

GREECE¹

3.1 Introduction

As most European countries were coming out of recession at the end of 2009, Greece was entering a tumultuous period. The announcement of the newly elected Greek government in October 2009 that the projected budget deficit for 2009 would be 12.7 percent of GDP² (rather than the 5.1 percent projection that appeared in the 2009 Spring Commission forecast), was initially met with shock and opprobrium in Brussels and other euro-area capitals. The initial reaction of policymakers across the European Union was that the risk of contagion was minimal, and that the right way to deal with the situation was to let Greece “swing in the wind”.

However, by April 2010 the manifestations of the Greek crisis were perceived as threatening the financial stability of the euro area. In early May 2010 the contagion from the Greek crisis was indeed spreading across Europe. Moreover, the Irish, Portuguese, and Spanish repo bond markets were becoming less liquid, and market participants started paying closer attention to the exposure of different banks to Greek, Portuguese or Spanish sovereign debt (BIS 2010). By this time policymakers had recognised the gravity of the situation, and in addition to the 110 billion euros bailout package offered to Greece by the European Union, the European Central Bank (ECB) and the International Monetary Fund (IMF) – commonly known as the “troika” – they decided on May 10 to set up a rescue package, totalling up to 750 billion euros in an effort to prevent a euro-area confidence crisis.³ The ECB pro-

vided further support through its decision to buy euro-area bonds in the secondary markets.

This chapter discusses whether the bailout package will prove sufficient to place the Greek economy on a sustainable path, i.e. whether after the end of the programme in June 2013 Greece will be able (or the market will perceive it as able and willing) to continue making the large interest payments and roll over its debt without the need for further official assistance.

Any attempt at understanding how Greece reached the brink of default, and whether the current bailout package and attendant policy measures and reforms will succeed in solving Greece’s perceived solvency problems, requires that some salient (and unique among the EU countries) features of the Greek economy are brought to attention. We review these features in Section 3.3, immediately after describing the evolution of key macroeconomic aggregates (Section 3.2). We then discuss in Section 3.4 the details of the bailout package and the policies and reforms (including pension reform) undertaken so far. In Section 3.5 we evaluate whether the policies detailed by the Memorandum of Understanding (the official agreement between the Greek government and the European Union, IMF and ECB) will be enough to return Greece’s public and external debt to a sustainable path. This section discusses also whether it will prove politically feasible to implement the policies detailed in the Memorandum. Section 3.6 discusses how Greece will deal with the day after the official financing runs out in the second quarter of 2013. Section 3.7 offers some concluding comments.

3.2 Macroeconomic developments

In this section we give a brief overview of the main macroeconomic developments in Greece during the last five decades, but the emphasis will be on the evolution of the Greek economy during the last 15 years. We also focus more on issues of economic structure that differentiate the Greek economy from the rest of the euro area.

¹ This chapter has been prepared with the partial input of Thomas Moutos. He also kindly allowed the EEAG to use material he has published elsewhere and has assured the EEAG that the editors have given their permission. See Katsimi and Moutos (2010) and Moutos and Tsitsikas (2010).

² The 2009 budget deficit turned out to be significantly higher than that. After a revision by Eurostat in April 2010, which placed it at 13.6 percent of GDP, the latest figure (November 2010) announced by Eurostat is 15.4 percent of GDP.

³ The total of 750 billion euros will consist of up to 500 billion euros provided by euro-area member states, with the IMF providing at least half as much.

3.2.1 Growth performance

Following the end of the three-year civil war in 1949, Greece started its reconstruction period in the 1950s. According to Maddison (1995), Greece had in 1950 the lowest per-capita income among the group of countries that later became the EU-15. Consistent with convergence theories, Greece was the fastest growing economy among this group of countries from 1950 to 1973 and by 1973 its per capita GDP had risen above Ireland's and Portugal's. During the rest of the 1970s Greece's growth rate decelerated, but it was still the highest among the (later to become the) EU-15, and the second highest growth rate among the OECD countries behind only Japan. This development is portrayed in Figure 3.1.

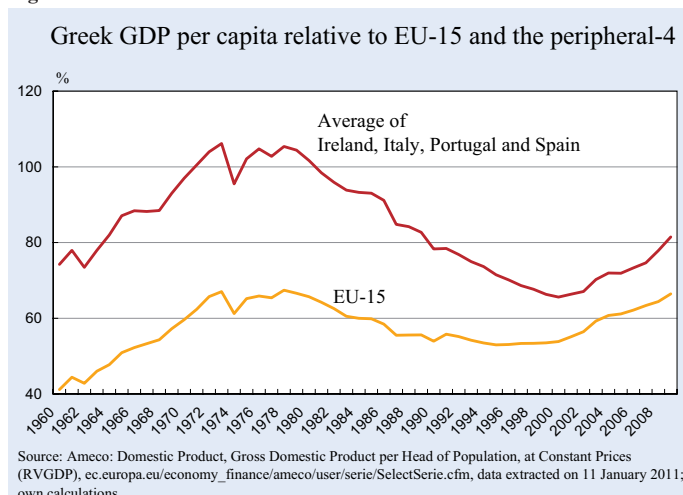
The long period of fast growth came to an abrupt end in the 1980s. During this decade, per capita GDP in Greece grew not only at a slower rate than the peripheral-4 (Ireland, Italy, Portugal and Spain), but also in comparison with the (unweighted) average for the (later to become the) EU-15 and the OECD (2 percent and 2.1 percent, respectively).

The anaemic performance of the economy continued until 1993 (the 1990 to 1993 growth in per capita GDP was minus 0.5 percent per annum), but improved for the rest of the 1990s and accelerated in the first decade of the new millennium. However, as discussed below, the relatively fast growth of the last decade did not have solid foundations, but was based on an unsustainable public and private spending spree.

3.2.2 Labour market

The changes in the average growth rates from decade to decade were reflected in changes in the unemployment rate (Figure 3.2). Until 1981, due to fast output growth and emigration, the unemployment rate was kept below 4 percent. By 1984, the unemployment rate had climbed above 7 percent, and it declined slightly up to the end of the decade. During the 1990s the unem-

Figure 3.1



ployment rate increased gradually to 11.7 percent in 1999, despite the fact that the 1990s were a higher-growth decade than the 1980s. The fast growth during the last decade brought the unemployment rate down to 7.7 percent in 2008, but by 2009 it had climbed to 9.5 percent, reaching even 13.5 percent in October 2010.

The fluctuations in the unemployment rate were not matched by fluctuations in the total employment rate which, following a small decline in the early 1990s, increased steadily, from 55 percent in 1983 to 61 percent in 2008. Unlike other euro-area (EA) countries, the increases in the employment rate in Greece were not accompanied by substantial decreases in hours worked per employed person (Figure 3.3). The average annual hours worked per employed person remain far above the EA-12 average (Greece: 2,160, EA-12: 1,578, in 2009) and are higher than in any other country in the EU-27.

Figure 3.2

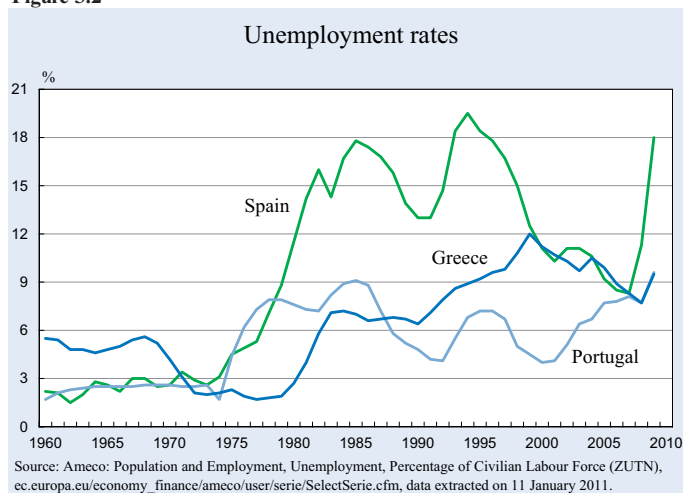
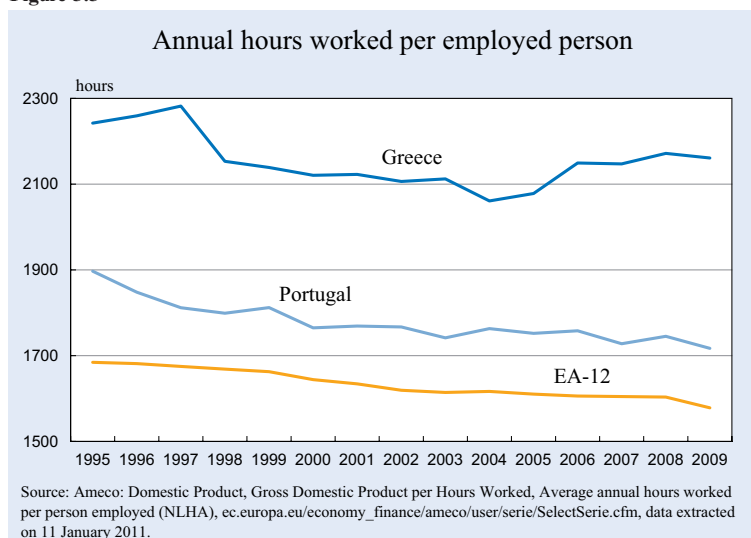


Figure 3.3



An explanation for the high number of hours worked is the importance of self-employment in the Greek economy. The share of self-employment in total employment is the highest among OECD countries (it is about 16 percentage points higher than the EA-12 average).⁴ Self-employed people tend to work and report longer hours than dependent employees; for example, it is common for small store owners – and there are many of them in Greece – to work more than 70 hours per week.

A complementary explanation reflects the interaction between the Greek socio-economic structure, an underdeveloped welfare state and employment protection legislation (EPL). Greece had (until the reforms of July 2010) one of the strictest EPL measures among OECD countries (OECD 2004). A high level of EPL implies that employers will try to sort out among job applicants of similar productivity those ones who are more likely to stay with the firm for a long period of time, and offer them a wage-employment package that involves long work hours. Given the Greek family and social welfare structure, these applicants will most likely be prime-aged men. The absence of a well-developed welfare state implies that females face serious constraints in their labour market activity. Both the willingness of employers to hire them will be lower (as employers may wish to avoid future quits induced by childbearing or other family-related care activities that are usually performed by

⁴ This is only partly explained by the larger share of agricultural employment in Greece, and it may well be induced by a privately efficient response to the limits on the size of the firm caused by the high employment protection legislation. This arises because firm owners prefer to rely on “flexible” family members to staff the company. The implications are reflected in the very small average size of Greek firms.

women), and jobs clashing with their responsibilities as home-makers will be less attractive. The efficient course of action for a family in these circumstances is often for the male member to work long hours in market-based activities and the female member to specialize in home production (or to participate in the shadow economy).

Given the expected contraction in aggregate demand for hours of work in the Greek economy due to the consolidation measures of the bailout package, it is important that policy mea-

sures are taken that soften the impact on the measured unemployment rate and the incidence of unemployment by inducing some work-sharing (e.g., through facilitating the creation of part-time employment opportunities or temporary reductions in individual work hours).

3.2.3 Public sector

The Greek government is highly centralized. The central government collected almost 67 percent of revenues and accounted for about 55 percent of expenditures in 2007; the relevant figures for the OECD as a whole are 58 percent and 43 percent, respectively (OECD 2009). Local governments represent a very small portion of total revenues and expenditures (Greece: 2.6 percent and 5.6 percent, OECD: 17.6 percent and 32.2 percent, respectively) and receive most of their revenues as grants from the central government (more than 90 percent of their funding). Social security funds account for over 30 percent of revenues and almost 40 percent of expenditures (OECD: 21.4 percent and 24.6 percent, respectively).

