Eurobank EFG Economic Research

Eurobank EFG

Greece: Macro Monitor

A Quarterly Review of the Greek Economy

November 2009

Twin deficits threaten medium-term macroeconomic stability

- The **Greek economy weakened significantly** in the first half of this year, with the most recent readings in a number of real activity and sentiment indicators pointing to some stabilization, though no quick turnaround in domestic economic activity.
- Given the ongoing weakness in domestic demand we have **revised downwards** our **real GDP growth forecast for 2009 to -1.3% from -1.0% GDP seen earlier** and we now expect the economy to remain weak throughout next year. Real GDP growth expected to **decline by a further 0.5% YoY** in 2010.
- In our view, **a return to strong and sustainable growth rates** requires **a transition of the Greek economy** towards a more exports-oriented (and less consumption-dependent) model of development. To this end, structural reforms are needed to reclaim steep competitiveness loses incurred in recent years.
- On the fiscal front, **the 2009 general government budget deficit risks exceeding 13.0%-of-GDP** on collapsing revenue and sizeable expenditure overruns. Furthermore, **the debt ratio is likely to approach 115%-of-GDP this year, with a further 8-10ppts-of-GDP rise expected in 2010.**
- More worryingly, without bold corrective measures, **the debt ratio could undertake a further *explosive* rise** in the next 3 -4years.
- In view of these developments, **the 2010 budget will include corrective measures**, which will reportedly aim to reduce the deficit to 9.0%-9.5%-of-GDP in 2010. The new government is also expected to ask for a 3-4 year reprieve to correct its excessive deficit. In return for its acquiescence, the European Commission is likely to ask Greece to take measures of more permanent nature to reduce its deficits

Read also in this issue:

- A new **econometric model** that purports to explain the rise in **Greek government bond yield spreads** following the onset of the subprime crisis in July 2007
- A special study **on the competitiveness** of the Greek economy

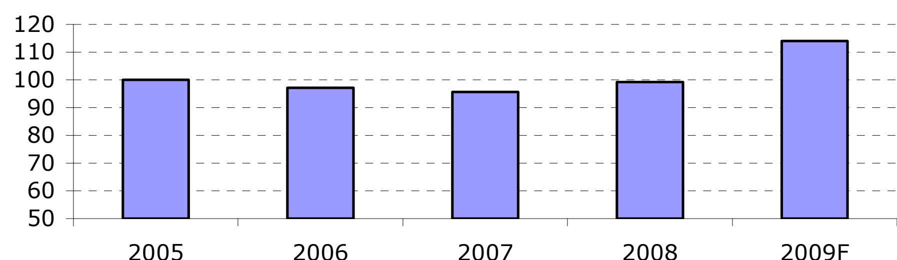
Written by:

Gikas Hardouvelis
Chief Economist
Director of Research
HGHardouvelis@eurobank.gr

Platon Monokroussos
Head of Financial Markets Research
HPMonokrousos@eurobank.gr

Theodoros Stamatiou
Research Economist
THStamatiou@eurobank.gr

Gross public debt (% GDP)



Source: Official statistics & Eurobank EFG Research

Summary

Main opposition socialist party, PaSoK, won a landslide majority in the October 4 general election, getting ca 43.9 percent of the vote and 160 seats out of 300 seats in parliament. The defeated conservative New Democracy (ND) party, which swept to power in 2004, trailed behind with 33.4 percent of the vote and 91 of parliamentary seats. PaSoK leader and current Prime Minister George Papandreou defeated Costas Karamanlis, the outgoing prime minister and president of ND, on a pre-election platform promising a ca €2.5bn stimulus package to help revive the economy from its worst slump in more than a decade. Mr. Papandreou pledged to pass five bills during the new government's first 100 days. The proposed legislation will aim to reignite the domestic economy, while helping to reduce public-sector waste and assist middle- and low-income earners, primarily via a more progressive tax system.

The Greek economy weakened significantly in the first half of this year, with the most recent readings in a number of real activity and sentiment indicators pointing to some stabilization, though no quick turnaround in domestic economic activity. According to the latest (preliminary) national accounts statistics, real GDP growth in seasonally adjusted terms contacted by 0.3%YoY in 2Q 09, after rising by 0.3%YoY in the prior quarter. For the whole period January-June 2009, annual GDP growth was broadly flat, having recorded positive growth of 3.3% in the same period a year earlier. On a quarter-on-quarter basis, Greek GDP grew by 0.2% in the second quarter of this year, following a 1.2% contraction in 1Q 09 and positive growth of 0.3% in the last quarter of 2008.

In view of the ongoing weakness in domestic demand we have revised downwards our real GDP growth forecast for 2009 to -1.3% from -1.0% GDP seen earlier and we now expect the economy to remain weak throughout next year (real GDP growth expected to decline by a further 0.5% YoY in 2010). Certain country-specific cyclical and structural characteristics of the Greek economy have so far acted as buffers to global contagion, allowing it to maintain a positive growth differential vis-à-vis the euro area. Yet, significant medium-term risks to the domestic economic outlook exist, especially in view of a more difficult external environment and the fading out of exceptional factors that supported growth in recent years, including the sharp decline of domestic interest rates following the country's EMU entry.

In our view, a return to strong and sustainable growth rates requires a transition of the Greek economy towards a more exports-oriented (and less consumption-dependent) model of development. To this end, structural reforms are needed to reclaim steep competitiveness loses incurred in recent years. The difficulty with the latter endeavor is that such reforms, along with efforts to overhaul the public sector and cut red tape in the Greek economy need to be implemented in an environment of weak economic growth and a complete lack of room for the implementation of counter-cyclical economic policies.

On the fiscal front, the 2009 general government budget deficit risks exceeding 13.0%-of-GDP on collapsing revenue and sizeable expenditure overruns. Furthermore, the debt ratio is likely to approach 115%-of-GDP this year, with a further 8-10ppts-of-GDP rise expected in 2010. More worryingly, without bold corrective measures, the debt ratio is likely to remain on a rising trend over the next 3-4 years, reaching or even exceeding 135%-of-GDP by the end of the corresponding period. In view of these developments, the 2010 budget will include corrective measures, which will reportedly aim to reduce the deficit to 9.0%-9.5%-of-GDP in 2010. The new government is also expected to ask for a 3-4 year reprieve to correct its excessive deficit. In return for its acquiescence, the European Commission is likely to ask Greece to take measures of more permanent nature to reduce its deficits

Read also in this report:

a) a new econometric model that purports to explain the rise in Greek government bond yield spreads following the onset of the subprime crisis in July 2007

b) A special study on the competitiveness of the Greek economy

Table of key macro-data: Realisations & projections			
y/y growth	**2008**	**2009 Eurobank EFG forecasts**	**2010 Eurobank EFG forecasts**
GDP (constant prices)	**2.0**	**-1.3**	**-0.5**
Private consumption	2.3	-1.4	-0.5
Government consumption	0.6	5.5	0.7
Gross capital formation	-2.5	-19.5	-1.0
Domestic demand	**1.0**	**-4.1**	**-0.4**
Exports g&s	4.0	-12.5	2.0
Imports g&s	0.2	-17.8	1.7
Harmonised CPI (average)	**4.2**	**1.0**	**1.6**
Current account balance (% GDP)	-14.4	-11.0	-12.5
Budget deficit (% GDP)	**-7.7**	**-13.5**	**-10.0**
Public debt (% GDP)	99.2	114.6	126.5
Unemployment rate	**7.7**	**9.5**	**10.5**

Source: Realisations & Eurobank EFG forecasts - as of 1.10.2009

Part A
Economic & Political Developments

New government´s plan to revive economic growth, promote fiscal consolidation
Main opposition socialist party, PaSoK, won a landslide majority in the October 4 general election, getting ca 43.9 percent of the vote and 160 seats out of 300 seats in parliament. The defeated conservative New Democracy (ND) party, which swept to power in 2004, trailed behind with 33.4 percent of the vote and 91 of parliamentary seats. PaSoK leader and current Prime Minister George Papandreou defeated Costas Karamanlis, the outgoing prime minister and president of ND, on a pre-election platform promising a ca €2.5bn stimulus package to help revive the economy from its worst slump in more than a decade. Mr. Papandreou pledged to pass five bills during the new government's first 100 days. The proposed legislation will aim to reignite the domestic economy, while helping to reduce public-sector waste and assist middle- and low-income earners, particularly via a more progressive tax system[1].

In particular, the first bill would raise public-sector wages and pensions slightly above the inflation rate[2]. The bill would also grant the poor a "solidarity" payment, and introduce a progressive taxation scheme for all income earners where income from all sources would be treated uniformly (after the appropriate adjustments to avoid double taxation). Distributed corporate earnings in the form of dividends to individuals would be included in this system, after deducting (the lower) tax on retained earnings. The latter would remain at its current lower level, but certain tax breaks deemed unnecessary would be abolished. The government is also planning to abolish ETAK (the Uniform Property Tax) and reintroduce a steeper, more progressive property tax, with a higher level of tax relief at the lower end. Finally, it will reintroduce a progressive inheritance tax, again with generous relief at the lower end.

The second bill would aim to protect people who face difficulties paying back their bank loans by providing gradual dispensation to those in proven need. The bill would also aim to combat the high cost of living, which would include a stronger competition agency to get tough on cartels.

The third bill is designed to increase liquidity in the market by providing loans on favourable terms to small- and medium-sized businesses (SMEs). It would freeze for one year the repayment of loans for SMEs hit by the crisis and/or give them the possibility to roll over their debt. It would provide guarantees (security) directly to firms based on objective criteria. It would provide liquidity to the market via TEMPME (Surety Fund for Small and Very Small Entreprises) by activating the currently frozen guarantees worth €15bn of the Government's bank support scheme. It would create a Re-financing Fund for the Economy which would raise capital for the purpose of supporting specific sectors and provide liquidity directly to the market.

The fourth bill is meant to boost entrepreneurship by simplifying the tax system as well as the bureaucracy faced by start-ups. It would also open up the scores of "closed-shop" professions, as demanded by the European Commission.

The fifth bill would aim to tackle the effects of the economic crisis on the job market. It would strengthen labour inspectors, and unemployment benefit would rise gradually to 70% of the basic wage. (It is now at 63%; the Government estimates the cost of this at €300m annually.) It would institute incentives for firms to hire the young via a generous programme of subsidising social-security contributions for four years.

The new government is planning to finance the programme by: a) slashing public waste and placing public-sector outlays under greater transparency b) clamping down on widespread tax evasion and c) imposing a tax

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[1] For a more thorough analysis on the new government´s announced economic program please see ''Greece: Politics, Economics and Markets – Latest Developments and Trends'', written in September 2009 by Constantine A. Papadopoulos, Advisor on European Affairs, Eurobank EFG

[2] The prior government, which called for a wage freeze in the public -sector put the cost of this measure at over €300m.

on the properties owned by the Church of Greece. It is also planning to freeze prices at state-controlled utilities and increase public investment to 4% of GDP, though it has already admitted that it would take more than two years for Greece to meet the budget-deficit limit applying to EU countries. (To this end, the government will try to secure at least a two-year reprieve until 2012 to reduce its excessive deficit).

The government has also promised to make Greece's economy more environmentally-friendly and to increase spending on education to 5% of GDP over four years, from a little over 3% today, setting aside an extra €1bn for the sector in the FY2010 budget. Spending on R&D would also increase to 2% of GDP over the same time horizon, from 0.57% today (the total cost of increasing spending on education and R&D is put by the Government at €7.8bn). ND officials put the cost of the government´s programme at about €10.7bn, an amount no government allegedly could afford in the next few years. PaSoK has estimated the cost of its first-100-days plan at around €2.5bn and noted that the overall cost of its entire economic programme should be spread over a four-year period.

