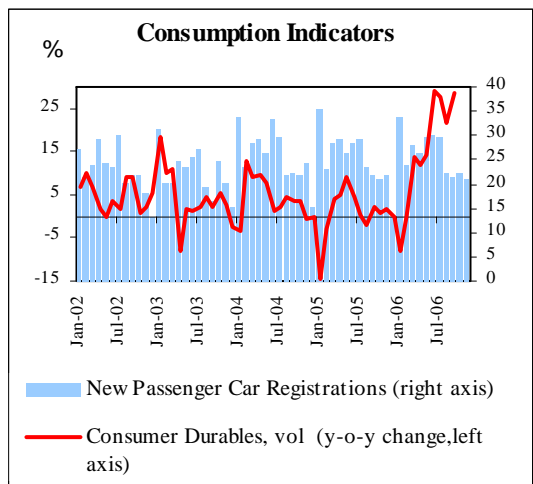


### Greece: Growth Outlook

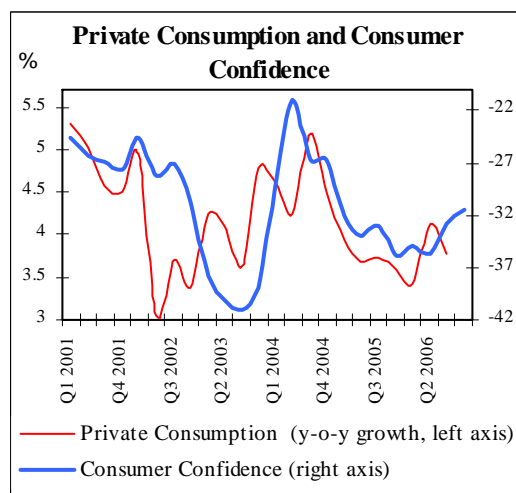
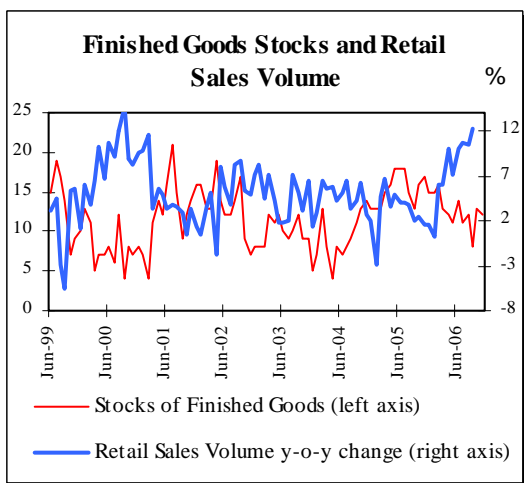
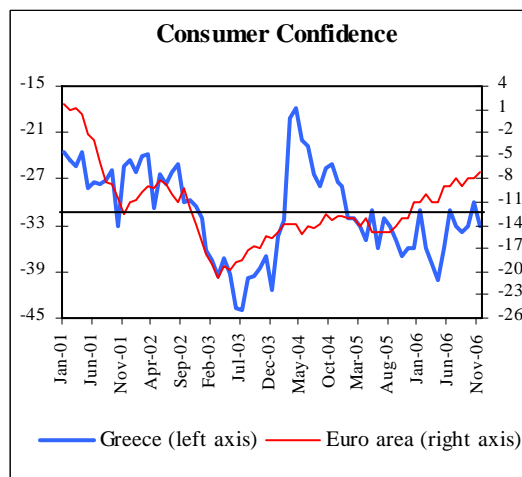
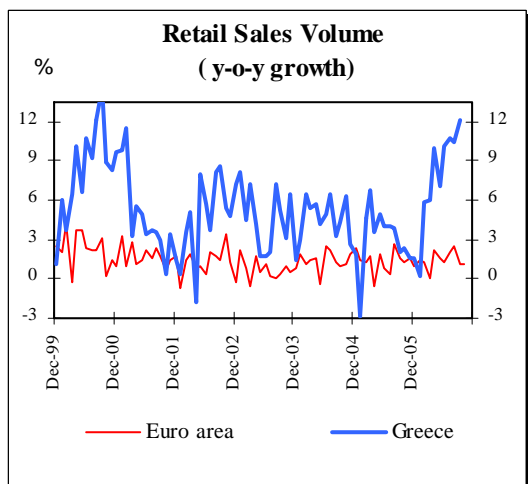
	2004	2005	2006f	2007f	2005				2006			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4f
GDP (per cent y-o-y)	4.7	3.7	4.2	3.9	3.5	3.8	3.8	3.8	4.1	4.1	4.4	4.1
GDP (per cent q-o-q)	...	...	...	...	2.5	-0.3	1.8	-0.2	2.8	-0.4	2.2	-0.6
Domestic Demand (y-o-y)	4.5	2.2	4.6	4.1	2.4	1.2	2.2	2.8	4.2	5.8	4.3	4.1
Final Consumption (y-o-y)	4.3	3.0	3.5	3.0	3.3	3.0	2.8	2.9	3.4	3.9	3.3	3.4
Private Consumption (y-o-y)	4.4	3.7	3.6	3.2	3.9	3.7	3.7	3.6	3.4	4.1	3.6	3.5
Public Consumption (y-o-y)	3.9	3.0	3.3	2.2	0.0	-1.0	-2.2	-1.0	3.2	3.6	3.2	3.2
Investment (y-o-y)	5.2	0.0	8.7	6.5	0.6	-3.0	0.6	1.7	6.9	13.9	7.6	6.2
-construction*	5.0	-3.0	9.3	7.8	...	...	...	...	...	...	...	...
-equipment*	6.5	1.3	7.2	5.0	...	...	...	...	...	...	...	...
Inventories (contribution to GDP)	0.0	-0.1	-0.1	0.0	-0.2	-0.3	0.0	0.3	-0.1	-0.4	-0.1	0.0
Net exports (contribution to GDP)	-0.3	1.3	-0.9	-0.5	0.8	2.5	1.4	0.6	-0.5	-2.2	-0.2	-0.5
Exports (y-o-y)	7.4	4.0	4.4	4.8	7.2	3.9	2.2	2.8	1.8	2.5	7.4	5.8
Imports (y-o-y)	5.5	-2.1	6.1	5.0	1.4	-6.6	-3.0	-0.2	2.9	10.2	5.8	5.4