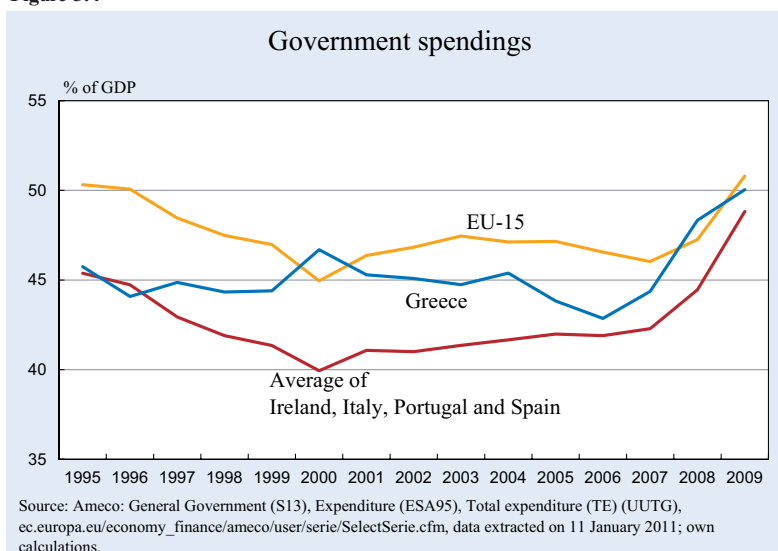
3.2.3.1 Government spending and its components

Up until 1980, government spending in Greece was significantly smaller than the average for the countries which became the initial 12 countries of the euro area (EA-12). In 1970, government spending as a proportion of GDP was 23 percent in Greece and 34 percent in the (later to become the) EA-12, whereas in 1980 the corresponding figures were 30 percent for Greece and 43 percent in the (later to

become the) EA-12.⁵ After a huge expansion of the public sector in Greece in the 1980s, government spending as a proportion of GDP had, by 1990, gone above that of the states that became the EA-12, the relevant figures being 49 percent for Greece and 48 percent for the EA-12 (OECD 2009). Since the increase in spending was not accompanied by corresponding increases in government revenue, the explosion in public debt as well as the prospect of European Monetary

Union (EMU) participation forced successive Greek governments in the 1990s to put the brakes on accelerating government spending. By 1999, government spending was down to 44 percent of GDP in Greece compared with 48 percent in the EA-12 states. It appears that after gaining entry in the euro area, Greek policymakers stopped being as vigilant in their efforts to further curb government spending, and by 2008 (before the global crisis hit Greece), government spending stood at 48 percent, climbing to 52 percent of GDP in 2009. Of particular interest is the comparison in the evolution of government spending among the peripheral EU countries. Figure 3.4 shows that by 1997, government spending (as a

Figure 3.4



percentage of GDP) in Greece had surpassed the corresponding figures for the average of Ireland, Italy, Portugal and Spain, whereas by 2008 it had matched the EU-15 average.

The growth in government spending in Greece is largely accounted for by the growth in social transfers, which rose from 8 percent of GDP in 1970 to 21 percent of GDP in 2009, and in the compensation of public employees (from 8 percent in 1976 to 12.7 percent of GDP in 2009).⁶ Of particular interest is the fact that during this period government spending on gross fixed capital formation (excluding capital transfers received) remained practically unchanged, hovering at around 3 percent of GDP.

The most important category among income transfers in Greece is pension benefits. This is the fastest growing category of social spending, and the biggest risk regarding the sustainability of public finances in

⁵ The low share of government spending until 1980 is noteworthy given Greece's large military spending, which has been on average 50 percent larger than what the government spends on education. The implications of this allocation of public spending for Greece's long-run growth potential are beyond dispute.

⁶ For the earlier data see Ministry of National Economy (1998), whereas the recent data are from the Ameco database.

Table 3.1

Demography-related government expenditure

	Greece			EU-27			Euro area		
	Level 2007 (% of GDP)	Change 2007–2035 (percentage points)	Change 2007–2060 (percentage points)	Level 2007 (% of GDP)	Change 2007–2035 (percentage points)	Change 2007–2060 (percentage points)	Level 2007 (% of GDP)	Change 2007–2035 (percentage points)	Change 2007–2060 (percentage points)
Pensions	11.7	7.7	12.4	10.2	1.7	2.4	11.1	2.1	2.8
Health care	5.0	0.9	1.4	6.7	1.0	1.5	6.7	1.0	1.4
Long-term care	1.4	0.8	2.2	1.2	0.6	1.1	1.3	0.7	1.4
Unemployment benefits	0.3	–0.1	–0.1	0.8	–0.2	–0.2	1.0	–0.2	–0.2
Education	3.7	–0.3	0.0	4.3	–0.3	–0.2	4.2	–0.3	–0.2
Total	22.1	9.1	15.9	23.1	2.7	4.7	24.3	3.2	5.2

Source: European Commission (2009), p. 26.

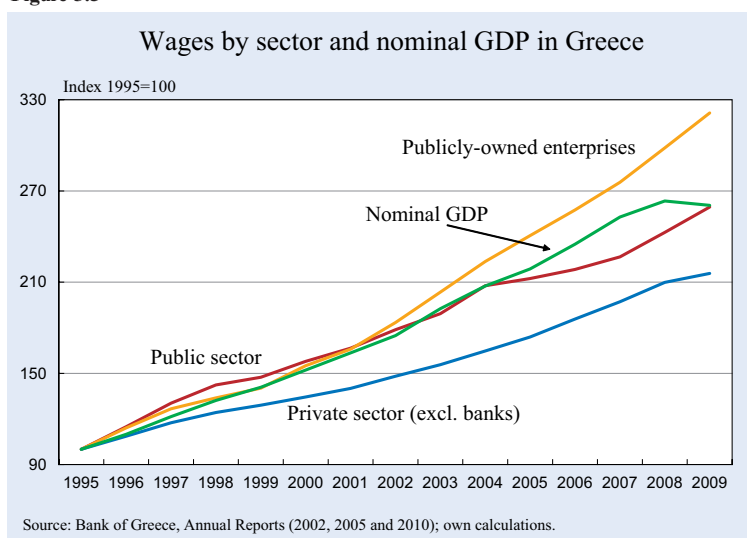
Greece. Government spending on pension payments was expected to rise in Greece from 11.7 per cent of GDP in 2007 to 19.4 per cent in 2035 (for the EU-27 the rise is expected to be only 1.7 percentage points, taking it to 11.9 per cent of GDP in 2035).

Table 3.1 provides long-term projections for pension spending as well as for different categories of demography-related expenditures. The sum of all other age-related government expenditures is expected to rise by only 1.4 percentage points until 2035 (in contrast to the 7.7 percentage points for pensions alone); the policy reforms of the pension system adopted in July 2010 as part of the bailout package may go some way towards ensuring that the pension system will not be the cause of recurring fiscal crises like the one the country experienced in 2010.

The large growth in general government spending on public employee compensation (from 8.3 per cent of GDP in 1976, to 12.7 per cent in 2009)⁷ is the result of considerable increases in both the number of (general) government employees and in their real wages, especially during the 1980s. While up to 2000, the Greek government was spending less (as a percentage of GDP) than the EA-12 average on wages and salaries, the inexorable rise in government spending on employee compensation has pushed it now higher than the EA-12 average. Between 1976 and the second quarter of 2010, the number of government employees almost tripled (from about 282 thousand to 768 thousand⁸), while private sector employment during the same period increased by about 24 per cent (from 2.95 million to 3.66 million); thus, general government employment increased from 8.7 per cent of total employment in 1976 to 17.3 per cent in the second quarter of 2010.

Real wages of civil servants received a very large boost in the 1980s. In 1982 alone, the central government's

Figure 3.5



wage bill increased by 33 per cent. The growth in public sector compensation costs continued in the 1990s under different guises. Nominal compensation per employee in public enterprises grew significantly faster than wages in other sectors. We can see from Figure 3.5 that the cumulative increase over the period from 1995 to 2009 in (gross) nominal private sector compensation per employee (excluding the banking sector) was 116 per cent, whereas the cumulative increase in the public sector was 159 per cent, and in publicly owned enterprises 221 per cent.⁹ The cumulative increase in nominal GDP during the same period was equal to 160 per cent, the same as the increase in public sector compensation per employee. We note that the increase in the economy-wide real compensation per employee was equal to 39 per cent during the same period, whereas the increase in GDP per employed person was equal to 35 per cent. The increase in the labour share was thus due to profligacy in the wider public sector,¹⁰ a result of the loose budget constraints that had come with the euro in some of Europe's peripheral countries.

The above-described developments in public sector pay and employment reflect the fact that public sector employment has remained a major channel through which political parties in Greece dispense favours to partisan voters, as well as a "redistributive" tool in periods of high unemployment (see Demekas and Kontolemis 2000). The relatively large size of employment in the public sector, and the desire of the two contending political parties in Greece to use appoint-

⁷ These numbers are calculated using data from the Ministry of National Economy (1998).

⁸ The use of the word "about" is intentional. The Ministry of Finance, until June 2010, had no precise idea of the total number of general government employees. This reflects mainly the unwillingness of various ministries to reveal the number of civil servants employed in their core operations and in the public enterprises under their control. A census of civil servants undertaken in July 2010 revealed that their number is 768,009.

⁹ See Fotoniata and Moutos (2010).

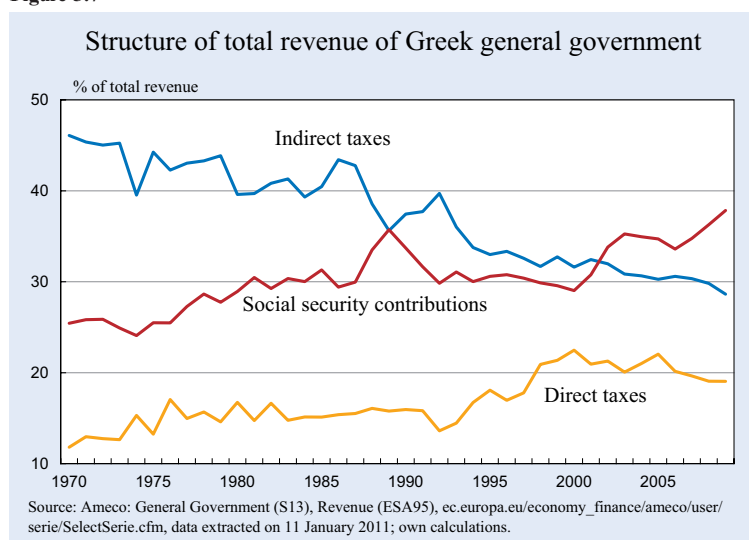
¹⁰ From 1995 to 2009, the rise in real private sector wages was smaller than the rise in business sector productivity (Fotoniata and Moutos 2010).

ments in the public sector to gain votes, was one of the factors responsible for why the increases in public sector wages were consistently above those awarded in the private sector. The consequence was not only a surge in government spending but also increasing reservation wages for private sector employment, which undermined the competitiveness of the Greek economy. Economists call this phenomenon the Dutch disease after the difficulties the Dutch economy once faced when the natural gas industry absorbed substantial fractions of the workforce from industry by outbidding wages.

3.2.3.2 Sources of government funding

The rise in government revenue only hesitantly followed the rise in government spending. While government spending relative to GDP rose by 18 percentage points in the 1980s, government revenue rose by only 5 percentage points (from 27 percent in 1980 to 32 percent in 1990). More adjustment in government revenue occurred in the 1990s, when its GDP share rose by 11 percentage points (from 32 percent of GDP in 1990 to 43 percent in 2000). This brought Greece's general government revenue 3 percentage points below the EU-15 average (and above the average for the peripheral-4), but by 2009 government receipts in

Figure 3.7

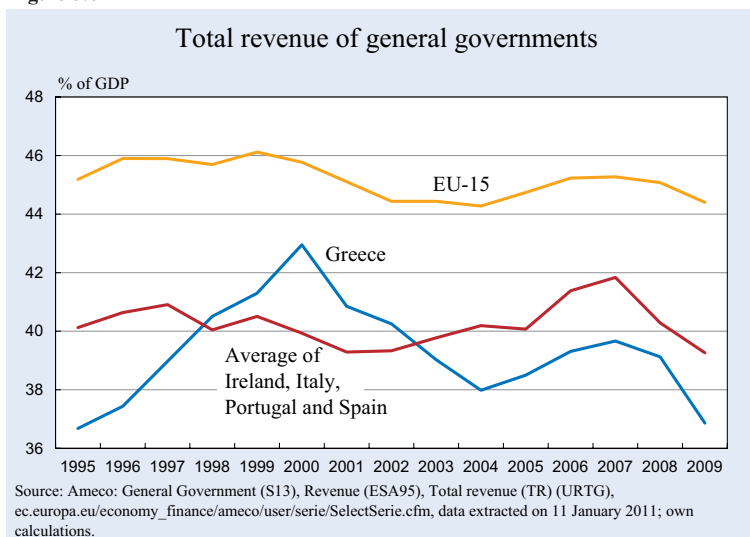


Greece (at 37 percent of GDP) had again fallen way below the EU-15 (which stood at 44.3 percent) and even the peripheral-4 average (which stood at 39.2 percent) – see Figure 3.6.

Direct taxes (including social security taxes) contributed the most to the rise in government revenue; whereas in 1976 they were 13 percent of GDP and 47 percent of total government revenue, by 2009 they had risen to 23 percent of GDP and 59 percent of government revenue. As a result, the significance of indirect taxes declined from 46 percent of government revenue in 1976 to 30 percent in 2009. This reduction in the importance of indirect taxes was a result of two forces: first, the harmonisation of indirect taxation in Greece with those of the (then) EEC in 1980 (the year prior to Greece's accession to the EEC) when many indirect taxes were cut or abolished;¹¹ second, the creation of the Single Market in 1992, when more indirect taxes were abolished. Figure 3.7 depicts the evolution of different sources of tax revenue in total (tax and non-tax) revenue.