Part B
Macroeconomic Outlook

The Greek economy weakened significantly in H1 2009…

The Greek economy weakened significantly in the first half of this year, with the recent improvement in a number of real activity and sentiment indicators pointing to some stabilization, though no quick turnaround in domestic economic activity. According to the latest (preliminary) national accounts statistics, real GDP growth in seasonally adjusted terms contacted by 0.3%YoY in 2Q 09, after rising by 0.3%YoY in the prior quarter. For the whole period January-June 2009, annual GDP growth was broadly flat, having recorded positive growth of 3.3% in the same period a year earlier. On a quarter-on-quarter basis, Greek GDP grew by 0.2% in the second quarter of this year, following a 1.2% contraction in 1Q 09 and positive growth of 0.3% in the last quarter of 2008[3].

…But domestic growth outperformed the rest of the euro area

Until last June, the domestic economy had not officially entered recession, at least in the technical definition of the term, which requires two consecutive quarters of negative GDP growth. The performance of the Greek economy in H1 2009 compares favorably with the rest of the euro area and, especially, with the more open and industrialized EU peers[4]. Among other reasons, this can be attributed to certain country-specific characteristics, including Greece's relatively low dependency on exports, strong real wage gains and significant EU fund inflows. These factors acted as buffers to global contagion, allowing the Greek economy to feel the effects of the world recession with a time lag and with less severity than the majority of its regional and EU peers. Yet, a closer look at the breakdown of the more recent national accounts statistics reveals certain worrying trends that make us less optimistic about the near-tern outlook of the Greek economy and, particularly, the speed and dynamism of any recovery in domestic economic activity.

Contraction in domestic demand outweighs positive contribution from net exports

With regard to GDP components, final consumption fell by 0.9% YoY in Q2 after recording positive growth of 1.0% YoY in each of the prior two quarters, with higher public spending only partially offsetting a pronounced decline in private consumption over the same period. Private consumption fell by 2.0% YoY in Q2, bringing its overall pace of decline in the first half of this year to -1.1% YoY[5]. Elsewhere, gross fixed investment growth remained in a negative territory for the 7th consecutive quarter in Q2 09 (-16.5% YoY), reflecting weakness in business investment and continuing problems in the domestic residential market. With regard to external-sector developments, net exports remained a positive contributor to overall growth as the pace of decline of the imports of goods and services (-21.8YoY) continued to outpace that of exports (-10.9% YoY).

Higher-frequency indicators signal some stabilization in domestic economic activity

The most recent readings in a number of key survey data and real activity indicators point to some stabilization in the pace of contraction of domestic economic activity following the significant downturn recorded in the first half of this year. With regard to **consumer-related indicators,** the EC **consumer confidence index** for Greece improved to -39 in September, from a record low of -56 hit in February, tracking the recent rebound in sentiment recorded in other Euro zone countries. Elsewhere, the **volume of retail sales** excluding fuels and lubricants contracted by 11.2% in annual terms in H1 09, with the July reading *(+4.8/-9.8% mom/yoy)* pointing to a tentative stabilization in the volume of sales. On a less positive note, **registration of new passenger vehicles** fell by 20.5% YoY in the first three quarters of 2009, following a 6.8% YoY drop last year. These unfavorable developments occurred despite a number of special measures adopted by the previous government last spring to support sales, including the temporary abolition of a special car registration tax. They also reflect a sharp reduction in bank financing for the purchases of consumer durables since the last quarter of 2008. With regard to expectations of domestic retailers, the **EC retail trade confidence indicator** for Greece hit a 10-year

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[3] Note that the GDP data for the first two quarters of 2009 are subject to revision as the National Statistics Service has recently revised its national accounts data for the period 2007-2008.

[4] The Euro zone economy contracted by -2.5/4.9 QoQ/YoY and -0.2/4.7% QoQ/YoY in the first and second quarters of this year, respectively.

[5] Private consumption (~70% of GDP currently) has been the primary driver of GDP growth in recent years, having grown by an average annual rate of 3.6% in the period 2004-2008.

low of -38 in March, reflecting worsened conditions in the domestic retail market. But, retailer confidence has recovered since then, coming in at an 11-month high of -6.8 in September. **In the industrial sector,** total output contracted by 9.5% YoY in H1 09, weighed down by weakness in domestic manufacturing (-12.0% YoY) and lower production in the mining and power sectors. The significant contraction in domestic industrial output since Q4 08 followed a sharp inventory build up in the prior quarter and reflects ongoing inventory destocking, weaker demand for domestically produced export goods by main trading partners and the domestic demand slowdown. On a somewhat more positive note, the recent improvement in global trade and conditions in major trading-partner economies point to a gradual recovery in domestic industrial output as suggested by the most recent survey data for the sector. Specifically, the index of **business expectations in manufacturing** declined in March to levels not seen since the early 80s, but recovered since then, hitting a 9-months high of -24 in September. Separately, the **PMI manufacturing index for Greece**, bounced in August above the key boost-or-bust level of 50, signaling expansion in the sector for the first time since October 2008. All major PMI sub-indices improved in August, with the key output and new orders components coming in at 51.2 and 54, respectively. Finally, the **capacity utilization rate** in industry stood at 70.8 in August, up slightly from an average rate of 70.2 in H1 09, but down significantly relative to a long-term average of 75.

Full-year GDP growth seen contracting this year and the next

Given the weakness of private consumption so far this year and the lack of any convincing signs of a swift turnaround in investment activity we have revised downwards our real GDP growth forecasts for 2009 to -1.3% from -1.0% GDP earlier and we now expect the economy to remain weak throughout next year *(real GDP growth expected to decline by a further 0.5% YoY in 2010).* From a more medium-term perspective, domestic economic prospects remain clouded by uncertainty regarding the extent and duration of the global economic downturn. On a more positive note, the strong rallies in global financial markets since March and the recent stabilization in a broad range of real activity and sentiment indicators suggest that the worst of the world economic recession may have already been seen. Accordingly, private-sector forecasters and international organizations such as the IMF and the OECD have recently revised their GDP growth forecasts for the world economy and the economies of major industrialized countries to reflect a relatively faster return to positive growth. The IMF now forecasts world GDP to shrink by 1.1% this year against an earlier projection for a 1.4% contraction, while a return to positive growth is expected in 2010, with GDP growth now seen at 3.1% vs. 2.5% expected previously. For the Eurozone economy, the Fund has recently revised upwards its 2009 and 2010 GDP projections to -4.2% and 0.3%, respectively from -4.8% and -0.3%, previously. For the Greek economy, the IMF forecasts growth rates of -0.8% and -0.1% for this year and the next, but these projections constitute upward revisions from the rates of contraction expected previously[6]. In spite of these positive developments, considerable uncertainty remains with regard to the longer-term outlook of the world economy. The latter is especially in view of the need to eventually withdraw the unrepresented fiscal and monetary stimulus currently in place so as to avoid unacceptably high inflation and the creation of new asset bubbles. These considerations have lately seen several prominent economists and commentators to underline the risk of a shift to lower rates of potential growth in industrialized economies relative to pre-crisis levels and even that of a ‘‘double dip’’ in the world economy once the current policy stimulus is withdrawn.

We forecast a lower-than-previously-expected domestic growth trajectory for the Greek economy over our forecasting horizon. As we have noted already, certain country-specific cyclical and structural characteristics of the Greek economy have so far acted as buffers to global contagion, allowing it to so far maintain a positive growth differential vis-à-vis the euro area. Yet, significant medium-term risks to the domestic economic outlook exist, especially in view of the more difficult external environment and the fading out of exceptional factors that supported growth in recent years, including the sharp decline of domestic interest rates following the country’s EMU entry and the hosting of the 2004 Olympic Games. In our view, a return to strong and sustainable growth rates requires a transition of the Greek economy towards a more exports-oriented (and less consumption-dependent) model of development. To this end, structural reforms are needed to reclaim steep competitiveness loses incurred in recent years. The difficulty with the latter endeavor is that such reforms,

[6] In a special county report for the Greek economy published in August 2009, the IMF forecast GDP growth of -1.7% in 2009 and -0.4% in 2010 *(IMF Country Repot No. 09/244).*

along with efforts to overhaul the public sector and cut red tape in the Greek economy need to be implemented in an environment of weak economic growth and a complete lack of room for the implementation of counter-cyclical economic policies.

Residential housing sector continues to contract

In the domestic construction sector, the sharp decline in **residential building activity** that started in mid-2007, continued uninterrupted in the first half of this year, reflecting a further rise in the inventory of unsold houses and tightened credit conditions. Private **building permits** in volume terms declined by 26.5%YoY in H1 09, with the most recent reading (-27.3%YoY in July) pointing to no significant improvement in the sector over the coming few months. Reflecting these unfavorable trends, the index of **business expectations in the domestic construction sector** hit in May its lowest level since the period immediately after the completion of the 2004 Olympic Games. The said index recovered thereafter to stand at -39 in September (latest available data). In a bid to help prop up activity in the domestic construction sector, the government announced in late April a series of **assistance measures for prospective homebuyers**, ranging from state guarantees on new mortgage loans to increased tax relief on interest payments on such loans. The new measures will allow bank loans to cover up to 100 percent of a property's commercial value, up from the 75 percent allowed under current banking practices. These measures along with the influx of EU structural funds and the implementation of projects aiming to reap the benefits of the new investment law and the framework for public-private partnerships are likely to alleviate continuing downward pressures in domestic construction activity in the period ahead. Yet, construction investment is again expected to record negative growth this year on the back contracting domestic demand and tightened lending conditions.

Long-awaited downward adjustment is domestic home prices began already

With regard to **price developments** in the **residential sector**, the most recent official data shows that the first half of 2009 witnessed a continuation of the deceleration trend in the general level of prices that began in early 2006. Specifically, according to Bank of Greece data covering a number of urban residential areas outside Athens, home prices fell by 4.3/2.5% QoQ/YoY in the first quarter of this year, after rising by 2.6% YoY in the full-year 2008. This was the first quarterly decline in prices, following average annual gains of more than 8.0% in the period 2000-2008. In Athens, residential prices retreated by 5.8% cumulatively in H1 09, following average annual growth of around 9% in the last nine years. The latter data suggest that the long awaited downward adjustment is domestic home prices has already started to occur, albeit with a time lag relative to other EU countries than experienced strong housing booms in recent years. Strong construction investment, mainly in the residential housing sector, has been a powerful driver of domestic GDP growth in 2001-2007.[7] But, the sharp downturn in domestic residential investment since 2007 has weighed heavily on **domestic gross fixed capital formation** in recent quarters. The latter contacted by 11.4%YoY in real terms in H1 09, following annual growth rates of -7.4% and +4.6% in the years 2008 and 2007, respectively.

Labor market conditions likely to deteriorate further

In the domestic labor market, after reaching a multi-year low of 7.2% in the second quarter of 2008, the unemployment rate embarked upon a rising trajectory, hitting a 3-year high of 9.6% in July 2009. This compares with a similar jobless rate in EU-16 over the same month. Unemployment was particularly pronounced in the broader Athens region, being affected by the continuing recession in the residential construction sector and job cuts in the tourism sector. More worrying - and reflecting persisting structural rigidities in the domestic labor market - the most recent data showed unemployment in the 15-24 age group stood at 23.9% in July 2009, among the highest in the euro area, with unemployment affecting women (13.8%) more significantly than men (6.6%). Weak domestic demand is likely to put more pressure in the domestic labor market with the unemployment rate seen rising further in the coming months. (Eurobank EFG Research sees unemployment rising to levels 10% or higher in the first half of 2010). In response to worsening domestic employment prospects the previous government announced in early April a €2.5bn assistance program, which included subsidies to existing jobs and additional public-sector hiring, aiming to support the young and those working in tourism, construction and small businesses.

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[7] Total construction investment (both public & private) currently accounts for slightly over 10%-of-GDP.

Regarding domestic prices developments, the credit crunch and weakening demand dynamics post the Lehman Brothers collapse unleashed significant deflation pressures, facilitating a steep decline in domestic inflation. After rising to a seven-year high of 4.9% YoY in June last year, Greek CPI embarked upon a significant deceleration recording a 40-year low of 0.5%YoY in May 2009, before moving marginally higher to come in at 0.7% YoY in September. We expect domestic inflation to edge slightly above 1.0% YoY in Q4, mainly as a result of base effects from the sharp decline in world oil prices during the same period a year earlier. For the full year, we expect the average headline CPI to fall to 1.1% in 2009 from 4.2% YoY in 2008. Looking further ahead, Greece's inflation outlook is surrounded by an unusually high degree of uncertainty. This is especially in view of the significant ambiguity surrounding the expect of domestic demand slowdown, the duration and intensity of global disinflationary forces and the new measures the newly-formed government may need to take to contain mounting fiscal deficits.