\*Historical data from NSSG, with the exception of the components of fixed investment which are based on MOF data and NBG estimates

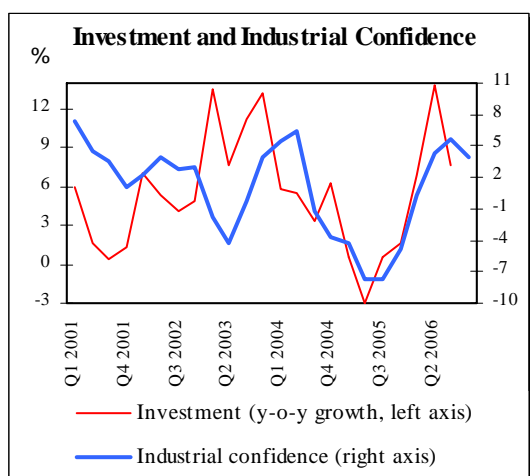
## CONSUMPTION



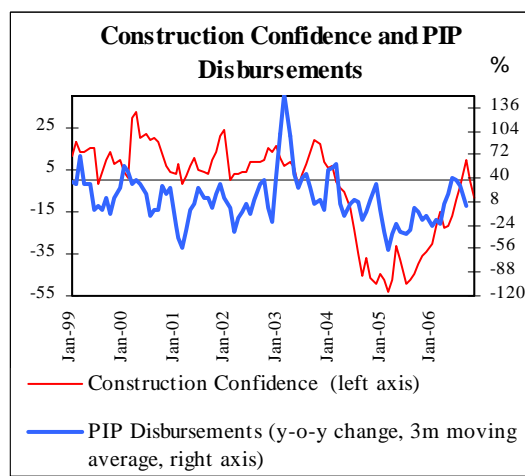
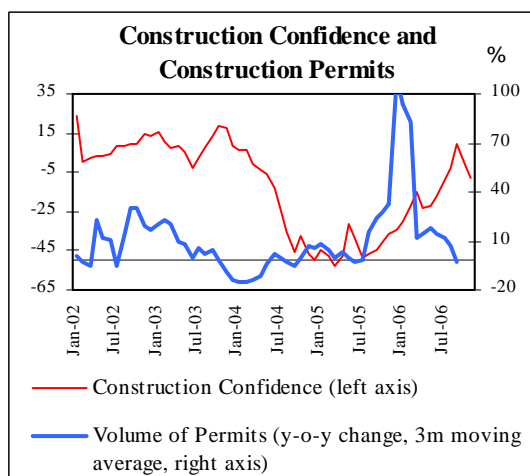
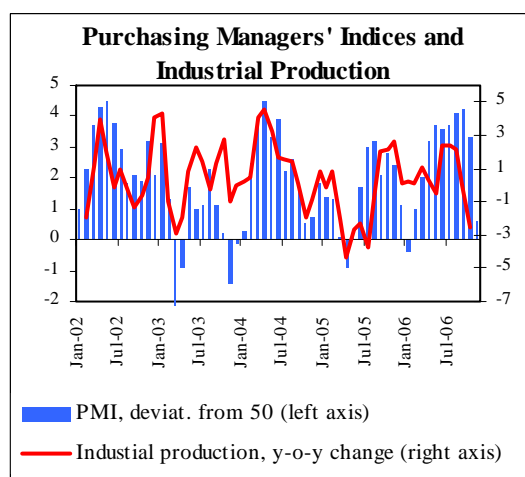
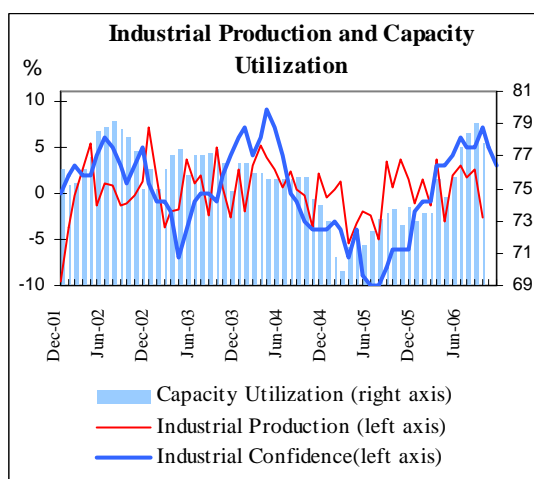
- Despite a series of shocks (mainly increased oil prices and fiscal consolidation), private consumption continues to exhibit impressive dynamism, with retail sales volume growth accelerating to 11.1 per cent y-o-y in the third quarter of the year - the highest pace of the past 6 years. More impressively, durable goods sales skyrocketed in Q3:2006 (26.1 per cent y-o-y).
- Furthermore, consumer confidence has revived to -31.5 in the last quarter of 2006 from its nadir of -35.9 one year ago.
- Key drivers for consumption in 2007 will be high real wage growth (3.5 per cent) as well as continued strong credit growth.