Social security contributions, which provided 26 percent of government revenue in 1976, rose

Figure 3.6



Social security contributions, which provided 26 percent of government revenue in 1976, rose

¹¹ Following Greece's entry in the EEC in 1981, there was a large decrease of tariff revenue; whereas in 1974 tariff revenue contributed 7.5 percent to total tax revenue, by 1982 the share of tariff revenue in total tax revenue had declined to 1.8 percent, and by 1990 had declined to below 0.1 percent.

to form 31 percent of revenue in 1985, and climbed to 38 percent in 2009. This rise in the importance of social security contributions in government revenue came about through large rises in statutory tax rates. In 1981, the rate for employer social security contributions stood at 18.75 percent, whereas the employee rate was 10.25 percent. By 2008, these rates had risen to 28 percent for employers and 16 percent for employees. The relevant figures for the EU-15 average in 2008 were 24 percent and 11.4 percent, respectively (OECD 2008).

The outline of the Greek tax system shows that Greece has significantly lower tax revenue (including social security contributions) than the other EU-15 countries and even lower ones than the other countries in the periphery (with the exception of Ireland). In comparison to the EU-15, the lack of total government revenue, and of tax revenue, relative to GDP has been in the range of 6 to 7 percent of GDP in recent years.

In addition, the Greek tax system is replete with serious drawbacks. (Some of the above-mentioned shortcomings of the tax system have been ameliorated by the 2010 tax reform, which we discuss in Section 3.4). These have arisen as the tax system has been changing frequently in ad-hoc fashion to comply with EU regulations, to generate additional revenue and to reverse (or sometimes foster) real or perceived inequities of the tax system.

Both the issues of equity and efficiency are adversely affected by the main issue bedeviling Greek public finances, namely tax evasion. This issue is particularly pertinent among those owning small businesses and the self-employed (from plumbers and electricians to medical doctors and lawyers), and it is exacerbated by the fact that the share of self-employed in total employment is so high in Greece. That the self-employed are more likely to tax-evade than those on dependent employment is well established in the literature. For example, using US tax audit data, Slemrod and Yitzhaki (2002) calculated that the rate of under-reporting of income from dependent employment was less than 1 percent, whereas the rate at which the self-employed under-reported their income was close to 58 percent. Assuming that the behaviour of the self-employed in Greece regarding tax evasion is similar to that in the United States, the difference in the shares of self-employment in the two countries (Greece: 30 percent, United States: 7 percent) would explain most of the difference (about 20 percentage points) in

the estimated size of the shadow economy in the two countries.¹²

The distributional implications of tax evasion in Greece have been found to largely offset some of the progressive elements of the tax system. Matsaganis and Flevotomou (2010) have compared the tax reported incomes of a large sample of income tax returns in 2004/05 with those observed in the household budget survey of that year. They found that tax evasion causes the poverty rate and the poverty gap to rise above what would have been the case under full tax compliance, in spite of the fact that in their calculations the poverty line was allowed to rise to reflect higher disposable incomes with tax evasion.

In the past, Greek governments have tried to deal with tax evasion by inferring an individual's income on the basis of "objective criteria" (i.e. presumptive taxation). This method presumes that a minimum level of income is required for an individual to own assets or consumer durables of various sizes or value (e.g. houses, swimming pools, passenger cars, motor boats) and to pay for household services (e.g. maids, gardeners, drivers, tutors). An individual's tax obligations would then be calculated on the higher of their reported or "objectively calculated" income. Various other methods have also been tried in the past in order to infer the income of self-employed individuals (e.g. in the case of dentists an algorithm based on the years of practice, the geographical location of the surgery, the use of dental assistants, etc.).

Despite the shortcomings of these methods, it is worth noting that they resulted in higher tax obligations for many of the professional classes (e.g. medical doctors, dentists, lawyers, architects), which on average reported incomes below those earned by manufacturing workers. These methods were abandoned a few years ago in the expectation that the reduction in statutory tax rates would increase taxpayer compliance. However, the response of the professional classes was not as expected since they continued to declare ridiculously low incomes.¹³ As a result, the current Greek government, forced also by the threat of default, is bringing forward legislation that reinstates

¹² Schneider and Enste (2000) and Schneider (2006) estimate the size of the shadow economy in Greece to be the largest (as a proportion of GDP) among 21 OECD countries. Their estimates hover between 25 and 30 percent of GDP.

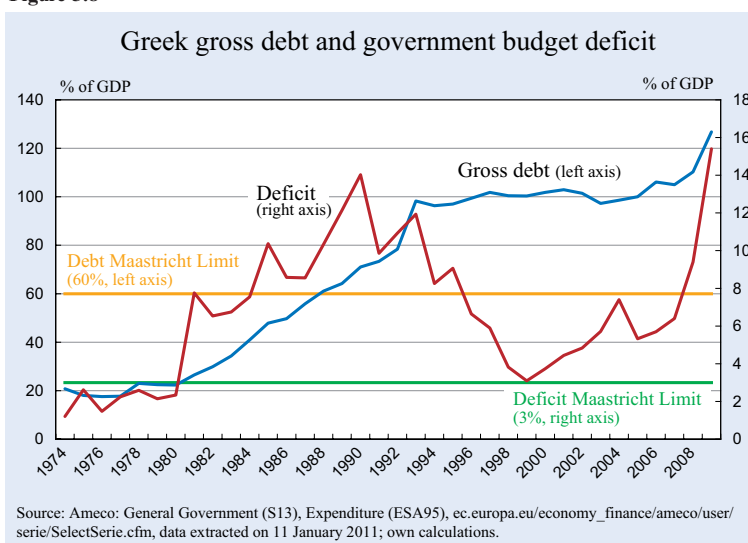
¹³ For example, according to data released from the Ministry of National Economy (reported in the Greek newspaper *Ta Nea*, www.tanea.gr/default.asp?pid=2&artid=4567727&ct=1, 31 March 2010), among the 151 medical doctors practicing in the most lucrative (for medical professionals) area of Athens, more than 40 percent of them reported annual, before-tax, incomes of less than 20,000 euros in 2008, which is less than the average income for wage earners.

(and in some cases reinforces) the old “objective criteria” for the calculation of minimum taxable income.

In addition to the large rates of income tax evasion, Greece faces very high rates of payroll tax evasion. As is to be expected in such cases, the estimates vary widely. Studies conducted by the Social Insurance Foundation (IKA) estimate that payroll tax evasion has increased through the years; the early 1990s’ estimates were around 13 percent of revenues, whereas more recent estimates raise this figure from about 16 percent in 2003 to 20 percent in 2005 (POPOKP 2005). IKA estimated that employers in 10 percent of all firms inspected in 2008 failed to pay social contributions, while 27 percent of all workers remained unregistered (Matsaganis et al. 2010). A weak connection between individual contributions and benefits has created incentives for collusion between employer and employee in order to minimise their social security contributions.

On the face of it, successive Greek governments have tried to implement reforms aimed at increasing the efficiency of tax collection, mainly through efforts to curb tax evasion. For example, from 2004 to 2007 new measures were instituted with the aim of reducing tax evasion. The most important of these measures were: (i) the imposition of VAT on new buildings (aimed at reducing the incidence of informal activity in construction activities), and (ii) the upgrading of the information technology used for the cross-checking of tax data and the restructuring of audit services. In addition, cuts in personal income taxes and measures to broaden the tax base (through the imposition of a 10 percent tax on dividends and capital gains) and to simplify the tax system (through a unique property holding tax) were introduced. Yet, these measures have not had much effect on tax evasion. A reason for this is that the measures are mostly piecemeal and do not take into account all other pieces of existing legislation. Another reason is that recurring tax amnesties have eroded the credibility of the system by providing incentives to taxpayers to delay and eventually evade the payment of taxes. The current Greek government announced another such “settlement” in October 2010. A further incentive for tax-evading

Figure 3.8



behaviour is provided by the existence of deadlines that permit taxpayers to be absolved of their tax obligations if the state has not managed to collect the owed taxes in time. In 2007 alone, around 3.5 billion euros (about 1.5 percent of GDP) in taxes were written off, mainly due to lapses in time for the collection of the owed tax revenue (State Audit Council 2008).

The failures in collecting taxes and in reigning in government spending were reflected in the fast accumulation of public debt. The accumulation of public debt through successive budget deficits is depicted in Figure 3.8 for the period from 1974 to 2009.¹⁴ We note the large deficits of the 1980s and early 1990s which took the debt-to-GDP ratio from 20 percent in 1975 to 100 percent in 1994. The government’s focus on the goal of EMU participation led to the fiscal consolidation of 1994 to 2000, but this was reversed after being admitted to the euro area. The onset of the global financial crisis put an end to the perception (held by both politicians and financial markets) that Greek public finances were sustainable, and by the end of 2009 the public debt-to-GDP ratio had risen to 127 percent, and the budget deficit for the year is estimated at 15.4 percent of GDP.

Given the fast growth in nominal (and real) GDP that the Greek economy registered from the mid-1990s until 2008 and the rather moderate (by Greek standards) deficits recorded during the period, how can

¹⁴ From 1953 to 1973 Greek governments were very prudent and, in most years, modest annual budget surpluses were recorded. This fiscal stance was partly a result of the fact that the country could not borrow internationally prior to 1966, when the settlement of the 1930s default was finally completed.

one account for the fact that there was not a decline in the debt-to-GDP ratio?

To answer this question we decompose the well-known identity¹⁵ describing the accumulation of public debt in order to disentangle the relative importance of the following four factors to debt accumulation: (i) over-generous programme spending and lax tax policy (and administration) leading to a primary deficit even if the economy is operating at potential output – we call this the *structural component*; (ii) primary deficits arising as a result of output being below potential – the *cyclical component*; (iii) the (real) interest rate exceeding the GDP growth rate, so that the debt-to-GDP ratio would rise even if programme

spending and revenues are equal – the rate component; (iv) various activities undertaken by the government that affect the accumulation of debt but are not reported as deficit – the *stock-flow adjustment*.¹⁶ The details of this decomposition are explained in Box 3.1.

Figure 3.9 presents the annual decomposition of the debt accumulation, whereas Figure 3.10 presents the compound effect of the different components. Starting from 1990, when government debt was 72 percent of GDP, the debt-to-GDP ratio reached

¹⁵ Blanchard (1990), Buitier, Corsetti and Roubini (1993), and Fortin (1996) present various ways of decomposing the public debt accumulation identity.

¹⁶ The data used in this section relate to debt and deficits as reported by Ameco before the November 2010 revision by Eurostat.

Box 3.1

Public debt decomposition

The government budget constraint implies that the stock of public debt at the end of period t , B_t , results from inherited debt at the end of period $t-1$, B_{t-1} , plus the budget deficit during period t , D_t :

$$B_t = D_t + B_{t-1}.$$

Interest payments can be separated from other expenditures, and the accumulation identity can then be rewritten as:

$$B_t = (1 + r_t)B_{t-1} + PD_t, \quad (1)$$

where PD_t is the primary deficit in period t . To account for the effects of growth on the government's ability to borrow, after some simple manipulations we can approximate the evolution of government debt in terms of ratios to GDP (denoted by lowercase letters):

$$b_t - b_{t-1} = (r_t - g_t)b_{t-1} + pd_t, \quad (2)$$

where g_t is the growth rate of real GDP.

An implication of equation (2) is that in order for the debt ratio to be stabilised, the left hand side of (2) must be zero, implying that the primary balance should satisfy

$$pd_t = -(r_t - g_t)b_t. \quad (3)$$

This implies that when the real interest rate is higher than the growth of real GDP and the debt is positive, the government must run a primary surplus ($pd < 0$).

Using equation (2), we can rewrite the debt (-to-GDP ratio) accumulation identity as

$$b_t - b_{t-1} = pd_t^* + (pd_t - pd_t^*) + (r_t - g_t)b_{t-1}, \quad (4)$$

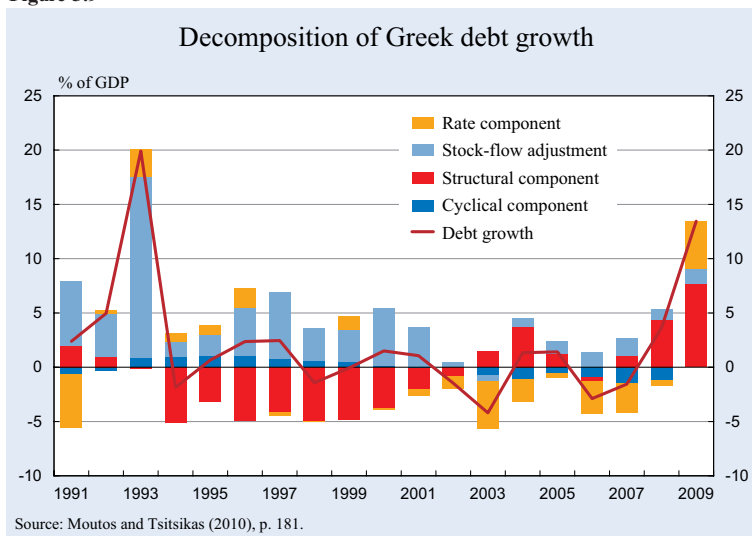
where pd_t^* stands for the primary deficit-to-GDP ratio when GDP is at its potential level. In equation (4) we now have the debt accumulation consisting of three components. The first component is the *structural* component and measures the contribution of the primary deficit to debt accumulation if the economy is operating at full capacity. The second component is the *cyclical* component (this is the second term on the right hand side) and measures the contribution that the *primary deficit* makes to debt accumulation as a result of the economy operating below capacity. Finally, the third component, which has been called the *rate* component, measures the influence of the difference between the (real) interest rate and growth of GDP on the debt-to-GDP ratio.