With regard to domestic credit developments, the most recent data reveal an ongoing deceleration in the growth of lending to domestic households by domestic Monetary Financial Institutions *(MFI).* Total outstanding balances of MFI loans to domestic enterprises and households was growing at an annual rate of 8.8% YoY in May, less than half the rate recorded in the same month a year earlier and the corresponding average of the prior 5-year period. The corresponding growth in the outstanding balances of housing loans and consumer credit were 6.9% YoY and 8.4% YoY, respectively in the same month. The annual growth of domestic MFI lending to domestic households is expected to decelerate further in the coming months and average around 4-5% YoY in 2009.

Greece: Key Macroeconomic & Market Indicators	Last	1H 2009	2008	2007
Consumer-vigor indicators				
Private consumption in constant prices (% YoY)	-2.0 (Q2 09)	-1.1	2.2	3.0
Retail sales excl. fuels & lubricants volume (% YoY)	-9.8 (Jul. 09)	-11.2	-1.4	2.3
New car registrations (% YoY)	-35.1 (Sept 09)	-28.7	-6.8	3.8
Consumer confidence (e.o.p. index level)	-39 (Sept 09)	-45	-56	-29.1
Retail trade expectations (e.o.p. index level)	-6.8 (Sept 09)	-12	-20	33.8
Industrial-activity indicators				
Industrial production (% YoY)	-9.0 (Aug 09)	-9.5	-4.0	2.3
manufacturing output (% YoY)	-9.8 (Aug 09)	-12.0	-4.7	2.3
Capacity utilization in industry (e.o.p rate)	70.8 (Aug 09)	70.2	73.8	77
Industrial confidence (e.o.p. index level)	-24 (Sept 09)	-28	-24	2.1
Manufacturing PMI (e.o.p. index level)	51.1 (Aug 09)	47.7	41.0	53.7
Construction sector & other investment-activity indicators				
Cross fixed capital formation in constant prices (% YoY)	-16.5 (Q2 09)	-11.4	-11.5	4.9
Housing investment in constant prices (% YoY)	-23.3 (Q1 09)	-21.5	-27.2	-3.4
Other construction in constant prices (% YoY)	8.8 (Q2 09)	22.4	11.6	22.7
Private building permits volume (% YoY)	-27.3 (Jul 09)	-26.5	-17.1	-5.0
Construction confidence (e.o.p. index level)	-39 (Sept 09)	-41	-21	-16
National accounts statistics - *volume*				
Exports of goods & services (% YoY)	-10.9 (Q2 09)	-15.6	2.2	3.1
Imports of goods & services (% YoY)	-21.8 (Q2 09)	-19.2	-4.4	6.7
Balance-of-Payments statistics *(euro-terms)*				
Tourism revenues (% YoY)	-16.7 (Jul 09)	-15.5 (Jan-Jul)	3.0	-0.3
Transportation revenues (% YoY)	-38.1 (Jul 09)	-30.1 (Jan-Jul)	13.3	18.3
Customs-based statistics *(€ - terms)*				
Goods exports (% YoY)	-12.8 (Aug 08)	-18.6 (Jan-Jul)	1.1	4.3
Goods exports to EU (% YoY)	-10.9 (Aug 09)	-24.7 (Jan-Jul)	-0.1	24.5
Goods exports to non-EU countries (% YoY)	-15.6 (Aug 09)	-6.2 (Jan-Jul)	3.4	-19.8
Goods imports (% YoY)	-37.0 (Aug 09)	-36.4 (Jan-Jul)	9.0	9.7
Goods imports from EU (% YoY)	-14.6 (Aug 09)	-21.6 (Jan-Jul)	3.5	15.9
Goods imports from non-EU countries (% YoY)	-59.1 (Aug 09)	-55.2 (Jan-Jul)	20.3	2.9
Domestic MFI credit to domestic enterprises & households *(oustanding balances)*				
Private sector (% YoY)	6.6 (Jul 09)	----	16.4	21.5
Enterprises (% YoY)	7.9 (Jul 09)	----	19.8	20.6
Households (% YoY)	5.2 (Jul 09)	----	12.8	22.4
Housing loans (% YoY)	5.2 (Jul 09)	----	11.4	21.9
Consumer credit (% YoY)	5.8 (Jul 09)	----	16.0	22.4
Private-sector credit outstanding (% GDP)				
Total domestic enterprices & households	103.3% (Jul 09)	----	103	94
Domestic households	48.8% (Jul 09)	----	48	50

Source: National statistics, Eurobank EFG Research

Special Focus I

Greece: Fiscal developments & outlook

Key points:

- **2009 fiscal deficit likely to exceed 13.0%-of-GDP on collapsing revenue and sizeable expenditure overruns. The debt ratio is likely to approach 115%-of-GDP this year, with a further 10ppts-of-GDP rise expected in 2010**

- **More worryingly, without bold corrective measures, the debt ratio is likely to remain on a rising trend over the next 2-3years, reaching or even exceeding 140%-of-GDP by the end of the corresponding period**

- **Greek government likely to ask for a 3-4 year reprieve to correct its excessive deficit. In return for its acquiescence, the Commission is expected to ask Greece to take measures of more permanent nature to reduce its deficits**

Eurostat revises upwards its past EU-27 deficit and debt estimates…

Eurostat released on October 22 revised government deficit and debt data based on figures reported in the second 2009 notification by EU Member States for the years 2005-2008. The new data showed an upward revision of 0.1ppts-of-GDP to the 2008 general government budget deficit of the euro area. This is now estimated to have risen to 2.0%-of-GDP, from 0.6%-of-GDP in the prior year. For the whole EU-27, the estimated deficit in 2008 was 2.3%-of-GDP, same as that reported in April 2009 i.e., following the prior data notification by Member States. In those lines, the government debt ratio in the euro area is estimated to have risen to 69.3%-of-GDP last year, from 66.0%-of-GDP in 2007, while, at the EU-27 level, the corresponding ratios stood at 61.5%-of-GDP in 2008 and 58.7%-of-GDP in 2007. The three EU-27 States with the largest government deficit-to-GDP ratios in 2008 were Greece (7.7%), Ireland (7.2%) and Romania (5.5%). Furthermore, at the end of last year, the three Member States with the largest debt-to-GDP ratios in descending order were Italy (105.8%), Greece (99.2%) and Belgium (89.8%).

…with the most significant revisions implemented in the Greek data

The new Eurostat figures show that the biggest revisions to the 2005-2008 fiscal data were for Greece. The country's general government deficit in 2008 was re-estimated at 7.7%-of-GDP, or 2.7ppts-of-GDP higher relative the figure reported back in April 2009[8]. Upward revisions - of 0.1ppts-to-GDP per annum - were also made in the estimated deficits of the years 2005 and 2006. Elsewhere, Greece's general government debt-to-GDP ratio at the end of 2008 was re-estimated at 99.2%-of-GDP or 4.8ppts-of-GDP higher relative to the prior figure (April 2009). According to Eurostat calculations, 2.6ppts-of-GDP of the total upward adjustment in the Greek deficit ratio in 2008 was due to revisions in past fiscal data, with the remaining 0.1ppts being attributed to a lower than previously estimated GDP. Note that the Greek statistics office recently revised downwards its 2008 estimates for gross domestic product. In current prices, the latter came in €239.14bn last year vs. €248,556bn estimated previously[9]. Tables A.1 and A.2 below shows the new estimates for Greece's government deficit and debt data in the period 2005-2008 along with the magnitude of the recent revisions (in percentage points-of-GDP terms).

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[8] The second biggest revision was to the deficit of Slovenia, which is now estimated to have reached 1.8%-of-GDP last year, or 0.9ppts-of-GDP higher relative to the prior estimated.

[9] See revised Stability and Growth Programme 2008-2011.

Table A.1

Greece - Revised government deficit & debt ratios	2005	2006	2007	2008
Government expenditure (%GDP)	43.8	42.9	44.4	48.3
Government revenue (%GDP)	38.5	39.7	40.4	40.6
Government deficit (million euro)	-10,068	-6,110	-8,287	-18,507
Government deficit (%GDP)	-5.2	-2.9	-3.7	-7.7
Government debt (million euro)	195,421	204,423	216,401	237,196
Government debt (%GDP)	100.0	97.1	95.6	99.2

Table A.2

Greece - Revisions of government deficit & debt ratios (in ppts-of-GDP)	2005	2006	2007	2008
Revision in deficit-to-GDP ratios*	-0.1	-0.1	0.0	-2.7
- due to revision of deficit/surplus	0.0	-0.1	0.0	-2.6
- due to revision of GDP	-0.1	0.0	0.0	-0.1
Revision in debt-to-GDP ratios**	1.2	1.3	0.7	1.6
- due to revision of deficit/surplus or debt	0.0	0.0	0.0	0.0
- due to revision of GDP	1.2	1.3	0.7	1.6

Source: Eurostat
* minus sign denoted rise in the deficit (and vise versa)
** positive sign denotes rise in the debt ratio (and vise versa)

Execution of 2009 budget underperforms official targets...

The most recent data on the budget execution suggest that the earlier official fiscal targets for the current year will be exceeded by a large margin[10]. In view of these developments, the Ministry of Finance has recently revised its forecasts for the 2009 government deficit and debt ratios, as reported in table B. Specifically, the 2009 deficits of the central government and the general government budgets are now expected to reach 13.3%-of-GDP and 12.5%-of-GDP, respectively[11]. These new projections compare with earlier official targets of 5.1%-of-GDP for the central government deficit and 3.7%-of-GDP for the general government deficit, as these appeared in the country's revised Stability and Growth Pogramme (SGP 2008-2011).

Table B

Official deficit and debt forecasts	2009 Budget	SGP (2008-2011)	EDP notification (Oct. 09)
General government balance (%GDP)	-2.0	-3.7	-12.5
Central government balance (%GDP)	-3.4	-5.1	-13.3
General government debt (%GDP)	91.4	96.3	112.9

Source: 2009 Budget, Hellenic Stability and Growth Programme (2008-2011) & Eurostat

...due to weak revenue growth...

Gross ordinary budget revenue in January-August 2009 amounted to €34.43bn, covering around 54.7% of the full-year target[12]. This was lower than the corresponding coverage in the same period a year earlier (63.2%). In annual terms, gross ordinary revenues in the first eight moths of 2009 contracted by 1.5%YoY, a rate lower that nominal GDP growth of around +0.5% over that period (Eurobank EFG Research estimate). Besides the well-documented existence of widespread tax evasion, certain other developments contributed to the underperformance of gross ordinary revenue in the January-August 2009 period. These included a decline of more that 10%YoY in VAT receipts and higher tax returns. The latter rose by 24.2%YoY in the first eight months of this year, as authorities presumably front-loaded 2009 returns in a bid to boost liquidity in the domestic

[10] The 2009 budget law, which was ratified by the Greek parliament in December 2008, targeted a general government budget deficit of 2.5%-of-GDP, based on a real GDP growth forecast of +2.7% for the current year. These official projections were subsequently revised downwards to 3.7%-of-GDP for the fiscal deficit and +1.1% for real GDP growth in 2009 (Revised Stability and Growth Programme 2008-2011).
[11] See *Reporting of government deficit/surplus and debt levels and provision of associated data*, Greece, Oct. 2, 2009
[12] The said full-year target corresponds to that envisioned in the revised Stability and Growth Programme 2008-2011.

economy. Reflecting these developments, total revenues after tax returns in the central government budget totaled €32.68bn in January-August 2009 or ca 52% of the corresponding full-year target. For a more detailed presentation of the execution of 2009 budget please see table C.