## BUSINESS SECTOR

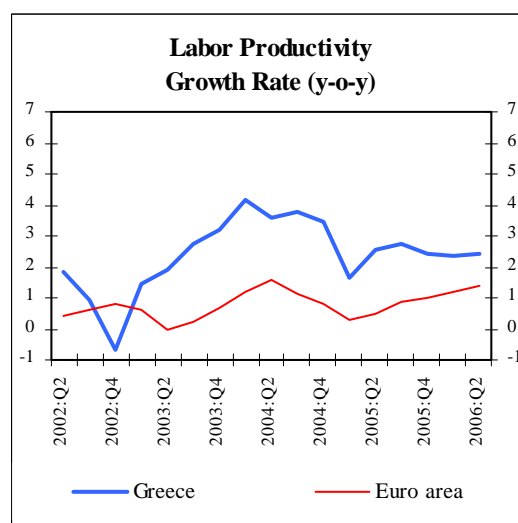
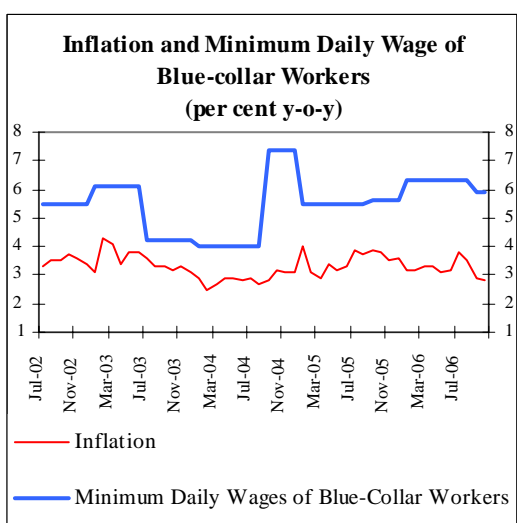
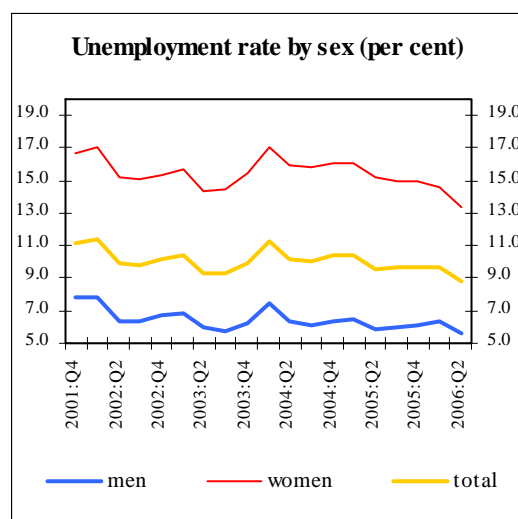
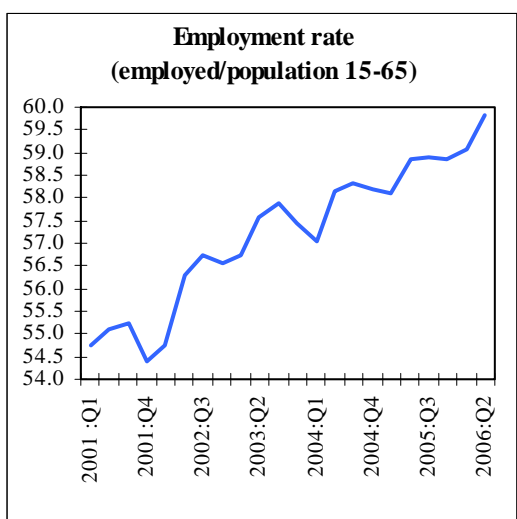


- Business activity has revived so far during the year, with capacity utilization on a rising trend (to 76.1 in the first three quarters of 2006 versus 72.1 per cent during the corresponding period of 2005) and industrial production increasing by 0.8 per cent on average over the first 9 months of the year.
- Moreover, construction confidence - albeit correcting slightly from the high in September 2006 - remains considerably higher from the 5-year average.
- Construction activity will continue to grow by healthy rates in 2007 based on the high volume of permits issued in 2005-06, providing approximately 1 percentage point to GDP growth, while business conditions are expected to remain favorable in 2007.

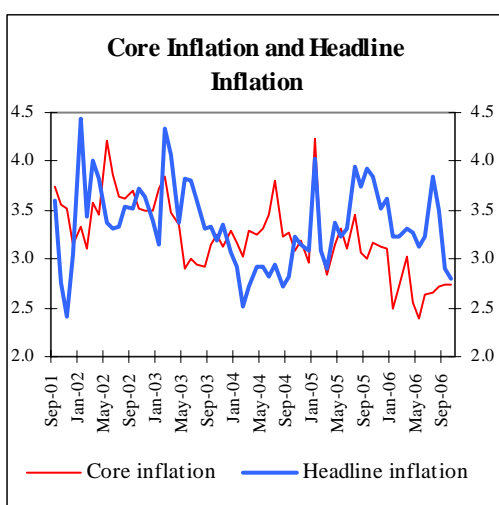
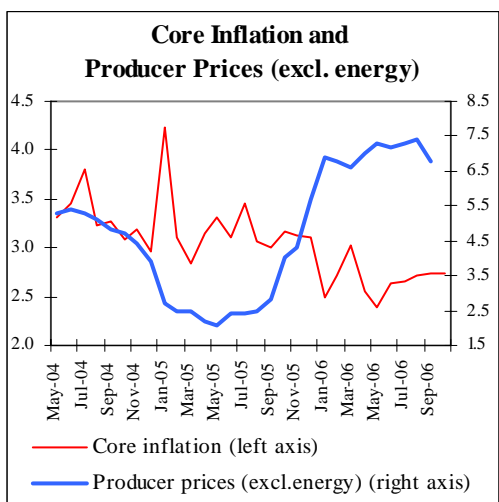


## LABOR MARKET

- During the second quarter of 2006, the unemployment rate fell sharply to 8.8 per cent, its lowest level since 1998 (Q2:2005: 9.6 per cent).
- In the same period, employment increased by 1.6 per cent y-o-y (Q2:2005: 1.2 per cent y-o-y).
- At the same time, the percentage of employed in the 15-65 age group increased and reached a record high 59.8 per cent, up from 54.1 per cent at the beginning of 2000.
- The unemployment rate for women continued to decline and reached 13.4 per cent in Q2:2006, but it still remains twice as high as that for men, which for the same period stood at 5.6 per cent.
- The growth rate of labor productivity rose in Q2:2006 reaching 2.4 per cent, sustaining a pace well above that of the euro area (the differential with the euro area is 1 percentage point).



## INFLATION



- Headline inflation decelerated to 2.8 per cent y-o-y in October 2006, from 2.9 per cent y-o-y in Q3:2006 on the back of the benign developments in energy prices (which have declined by -2.2 per cent y-o-y in October compared with an average increase of 11.6 per cent y-o-y in Q3:2006). Underlying inflation pressures remain evident as core inflation (that excludes price developments in fresh fruits and vegetables as well as in energy) increased for a fifth consecutive month to 2.7 per cent y-o-y in October 2006 reflecting economy's structural and capacity constraints.
- Looking forward, we expect average annual headline inflation to decelerate further to 2.9 per cent y-o-y in 2007, down from an estimate 3.2 per cent in 2006, benefited from lower energy prices. Core inflation will decelerate only marginally to 2.7 per cent y-o-y, mainly due to the entrenchment in final goods prices of previous increases in oil prices and the strong real wage growth in 2007 (estimated to exceed 3½ per cent y-o-y up from 3.2 per cent in 2002).