In order to apply equation (4) in the Greek context, we need to take into account various activities undertaken by the government that affect the accumulation of debt but are not reported as deficit. These activities are subsumed under the term *stock-flow adjustment* (European Commission 2004). Taking into account the stock-flow adjustment term (sf_t), the modified equation (4) reads:

$$b_t - b_{t-1} = pd_t^* + (pd_t - pd_t^*) + (r_t - g_t)b_{t-1} + sf_t. \quad (5)$$

The Ameco database provides estimates for two measures of potential output as well as estimates of the cyclically adjusted deficit for both of these measures. Since the results of using either measure of potential output do not affect, to any significant degree, the contribution of each factor to the evolution of debt, we will present results based on the sustainable GDP measure.

Figure 3.9



113 percent at the end of 2009. Figure 3.10 makes clear that the rise in the debt-to-GDP ratio by 41 percentage points from 1990 to 2009 can be wholly attributed to the stock-flow effect, which, in the absence of other forces, would have contributed 62 percentage points to the debt-to-GDP ratio. (We note that this conclusion would most likely remain intact had we used the latest debt and deficit data as revised by Eurostat in November 2010.) The joint, cumulative force of the other three components would have subtracted from the debt-to-GDP ratio 21 percentage points, of which the structural component contributed 12 points, the rate component 8 points and the cyclical component just 1 percentage point.

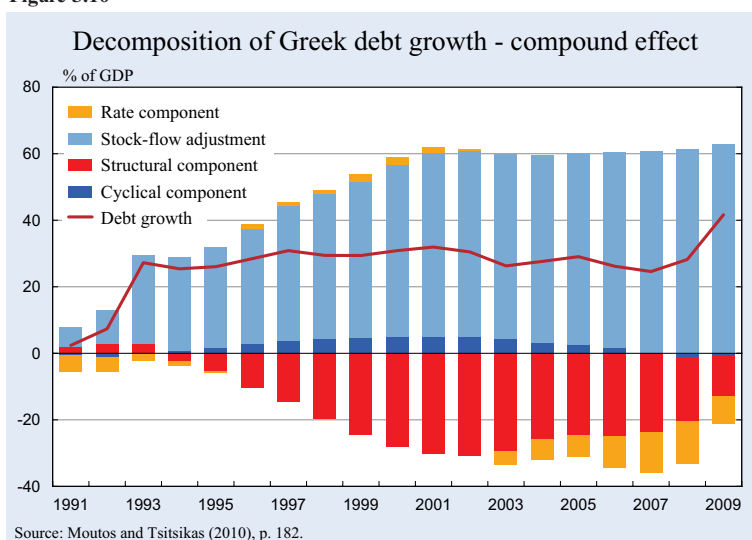
What government actions (both before and after 1991) were responsible for this huge contribution of

stock-flow adjustments to the rise in the debt-to-GDP ratio? The Greek government had accumulated (especially during the 1980s) large implicit liabilities in the form of loan guarantees to “restructured enterprises”, which became quasi-public entities. From 1990 to 1993 the government took over the long-standing liabilities of these entities to the banking system – up to that point these liabilities were not recorded in government debt.¹⁷ These liabilities (known as “consolidation loans”) amounted to 1.8 trillion drachmas (about 5.3 billion euros), and had by 1992 added 10 percentage points to the debt-to-GDP ratio.

Large stock-flow adjustments were also recorded during the 1994 to 2000 period since the second phase of EMU required a consolidation of government accounts, especially with the central bank. The government had three accounts with the central bank, which were overdrawn to the sum of 3.04 trillion drachmas (about 9 billion euros), all of which had to be transformed into formal debt by the end of 1993 so that Greece could enter the second phase of EMU (see Manessiotis and Reischauer 2001 for more details). This action alone added another 16 percentage points to the debt-to-GDP ratio. In addition to these very large, debt-increasing, stock-flow adjustments, it is worth mentioning that during the consolidation period some (far smaller) debt-reducing

adjustments were made. These involved the transfer of Social Security Fund’s deposits from the central bank (where they were held in its own name) to the government’s accounts, as well as the privatization revenue that was used to retire public debt. It is evident that the effort at budget consolidation that started in 2010 will not be successful if it does not manage to reign in the creation of the off-budget liabilities,

Figure 3.10



¹⁷ Large stock-flow adjustments took place in 1982 and in 1985 as well. These resulted from previous loans that the Bank of Greece extended to the government in order for the latter to make off-budget transfers to farmers.

which are still accumulating in some publicly-owned enterprises.

From Figure 3.9 we observe that from 1994 to 2000, the structural component contributed on average about 4 percentage points per annum to debt reduction. This process was reversed gradually from 2001 to 2009; during this period the structural component added on average about 2 percentage points per annum to the increase in the debt-to-GDP ratio. One may be justified in thinking that the efforts of Greek governments to reign in the accumulation of debt were relaxed after the country gained entry into the euro area, given that Greek interest rates fell dramatically (see Chapter 2, Figure 2.1). A more benign interpretation would take into account the steep rise in spending on infrastructure necessitated by the 2004 Athens Olympics and the recent global financial crisis. Nevertheless, the very large debt-to-GDP ratio left the country vulnerable to perturbations in the difference between GDP growth and real interest rates. We note that due to the low interest rate environment in which Greece was operating after entering the EMU and until the onset of the global financial crisis, as well as the fast growth rates it experienced after 1994, the rate component did not contribute to debt accumulation (in fact, it subtracted 8 points¹⁸).

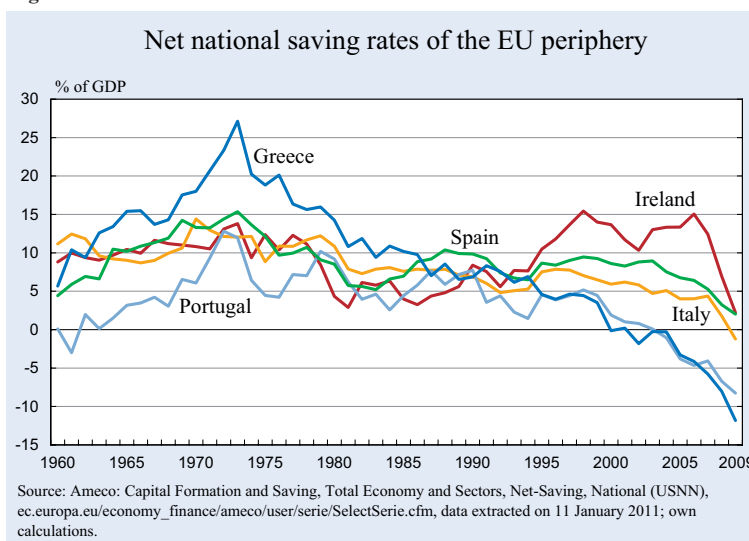
3.2.4 External imbalances

Bringing the government's finances in a sustainable position is a key priority for Greece. Unfortunately, this may not be the main problem; the very high, and rising, net foreign indebtedness may be the bigger problem. The fast growth experienced by the Greek economy after 1950 (identified with the initial stages of its catch-up phase with the advanced OECD economies), was

¹⁸ See Moutos and Tsitsikas (2010) for more details.

¹⁹ See Figure 3.11. The difference between gross and net saving is the depreciation of capital (i.e., capital consumption).

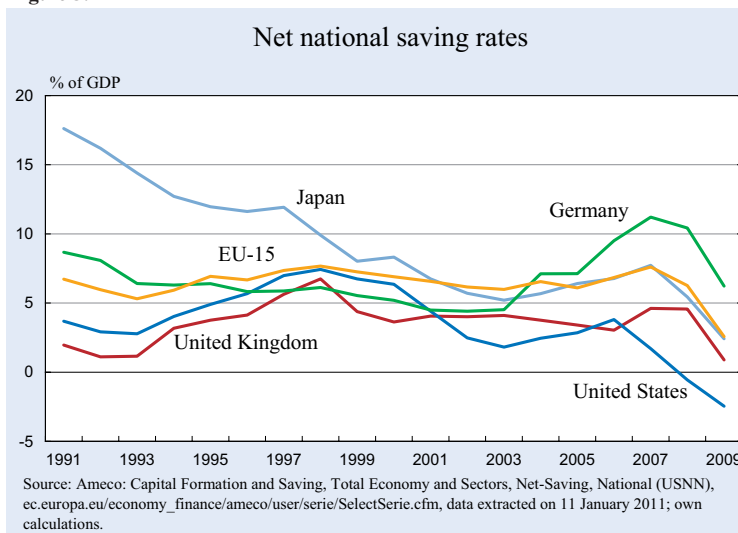
Figure 3.11



associated with significant increases in both the net and gross saving rate until 1974. For the 35 years since 1974, however, there has been a steady decline in the saving rate, with the net saving rate dropping by about 32 percentage points, from 20 percent to minus 12 percent.¹⁹ This huge drop in the national saving rate has (since 1988) not been associated with a rise in government borrowing, but it is wholly attributable to the decline in the private sector's gross saving rate (from 27 percent in 1988 to 11 percent in 2008; see Moutos and Tsitsikas 2010).

The decline in the Greek national saving rate is larger than in any other EU-15 country. Figure 3.11 shows the net national saving rates for Greece, Ireland, Italy, Portugal and Spain, whereas Figure 3.12 displays the same variable for the EU-15, Germany, Japan, the

Figure 3.12



Source: Ameco: Capital Formation and Saving, Total Economy and Sectors, Net-Saving, National (USNN), ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm, data extracted on 11 January 2011; own calculations.

United Kingdom and the United States. Greece and Portugal are the only countries in the euro area for which the net national saving rate turned negative under the euro, long before the onset of the global financial crisis in 2008, another aspect of the soft budget constraints that prevailed.²⁰

The upshot of the large decline in national saving for Greece has been a gradual widening of the current account deficit and the accumulation of foreign debt (Figure 3.13). During its period of fast growth from 1950 to 1973 (about 7 percent per annum),

Greece ran small current account deficits, which were on average about 2 percent of GDP. These small current account deficits were made up of large deficits in the trade balance on goods and services (about 7 percent on average) and significant surpluses (about 5 percent on average) on the income and transfers accounts, mainly reflecting remittances from Greek seamen and emigrants.

Following the first oil crisis and up to Greece's accession to the EEC in 1981, there was a reduction in the growth rate (to still respectable 4 percent per annum), and a marked improvement in the trade balance, which produced a string of current account surpluses. From 1981 onwards, both the income and trade accounts started deteriorating (as emigrants started returning to the home country, and the gradual liber-

Figure 3.13

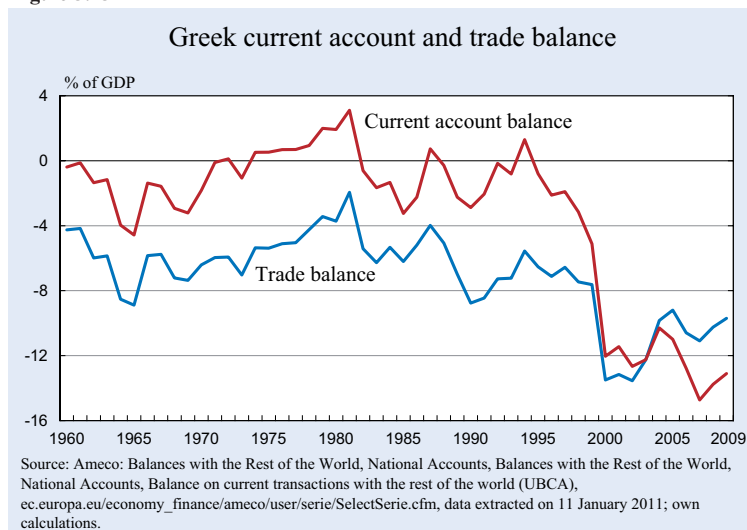
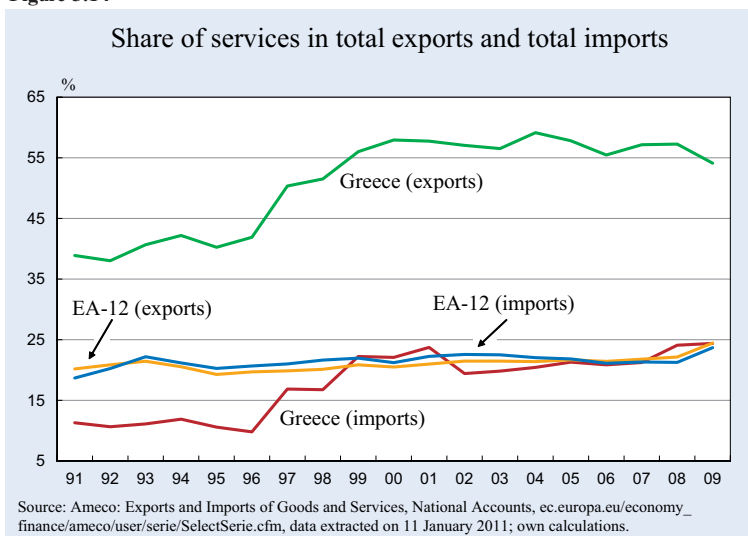