...and significant expenditure overruns

From the expenditure side, central government budget outlays rose 14.3% YoY to €53.56bn in January-August 2009, covering around 70.8% of the corresponding full-year target. As a result of the above, the overall deficit of the central government balance reached €20.88bn in the first eight months of this year, an amount equivalent to 8.7% of the official 2009 full-year nominal GDP projection. As we noted earlier, the 2009 budget law foresaw a central government deficit of just 3.4%-of-GDP, which was subsequently revised to a deficit projection of 5.1%-of-GDP (SGP 2008-2011). The underperformance of this year's official fiscal targets led to a higher-than-initially planned borrowing requirement. The Greek State has so far raised from the markets some €62.46bn vs. an originally-planned full-year amount of €42bn. More public funding is likely in Q4 with the full-year amount expected at around €70bn.

Table C - Budget exectution in January-August period

(Preliminary data - cash basis accounting - in million euro)

	2008	2009	2008	2009		
	Jan-Aug	Jan-Aug	Estimates	2009 budget forecasts	SGP 2008-2011 forecasts	% coverage of 2009 target
	(1)	(2)	(3)	(4)	(5)	(6=2:5)
Ordinary budget						
1. Net revenue (α-β)	**32.458**	**31.333**	**51.660**	**62.272**	**59.287**	**52,8**
α.Gross revenue	34.953	34.432	55.313	65.572	62.987	54,7
β. Tax returns	2.495	3.099	3.653	3.300	3.700	83,8
2. Expenditure (α+β)	**40.998**	**46.598**	**60.925**	**65.978**	**66.878**	**69,7**
α. Primary expenditure	31.971	36.579	49.715	53.978	54.778	66,8
β. Interest rate outlays	9.027	10.019	11.210	12.000	12.100	82,8
Public Investment Budget						
3.Revenue	**3.224**	**1.347**	**4.978**	**3.700**	**3.700**	**36,4**
4. Expenditure	**5.858**	**6.958**	**9.624**	**8.800**	**8.800**	**79,1**
5.Central government deficit (1-2+3-4)	**11.174**	**20.877**	**13.911**	**8.806**	**12.691**	

Source: MoF

Full-year fiscal deficit may exceed 13%-of-GDP

Our preliminary estimates, which are based on the latest official projections and budget-execution data (January-August 2009), suggest that the general government budget deficit may reach 13.5%-of-GDP this year, with the outstanding gross debt ratio rising by around 15 percentage points to levels near 115%-of-GDP. Table D below shows our new estimates and projections (in percentage-of-GDP terms) for evolution of the main fiscal variables in 2008-2009. The column titled *2008 Eurobank EFG estimates* contains our estimates of last year's fiscal outcome, following Eurostat´s recent revisions. As of October 2009, neither the Greek authorities nor the Eurostat have provided a detailed breakdown of the revised deficit outcome in 2008. Thus, we had to derive our own estimates of the corresponding breakdown in order to be able implement full-year forecasts for 2009.

TABLE D: Fiscal realisations & porojections			
% of GDP	2008 official data	2008 Eurobank EFG estimates	2009 Eurobank EFG forecasts
1. Ordinary Budget			
a. Gross ordinary revenue	23.1%	23.1%	22.7%
a1. Tax reinbursements	1.5%	1.5%	1.7%
a2. Special revenue	0.0%	0.0%	0.3%
a3. Net revenue (a-a1+a2)	21.6%	21.6%	21.3%
b. Expenditure	25.5%	28.0%	32.0%
b1. interest	4.7%	4.7%	5.2%
b2. Primary expenditure (b-b1)	20.8%	23.3%	26.8%
2. Ordinary budget balance (1a3-b)	-3.9%	-6.4%	-10.7%
3. Public Investment Budget			
a. Revenue	2.1%	2.1%	1.1%
b. Expenditure	4.0%	4.0%	4.6%
4. PIB balance (3a-3b)	-1.9%	-1.9%	-3.5%
5. Central government balance (2+4)	-5.8%	-8.3%	-14.2%
6. Public sector surplus & adjustment	0.2%	0.6%	0.6%
7. General govnt balance (5+6)	**-5.6%**	**-7.7%**	**-13.5%**

Source: official data; Eurobank EFG Research estimates & projections

All in all, the poor budget execution so far in 2009 appears to be due to both a collapse in revenues and sizeable expenditure overruns. More specifically: a) weak tax collections due to the sharp slowdown in domestic economic activity since last October b) certain organization problems and delays, which resulted to lower than projected tax revenues from the application of a unified framework for property taxation c) the fact that a new scheme of settling outstanding tax liabilities to the state did not yield the expected results, among other reasons because of liquidity constraints caused by the financial crisis d) a sharp contraction in VAT receipts as a result of nose-diving consumer moral and tightened credit conditions e) higher tax refunds in order to help enhance liquidity in the market and f) from the expenditure side, significant overruns as a result of certain social solidarity benefits and higher than projected transfers to Social Security Funds.

General government debt seen approaching 115%-of-GDP at the end of 2009 with a further significant rise expected next year

In line with our latest deficit forecasts, we expect a further significant rise in general government debt to levels near 115%-of-GDP by the end of 2009. The latter is based in a number of assumptions with regard to the evolution of the key determinants of the debt ratio including: a) a rise in the deficit of the primary balance to 8.0%-of-GDP in 2009, from 3.1% last year b) a slowdown in nominal GDP growth to 0.2%, from 5.6% in 2008 c) average interest on new government debt of around 4.4% vs. 4.6% last year and d) a stock-flow-adjustment equivalent to 3.3%-of-GDP compared to 1.45%-of-GDP in 2008. Note that the latter component includes additions to the overall debt level (stock), that due not influence the government deficit (flow). In addition to the above, we examine three possible scenarios for the evolution of the debt ratio in 2010 (Table E). Our scenario analysis indicates that a further significant rise (of 8-10ppts-of-GDP) in the ratio is likely next year event under relatively benign underlying assumptions.

Table E General government debt (% GDP): Evolution & forecasts		2010 scenarios		
	2009f	Bad	Base	Good
Primary balance (% GDP)	-8.0	-7.0	-5.0	-4.0
Nominal GDP growth	0.2%	-0.5%	0.80%	2.00%
Average interest rate on gvnt borrowing	4.4%	4.8%	4.6%	4.40%
Deficit-debt adjustment (% GDP)	3.3	3.5	2.5	1.8
Debt-to-GDP projections	**114.6%**	**131.3%**	**126.5%**	**123.1%**

Source: Official data & Eurobank EFG Research projections

Greece to ask for a 3-4 year reprieve to correct its excessive fiscal deficit

In April 2009, Greece was placed by the Ecofin Council under budgetary surveillance - i.e., the so-called Excessive Deficit Procedure - and was given until the end of 2010 to bring its budget deficit under 3%-of-GDP.[13] This is the second time since its euro area entry that Greece was placed under EU supervision, as it managed to contain its general government budget deficit below 3%-of-GDP only once (in 2006) despite strong domestic growth and a generally favorable international environment. The decision was based on 2008 estimates; but as the Commission itself subsequently admitted it had originally underestimated the severity of the economic downturn. Athens hopes to use this to ask for a revised Council Decision, giving it a 3-4 year reprieve (until the end of 2012 or 2013) to correct its excessive deficit. The European Commission and Ecofin were earlier scheduled to discuss on 24 October whether Greece's pre-announced packages of special deficit-reducing measures (Table F) met the EU's requirements before granting Athens the extension it desires. However, the October 4 snap elections have push back the above schedule as follows:

- On November 11 2009, the European Commission will issue a progress report on Greece's fiscal consolidation effort in its first six months under EU budgetary surveillance. (Note that a week before that date, the Greek government is expected to unveil its FY2010 budget draft, which will be submitted to parliament on November 20.)

- The next EcoFin meeting on December 1-2, 2009 will discuss the said progress report and decide whether to place Greece under Article 104, paragraph 8, of the Treaty.[14]

- Greece will submit to EU authorities its new stability and growth programme (SGP) by the end of January 2010.

- The revised SGP will be discussed at the EcoFin meeting in March 2010 and the EcoFin will decide on: a) whether to place Greece under Article 104, paragraph 9, of the Treaty, which will require a more rigorous and frequent (i.e., quarterly) monitoring of the country´s fiscal-consolidation progress and b) whether to give Greece a 3-4 years acquittal to correct its excessive deficit. In return for the acquiescence, the Commission will likely ask for permanent measures that go further than the current assortment of mid-year one-off taxes i.e., measures that raise competitiveness in a more durable way. Much will also hinge on the extent to which the new government actually commits to pensions reform: this issue is insistently flagged by the Commission due to Greece's ageing population and the above-average negative impact this is expected to have on the long-term sustainability of Greece's public finances.

Table F: Main budgetary measures for 2009, Greece

Revenue measures*	Expenditure measures**
▪ Increase in the excise duties of tobacco and alcohol (0.15% of GDP)	▪ Restraining public sector employment growth (0.3% of GDP)
▪ Increase in the advance payment rate for enterprises to 80% from 65% (0.15% of GDP)	▪ Cuts in the public sector's high-level officials' renumeration (<0.1% of GDP)
▪ The introduction of a tax rate of 10% on dividends; the same holds for capital gains from selling stocks (<0.1% of GDP)	▪ 10% cut in elastic public expenditure items
▪ The introduction of a new tax on options, in line with rules pertaining to wage income (<0.1% of GDP)	▪ Public wages freezing for 2009 (0.2% of GDP)
▪ Tax settlement (0.5% of GDP)	
▪ One-off supplementary tax contribution on tax-payers with annual income above 60.000 euro (>0.1% of GDP)	

* Estimated impact on general government revenues.
** Estimated impact on general government expenditure.
Source: *Commission services, stability programme of Greece and 2009 Budget Law*

[13] Presently, eleven Member States are subject to the Excessive Deficit Procedure under Article 104 of the Treaty. These include: Poland, Romania, Lithuania, Malta, France, Latvia, Ireland, Greece, Spain, the UK and Hungary.
[14] Such a move would be a mostly procedural one.

Serious medium-term fiscal risks persist

In its assessment of Greece's revised stability and growth program (SGP 2008-2011) conducted in early March, the EU Commission opinioned that **i.** the budgetary outcomes for the current year and the next two are subject to significant downside risks, as result of optimistic assumptions regarding domestic economic growth over the relevant forecasting horizon as well as possible fiscal slippages in the implementation of the envisioned budget targets and **ii.** the medium-term budgetary framework remains weak, characterized by a poor track record as result of insufficient control of public expenditure and revenue projections that prove systematically optimistic. As we have already noted, these fiscal risks have already started to materialize in a dramatic way. And, it is now difficult to see how the general government deficit can be brought back to levels below 3%-of-GDP without bold multi-year action by domestic authorities to deal with long-standing structural fiscal problems. Among others these include, widespread tax evasion, mainly in the services sector; an oversized and inefficient public sector, which absorbs large budgetary resources; a lack of transparency and accountability in public spending; weak medium-term budgetary frameworks both in the central government level and in the broader public sector. To obtain a macroscopic view of how these long-standing structural deficiencies have hindered fiscal consolidation in recent years one needs to observe the evolution of the *cyclically-adjusted* fiscal balances in Greece since its EMU entry in 2001. In that respect, it is rather disappointing to see that the country has lagged its EU-27 peers in its fiscal consolidation effort over that period. The latter, in turn, suggests that if, as we believe, the Greek economy is heading for a prolonger period of weaker growth than that experienced in the past 10 years a sustainable reduction in the fiscal deficit is virtually impossible without bold (and permanent in nature) measures to deal with such problems.

Bold action is need to break vicious cycle of rising deficit and debt ratios

The earlier downward trend in the public debt-to-GDP ratio has been halted as a result of widening fiscal deficits and significant stock-flow adjustment, with the ratio rising by around 18ppts in the period 2008-2009 (Eurobank EFG Research estimate), after declining by 7.8ppts in the prior eight year period. The burgeoning debt burden places significant servicing costs on the budget - these are expected to exceed 4.7%-of-GDP in 2009 - and further complicates the public funding program in an environment characterized by increased uncertainty and volatile investor sentiment towards riskier markets. To make things worse, adverse demographics and the expected sharp rise in social security costs after 2015 leave little room for complacency, urgently requiring policies to exit from the current vicious cycle of rising deficit and debt ratios. According to recent Bank of Greece estimates, primary surpluses in the order of 5.5%-to-6.5%-of-GDP per annum are required to reduce the debt ratio towards the 60%-of-GDP reference threshold. Yet, it is rather difficult to see how Greece can attain such sizeable surpluses, at least over the next 2-3 years, given weak domestic growth and the current fiscal trends.