### NBG Inflation Projections

	CPI	Core inflation
Q1:2006 (p.a)	3.3	2.7
Q2:2006 (p.a)	3.2	2.5
Q3:2006 (p.a)	3.4	2.9
Q4:2006 (p.a)	2.9	2.8
<b>Average 2006</b>	<b>3.2</b>	<b>2.8</b>

(1) Assuming oil prices at 68 \$/bbl and \$/€ of 1.26 on average for 2006

(2) Assuming fresh fruit & vegetable prices increase by 5 per cent in 2006

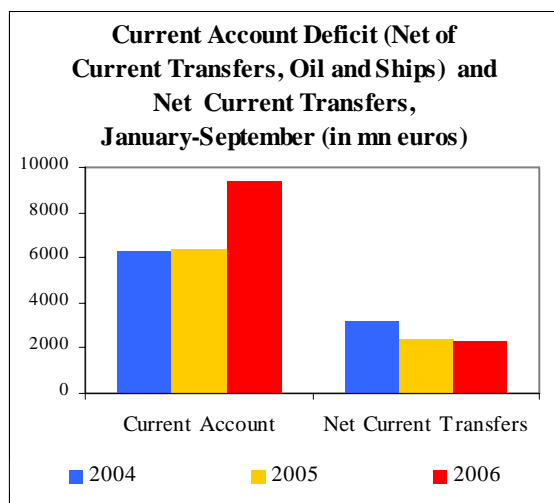
<b>Average 2007</b>	<b>2.9</b>	<b>2.7</b>
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(1) Assuming oil prices at 65 \$/bbl and \$/€ of 1.35 on average for 2007

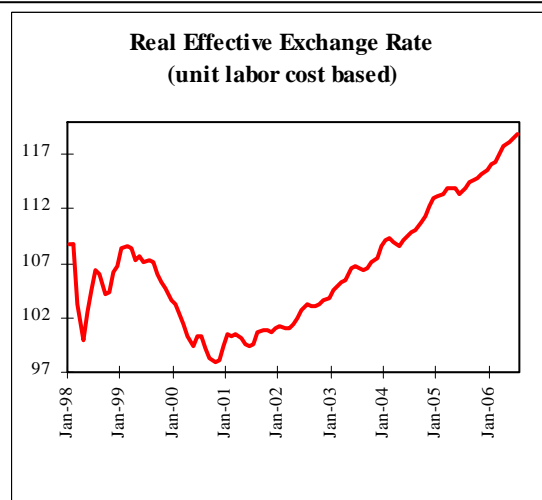
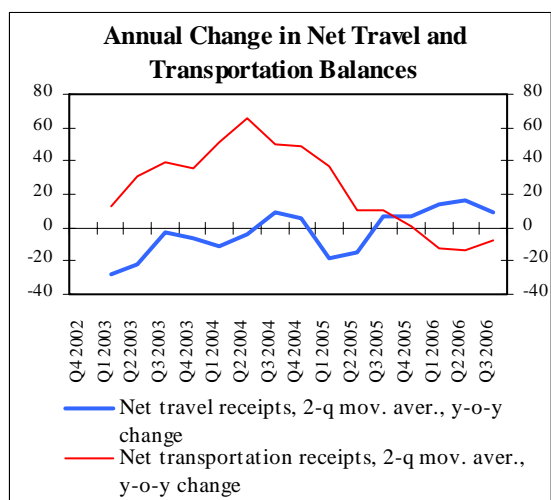
(2) Assuming fresh fruit & vegetable prices increase by 6 per cent in 2007

	CPI	Core inflation	Energy prices	Fresh fruit & vegetables	PPI	PPI (excl.energy)
October	3.8	3.2	16.0	1.8	7.0	4.0
November	3.5	3.1	11.2	1.0	7.0	4.3
December	3.6	3.1	20.8	-9.1	9.1	5.7
<b>2006</b>						
January	3.2	2.5	22.8	-6.5	9.9	6.9
February	3.2	2.7	17.2	-4.6	9.5	6.8
March	3.3	3.0	13.9	-6.9	8.3	6.6
April	3.3	2.6	14.4	3.6	8.6	7.0
May	3.1	2.4	17.0	-0.7	9.3	7.3
June	3.2	2.6	13.9	0.8	8.0	7.2
July	3.8	2.6	17.5	16.0	8.3	7.3
August	3.5	2.7	14.2	7.5	7.7	7.4
September	2.9	2.7	3.3	8.9	4.5	6.8
October	2.8	2.8	-2.2	10.0	...	..

## EXTERNAL SECTOR



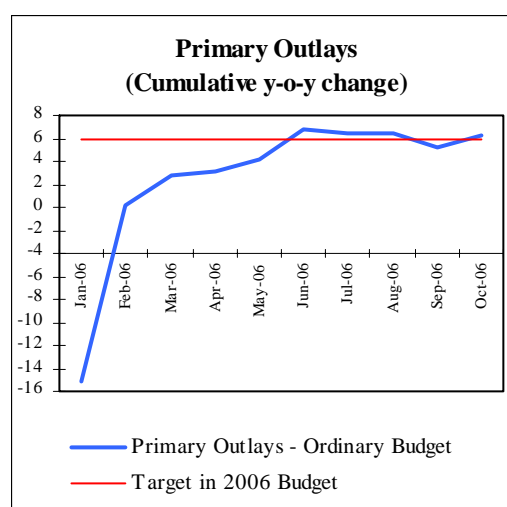
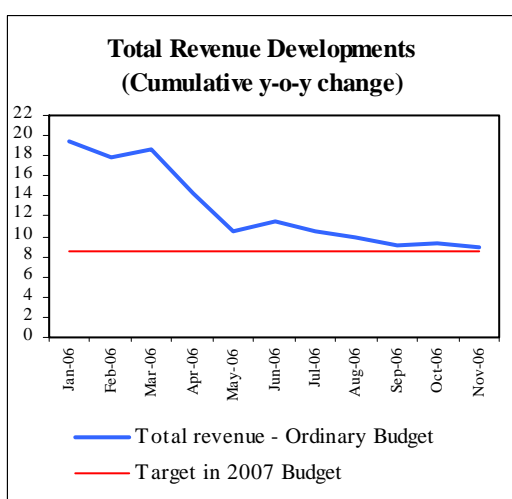
- The current account deficit widened dramatically during January-September 2006 compared with the same period in 2005 (by €7.4 billion), mainly due to higher oil and ships imports (by €2.1 billion for oil imports and by €2.3 billion for imports of ships). Nevertheless, correcting for these transitory factors, the current account as a per cent of GDP is only marginally higher than its 6-year average of 4.8 per cent.
- A large inflow of non-resident funds, primarily towards deposits and repos, totaling €3.9 billion (which was more than double the residents' corresponding investment abroad), provided the main source of financing of the current account deficit.
- Looking forward, the current account will reach a high exceeding 12 per cent of GDP in 2007, partly reflecting strong domestic demand and external factors, such as high oil prices and the purchase of ships.