Figure 3.14



alisation of trade took effect), but there was an improvement in the transfers balance (mainly transfers from the European Union), which, as long as it lasted, prevented a large deterioration of the current account. The current account deteriorated sharply around the year 2000 shortly before Greece was admitted to the euro area. According to Bank of Greece figures, the country's negative net international investment position stood at about 98 percent of GDP by the third quarter of 2010 – a result of the huge current account deficits that were incurred during the last 10 years.²¹

We conclude this section by drawing attention to the overwhelming influence of the service sector in total Greek exports (Figure 3.14). The share of services in total exports increased during the 1990s from an already high level and has, during the last decade, been more than twice as large as the corresponding measure for the EA-12. Before the crisis, in 2008, transportation services (mainly sea transport) contributed 56 percent to the total exports of services,

²⁰ Among the likely causes of the decline in the saving rate in Greece is the continuous decline of the share of agricultural employment (since farmers face greater income uncertainty than wage earners – especially government employees), and the gradual extension of unfunded pension benefits to a larger part of the population.

²¹ See Bank of Greece, Statistics, External Sector, International Investment Position www.bankofgreece.gr/BogDocumentEn/International_Investment_Position-Data.xls, data extracted on 23 January 2011, own calculations.

while travel services (mainly tourism) contributed another 34 percent.²²

During the recent global crisis, the share of services in total exports decreased in Greece by about 4 percentage points from 2008 to 2009, whereas it increased by about 2.5 percentage points in the EA-12. These differential movements reflect the fact that Greece was earning from transportation services in 2008 as much as from its total exports of goods (including ships and oil). The considerable slowdown in world trade in 2009 reduced Greek receipts of transportation services by about 30 percent in 2009 relative to 2008.

3.3 The crisis

The slowdown in global economic activity in 2008, and the recession in OECD countries in 2009 were the prelude, but not the cause, of the Greek crisis. With hindsight we know that Greece had been on an unsustainable path for many years. In fact, it may have been unfortunate for Greece that the global crisis did not come earlier – for, in this case, both the public debt-to-GDP ratio and the net foreign indebtedness-to-GDP ratio would have been smaller, thus making the adjustment less painful, and the probability of default or debt restructuring smaller.

Greece's inability to access private financial markets is related to the fact that a constantly increasing share of its public debt is externally held, which compromises the perceived ability (and willingness) of the country to keep honouring its debt obligations to foreigners. The projected level of net external debt for 2010 is 99 percent of GDP. At the end of 2009 the average net external debt-to-GDP ratio of the GIPS countries (Greece, Ireland, Portugal and Spain) stood at about 82 percent (Cabral 2010).

The current account deficits incurred after 1997 have been responsible for increasing the country's net foreign debt position as a proportion of GDP from 3 percent of GDP in 1997

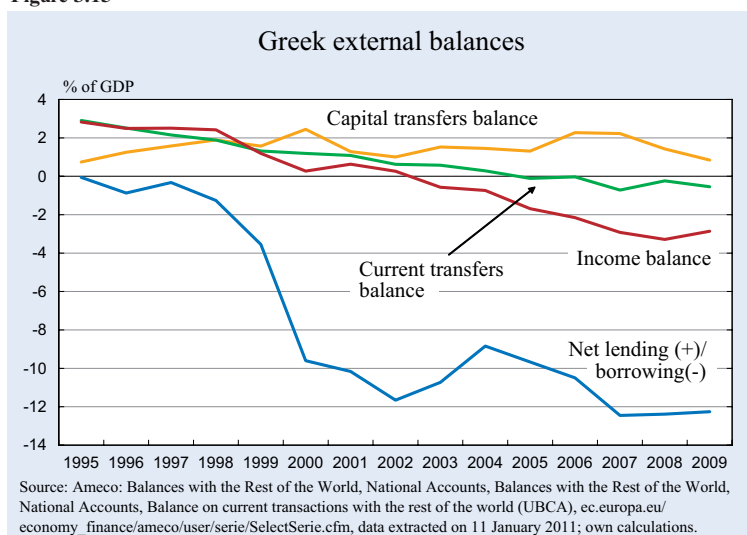
to 86 percent by the end of 2009 (IMF 2010b). The rise by 83 percentage points in net foreign indebtedness dwarfs the 25 point rise in the public debt-to-GDP ratio during the same period (from 102 percent in 1997 to 127 percent in 2009).

Consistent with these facts, the net borrowing requirements of the Greek economy as a proportion of GDP from 2000 until 2008 were on average 10.6 percent per annum. During the same period, the average budget deficit was 5.9 percent per annum. (according to the data revised by Eurostat in November 2010), implying that the private sector not only was unable to finance the government's budget deficit, but was also an equally significant net contributor to the rise in the country's net foreign indebtedness (Katsimi and Moutos 2010).

In addition to the very large trade deficits, the rise in foreign indebtedness was also fuelled by (i) the gradual decrease in the current and capital transfers, which Greece was receiving (mainly) from the European Union, and (ii) the sharp deterioration in the income account (Figure 3.15). In 1995, the balance on current and capital transfers was equal to 3.6 percent of GDP (2.9 on current transfers, and 0.7 on capital transfers). In 2009, the magnitude for the sum of these transfers had dropped to just 0.3 percent of GDP. The deterioration in net income receipts was even larger; in 1995 there was a surplus of 2.8 percent of GDP, which by 2009 had turned to a deficit of 2.9 percent.

When a large proportion of public debt is held externally and debt interest payments to foreigners are a large proportion of the country's GDP, foreign

Figure 3.15



²² See Bank of Greece, Statistics, External Sector, Balance of Payments, Basic Items, www.bankofgreece.gr/BogDocumentEn/Basic_data_of_Balance_of_PaymentsAnnual_data.xls, data extracted on 23 January 2011, own calculations.

investors may start to question the ability (and/or willingness) of the government to generate the resources required for debt service to foreigners. In the case of Greece, the interest payments made to foreigners were 3.8 percent of GDP in 2009. In the first months of 2010, market estimates for this figure had it rising to at least 5 percent of GDP in the near future, under the assumption that interest rates would not rise – not a small figure by historical standards.²³

3.4 The bailout

In October 2009, the newly elected Greek government announced that the projected budget deficit for 2009 was 12.7 percent of GDP rather than the 2 percent displayed in the Greek 2009 budget (approved by Parliament in December 2008). From this moment until the formal request for assistance on 23 April 2010, the Greek government attempted to “educate” the public about the severity of the brewing crisis and persuade itself that nothing less than the standard IMF bailout package was the only available option. As becomes apparent from the events detailed in Box 3.2, domestic political and economic considerations, including the need to persuade the traditional voters of the governing party as to the necessity of the conditionality-based bailout package, were instrumental in delaying the official recognition of the limited choices available to the country.

The total value of the loans to be disbursed to Greece amounts to 110 billion euros, of which 80 billion are intergovernmental loans pledged by the euro-area countries, and 30 billion offered by the IMF. The projected disbursement of these loans is targeted to meet Greece’s financing needs up to the first half of 2013. Table 3.2 provides these details as well as the predicted evolution of government and external debt.

The euro-area loans carry a variable interest rate, calculated as the three-month Euribor rate plus a charge of 300 basis points. For amounts outstanding for

more than three years, the charge rises to 400 basis points. To cover operational costs, a one-off service fee of 50 basis points is also charged for each drawing. The euro-area loans are envisaged to carry the same maturities as IMF lending, i.e., a three-year grace period and subsequent repayment of principal in eight equal quarterly tranches. The interest rate for the IMF loan (30 billion euros) is around 3.3 percent.

The European Council Decision of 10 May 2010 requires Greece to adopt a number of measures before the deadlines of end-June 2010, end-September 2010, end-December 2010 and end-March 2011. According to the Memorandum of Understanding (see European Commission 2010a, Attachment II, pp. 59–84) between the Greek government, the European Commission, the ECB and the IMF, the adjustment will be frontloaded and will be based more on permanent expenditure cuts than tax increases. In total, the fiscal consolidation measures²⁴ will amount to about 20 percent of one year’s GDP over the 2010 to 2014 period. The total adjustment of 20 percentage points is planned to be spread over the years, as in Table 3.3. Note that none of these consolidation measures force the Greek government to save and actually reduce its debt. The measures are merely designed so as to reduce the net increase in debt.

The adjustment programme, in addition to cuts in the public sector wage bill and increases in indirect taxation, includes a wide-ranging reform of the pension system and structural reform initiatives aimed to boost the capacity to export and reduce the very large trade deficit. As noted in Section 3.2, reform of the pension system is the most important budget item for fiscal sustainability (see Table 3.1). Projections from the European Commission (2010a) about the growth of the public debt with an unreformed pension system (but with all other consolidation measures in place) raise the debt-to-GDP ratio to more than 250 percent by 2050.²⁵

The pension reform adopted by the Greek Parliament on 8 and 15 July 2010 (for the private and public sector, respectively) simplifies the current highly fragmented pension system, enhances transparency and fairness, postpones the retirement age and decreases the generosity of benefits, while preserving an ade-

²³ For example, the interest payments that the Latin American countries had to make to foreigners were on average about 6 percent of GDP during the debt crisis of the 1980s (Agénor and Montiel 1996). The annual reparations that Germany had to make after the initial period of heavy reparations following the end of World War I (1924–1931) were less than 3 percent of GDP (Webb 1988). (This figure does not include the most voluminous reparations, though. Amongst others, most of Germany’s trading fleet and all patent rights were transferred, German foreign property was nationalized and substantial territories (e.g., Alsace) were lost, see Webb 1988). On the other hand, even 15 years after unification west German transfers to eastern Germany were about 5 percent of west German GDP (Sinn 2007, p. 149). IMF (2010a) estimates that for a few years Greece will have to transfer as much as 5 percent of its GDP as (net) debt interest payments abroad.

²⁴ The consolidation measures include the, as yet, unidentified ones as well as those announced by the Greek government before 10 May 2010.

²⁵ Projections which do not take into account either the consolidation measures or the pension reform of 2010 raise the debt-to-GDP ratio to over 400 percent by 2040 (see Cecchetti et al. 2010).