Debt ratio likely to remain in a rising trend in the next 3-4years

Assuming that Greece will be given a 3-4year reprieve to correct its excessive deficit - and under relatively mild assumptions regarding the future evolution of public-debt determinants - we expect the debt ratio to remain in a rising trajectory reaching 135%-of-GDP or higher levels by the end of the corresponding period. In these lines, another worrying development is the recent sharp rise in the state-guaranteed debts of a multitude of entities in the broader public sector. According to recent estimates, these reached €22.2bn (9.0%-of-GDP) at the end of last year, up from around 6.1%-of-GDP in 2000-2002 and they are believed to have increased further in 2009, though no official data for the present year are currently available. Furthermore, state debts to various public-sector suppliers have risen significantly in recent years and are now estimated to exceed €12bn. [15]

Government plans corrective fiscal measures aiming to reduce its deficit to 9.0%-9.5% of-GDP in 2010

The government is currently preparing its 2010 budget (draft to be unveiled in early November) and, according to press reports, it is currently considering measures aiming to generate some €10bn of additional savings so as to reduce its deficit to between 9.0% and 9.5%-of-GDP. In addition to the measures we have detailed in Part A of this document (see *New government´s plan to revive economic growth and promote fiscal consolidation)* the government is planning to announce increases in the special consumption tax rates on motor fuels, alcoholic

[15] See BoG´s latest semiannual monetary policy report (October 2009).

beverages and cigarettes, though no hike in VAT rates is currently under consideration. Moreover, it considers asking a one-off contribution from banks and large corporations[16]. An estimated amount of ca €5bn of recovered uncollected taxes to the state will also be sought to support the implementation of the 2010 budget[17]. We will be closely monitoring the new draft budget and any new official comments on the issue to form a better assessment of the fiscal outlook for 2010.

[16] The amount is not yet specified, though the press reports suggest it could exceed €1bn.

[17] According to some estimates, total uncollected tax arrears currently amount to €35bn, an amount equivalent to14.5%-of-GDP or 60% of total budget revenues.

Special Focus II

An econometric model for explaining the evolution of Greek sovereign spreads following the eruption of the subprime crisis

By Platon Monokroussos[18]

Abstract

In this section we propose a new econometric model that purports to analyze and explain a) the rise in Greek government bond (GGB) yield spreads following the onset of the subprime crisis in July 2007. Particularly, after the collapse of U.S. investment bank Lehman Brothers in September 2008 and b) the gradual de-escalation of GGB spreads since March 2009, in tandem with a significant bounce in investor risk sentiment and improving conditions in world financial markets. Our results provide support to the view that, whereas in the pre-subprime crisis period the 10-year GGB/Bund yield differential was moving broadly in random fashion (and corresponding yields have very strongly and positively correlated), the period following the eruption of the crisis saw a notable change in the behavior of the spread. Such a change was not specific to the Greek bond yield differential. It has also been observed in other government bond markets in the so-called Euro zone periphery. In our particular case, global drivers such as risk aversion and perceived default risk have contributed to the widening of the 10-year GGB/bund yield differential in the period July 2007-March 2009 and its subsequent de-escalation. Notably, in the period following the collapse of Lehman Brothers, other country-specific drivers such as Greece's deteriorated fiscal prospects came into play, helping to magnify the global contagion effects on the country's sovereign spreads.

I. Introduction

At the onset of the subprime crises in the third week of July 2007, the yield differential of the 10-year benchmark GGB over its German counterpart (Bund) was around 27.5 basis points (bps), not far from the corresponding Italian (25.5bps) and Irish (9bps) spreads[19]. The subsequent period leading to the rescue of Bear Sterns on March 16, 2008 saw Euro zone periphery sovereign spreads rising to levels not seen since early 2001, even though German bond yields remained at low levels with a tendency even to fall, supported by flight-to-safety flows and expectations of lower rates of future economic activity and inflation. At the close of the trading session on March 14, 2008, one day before Bear Sterns hammered out an emergency funding deal with the U.S. Federal Reserve and JPMorgan, the 10-year Bund yield stood 3.73% compared to ca 4.44% at the end of the third week of July 2007. At the market close of that same day, the corresponding 10-year government bond spreads of Greece, Italy and Ireland were 68bps, 63bps and 41bps, respectively. Evidently, public support to rescue Bear Sterns created a link between the global financial sector and public finances[20]. This along with a temporary spike in inflation expectations - among other reasons, due to the strong rallies in world commodity prices in Q2 2008 - prompted a subsequent bear-market selloff in Eurozone government bonds, with the 10-year Bund yield hitting in June 2008 highs above 4.60%. The said yield mostly remained at 4.20%-plus levels for the greater part of the third quarter of that year, but declined precipitously following the Lehman Brothers collapse in mid-September 2008. The 10-year German bond yield fell to multi-decade lows near 3.00% in December

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[18] Platon Monokroussos, Ph.D. is Head of Financial Markets Research, Eurobank EFG. PMonokrousos@eurobank.gr

[19] Besides the 10-year GGB-Bund yield spread we have chosen to concentrate here on the evolution of the corresponding spreads of Italy and Ireland. Among other reasons, this is because: i. in the period leading to the fall of Lehman Brothers in Sept. 2008 (and following Greece's entry into the euro area), the Greek and Italian benchmark government bonds have exhibited similar yield levels and spreads co-movement, thanks to the fundamental commonalities of the two markets e.g,. comparable sovereign risk ratings and public debt ratios ii. In the period right before the subprime crisis erupted, the Irish 10-year bond yield was trading broadly at par with the German benchmark. The corresponding yield differential consequently followed the general widening trend experienced in other euro area periphery markets and hit levels comparable with the Greek yield spread following the nationalization of Anglo Irish on January 15, 2009.

[20] See Mody, Ashoka, 2009, ''From Bear Sterns to Anglo Irish: How Eurozone Sovereign Spreads Related to Financial Sector Vulnerability'', *IMF Working Papers WP/09/108.*

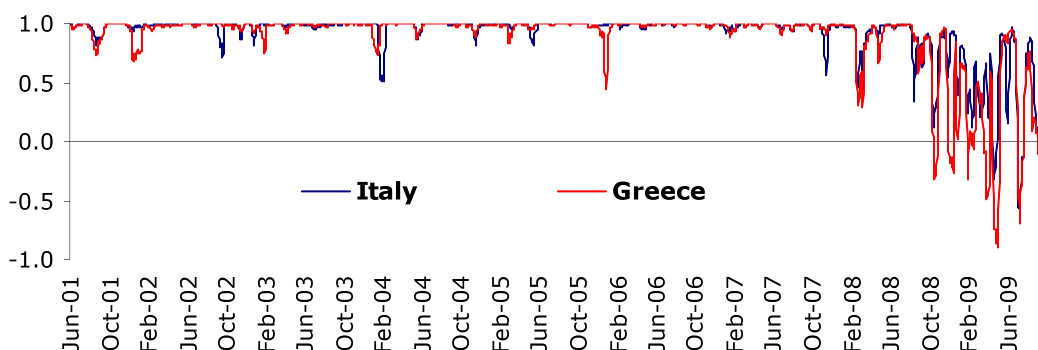
2008 and temporarily eased below 2.90% a month latter amid rising investor fears over the viability of the Economic and Monetary Union (EMU) following the nationalization of Anglo Irish on January 15, 2009.

In contrast with the sharp post-Lehman declines evidenced in short-, medium- and long-dated yields in U.S., Germany and other major government bond markets, sovereign spreads in euro area periphery markets widened sharply, recording levels not seen since the inception of EMU in January 1999. Indicatively, the 10-year bond yield spread of Greece hit levels near 300.5 on March 12, 2009, while the corresponding Italian and Irish spreads recorded highs of 158.6bps and 283.5bps on January 27, 2009 and March 19, 2009, respectively. These dramatic developments interrupted a long period of remarkable convergence and stability in euro area sovereign bond markets that used to epitomize the market's confidence in the stability and longevity of EMU. But what caused the dramatic rise in Euro zone periphery spreads after the Lehman incidence? In our view, some of the main drivers were the following:

a) Flight-to-safety flows to US, German and other major government bond markets

In periods of increased political and economic uncertainty, it is customary for investors to flee riskier assets and channel their capital to traditional safe-havens such as gold, money market funds, US, German and Japanese government bonds as well as other AAA-rated sovereign debt securities. This phenomenon occurred in many instances in the recent past and the same trend was again observed - albeit with a much higher intensity and duration - in the aftermath of the Lehman Brothers debacle. Indicatively, the yield of the benchmark 10-year U.S. Treasury note hit 50-year lows near 2.05% on December 30, 2008 while the yield of the German counterpart recorded multi-year lows around 2.89% on January 15, 2009. More importantly, the earlier strong positive correlation between the government bond yields of the so-called *core* Eurozone (eg.. Germany and France) and *periphery* (eg., Ireland, Greece, Italy, Spain and Portugal) markets has broken down after September 2008, suggesting that investors now tend to view the two markets as distinct asset classes with intrinsic characteristics (graph I.1.). Indeed, even in more recent months, and in spite of the recent significant improvement in global financial market conditions, pockets of increased macro economic uncertainty and sporadic selloffs in riskier markets have tended to benefit core Eurozone bond markets and, concurrently, exercise downward pressure on periphery markets (and vise-versa).

Graph I.1. 10yr Greek-German & Italian-German government bond yield spreads: 21-day rolling correlations



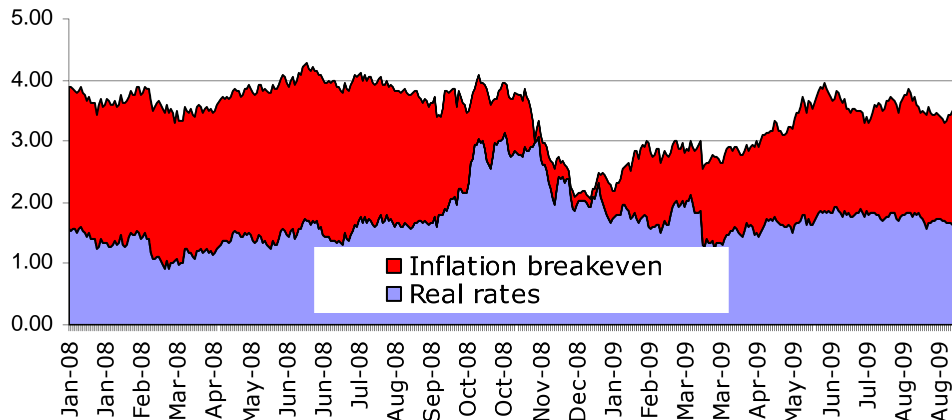
Source: Eurobank EFG Research & Bloomberg

b) Downward revisions to world economic growth forecasts & perceptions of increased deflation risks. It is an empirically documented result that short-dated bond yields (maturities of up 2-3years) are mainly driven by monetary policy expectations, while intermediate and longer-maturity yields are driven by a) expectations regarding the future evolution of short-rates b) expectations about future inflation and c) term-related and various other risk premia[21]. The Lehman Brothers collapse and the consequent distortions in global financial markets prompted rapid and significant revisions to the outlook of world economic growth and raised

[21] See for instance Diebold, F.X., Li, C., 2005. Forecasting the term structure of government bond yields. Journal of Econometrics 130 (2006) 337-364.

fears of deflation. As a result, short-maturity yields in U.S. and Germany fell precipitously since Q4 2008, tracking aggressive rate cuts by the Fed and the ECB and have remained at very low levels so far this year, supported by expectations of excessively low policy rates for longer[22]. In a similar vein, longer-dated yields *(maturities of 5-year of longer)* in the U.S. and Germany fell to multi-year lows following the Lehman incidence, driven lower by declining real rates and, primarily, collapsing inflation premia. Notably, breakeven rates in U.S. and Euro zone temporarily touched negate levels in November 2008, implying medium-term expectations of persisting deflation. Breakeven rates have bounced strongly in recent months, returning to levels more consistent with historical averages (graph I.2.).