Balance of Payments (in million EUR)											
	2004	2005	2006f	2007f	2005				2006		
					Q1	Q2	Q3	Q4	Q1	Q2	Q3
<b>Current Account</b>	-10717	-14348	-22130	-25365	-4588	-3345	-422	-5993	-8000	-6277	-1760
Current Account ( % of GDP)	-6.4	-7.9	-11.4	-12.3	-2.5	-1.8	-0.2	-3.3	-4.1	-3.2	-0.9
Non-oil Trade Balance	-20925	-20918	-25310	-28348	-5390	-4994	-5192	-5342	-6599	-6793	-6137
Oil Balance	-4511	-6629	-8618	-9049	-1356	-1365	-1748	-2161	-2540	-1795	-2207
Services Balance	15467	15698	15541	16163	1954	4035	7411	2299	1642	3663	7817
Income Balance	-4377	-5676	-6698	-7234	-979	-1555	-1651	-1491	-1382	-2156	-1845
Current Transfers, net	3629	3177	2955	3103	1183	535	758	702	879	804	611
<b>Capital transfers</b>	2386	2049	2458	2999	811	236	299	702	738	770	557
<b>Financial Account</b>	8098	12607	...	...	3711	3395	713	4787	7526	5721	894
Foreign Direct Investment, net	864	-679	...	...	45	100	-780	-44	423	587	-122
Portfolio Investment, net	14075	7279	...	...	-1001	6464	4387	-2571	930	1184	3533
Financial Derivatives, net	-347	43	...	...	-13	-511	-38	606	79	79	0
Other Investment, net	-9104	5914	...	...	4464	-2620	-2701	6770	6337	4049	-2513
Change in Reserve Assets	2611	49	...	...	216	-38	-155	26	-242	-178	-5
<b>Errors and Omissions</b>	233	-308	...	...	66	-287	-590	503	-264	-214	-309

## FISCAL DEVELOPMENTS

- Ordinary Budget total revenue rose by 8.9 per cent y-o-y in the January-November 2006 period, topping the government's annual target in 2007 Budget of 8.8 per cent.
- In the January-October 2006 period, Ordinary Budget primary expenditure rose by 6.2 per cent y-o-y, (annual target: 6.0 per cent), but total spending, including interest on debt, increased by 3.5 per cent y-o-y, equal to the 2006 target.
- In the 10 months to October, Public Investment Budget revenue increased to €2.5 billion from €1.9 billion in the same period of 2005, and Public Investment Budget expenditure reached €5.4 billion (corresponding period of 2005: €4.7 billion).
- Following the above-mentioned developments, the budget deficit of central government declined by 21.0 per cent in the first ten months of the year and amounted to €6.6 billion, from €8.3 billion in the same period of the previous year.
- On a cash basis, the deficit of central government during the first nine months of the year was €7.8 billion (4.0 per cent of GDP), compared with €10.7 billion (5.9 per cent of GDP) in the same period last year.
- According to data released by the MoF, by September 2006, central government public debt has already exceeded the end-year target of €26.1 billion and stood at €27.2 billion.



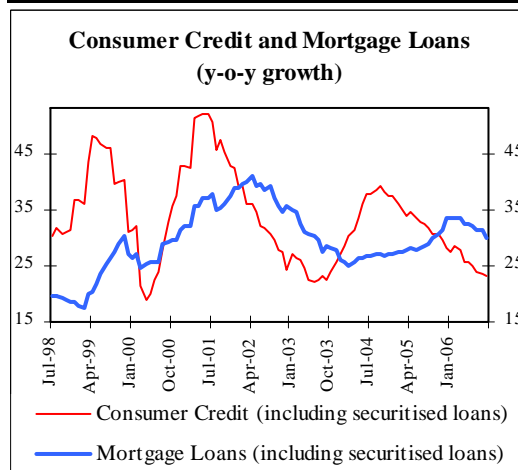
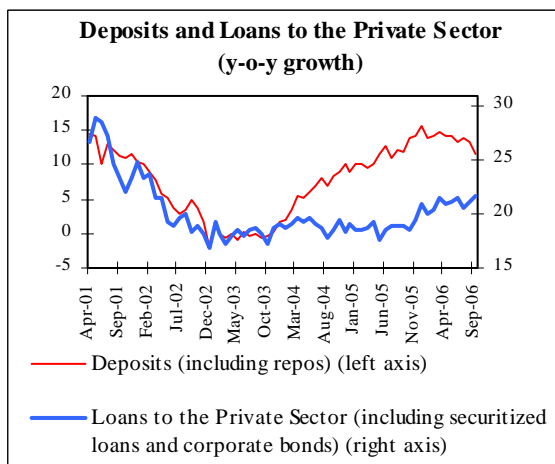
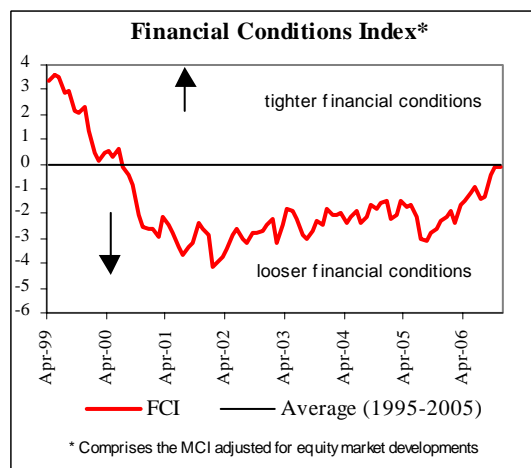
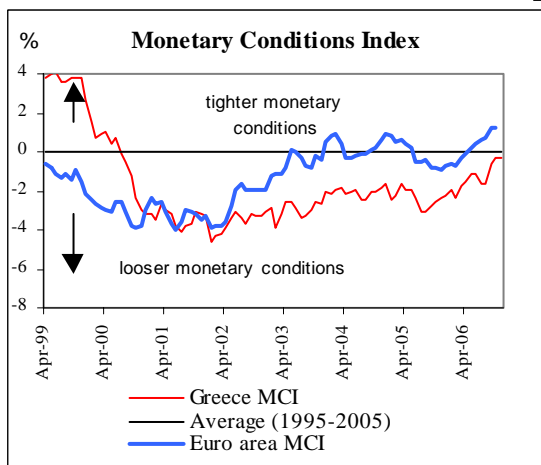
Auctions of Government Bonds						
	Last Issue	Amount (EUR mln)	Spread over corresponding euro rates (bps)	Euro assets swap spread (bps)	Current yield	Estimated share of 2006 new bond issuance (%)
3 - year bond	17-Oct-06	1232	11	-11	3.76	15
5 - year bond	28-Nov-06	1000	15	-4	3.98	20
10 - year bond	26-Sep-06	1400	26	8	3.98	30
20 - year bond	14-Oct-03	1200	24	2	4.31	0
30 - year bond	14-Feb-06	4000	38	19	4.51	20
20 - year inflation-linked	12-Apr-06	2000	--	--	2.05	10