Box 3.2**Timeline of the Greek sovereign debt crisis**

- 21 October 2009: The newly elected government notifies Eurostat that the projected government budget deficit for 2009 is 12.5 percent of GDP, instead of the 3.7 percent updated projection reported in April 2009.
- 22 October 2009: 10-year bond spread (over the German bond) remains unchanged at 134 basis points.
- 5 November 2009: Update of government budget reveals an estimated deficit of 12.7 percent of GDP for 2009, more than six times the initial budget (December 2008) estimate.
- 6 November 2009: 10-year bond spread remains at 139 basis points.
- 8 November 2009: Budget draft aims to cut deficit to 8.7 percent of GDP for 2010, and projects public debt to rise to 121 percent of GDP in 2010 from 113.4 percent in 2009.
- 8 December 2009: Fitch Ratings cuts Greece's rating to BBB+ from A-, with a negative outlook.
- 9 December 2009: 10-year bond spread reaches 247 basis points.
- 16 December 2009: Standard & Poor's cuts Greece's rating to BBB+ from A-.
- 22 December 2009: Moody's cuts Greece's rating to A2 from A1.
- 23 December 2009: Parliament adopts the 2010 budget setting a general government deficit target of 9.1 percent of GDP.
- 1 February 2010: 10-year bond spread reaches 270 basis points.
- 2 February 2010: The European Commission adopts (i) a proposal for a Council Decision, in view of the excessive deficit correction in Greece by 2012, (ii) a Draft Council Recommendation with a view to ending the inconsistency with the broad guidelines of the economic policies, and (iii) a Draft Council Opinion on Greece's Stability Programme.
- 3 February 2010: Greece announces a set of measures in addition to those announced in the Stability Programme (freezing wages and raising excise taxes with the aim of reducing the government deficit).
- 11 February 2010: European Council invites the Economic and Financial Affairs Council (ECOFIN) to adopt these documents, and calls on the European Commission to monitor implementation of the Council decision and recommendation, in liaison with the ECB and drawing on the expertise of the IMF. The euro-area member states declare their readiness to take determined and coordinated action, if needed, to safeguard the financial stability in the euro area as a whole.
- 16 February 2010: European Council adopts the above-mentioned documents, after discussion in the Eurogroup.
- 3 March 2010: Greece announces new deficit-reducing measures of over 2 percent of GDP, including an increase in the VAT rates and other indirect taxes and a cut in the wage bill (through the reduction in allowances, and partial cancellation of the Easter, summer and Christmas bonuses, of civil servants).
- 8 March 2010: Greece submits a report on progress with implementation of the Stability Programme and additional measures.
- 15 March 2010: The Eurogroup welcomes the report by Greece, and embraces the European Commission's assessment that the additional measures appear sufficient to safeguard the 2010 budgetary targets, if fully implemented.
- 25 March 2010: 10-year bond spread drops to 250 basis points.
- 25 March 2010: Heads of state and governments of the euro-area countries reaffirm that they fully support the efforts of the Greek government and welcome the additional measures announced on 3 March, which appear sufficient to safeguard the 2010 budgetary targets.
- 8 April 2010: 10-year bond spread reaches 430 basis points.
- 11 April 2010: The Eurogroup reaffirms the readiness by euro-area member states to take determined and coordinated action if needed. It highlights that the objective is not to provide financing at average euro-area interest rates but to safeguard financial stability in the euro area as a whole.
- 15 April 2010: Greece requests "discussions with the European Commission, the ECB and the IMF on a multi-year programme of economic policies ... that could be supported with financial assistance ..., if the Greek authorities were to decide to request such assistance".
- 22 April 2010: Eurostat revises its estimate for the 2009 Greek budget deficit to 13.6 percent.
- 22 April 2010: 10-year bond spread rises to 586 basis points.
- 23 April 2010: Greece requests financial assistance from the euro-area member states and the IMF.
- 27 April 2010: Standard & Poor's downgrades Greece's debt ratings below investment grade to junk bond status.
- 27 April 2010: 10-year bond spreads reach 755 basis points.

continued: Box 3.2

3 May 2010:	Greece, the European Commission, the ECB and the IMF announce an agreement on a three-year programme of economic and financial policies (see European Commission 2010a, Attachment II, pp. 59-84). The Eurogroup unanimously agrees to activate stability support to Greece via bilateral loans centrally pooled by the European Commission.
3 May 2010:	ECB announces that it will accept Greek government bonds as collateral no matter what their rating is.
4 May 2010:	The European Commission adopts a Recommendation for a Council Decision according to the Treaty on the Functioning of the European Union (TFEU). ¹⁾ The Draft Decision includes the main conditions to be respected by Greece in the context of the financial assistance programme.
6 May 2010:	The Greek Parliament votes to accept a series of policy measures included in the programme of economic and financial policies, including an increase in VAT and excise taxes, as well as further reductions in public sector wages and pensions.
6 May 2010:	ECB adopts temporary measures relating to the eligibility of marketable debt instruments issued or guaranteed by the Greek government.
7 May 2010:	10-year bond spread reaches 1038 basis points.
7 May 2010:	The European Council adopts a Decision according to the TFEU including the main conditions to be respected by Greece in the context of the financial assistance programme (totalling 110 billion euros). ²⁾
9 May 2010:	IMF Executive Board approves the stand-by arrangement (SBA).
10 May 2010:	The European Council and the EU member states endorse a financial stabilisation mechanism.
10 May 2010:	10-year bond spread falls to 458 basis points.
18 May 2010:	The euro-area member states disburse the first instalment (14.5 billion euros) of a pooled loan to Greece.
28 June 2010:	10-year bond spread reaches 811 basis points.
6 July 2010:	10-year bond spread falls to 770 basis points.
6 August 2010:	Greece submits to the European Council and the European Commission a report outlining the policy measures taken to comply with May's bailout package.
19 August 2010:	European Commission determines that Greece has met the conditions for the second instalment of the 110 billion euros rescue loan after making swift progress in its budgetary reform efforts.
8 September 2010:	10-year bond spread reaches 975 points.
15 November 2010:	Eurostat revises upwards its estimate for the 2009 government budget deficit to 15.4 percent of GDP.
14 January 2011:	Fitch Ratings downgrades Greek bonds from BBB- to BB+.

¹⁾ See Consolidated Version of the Treaty on the Functioning of the European Union (TFEU), Articles 126 (9) and 136.
²⁾ Ibid.

Table 3.2

Greek public sector financing requirements and loan disbursements

	2010	2011	2012	2013
	(in billion euros)			
Financing gap	31.5	46.5	24.0	8.0
of which: EU (8/11 of the gap)	21.1	36.6	17.5	5.8
IMF (3/11 of the gap)	10.4	9.9	6.5	2.2
Total government debt	327.4	348.4	363.8	375.4
	(% of GDP)			
Gross external debt	187.5	192.7	199.1	203.3
of which: public sector	135.6	137.8	141.8	141.4
private sector	52.0	54.9	57.2	61.9

Source: IMF (2010b), p. 42.

quate pension for the low-middle income earners – see Box 3.3. Some further elements of the pension system are to be reformed in 2011.²⁶

Reforms of the tax system were adopted in April 2010. These reforms aim at widening the tax base for household and corporate income taxation; to this purpose, the new law has enacted a progressive tax scale for all sources of income and a horizontally uni-

fied treatment of income generated by labour and capital assets. The new law also abrogates all exemptions and autonomous taxation provisions in the tax system, including income from special allowances paid to civil servants. These changes, in combination

²⁶ In the absence of complete long-term projections, it is not yet possible to have a complete assessment of the pension reform. The main pension parameters will have to be adjusted in the course of 2011 to ensure that the long-term evolution of pension expenditure (2009–2060) does not exceed 2.5 percent of GDP. This adjustment will be based on long-term projections to be provided by the National Actuarial Authority and validated by the EU Economic Policy Committee.

Table 3.3

Consolidation measures and budget accounting

	Million euros		% of GDP	
		cumu- lative measures		cumu- lative measures
2009 deficit	36 150		15.4	
nominal deficit drift in 2010	4 183		1.8	
identified measures	18 000	18 000	7.8	7.8
impact of nominal GDP growth	–		–0.2	
2010 deficit	22 333		9.6	
nominal deficit drift in 2011	9 345		4.1	
identified measures	14 800	32 800	6.5	14.4
impact of nominal GDP growth	–		–0.1	
2011 deficit (target)	16 877		7.4	
nominal deficit drift in 2012	6 198		2.7	
identified measures	5 575	38 375	2.4	16.6
unidentified measures	2 584	2 584	1.1	1.1
impact of nominal GDP growth	–		0.1	
2012 deficit (target)	14 916		6.4	
nominal deficit drift in 2013	1 687		0.7	
identified measures	575	38 950	0.2	16.3
unidentified measures	4 629	7 213	1.9	3.0
impact of nominal GDP growth	–		0.2	
2013 deficit (target)	11 399		4.8	
nominal deficit drift in 2014	–503		–0.2	
identified measures	–1 050	37 900	–0.4	15.4
unidentified measures	5 561	12 774	2.3	5.2
impact of nominal GDP growth	–		0.2	
2014 deficit (target)	6 385		2.6	

Notes: Deficit in a year equals the deficit in the previous year plus deficit drift in the year minus the the sum of identified and unidentified measures (to calculate the ratios, the impact of the measures on nominal GDP growth is also taken into account). Deficit drift measures the increase in the deficit that would take place without the measures, due, for example, to structural increases in pension expenditure and unemployment benefit payments.

Source: European Commission (2010b), p.17.

with a number of administrative actions (e.g. upgrading of software for purposeful auditing and execution of tax audits on the basis of known data, electronic tracking and monitoring of the fuel market for the purposes of combating the black market, verification of the origin of assets for all tax officials and introduction of measures against officials whose assets cannot be justified by their income) are expected to help increase tax compliance and reduce tax evasion. The extra measures undertaken since May 2010 include an increase in the standard VAT rate from 21 to 23 percent and in the reduced rate from 10 to 11 percent, moving lower taxed products such as utilities, restaurants and hotels to the standard VAT rate, and increasing excises on fuel, cigarettes and other tobacco to bring them in line with EU averages. The remaining measures include higher assessment of real estate, a temporary crisis levy on profitable firms, presumptive taxation (for the self-employed), taxes and levies on unauthorized establishments and buildings, and new gaming royalties and license fees.

Similarly, in addition to the expenditure cuts (mainly on wages and bonuses of public sector workers) undertaken before May 2010, the government has decided to reduce the public wage bill by reducing the Easter, summer and Christmas bonuses to civil servants (these are totally eliminated for those earning more than 2,000 euros per month) and to pensioners with pensions above 800 euros per month. Pensioners receiving more than 1,400 euros per month will face a levy of 10 percent on any amount they receive above it. Other expenditure cuts involve public-sector employment reductions, cuts in discretionary and low priority investment spending, untargeted social transfers, consolidation of local governments and lower subsidies to public enterprises.

Beyond fiscal-related issues, important steps forward have also been made with the ambitious broader structural reform agenda. Business environment reforms, measures to accelerate

absorption of structural and cohesion funds, and legislation to implement the Services Directive have been instituted. The government also plans to privatize and restructure state-owned companies – in particular in the areas of rail transport and energy. Of particular importance for the bailout package are the new labour market laws that were adopted on 15 July 2010, aimed at reducing the strictness of employment protection legislation and dismantling the obstacles to temporary and part-time employment. These include provisions to reduce the cost to firms of severance payments and facilitate collective dismissals; the new law also reduces the *overtime premium*²⁷ and introduces a sub-minimum wage to be applied to newly recruited workers younger than 25 years old (84 percent of minimum wage).

²⁷ This measure will possibly clash with the objective of promoting part-time employment and work-sharing.

Box 3.3**Pension reform (July 2010)**

Main elements of the pension reform are:

- Introduction of a new basic pension of 360 euros per month. For those with less of 15 years of contributions, and thus not eligible for the contributory pension, the basic pension is means-tested, and provides an important social safety net.
- Accrual rates (i.e. the rate at which pension rights accumulate for each year of pensionable employment) in the old system varied significantly across pension funds. The new system introduces accrual rates with the same profile for all workers that depend only on the length of the career (ranging from 0.8 to 1.5 percent of earnings). The new accrual rates are significantly lower than those in the old system (ranging from 2 to 3 percent), reducing the system's over-generosity.
- Under the previous rules, retirement was allowed on a full pension at age 60 and in some cases even earlier. The reform increases the statutory retirement age to 65, and the minimum age for retirement is set at 60. If a person retires between 60 and 65 without having a full contributory period, their pension will be reduced by 6 percent per year before reaching 65 years of age.
- The full contributory period will increase from the current 35 years (or even lower, for some categories) to 40 years.
- As from 2021, the minimum and statutory retirement ages will be adjusted in line with changes in life expectancy every three years.
- Equalization of retirement age of men and women in both the private and public sector by 2013. Moreover, the indexation of benefits will not exceed HICP inflation.
- Pensionable earnings will be calculated based on the full-earnings history. In the old system only five years (with the best earnings) of the 10 last years before retirement were used to determine pensionable earnings.
- A substantial revision of the list of heavy and arduous professions, aiming at reducing substantially the coverage to no more than 10 percent of the employees, is underway, and it will apply from 1 July 2011 for all workers.

Further initiatives that are on the agenda include extending probationary periods for new jobs from two months to one year; facilitating the use of temporary and part-time contracts, as well as increasing flexibility in working hours; clarifying the legal framework for collective bargaining to ensure that there is a clear legal framework for firm level agreements, with the aim of allowing firm-level agreements to prevail over other levels; reforming the arbitration system, so as to guarantee non-interference from the government.

The social partners have also recently concluded a national general collective bargaining agreement with a three-year horizon, which foresees a wage freeze for 2010 and wage increases as of July 2011 and July 2012 equal to the HICP for the European Union in 2010 and 2011, respectively. Moreover, new legislation enacted in July

2010 forbids sectoral or enterprise unions from taking to arbitration wage demands that exceed the limits set by the collective agreement, and renders void recently concluded decisions by the arbitration

Table 3.4**Macroeconomic developments**

	2009	2010	2011	2012	2013
	Annual percentage change				
GDP	-2.3	-4.3	-3.2	1.1	2.1
Private consumption	-1.8	-4.1	-4.3	0.5	1.1
Public consumption	7.6	-9.0	-8.5	-6.0	-1.0
Gross fixed cap. formation	-10.4	-17.4	-7.5	-2.6	1.1
HICP	1.3	4.7	1.7	0.5	0.7
Unit labour costs total economy	4.1	-0.6	-0.7	0.1	-0.2
Total exports	-20.0	0.6	5.1	6.0	7.4
Total imports	-18.6	-12.0	-6.4	-1.5	1.5
	% of GDP				
Current account balance	-14.0	-10.6	-8.0	-6.5	-5.2
Net borrowing from the RoW	-12.9	-9.5	-6.7	-5.1	-3.7
General government deficit	-15.4	-9.6	-7.4	-6.4	-4.8
Primary government balance	-10.1	-3.3	-0.8	1.1	3.5
General government gross debt	126.8	141.2	152.6	156.9	157.3
Unemployment rate	9.5	12.4	15.5	15.0	14.6

Source: For GDP growth rate, HICP (inflation), and unemployment rate: EEAG forecast up to 2011. For 2012 and 2013, for the same variables, IMF (2010b, Table 7). For all other variables, European Commission (2010b, Annex 4).

authorities that involve wage increases above those decided by the collective agreement.