Graph I.2. 10yr US Treasury note: Evolution of real rates & inflation breakevens



Source: Eurobank EFG Research, Bloomberg

c) Credit crunch takes a heavy toll on counties featuring acute macro imbalances and large borrowing requirements. The previous two points provide some fundamental rational for the sharp yield declines in major government bond markets in the period following the collapse of Lehman Brothers. They also help to explain the incipient widening in the Eurozone periphery spreads, albeit from the side of reference (i.e., Bund) yields. But, as we have noted already, over the corresponding period a break occurred in the previous positive correlation between the euro area core and periphery spreads. Apart from any technical-, and flow-related reasons, eg., higher cost of funding for carrying leveraged positions, fire-sales by hedge funds and other leveraged players, other, more fundamental drivers, may help explain the latter developments. The most important of these are highlighted below:

d) Financial crisis leads to major re-evaluation of risk on the part of investors. Risk aversion skyrocketed and money market spreads exploded to unprecedented levels after the Lehman incidence, leading to a major change on how market participants viewed lower-rated credits. In this environment, sovereign names exhibiting inconsistent domestic policy frameworks, large current account deficits and other macro imbalances suffered the most on fears over their ability to maintain high rates of growth and meet large external borrowing needs. In view of these weaknesses, the FX, equity and rate markets in Central and Eastern Europe (CEE) came under immense selling pressure in the aftermath of the Lehman debacle, amid fears over a major financial and economic collapse in the region.

e) Worsened fiscal positions led to a differentiation of sovereign debt markets with respect to respective-country debt-to-GDP levels. While Lehman was allowed to go bankrupt, authorities in the U.S., Euro zone, Japan and other G20 economies made it immediately clear that certain entities were *too big to fail* and proceeded with aggressive measures to shore up their financial sectors. This, in turn, shifted the focus on the potential fiscal impact of such rescue packages and led to differentiation of countries with respect to their

[22] Following the Lehman collapse, the ECB delivered 325bps of cumulative rate cuts, bringing its key 2-week refi rate down to 1.00% on May 7, 2009. In a similar vein, the Fed reduced its funds target rate by a further 187.5bps, bringing it to .0.00%-0.25% on December 16, 2008.

prevailing debt-to-GDP levels. This had significant repercussions for Euro zone periphery bond spreads, especially for member States exhibiting structurally weak fiscal positions eg., Ireland and Greece.

As the above analysis indicates, the widening in Euro zone sovereign spreads following the Lehman incidence can be attributed to global drivers (e.g., risk aversion and the higher cost of funding) as well as country-specific ones (e.g., macro imbalances, weak fiscal positions and high debt ratios). In this section we analyze the determinants of weekly changes in the 10-year sovereign spread of Greece vs. Germany and our econometric findings broadly support the existence of both global and country-specific determinants in the evolution of the spread. The analysis spans the period October 2004-September 2009 and our main results are:

- In the period following Greece's Eurozone entry (January 2001) and before the subprime crises erupted (third week of July 2007), the 10-year GGB yield was moving very closely in line with the 10-year German benchmark (Bund), with the corresponding spread evolving in a broadly random fashion. [23,24]

- After the subprime crises erupted and in the period leading to the Lehman incidence, the evolution of the 10-year GGB/Bund spread broadly reflects global factors e.g. risk aversion and flight-to-safety flows.

- In the aftermath of the Lehman collapse, besides global factors, other more intrinsic drivers also affected the evolution of the Greek bond spread. In particular, market expectations of a more pronounced deterioration in the country's fiscal position in an environment of weak domestic economic growth. As we have noted earlier, Greece's fiscal deficit is expected to reach or exceed 12%-of-GDP in 2009 thanks to weak revenue collection and major expenditure overruns. As such, Greece's public borrowing program for this year will be significantly higher than originally planned (Eurobank EFG Research projection: €70bn or slightly higher vs. an initial budget target of ca €42-45bn). Notably, this increased bond supply is taking place in a year when total government bond supply in the euro area has exceeded initial estimates by a wide margin.

II. Data and model specification

In this analysis, we use weekly changes in the 10-year GGB/Bund yield spread over the period October 15, 2004 – September 25, 2009. In the spirit of Ashoka Mody (2009), we employ the following specification[25]:

$$\Delta Spread_t = \sum_{i=1}^{k} \beta_{t-i} + \sum_{j=0}^{m} \delta_{t-i} * \Delta Crossover_{t-i} + \sum_{\theta=1}^{2} D_i + D_3 * (1 + \Delta F_{t-1} + \Delta F_{t-2} + DebtRatio_t) + Riots + AngloIrish + \varepsilon_t \quad (1)$$

Where,

ΔSpread$_t$ is the weekly change (week t over week t-1) in the yield spread in basis points (pbs). The said spread is a market-implied measure of the sovereign risk of default of Greece[26]. Our specification contains lags of this variable to capture any persistence in the spread. Our results suggest that the fist two lags of the spread are statistically significant (coefficient p-values of less than 0.05), with the sign of corresponding coefficients providing evidence of *mean-reversion* in the spread (see table A).

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[23] Our results from running our model with data covering the period January 2001-July 2007 (results not shown in this section) generally support the randomness hypothesis in the evolution of the spread over that period.

[24] We estimate that the average 14-day rolling correlation between the benchmark 10-year Bund and GGB yields in the period 1.1.2001-15.7.2007 was around 0.97.

[25] See Mody, Ashoka, 2009, ''From Bear Sterns to Anglo Irish: How Eurozone Sovereign Spreads Related to Financial Sector Vulnerability'', *IMF Working Papers WP/09/108.*

[26] In our analysis, the Bund yield is considered as a *risk-free* rate.

$\Delta Crossover_t$ is the weekly change (in bps) in the Markit iTraxx Crossover index, which is an equally-weighted average of the CDS spreads of a representative basket of 40 or more, mostly junk-rated, European corporations. The iTraxx Crossover index is used in our specification as a proxy for the market-implied risk of corporate default and helps to captures the effects of global factors (i.e., credit risk) on the spread. The general specification above contains m lags of this variable, but we find only its contemporaneous value (i = 0) to be statistically significant (Table A).

Di *(i = 1,2,3),* ***Riots*** & ***AngloIrish*** are all dummy variables.

D1 (pre-subprime) = 1 between October 15, 2004 and July 13, 2007 and zero otherwise

D2 (subprime-to-Lehman) = 1 between week of July 20, 2007 and September 5, 2008 and zero otherwise

D3 (post-Lehman) = after September 5, 2008 and zero otherwise

Riots = 1 in weeks December 12-to-December 26 of 2008 and zero otherwise
This dummy is used to capture the sharp spike in the 10-year GGB/Bund yield spread in mid-December 2008, ostensibly as a result widespread riots in Greece that temporarily resulted in increased political uncertainty as well as extensive material damages and a sharp drop in retail sales in main metropolitan areas around the country. As graph I.3 illustrates, the sharp widening in the Greek spread over that period was not, to similar an extent, reflected in the movements of other periphery spreads.

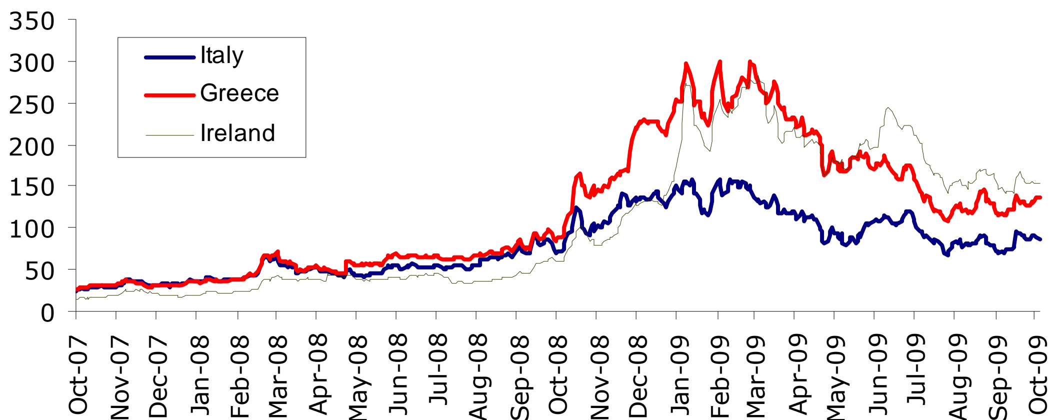
AngloIrish = 1 in weeks January 16 & January 23 of 2009 and zero otherwise
This dummy is used to capture the sharp spike in the Eurozone periphery spreads in the aftermath of the Ango Irish bank nationalization.

F_t: As in Mody, Ashoka (2009), this variable represents Greece´s financial-sector equity index divided by the overall equity index. In our study the index is normalized to 1.0 on October 15, 2005 and enters our specification in a weekly-change form. A fall in ***F_t:*** means that the country's financial sector is expected to underperform the rest of the economy *(and vise versa).* In the present study, one would expect to see a significant and negative coefficient of ***F_t***, given the link between the prospect of a country´s financial sector and its sovereign debt dynamics, which was established with the government support packages offered to domestic banks. In our model (Table A) we use two lags of this variable, both of which are interacted with the post-Lehman dummy, D3. Their coefficients have the correct (negative) sign and are both statistically significant.

$DEBTRATIO_t$, is the *level* of Greek debt-to-GDP ratio and enters our regression contemporaneously. In our analysis we use the (expected) end-2009 value of the ratio. Again, this variable is interacted with the post-Lehman dummy D3 and is used to capture any *accelerated* transition to higher spreads in response to the level of the country's debt-ratio in the post-Lehman period. Here, we use updated forecasts of the Greek public debt ratio implemented by the Greek MoF and the European Commission at various points in time *e.g.* release of 2009 budget law (Nov. 2008), Greece´s revised SGP (Jan. 2009), EC Spring Forecasts (May 2009), Greece's 1st and 2nd EDP data notification (Apr. 09 & Oct.09, respectively). We assume here a broadly linear evolution of market expectations of Greece's end-2009 debt ratio along these points in time. We note here that, in general, significant methodological challenges exist in identifying the relationship between public debt (annual-frequency variable) with the higher frequency changes in the spread. However, what the variable DEBTRATIO is supposed to measure in our study is the evolution of expectations of the 2009 ratio rather than its realized value. Moreover, as Mody Ashoka (2009) notes *''Even though changes in the spreads cannot be traced to changes in debt levels, debt levels do differentiate the level of spreads across countries''.*

ε_t is the regression error

Graph I.3: 10-year sovereign yield sperads to Germany



Source: Bloomberg

III. Interpreting the results

Table A displays the results of estimating our model (1). Our estimation method is Least Squares with White heteroskedasticity-consistent standard errors & covariance. The following findings emerge:
First, the coefficients of the first lag and the second lag of the dependent variable, Δ*Spread*, are significant at the 5% level (p-values: 0.05 and 0.02 respectively) and are both negative. The latter suggests existence of mean reversion in the spread i.e., a rise in the spread exhibit a certain degree of overshooting, which tends to fade away over the next two weeks.

Second, the coefficient of our credit-risk-type variable, Δ*Crossover* is significant at a 5% level and has the correct (positive) sign. In our analysis, this variable is used as a proxy for the effect of global factors *(i.e., rise in perceived credit-risk*) on the Greek spread. Ceteris paribus, the estimated coefficient suggests that Δ*Crossover* accounts for ca 7% of the average weekly change in the spread.