\* Amount Auctioned

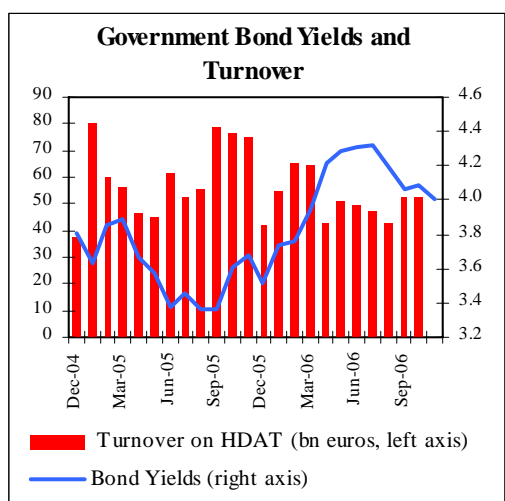
## MONETARY CONDITIONS



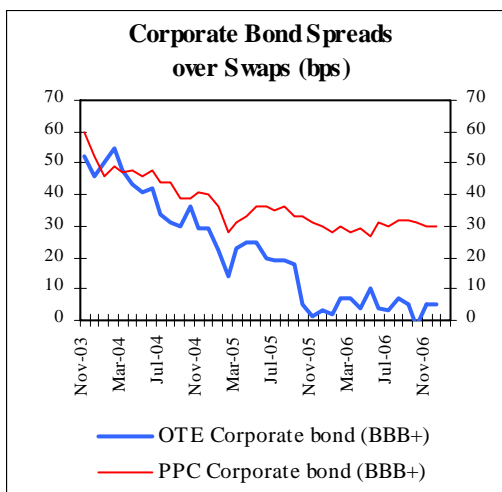
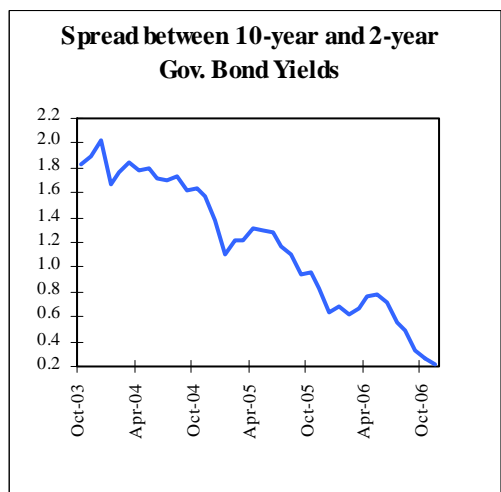
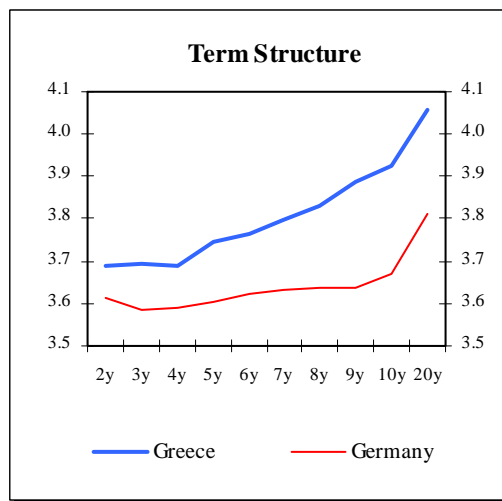
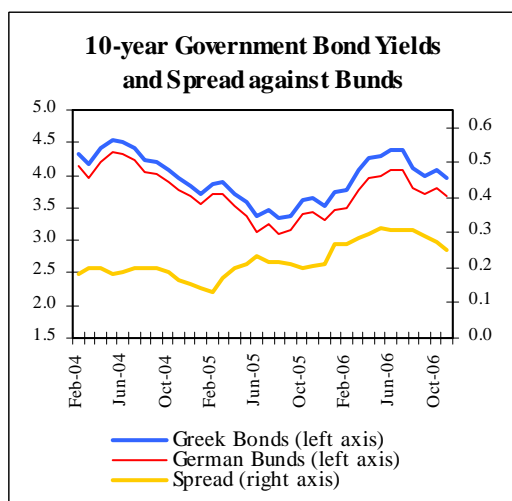
- Overall monetary and financial conditions tightened during 2006 -- nearing the average of the past eight years -- due to the ECB's rate hikes (by 125 bps since end 2005), the fall in inflation that led to higher real interest rates, and the appreciation of the euro exchange rate.
- Deposits (including repos) continued to grow at relatively high rates (11.6 per cent y-o-y in September), mainly due to time deposits, up 35.2 per cent y-o-y in September 2006 versus an average annual growth of 15.1 per cent during the past 5 years.
- Mortgage credit continues to grow rapidly by 29.9 per cent y-o-y in September, while consumer credit has lost momentum, slowing to 23.3 per cent y-o-y in September 2006.
- Looking forward, monetary conditions are expected to tighten further, as the ECB is expected to increase its intervention rate by 25-50 bps during the next 12 months, while the euro exchange rate will approach \$1.40 during the same period.