The predicted evolution of the main macroeconomic variables is described in Table 3.4. These forecasts indicate that the government is expected to start running primary surpluses from 2012 onwards, thus making it possible for the public debt-to-GDP ratio to start declining after 2013. However, these projections are all based on Greece returning to economic growth, which is dubious for the time being. The question of what is to be done if the Greek government implements all the changes agreed in the Memorandum, yet the macroeconomic outcomes turn out to be significantly worse than the ones assumed in Table 3.4 will be discussed in the following section.

We note the obvious: any projection that has public sector external debt stabilising at around 150 percent of GDP implies that small deviations in the assumed parameters of the simulation exercise (e.g. the assumed growth rate) can delay the actual stabilisation and make lenders jittery about the government's solvency.

3.5 Will the bailout package prove enough?

In this section we examine some factors (both economic and political) that may prove crucial in determining the successful transition of Greece from the official financing of the European Union and the IMF to market financing of its debt.

3.5.1 Economic considerations

In 2009, Greece's (gross) external debt stood at 170 percent of GDP, with the public sector debt (including public enterprises) being equal to 111 percent and private debt at 59 percent of GDP. The net foreign debt was estimated to be about 86 percent of GDP. Table 3.2 reveals that by 2010, the (gross) external debt-to-GDP ratio is expected to rise to 187 percent, with the public sector increasing its debt-to-GDP ratio to 135 percent and the private sector deleveraging to 52 percent. The subsequent evolution of both ratios is expected to reach, in 2013, 141 percent and 62 percent, respectively.

One thing that stands out in the (baseline) predictions of both the European Union and the IMF is their

homophony regarding a policy scenario that is full of uncertainties, with the evolution of the global and European economies being of decisive role in this respect. Some predictions are more open to debate than others. Consider, for example, the prediction that GDP is set to contract by 4.2 percent in 2010 and 3 percent in 2011, following a set of fiscal consolidation measures equivalent to about 8 percent of GDP in 2010 and 6.5 percent in 2011. For these GDP forecasts to materialize, global economic recovery and, in particular, world trade recovery must not slow down.

Furthermore, the European Union and the IMF have factored in their projections substantial declines in the spread at which both the government and the private sector borrow, and an easing of the credit crunch.²⁸ This may or may not come to pass. Given the stringent credit environment for private sector borrowers that existed in Greece in the first half of 2010 and the defensive process of deleveraging in the domestic banking sector, a substantial improvement is required if the credit crunch is not to combine with the fiscal contraction to produce a very large drop in output.

It should be noted that the European Union and IMF predictions apply to the *officially measured* GDP. Reforms aimed at transferring activities from the shadow to the official economy may add 1 to 2 percentage points to *measured* GDP, thus masking a bigger decline in actual GDP than the one predicted.

The development of the unemployment rate may be of critical importance for the political sustainability of the fiscal consolidation programme. The projected increase in the unemployment rate, which is assumed to peak at 15 percent in 2012 and decline to 14 percent in 2014, is very likely an underestimate. Simple estimates of an Okun's law relationship for Greece using different specifications and data periods provide estimates of the path of the unemployment rate that are much higher than the predicted values by the European Union and the IMF, even if the GDP growth projections are taken at face value.

²⁸ The corporate sector in Greece has, so far, continued to suffer from the credit crunch since non-sovereign bond spreads have followed the rise of the sovereign bond spreads. For example, in November 2009, both the sovereign CDS spread and the CDS spread of the main banks in Greece stood at about 200 basis points. By the end of May 2010, both had risen to about 630 basis points. Very likely this reflects, among other things, the increased correlation between sovereign and banking risks due to the significant holdings of government debt securities by banks in their portfolios. This rise in the costs for banks has been transferred to the non-financial corporate sector.

For the foreign lenders who will be called on to provide the financing after the bailout package expires in the second quarter of 2013, the ability of the country to service its (foreign) debt obligations will be a key concern. According to the European Commission scenario, the country's net borrowing needs in 2013 will be equal to 3,7 percent of GDP. Is it likely that foreign lenders will be willing to step in and provide financing to a public sector whose external debt is about 150 percent of GDP at spreads of only 100 basis points (IMF 2010a), without any implicit guarantees from international institutions such as the European Union and the IMF? (In its latest scenario the IMF (2010b) assumes that spreads will be 300 basis points in 2013.) We are also not convinced that foreign lenders will have such a short memory of the near default in 2010 and that they will not require a higher risk premium to lend to an admittedly reformed country, but whose accumulated debts make it very vulnerable to small deteriorations in the international environment.

The previous paragraph assumes that the predictions of the bailout package regarding the trade and current account deficits will come to pass by the second quarter of 2013. But external accounts data from the first nine months of 2010 suggest that the predicted improvements may not be forthcoming. Consider the (provisional) data for the first nine months of 2010 provided by the Bank of Greece.²⁹ The level of the current account balance for January to September 2010 shows a very small improvement over the relevant 2009 magnitude; according to these data the drop of the current account deficit relative to GDP is less than 0.3 percentage points. Similarly, net exports of goods and services show an improvement of less than 1 percentage point (over the 2009 figure). The sum of the current account balance and the capital transfers balance (i.e. *net borrowing* in the Ameco nomenclature) shows deterioration!

The above arguments illuminate the very narrow path on which the Greek economy must tread during its adjustment towards fiscal and external sustainability. On the one hand, in order to reduce the budget deficit, slow down the rise in the public debt-to-GDP ratio and quickly place it on a downward trend, it needs the reduction in GDP in 2010 and 2011 to be as small as possible, and rise fast thereafter. On the other hand, given the absence of the exchange rate as an instrument to regain the loss in competitiveness and the

slow pace of internal devaluation, any improvements in the current account will have to rely on a sharp internal devaluation with declining prices, wages and a drop in GDP so as to compress imports. Alternatively, all hope for an improvement in the current account will have to rest on fast increases in world income and trade so as to export its way out of the crisis; the current world economic environment is not a good portent in this respect. Our back-of-the-envelope calculation (see Section 3.6.1) suggests that the "required" drop in GDP is probably much larger than what is predicted in the Memorandum.

It would not surprise us if the European Union and the IMF have similar reservations about their baseline scenario, yet are not willing to draw attention to the issue that the probability that Greece will not be able to return to the markets to roll over its debt at default-avoiding spreads is not negligible.

3.5.2 Political considerations

We take it for granted that both the European Union and the IMF have a strong stakeholder interest in the eventual success of the bailout package. The IMF has also learned from previous crises that building a wide albeit lukewarm domestic support for the fiscal consolidation and reform package is key for the political sustainability of the effort.

From the moment the newly elected government appeared to understand the gravity of the situation, a serious effort was made to reverse the widespread belief that an IMF-style programme would be politically infeasible. The government seems, up to this point, to have managed to persuade a large proportion of the population of the inevitability of the austerity measures coming in exchange for the bailout programme. This effort was aided in no small measure by using the media to expose gross cases of tax evasion and public sector corruption (which it promised to prosecute), as well as cases of under-worked and over-paid public sector employees. Some evidence of the acceptance (albeit grudgingly) of the policies implied by the bailout package is provided by the latest Eurobarometer, which reports results of interviews conducted between 7 and 25 May in Greece, when most of the details of the bailout package had already been reported in the press (Eurobarometer 2010). In response to the statement: "In a international financial and economic crisis, is it necessary to increase public deficits to create jobs", more people in Greece

²⁹ See Bank of Greece, Statistics, External Sector, Balance of Payments, Basic Items, www.bankofgreece.gr/BogDocumentEnl/Basic_data_of_Balance_of_Payments-Annual_data.xls, data extracted on 23 January 2011, own calculations.

than in any other European country have stated that they disagree (for Greece, 37 percent “agree” and 53 percent “disagree”; for the EU-27, 46 percent “agree” and 36 percent “disagree”). Given that public sector employment has remained a main tool through which political parties in Greece dispense favours to partisan voters, as well a “redistributive” tool in periods of high unemployment, this change in attitudes is an indication that the current government has succeeded in refashioning the public debate about the role of the public sector in the economy.

A crucial determinant of the political feasibility of the bailout package is the response of the trade union movement. Public sector unions are fragmented along party lines. This is a result of the overwhelming penetration of the state bureaucracy by the two political parties (New Democracy and PASOK) that alternated in government since 1974. The absence of a strong and confident bureaucracy in Greece allowed the political parties to have an excessive influence on personnel choice and promotion to potentially lucrative posts. In effect, this meant that able civil servants had to “take sides” and “declare their allegiance” with a particular political party/trade union association, if they wanted to avoid being left behind in their careers while other less able employees were promoted.³⁰ Currently, the majority, and the president, of the executive council of public sector workers (ADEDY) are trade unionists who are politically affiliated with the governing party, whereas the second largest fraction is affiliated with the Conservative Party.

The close connection between PASOK and the leadership of the trade union movement implies that, on the margin and despite the strong rhetoric against the reforms on which the bailout package is conditioned, the reaction to the so-called “curtailment of the fundamental rights of the working people” will be more restrained than what may have been the case if New Democracy was in power. However, even a friendly trade union leadership may not be able to contain the wishes of the rank and file if unemployment rises steeply and extra tax-raising measures are imposed.

From the four opposition parties in Parliament, both New Democracy (the main opposition and the party in government during the period from 2004 to 2009), and the parties of the Left, voted in Parliament against the austerity measures. (A populist party with nationalistic overtones voted in favour.) This appears to have influenced voter perceptions about the *relative* suitability of the two main parties to steer Greece through the economic minefield that lies ahead, as reported in a Greek Public Opinion poll released on 30 August 2010.³¹ When asked which party’s policy they trusted most to resolve the economic crisis, 31 percent said PASOK, 13.4 percent said New Democracy and 39.5 percent said none. Thus, PASOK appears to be trusted more than all other parties put together. Moreover, among New Democracy voters, only 38.4 percent agree with the party’s proposals on economic policy. (Among PASOK voters, 62.7 percent agree with the party’s – i.e., the government’s – economic policy.)

The political dynamics so far seem to indicate that the current government has been able to build sufficient support for the reforms in the bailout package. Yet considerable dangers remain, as the full extent of the economic problems Greece faces has not been revealed to the public. It would not be surprising if the elites switched in favour of default in case they thought that their power to shape policy in Greece could be compromised by policy proposals of the outside actors that go beyond the usual austerity measures or if the economic situation turned much worse than the IMF predicts, as we fear. The elites may also find other allies in this case (in addition to the rising numbers of the unemployed): the small business owners (many of them shopkeepers with either no or just one or two employees) who suffer disproportionately from the drop in consumption spending and have small room for adjustment. The fact that both the left-wing parties and the main right-wing party are opposed to the bailout package suggests that the danger that an “unnatural” coalition may be formed in the medium-term should not be ignored.

3.6 The day after (June 2013)

The arguments of the previous section suggest that it is likely that Greece will not be able to return to the private financial markets at default-avoiding interest rates when the current bailout package expires, even if

³⁰ The upshot of these practices has been reflected in the misreporting of data regarding public debt and deficits by the Greek Statistical Service (ESYE). Although ESYE’s past officials have claimed that they had no way of verifying the soundness of the data sent to them from various government or quasi-government entities, it is hard to avoid the conclusion that the “capture” of many aspects of public administration by the political parties had affected the diligence with which some of the high-ranking employees of ESYE were carrying their duties (see Moutos and Tsitsikas 2010, for more details about how successive governments could count on the “goodwill” of some ESYE officials).

³¹ See www.tovima.gr/default.asp?pid=2&artid=351256&ct=32&dt=30/08/2010, 30 August 2010.

the Memorandum's policies are implemented. Moreover, it may well be the case that Greece's current account situation will not have improved sufficiently with the austerity measures taken, which will force a further downward adjustment of the Greek economy and reduce the chance that the country will be able to redeem its debt even further.

The question is: What will happen if, as we expect, Greece's problems will not be resolved by 2013, in particular if the huge current account deficit is still unsustainable? Apart from a debt moratorium, which we discuss below, there are in principle only three options.

i) Greece returns to the drachma and depreciates (external depreciation)

ii) Greece goes through an equally radical internal depreciation process during which wages and prices fall by the same amount relative to the rest of the euro area as they would have done with an external depreciation.

iii) The European Union finances the Greek current account deficit with ongoing transfer programmes.