Third, financial sector prospect do matter in our model as indicated by the significance (and negative signs) of the two lags of the coefficients of our *ΔF* variable. Theoretically, such a relationship is established in e.g., in Reinhart and Rogoff (2008), who find that a country's banking crisis is followed by a substantial rise in the public debt ratio as a result of the subsequent slowdown in economic growth and the costs associated with the bailout/rehabilitation of the domestic banking sector.[27] In our study we found the contemporaneous value of the *ΔF* variable to be insignificant, meaning that following an observed underperformance of the domestic banking-sector equity index relative to the rest of the market, sovereign spreads tended to rise with a time lag of 1-2 weeks.

Fourth, the inclusion of the period dummies D_i (i=1,2,3) and which intend to capture other common *i.e. global* drivers of the spread tend to weaken the link between the yield spread and the variables, Δ*Crossover, DEBTRATIO & ΔF,* examined above. Yet, the direction and significance of the effects of these variables remains clear.

Fifth, our model does a relatively good job in explaining the evolution of the Greek sovereign spread in the period under consideration (adjusted R^2 = 0.48). Yet, a number of performed tests offer evidence of certain remaining problems with our model specification (1). For instance an application of the *Breusch-Godfrey Lagrange multiplier test* offers evidence of higher-order serial correlation in residuals (lags: 2-4).

[27] See also Mody, Ashoka, 2009, "From Bear Sterns to Anglo Irish: How Eurozone Sovereign Spreads Related to Financial Sector Vulnerability", *IMF Working Papers WP/09/108.*

Moreover, the *recursive residuals* from estimating our model using ever larger subset of the sample data offer some evidence of parameter instability, especially in the post-Lehman-collapse period. For future research purposes, the inclusion of other (missing) variables eg, unanticipated bond supply shocks in Greece and other euro area countries may help improve our model.

Table: A – Regression output

Dependent Variable: ΔSPREAD(t)
Method: Least Squares
Sample (adjusted): 10/29/2004 9/25/2009
Included observations: 257 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ΔSPREAD(t-1)	-0.375021	0.055425	-6.766334	0.0000
ΔSPREAD(t-2)	-0.321113	0.053053	-6.052696	0.0000
ΔCROSSOVER(t)	0.064709	0.013587	4.762587	0.0000
D1	0.072400	0.594289	0.121826	0.9031
D2	1.013211	0.919842	1.101505	0.2718
D3	38.68590	14.46197	2.675009	0.0080
D3*ΔF(t-1)	-1.355521	0.292194	-4.639113	0.0000
D3*ΔF(t-2)	-1.303776	0.311546	-4.184854	0.0000
D3*DEBTRATIO(t)	-0.391314	0.139993	-2.795246	0.0056
RIOTS1	22.52942	4.667479	4.826893	0.0000
AgloIrish	34.44048	5.430662	6.341856	0.0000

Adjusted R-squared	0.480263	Mean dependent var	0.394942
S.E. of regression	7.081705	S.D. dependent var	9.629273
Sum squared resid	12337.03	Akaike info criterion	6.794765
Log likelihood	-862.1273	Schwarz criterion	6.946671
Durbin-Watson stat	1.979206	Hannan-Quinn criter.	6.855854

Source: Eurobank EFG Research

IV. Conclusions

The results of our econometric model provide support to the view that, whereas in the pre-subprime crisis period the 10-year GGB/Bund yield differential was moving broadly in random fashion (and corresponding yields have very strongly and positively correlated), the period following the eruption of the crisis saw a notable change in the behavior of the spread. Such a change was not specific to the Greek bond yield differential. It has also been observed in other government bond markets in the *so-called* Euro zone periphery. In our particular case, global drivers such as risk aversion and perceived default risk have contributed to the widening of the 10-year GGB/bund yield differential in the period July 2007-March 20009 and its subsequent de-escalation. Notably, in the period following the collapse of Lehman Brothers, other country-specific drivers such as Greece's deteriorated fiscal prospects came into play, helping to magnify the global contagion effects on the country's sovereign spreads. From a policy standpoint, the existence of global factors in the evolution of Greek sovereign spreads may offer some room for complacency, as world market conditions have stabilized lately and spreads across asset classes eased significant from their high levels earlier this year. Yet, the mere existence of such global drivers (as well as country-specific ones helping to reinforce and magnify the impact of the former) indicated increased vulnerability to sudden shifts in global market conditions. This, in fact, must to be of particular concern to policymakers, especially in a period characterized by increased uncertainty, volatile investor sentiment and deteriorated domestic fiscal prospects.

References:

Mody, Ashoka, 2009, ''From Bear Sterns to Anglo Irish: How Eurozone Sovereign Spreads Related to Financial Sector Vulnerability'', *IMF Working Papers WP/09/108.*

Diebold, F.X., Li, C., 2005, ''Forecasting the term structure of government bond yields'' *Journal of Econometrics 130 (2006) 337-364.*

Special Focus III

The Competitiveness of the Greek Economy in 2009: Evidence from World Bank's "Doing Business" Indices

By Theodoros Stamatiou[28]

Key points:

- **Competitiveness of an economy is defined as the set of factors that make its product(s) preferred in the international market**
- **From the 100th place in World Bank's 2008 "Doing Business[29]" report, Greece moved to the 109th place in the respective 2009 ranking**
- **The absence of major reforms is the main reason for the stalemate in the Greek economy indices and the consequent downgrading**

In what follows the "Doing Business" (DB) reports of the World Bank will be used to draw conclusions on the competitiveness of the Greek economy in the period 2008-2009. Competitiveness of an economy is defined as the set of factors that make its product(s) preferred in the international market. The DB indices are used as a proxy for competitiveness even though the aspects they cover are limited compared to other approaches to competitiveness. For example, the World Economic Forum Global Competitiveness Report (GCR)[30] 2009-2010 has 12 categories (pillars) that affect competitiveness and each one of them is divided in various sub indices. But, the basic advantage of the DB indices is their quantitative nature. It permits comparisons between economies and identification of the ways to improve the business and regulatory environment of an economy. The alternative approach with various qualitative and quantitative indices is rather difficult to use for active policy decisions, even though it is better in describing the competitiveness situation of an economy

1. A Short Guide to World Bank's "Doing Business" Indices

Since 2005, the World Bank has been publishing its DB reports that rank participating countries according to their regulatory and business environment (183 economies participated in the 2009 DB report). Using a hypothetical small or medium sized enterprise as a reference point, various aspects (common across countries) of its business environment are examined and quantitatively measured (in exactly the same way) for each of the participating economies. The common reference point and the conformity of the data permit for a better comparison across countries[31]. Yet, the said methodology has its own limitations since it does not cover other aspects of the business environment that are difficult to measure under a common reference point, including a country's macroeconomic policy, its education system, the introduction of innovations in the production process etc. All these factors are covered in reports like the one provided by the GCR. Under the latter's framework, the bundle of institutions, policies, and factors that set the sustainable current and medium-term levels of economic prosperity is measured. Even though GCR covers a much broader area of the respective business and regulatory environment, it includes aspects that are not commonly measured across different economies and thus, it is only a rough tool for policy-oriented decisions.

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[28] Theodoros Stamatiou, Ph.D. is Research Economist, Eurobank EFG. TStamatiou@eurobank.gr

[29] The Doing Business report 2010 refers to the indices of 2009. More specifically, the Doing Business 2010 report's indices were measured as of July 31st 2009. In what follows the actual years will be used and not the titles of the publications (i.e. we will write 2008 and 2009 and not Doing Business report 2009 and Doing Business report 2010 respectively)

[30] For more information on the World Economic Forum and its Global Competitiveness report refer to: http://www.weforum.org/en/index.htm

[31] More information for the indices construction can be found in the following web address: http://www.doingbusiness.org/documents/DB10Easeofdoingbusinessrankmethod.pdf

On the other hand, each DB report is a snapshot of the current situation of the economy it covers. Moreover it provides a precise guide for the reforms needed to improve the economy's condition in the total ranking. As a result, the DB report includes a complete list of the reforms each participating economy implemented so as to improve its ranking. The latter is based on an aggregate index (commonly known as the DB index) which is the simple arithmetic average of the following ten (10) indices that assess the business and regulatory environment of an economy:

- Starting up a business
- Managing construction permits
- Employing workers
- Registering property
- Getting credit
- Protecting investors
- Paying taxes
- Trading across borders
- Enforcing contracts
- Closing a business

There is a direct link between the DB approach and the competitiveness of an economy. An economy that uses the information of the DB indices and commits itself on their improvement via reforms in its business and regulatory environment also improves the set of factors that affect competitiveness. It is not by coincidence that along others, indices similar to the ones presented in the DB reports are also used by the GCR. A direct comparison of the leaders in the DB ranking and those of the GCR ranking is helpful in identifying such a link (Table 1). Observe that 17 of the economies ranked at the top 25 places in the DB 2009 report are also at the top-25 list in the GCR 2009 report (the respective 2008 number is 16). This constitutes a clear indication of the link between competitiveness and DB rankings.

Table 1: Comparison between the Leaders in Doing Business and Global Competitiveness Rankings and Greece for 2008 and 2009

Doing Business Top 25 Ranking and Global Competitiveness Report				
	Doing Business	WEF GC Report	Doing Business	WEF GC Report
Economies	**2008**	**2008**	**2009**	**2009**
Singapore	1	5	1	3
New Zealand	2	24	2	20
Hong Kong, China	3	11	3	11
United States	4	1	4	2
Denmark	5	3	6	5
UK	6	12	5	13
Ireland	7	22	7	25
Canada	8	10	8	9
Australia	9	18	9	15
Norway	10	15	10	14
Iceland	11	20	14	26
Thailand	12	34	12	36
Japan	13	9	15	8
Finland	14	6	16	6
Saudi Arabia	15	27	13	28
Georgia	16	90	11	90
Sweden	17	4	18	4
Bahrain	18	37	20	38
Switzerland	19	2	21	1
Belgium	20	19	22	18
Malaysia	21	21	23	24
Estonia	22	32	24	35
Korea, Rep.	23	13	19	19
Mauritius	24	57	17	57
Lithuania	25	44	26	53
Greece	100	67	109	71

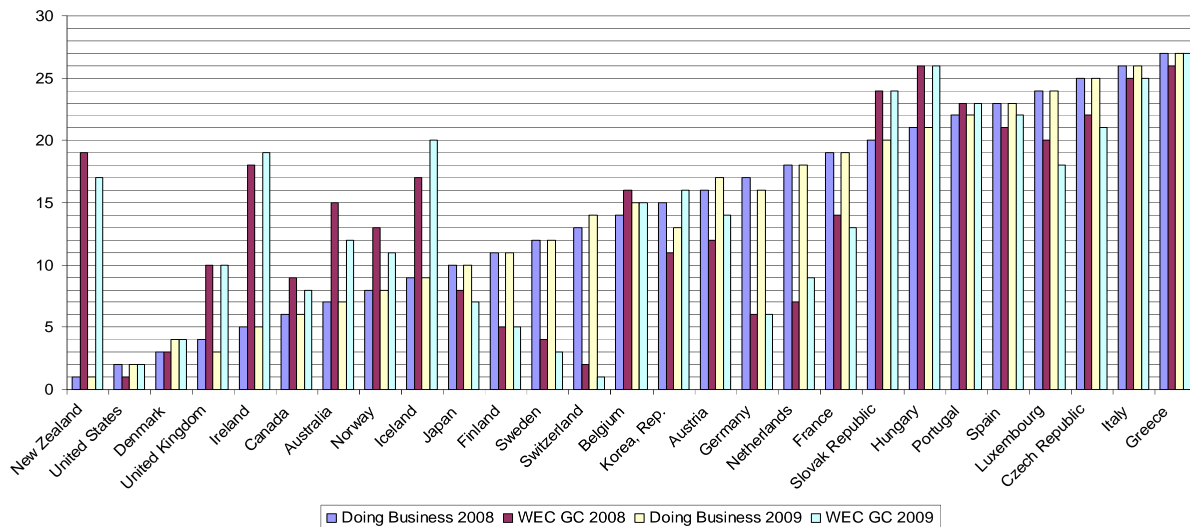
Source: Doing Business Database, World Economic Forum Global Competitiveness Report 2009-2010.
Note: The Doing Business reports for 2008 and 2009 include the same number of economies - countries (183) while the World Economic Forum Global Competitiveness Report for 2008-2009 includes 134 economies while the respective 2009-2010 report includes only 133 countries since there were no data available for Moldova.