## BOND MARKET

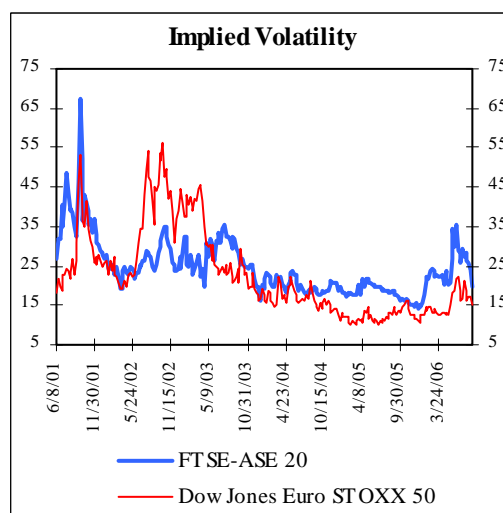
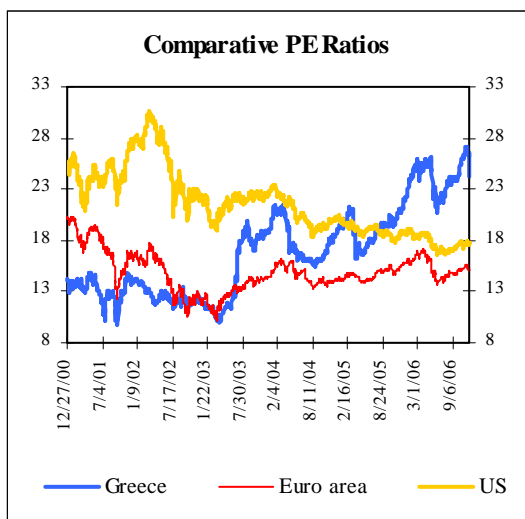
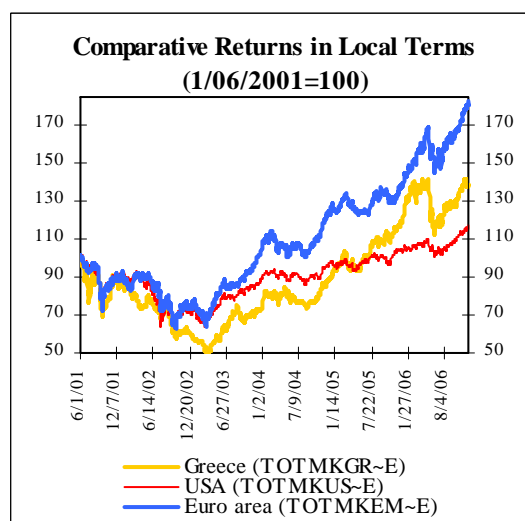
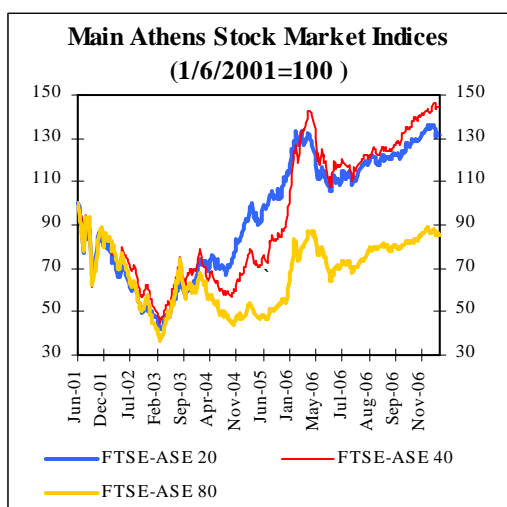


- Turnover on the paperless trading system HDAT increased sharply to €2.6 billion in November 2006, from €7.1 billion in July 2006, still remaining below the 12-month average of €5.8 billion.
- Since the beginning of 2006, the yield on the 10-year benchmark government bond has increased by 21 bps to 3.94 per cent, in tandem with the euro area bond market.
- The spread of the 10-year government bond over the benchmark bond has dropped to 25 bps in November 2006, from 31 bps in July 2006.
- The corporate bond spread over swaps for PPC increased to 30 bps in December 2006, from 28 bps in January 2006. The spread of OTE widened slightly to 5 bps in December 2006, from 2 bps in January 2006.



## STOCK MARKET

- Despite the correction that started in May -- leading to a fall by 13.7 per cent, 4.0 per cent and 9.5 per cent respectively, in Greek, US and euro area stock markets to mid-June --, Greek, US and euro area stock markets have increased by 13.0 per cent, 13.7 per cent and 32.2 per cent, respectively in local currency terms since the beginning of the year.
- In terms of valuations, the trailing 12-month P/E of a broad Greek stock market index increased to 24.3 in early-December 2006 from 22.0 in January 2006, still outpacing the euro area and the US (15.1 and 17.7 respectively), reflecting strong growth opportunities.
- Greece's stock market implied volatility increased to 19.2 per cent in early-December 2006, from 15.7 per cent in January 2006, suggesting decreased confidence in stock market valuations, albeit far below the peak of 26 per cent in May.
- Since the beginning of the year, the best performing sectors were healthcare (128 per cent), chemicals (77 per cent) and financial services (57 per cent). On the other hand, oil and gas (-10 per cent), technology (-1 per cent) and media (4 per cent) were the worst performers.



Greek Economy: Selected Indicators										
	2004	2005			2006				2006	
	year aver.	year aver.	Q3	Q4	Q1	Q2	Q3	Most recent		
<b>Real sector (y-o-y period average, constant prices)</b>										estim.
GDP	4.7	3.7	3.8	3.8	4.1	4.1	4.4	Q3	4.4	4.2
Domestic demand	4.5	2.2	2.2	2.8	4.2	5.8	4.3	Q3	4.3	4.6
Final Consumption	4.3	3.0	2.8	2.9	3.4	3.9	3.3	Q3	3.3	3.5
Gross fixed capital formation	5.2	0.0	0.6	1.7	6.9	13.9	7.6	Q3	7.6	8.7
Exports of goods and services	7.4	4.0	2.2	2.8	1.8	2.5	7.4	Q3	7.4	4.4
Imports of goods and services	5.5	-2.1	-3.0	-0.2	2.9	10.2	5.8	Q3	5.8	6,1
<b>Coincident and leading indicators (period average)</b>										
Retail sales volume (y-o-y)	4.6	3.1	3.3	1.8	4.1	9.0	11.1	Sept	12.2	...
Retail confidence (5-yr. average: 9,3)	16.7	5.7	1.6	7.0	17.7	19.0	24.3	Nov	25	...
Car registrations (y-o-y)	16.4	-3.3	1.2	-10.0	-0.2	2.9	-2.3	Nov	-3.2	...
Consumer confidence (5-yr. average: -32)	-26	-34	-33	-36	-35	-36	-33	Nov	-33	...
Industrial production (y-o-y)	1.2	-0.7	-0.4	1.3	1.3	0.6	0.6	Sept	-2.6	...
Manufacturing production (y-o-y)	1.1	-0.5	-0.4	2.3	1.4	1.3	1.0	Sept	-2.9	...
Capacity Utilization (5-yr. average: 76 )	75.3	72.3	73.4	73.2	74.1	75.9	76.1	Sept	77.8	...
Industrial confidence (5-yr. average: 0,2)	2	-6	-8	-5	0.3	4.3	5.7	Nov	3	...
PMI Manufacturing (base=50)	52.3	51.5	52.8	52.1	50.9	53.5	54.0	Nov	50.6	...
Construction permits (y-o-y)	-2.7	32.6	23.8	109.4	11.8	14.2	-3.3	Sept	-12.5	...
Construction confidence (5-yr. average: -10)	-21	-43	-47	-37	-22	-21	-1.0	Nov	-8	...
PIP Disbursements (y-o-y)	20.1	-26.1	-1.4	-11.9	-21.5	41.7	2.8	Sept	4.2	...
Stock of finished goods (5-yr. average: 12)	10	16	15	16	15	12	10	Nov	12	...
<b>External sector (period average)</b>										
Current account balance as % of GDP	-6,4	-7,9	-0,2	-3,3	-4,1	-3,2	-0,9	Sept	...	-11,4
Current account balance (EUR mn)	-10717	-14348	-422	-5993	-8000	-6277	-1760	Sept	-1167,7	-22130
Services balance, net (EUR mn)	15467	15698	7411	2299	1642	3663	7817	Sept	2038,8	15541
Current Transfers, net (EUR mn)	3629	3177	758	702	879	804	611	Sept	257	2955
Merchandise exports-- non-oil (y-o-y cum.)	13,0	7,5	8,8	7,5	7,8	11,9	12,0	Sept	12,0	...
Merchandise imports-- non-oil (y-o-y cum.)	12,8	2,6	3,5	2,6	17,4	22,9	20,6	Sept	20,6	...
<b>Employment</b>										
Unemployment rate	10,5	9,9	9,7	9,7	9,7	8,8		Q2	8,8	...
Employment rate (y-o-y)	0,9	1,3	1,0	1,2	1,7	1,6		Q2	1,6	...
<b>Prices (y-o-y period average)</b>										
Headline inflation	2,9	3,5	3,9	3,7	3,3	3,2	3,4	Oct	2,8	3,2
Core inflation	3,3	3,2	3,2	3,1	2,7	2,5	2,9	Oct	2,8	2,8
Producer prices	3,5	5,9	6,3	7,7	9,2	8,6	6,8	Sept	4,5	...
Producer prices excl.energy	4,7	3,0	2,6	4,7	6,8	7,2	7,2	Sept	6,8	...
<b>Fiscal policy</b>										
<b>MoF 2007</b>										
Government balance/GDP	-7,8	-5,2	...	...	...	...		...	...	-2,6
Government debt/GDP	108,5	107,5	...	...	...	...		...	...	104,8
Revenues--Ordinary budget (cum. % change)	6,6	4,3	4,4	6,5	18,6	12,1	9,9	Jan-Nov	8,9	...
Expenditure-- Ordinary budget (cum. % change)	10,4	2,7	6,3	5,2	-5,7	-1,4	2,6	Jan-Oct	3,5	...
<b>Monetary sector (y-o-y, end of period)</b>										
Deposits (including repos)	9,0	15,6	11,9	15,6	14,8	13,4	11,6	Sept	11,6	...
Loans to private sector	19,2	20,9	19,0	20,9	21,6	21,4	21,8	Sept	21,8	...
Mortgage loans (including securitized loans)	27,2	33,4	30,0	33,4	33,5	32,2	29,9	Sept	29,9	...
Consumer credit (including securitized loans)	37,4	28,0	30,6	28,0	27,8	24,9	23,3	Sept	23,3	...
<b>Interest rates (period average)</b>										
10-year government bond yield	4,21	3,57	3,40	3,58	3,77	4,27	4,16	Nov	3,95	...
Spread between 10 year and bunds (bps)	19	19	21	20	26	30	30	Nov	25	...
<b>Exchange rates (period average)</b>										
USD/euro	1,24	1,25	1,22	1,19	1,19	1,25	1,28	Dec	1,33	1,26
Real effective exchange rate (1995=100)	111,8	112,1	110,7	111,9	111,4	113,6	112,9	Oct	114,2	...
<b>Stock market (y-o-y end of period)</b>										
ASE capitalization/GDP (per cent)	56,7	68,7	66,4	68,7	77,7	73,0	72,0	Nov	78,0	...
ASE Index	23,1	32,4	43,3	32,4	45,5	21,6	16,2	Nov	23,6	...
FTASE	32,3	28,2	45,9	28,2	41,4	18,0	14,2	Nov	19,2	...
FTSEM	-21,3	46,1	51,0	46,1	80,0	63,2	48,2	Nov	63,1	...

Sources: BoG, NSSG, MoF, ASE, NBG

# GREECE

## Economic & Market Analysis

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Note: The Bulletin analysis is based on data up to 5 December , 2006, unless otherwise indicated.