2. The "Doing Business" Reports for the Greek Economy

Table 1 shows the DB and GCR rankings of the Greek economy in the period 2008 - 2009. From the 100th place in the 2008 DB report, Greece moved down to the 109th place in the respective 2009 ranking. At the same time it was ranked 67th and 71st in the GCR ranking in the corresponding period. So in both rankings the results pointed to a downgrading of Greece's economic competitiveness. Figure 1 bellow presents the rankings both in terms of "Doing Business" and Competitiveness for the OECD economies[32] for the 2008-2009 period. Beware that a high score in the ranking is translated in a low DB or GCR performance. For both years the Greek economy ranks last among the OECD economies.

[32] The GCR ranks countries according to their stages of development. From that list Greece falls within the third stage of development in the GCR parlance (i.e. the Greek economy shares similar characteristics with the developed – mainly OECD members – countries.).

Figure 1:
"Doing Business" and Competitiveness Rankings for the OECD economies (2008-09)

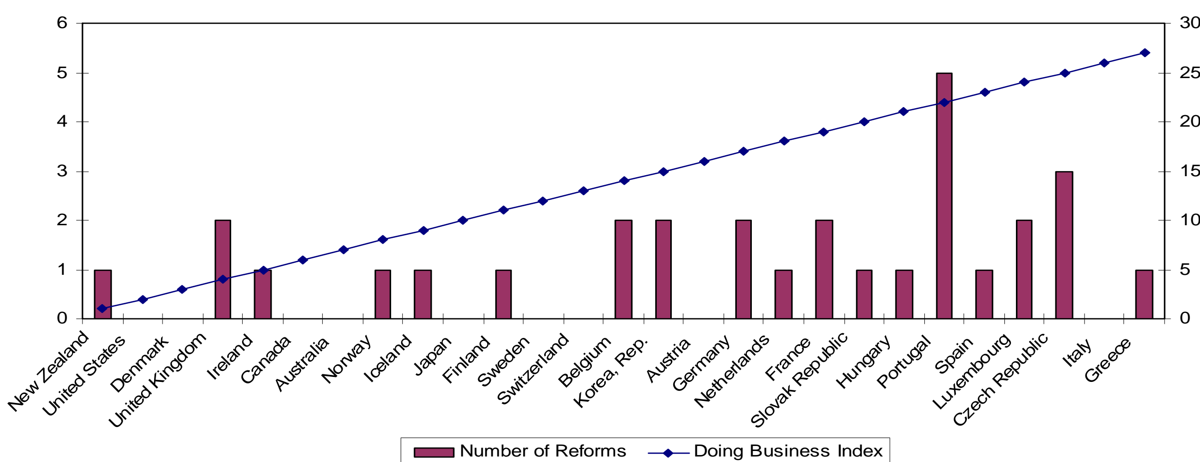


Source: Doing Business Database, World Economic Forum Global Competitiveness Report 2009-2010.

2. DB indices and the Role of Reforms in Greece

Each year the DB reports present the respective indices and the reforms each economy implemented to improve its previous year's DB rankings. The critical role of reforms is obvious. The only way an economy can improve its competitiveness – and achieve a higher DB ranking - is through the implementation of reforms. Figure 2 below presents the number of reforms implemented by the OECD countries together with the respective DB rankings. Note again that a high DB ranking is translated to a low DB performance. Observe that countries that appear at the top-10 list implemented the less number of reforms (mean: 0,6 reforms) compared with the remaining 17 countries (mean: 1,4 reforms). Moreover Greece ranks at the last position of the DB ranking and implemented only one (1) reform the previous year.

Figure 2:
Number of Reforms compared with the Doing Business Ranking for the OECD economies (2009)

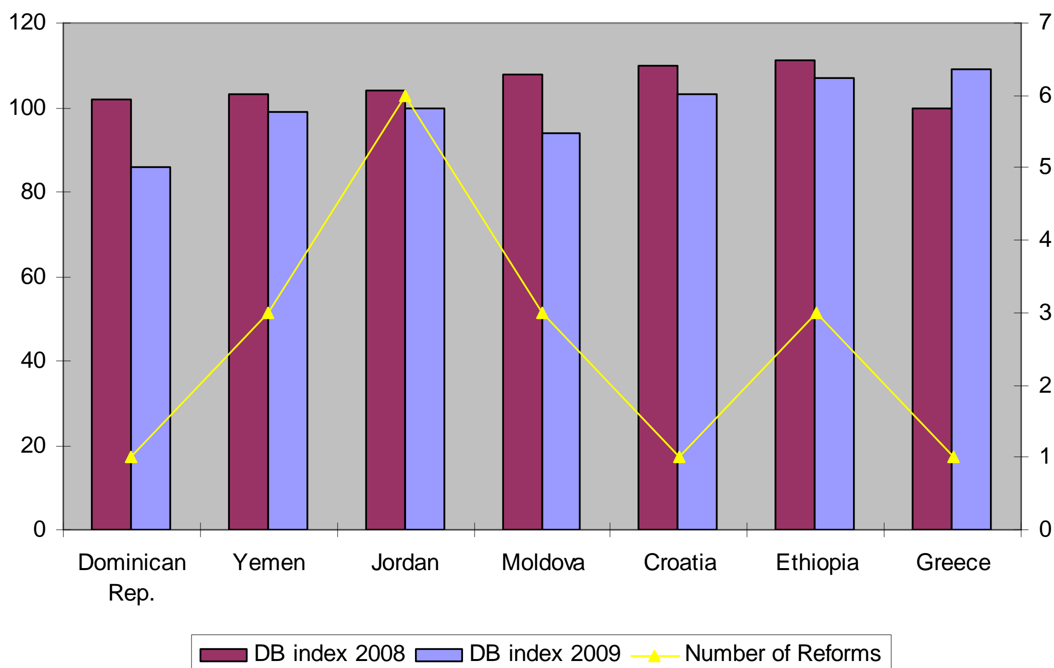


Source: Doing Business Database

The role of reforms in improving the DB ranking becomes evident if we observe closely the Greek economy DB indices**.** Table 2 presents the individual Greek DB indices for the 2008 – 2009 period as well as the sub indices that were used for the construction of each index. The first column of the table presents the individual indices, while the second and the third present the ranking for each individual index for 2008 and 2009 respectively. The fourth column presents the sub indices that are used in the construction of each index and the sixth and seventh columns present the respective rankings of the sub indices for the 2008 – 2009 period.
Starting from the main indices, eight (8) of them have a 2009 ranking lower than in 2008, one (1) of them remains constant (*Closing a Business*) and there is a significant rise in the ranking only for one (1) index (*Getting Credit Index*).

The rise of the *Getting Credit* index comes from the improvement of the types of information that the private credit bureau TEIRESIAS SA discloses about the economic credit behavior of individuals and firms[33]. Note here that according with the 2009 DB data this is the only reform that took place during that year and comes from a private sector firm. The index that remained constant between 2008 and 2009 is *Closing a Business* (i.e. there was no change in the procedures for closing a business and moreover there was no change in the relative position of the index across countries). For the remaining indices, there was a downward move in the corresponding rankings in 2009. This move is not due to the worsening of the factors that influence each index. These remained more or less at the same level in 2008 - 2009.

Figure 3:
The Role of Reforms in the DB Ranking



Source: Doing Business Database

[33] According to the 2009 DB report for Greece the private credit bureau, Tiresias, expanded the amount of information it distributes in its credit reports, enhancing access to credit information. For more details on the subject please refer to the following web address: http://www.tiresias.gr

Table 2: Summary of the Individual "Doing Business" Indices for the 2008-2009 period

Doing Business Indices for the Greek Economy (2008-2009)					
Doing Business Index	**2008**	**2009**	**Sub Indices**	**2009**	**2010**
Starting a Business	130	140	**Procedures (number)**	15	15
			Time (days)	19	19
			Cost (% of income per capita)	10.2	10.9
			Min. capital (% of income per capita)	19.6	21.4
Dealing with Construction Permits	43	50	**Procedures (number)**	15	15
			Time (days)	169	169
			Cost (% of income per capita)	46.4	50.7
Employing Workers	135	147	**Difficulty of hiring index (0-100)**	33	44
			Rigidity of hours index (0-100)	67	67
			Difficulty of redundancy index (0-100)	40	40
			Rigidity of employment index (0-100)	47	50
			Redundancy costs (weeks of salary)	24	24
Registering Property	104	107	**Procedures (number)**	11	11
			Time (days)	22	22
			Cost (% of property value)	3.8	4.0
Getting Credit	109	87	**Strength of legal rights index (0-10)**	3	3
			Depth of credit information index (0-6)	4	5
			Public registry coverage (% of adults)	0.0	0.0
			Private bureau coverage (% of adults)	39.0	46.9
Protecting Investors	154	154	**Extent of disclosure index (0-10)**	1	1
			Extent of director liability index (0-10)	4	4
			Ease of shareholder suits index (0-10)	5	5
			Strength of investor protection index (0-10)	3.3	3.3
Paying Taxes	65	76	**Payments (number per year)**	10	10
			Time (hours per year)	224	224
			Profit tax (%)	..	13.9
			Labor tax and contributions (%)	..	31.7
			Other taxes (%)	..	1.9
			Total tax rate (% profit)	47.4	47.4
Trading Across Borders	74	80	**Documents to export (number)**	5	5
			Time to export (days)	20	20
			Cost to export (US$ per container)	1,153	1,153
			Documents to import (number)	6	6
			Time to import (days)	25	25
			Cost to import (US$ per container)	1,265	1,265
Enforcing Contracts	86	89	**Procedures (number)**	39	39
			Time (days)	819	819
			Cost (% of claim)	14.4	14.4
Closing a Business	43	43	**Recovery rate (cents on the dollar)**	44.2	44.2
			Time (years)	2.0	2.0
			Cost (% of estate)	9	9

Source: Doing Business Database

Instead, the 2009 downgrading is due to reforms that took place in economies that were previously behind Greece. Figure 3 presents the economies that in 2008 were behind Greece in the DB rankings and in 2009 moved upwards. The first column shows the 2008 rankings and the second column the 2009 rankings. The line

shows the number of reforms that each country made during 2009 and is measured in the right axis. Beware again that a high ranking in the DB index translates in poor DB performance

These developments along with the stalemate in the Greek DB indices led to the 109th DB ranking in 2009. For example Ethiopia was ranked 111nd in the 2009 DB ranking while it was ranked 107th in the same index for 2010. According to the 2009 DB list of reforms, in Ethiopia reforms at the company registry and the streamlining of procedures have made it easier to start a business[34].

All these provide support to the argument that the absence of serious reforms in the Greek economy led to its downgrading in its DB ranking. Under the assumption that there is a strong link between the DB and competitiveness rankings, the down grading of the Greek economy in terms of DB rankings is clear evidence of deteriorating competitiveness too.

Summary

In the preceding discussion the DB indices for the Greek economy were used as a proxy to competitiveness. The main result of the analysis is that the individual DB indices remained relatively constant and this in turn led to a down grading of the Greek economy in the aggregate DB index (from 100th (2008) to 109th (2009) among the 183 economies). This is due to the absence of serious reforms in the period under consideration.

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[34] The list is on page 49 of the Ethiopia edition of the "Doing Business" Indices. The respective web address is: http://www.doingbusiness.org/Documents/CountryProfiles/ETH.pdf

Research Team:
Gikas Hardouvelis, *Chief Economist and Director of* Research
Platon Monokroussos, *Head of Market Research*
Paraskevi Petropoulou, Economist
Galatia Phoka, Emerging Markets Economist

EFG Eurobank Ergasias, 8 Othonos Str. GR 105 57, Athens, Tel:(30210) 3718 906, 3718 999, Fax:(30210) 3337 190, Reuters Page: EMBA
Internet Address: Hhttp://www.eurobank.grH

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