The first two of these options are mutually exclusive, but blends of the third and either the first or the second options are possible. We will now discuss these three options in more detail.

3.6.1 External and internal depreciation: the similarities

From a political perspective a policy of exiting from the euro, returning to the drachma and allowing a depreciation to take place looks very different from an austerity programme that tightens Greek budget constraints, as less capital is flowing into the country. However, from an economic perspective the differences are smaller than may appear at first glance. Thus we first point out the similarities before we emphasize the differences.

The two policies have in common that they make Greek exports cheaper internationally and imports more expensive internally, such that, in principle, a boost in exports and a decline in imports can be expected that reduces the trade deficit and the deficit in the current account, which by definition then means a reduction in capital imports.

They also have in common that they both come about because capital is shying away from Greece due to the increased default probability perceived by investors. If the exchange rate is flexible this leads to depreciation, and if it is fixed, the tighter budget constraint for the Greek government means that the public sector has to be scaled down in terms of reducing the number of jobs, lowering salaries and reducing public purchases of privately produced goods, all of which reduces aggregate demand and forces the private sector to cut down wages and prices.

In the case of an external depreciation the change in effective exchange rates comes about overnight as the drachma will immediately lose value. In the case of an austerity programme, there is a more extended period of stagnation, wage and price cuts leading ultimately to the same result.

Both policies will increase the burden of the external debt. As the external debt is defined in terms of euros, the decline in the euro-value of Greek GDP that an external devaluation will bring about will increase the ratio of foreign debt to GDP. The same is true after an internal depreciation, because it also implies a decline in the euro-value of Greek GDP (Corsetti 2010). By the end of 2010 the ratio of net foreign debt to GDP was about 100 percent in Greece. If the country undergoes an internal or external devaluation of, say, a third, this ratio would increase to 150 percent. Thus private and public debt moratoria by which foreign creditors, mostly banks, relinquish some of their claims against Greece will become likely.

While both – internal and external depreciation – can be expected to improve the current account, they will not be able to do so immediately. In fact, it is even likely that there will be an adverse reaction of the current account in the short-run, as import and export quantities will need some time to react, while export prices decline, reducing the export value in terms of euros. Until a normal reaction of the current account and trade balance, which is driven by increasing export and falling import quantities, can be expected, a number of years may pass.

Even then, however, it is doubtful whether export values will go up after a depreciation, as price and quantity effects work in opposite directions. This is particularly obvious for tourism, which is a substantial part of Greek exports. While falling prices will certainly bring more tourists to Greece, it is unclear whether the Greek revenue from tourism will increase, as there

is less revenue per tourist. A similar caveat is appropriate for transportation services (mainly sea transport), which is an even stronger component in Greece's exports. Since the "costs" of producing sea transport services are almost independent of domestic cost developments in Greece, the trade surplus generated by this sector is more or less fixed in euro terms (but dependent on developments in world trade – which are independent of Greek depreciation).

Thus nearly all of the adjustment in the trade balance will have to come via the import side (as well as from any rise in Greek exports due to the increases in world income and world trade). After an external or internal depreciation, Greek income in terms of euros will fall, and hence fewer imports can be afforded.

Fortunately, the declining euro value of Greek incomes does not mean that the living standard falls in proportion, as prices of local goods and services, which are the lion's share of Greek expenditures, will also fall. If the depreciation process is balanced, the prices of goods will fall inversely to their import content, and prices of local services will fall more or less by the same proportion as incomes fall. Thus, for example, restaurants will remain affordable, but cars will often become too expensive.

It is an open question how large the internal or external depreciation will have to be. Some back-of-the-envelope calculation may help to get a feeling for necessary magnitudes. Suppose the income elasticity of Greek imports is 1, then a 1 percent decline in the euro-value of Greek GDP reduces the euro-value of imports by 1 percent, and assume that for the reasons given in the text, the euro-value of exports will not react to a depreciation, and that there will be no increase in Greek exports due to the rebound in world income and world trade. Then, to eliminate a current account deficit of 11 percent one needs a drop in GDP of 11 percent divided by m , where m is the import share of GDP. In Greece the import share is about a third. Thus the reduction in Greek GDP necessary to get rid of the entire current account deficit would be 33 percent.

However, the income elasticity of imports may be a bit above one, given that imports are typically superior goods that decline more than proportionately with incomes. An extreme possibility would be an elasticity of 2, which means that imports decline twice as much as income. In this case a real devaluation and a decline in the euro value of Greek GDP by 16.5 per-

cent is required. (Taking into account the rise in Greek exports due to the rise in world trade would not affect these calculations to a great extent since exports are a low share of GDP in Greece.)

It may be revealing in this context that Latvia underwent a substantial internal devaluation in 2009 that reduced the euro-value of its GDP by 19 percent. Such orders of magnitude should not be considered to be implausible, also for Greece.

The current account deficit will not necessarily have to be eliminated entirely. After all, when GDP increases, so can the net foreign debt position of Greece, without increasing the ratio of foreign debt to GDP. However, the necessary internal or external depreciation means that the euro-value of Greek GDP will have to fall before it will again be able to rise. Thus, envisaging a growth scenario for Greece that could justify aiming at less than the elimination of current account deficit might be a bit optimistic under present circumstance.

3.6.2 The differences between external and internal depreciation

While there are crucial similarities between an internal and external depreciation, the differences should not be overlooked.

As argued above, both kinds of depreciation will be enforced by a shortfall of capital willing to flow to Greece because of a rapidly changed assessment of the default probability on the part of international investors.

In a currency union, the tightening in the public and private budget constraints will lead to a reduction in aggregate demand. This causes a real contraction of the economy with increasing unemployment to the extent that wages and prices are sticky and do not flexibly react to the changed economic conditions. Over time, wages and prices will however have to come down, which helps the economy recover and improve the employment situation.

With flexible exchange rates, by way of contrast, when prices and wages are quoted in drachma, the euro prices and wages will automatically come down when international investors shy away from Greek assets because there is an immediate depreciation. Drachma prices of services and non-traded goods without

import content can remain unchanged, and the drachma prices of other goods will only have to increase in proportion to their respective import content. As prices and wages are usually stickier downward than upward, and fewer price changes will be necessary, the economy finds its new equilibrium faster after an external than after an internal depreciation.

A price and wage decline is the precondition for the economy to regain its competitiveness in both kinds of depreciation. However, while an external depreciation achieves this through a mere exchange rate adjustment, the internal depreciation needs a recession and real economic contraction to bring this same result about.

Keynes argued long ago that this is the crucial distinction between external and internal depreciation. While it is conceivable to orchestrate a price and wage cut that mimics an external depreciation, as tiny Latvia has recently shown, the process is difficult in a comparatively large economy with a large variety of diverging interests, many more prices and a comparatively weak government. The workers who will first be called on to accept a reduction in their nominal wages will not happily acquiesce to it until they are sure that all other workers will also accept a reduction in their wages. Moreover, the workers as a group cannot be certain that their sacrifice will be met with a corresponding fall in the cost of living, since producers may not pass on their reduction in wage costs to prices. The political skill required to effect substantial decreases in thousands of wages *and* millions of prices is considerable. If the process is not well orchestrated politically and only works itself through the economy via the squeezing of public and private budget constraints, it is likely to lead to riots and political destabilisation.

However, an external depreciation also has extremely problematic implications, the most obvious one being a bank run. As soon as the rumour of a possible return to the drachma spreads, people will try to secure their money by emptying their bank accounts, and as no bank has the (base) money it shows on its deposits, banks would quickly become illiquid. Thus, such a policy would need to be supplemented with an appropriate auxiliary programme by the ECB or the European Union, providing Greek banks with the necessary liquidity. If such help is not organised, a Greek exit from the euro area would have all the manifestations of a currency crisis for the new drachma, like the ones we have seen in East Asia and in Latin

America since the early 1990s. If badly managed, the currency conversion could have similarly devastating implications for real economic activity as an internal depreciation (see Krugman 1999 and Aghion et al. 2000).

A major difficulty that comes with a depreciation is the mismatch of assets and liabilities in the balance sheets of banks and companies of the real economy, and here again there are substantial differences between an internal and an external depreciation.

After both kinds of depreciation the balance sheets of ordinary companies of the real economy come in disorder, because the euro-values of the real assets, such as real estate property and, to some extent, equipment capital, will fall while the euro-value of liabilities may not fall as much or not fall at all.

The latter is the case after an internal depreciation. As debt contracts are made in nominal euro terms, the liabilities will not be affected, but the general price decline will devalue companies' real assets, driving many of these companies into bankruptcy. This will hurt their creditors, above all the banking system.

After an external depreciation, the euro-value of real assets in normal companies will likewise decline; only the liabilities to foreigners, which typically are of minor importance, will remain fixed. Liabilities to domestic creditors, the banking system in particular, will have been converted to drachma and will therefore decline in euro terms, which is a substantial relief. Thus, in the real economy, the probability of default of normal companies will be smaller after an external depreciation than after an internal one.

Under which kind of regime the financial sector will fare better is not quite clear. At first glance it seems that it will not be affected by an internal devaluation. After all, both its assets and liabilities are determined in euros. By contrast, an external devaluation that follows a conversion of balance sheets into drachma will create substantial disorder, because claims and liabilities to foreigners will remain fixed in euro terms while claims and liabilities to domestic residents are fixed in terms of drachma. As Greek banks are net borrowers abroad and net lenders at home, the external depreciation will probably hurt them by shrinking the euro-value of their assets more than shrinking the euro-value of their liabilities. However, this analysis forgets the additional write-off losses on claims against the companies of the real economy that will be driven

into bankruptcy after an internal depreciation. If these write-off losses are taken into account, it is not clear whether banks fare better after an internal depreciation than after an external one. It is only clear that companies of the real economy will fare better after an external depreciation.

In view of these uncertainties in the analysis, the EEAG has decided not to opt for a particular policy alternative but only to inform policymakers of the relevant arguments. Definitely, there is no alternative that clearly dominates the other in all dimensions. The choice is between two evils.

3.6.3 Transfer union

In 2009 Greece had a current account deficit and net capital import of 11 percent of GDP, an excess of consumption over aggregate income of 12 percent of GDP and a public deficit of 15 percent of GDP. Public debt relative to GDP is estimated to be about 140 percent at the end of 2010, and net foreign debt to GDP about 100 percent. The country lived beyond its means, and capital markets are no longer willing to finance this. They have abruptly tightened the budget constraints, which had long been overly soft. In a painful process of internal or external depreciation Greece will have to lower the euro-value of Greek GDP if not real GDP, unless the missing capital flows are replaced with public transfers from other countries. Basically this means that import goods that Greece can no longer buy on credit would have to be given to the country.

It is true that the EU cohesion funds as well as agricultural and other subsidies already contribute to financing the Greek trade deficit. In 2009 Greece paid in 2.4 billion euros and received 5.4 billion, which implied a net gain of about 1.3 percent of Greek GDP in 2009. Much more than this would be needed, however, to make a substantial contribution towards mitigating the problem.

Whether the EU budget should be expanded for this purpose is a distributional question that will have to be decided by the political process. Politicians should not overlook, however, that there is the risk of Greece becoming addicted to the transfers, since it seems to have become addicted to the capital flows of the past. Simply replacing the borrowed funds with gifts will make it even more attractive for Greece to continue living beyond its means and will therefore perpetuate

the trade deficit for the simple reason that political constraints will never be as tight as market constraints.

How difficult if not futile it is to accommodate a region's lack of competitiveness with transfers is shown by former East Germany that joined West Germany and the European Union some twenty years ago. Up to 2011 about 1.2 trillion euros of public funds have been pumped into the east German economy without the eastern part of Berlin, and including it possibly about 1.5 trillion euros.³² While the lion's share of this money has been used to maintain the social system, a perfect public infrastructure has also been built up and all cities have been superbly restored.

Nevertheless, the economy of eastern Germany does not function well. Its growth has been meagre, and even in the last boom, just before the crisis in 2008, its unemployment had not come down to less than 12 percent. The hopelessness of the situation has led to an ongoing mass emigration. Since the wall came down, the population has shrunk by 2.3 million, from an original 16 million, mostly by emigration to western Germany – 60 percent of this emigration has occurred since 1995.

The mass emigration is the only reason why, over the last 15 years, (1995–2010) GDP per capita on the territory of the former German Democratic Republic (GDR) increased from 60 to 69 percent of the west German level (including the west part of Berlin). With a cumulative rise of 22 percent over the period from 1995 to 2010, GDP in eastern Germany grew nearly exactly as fast as GDP in western Germany (20 percent). And surprisingly, eastern Germany did not participate in the rapid growth process of the GIPS countries, whose GDP grew by 52 percent. Neither was it able to match the average growth of the EU countries, which was 31 percent over the fifteen-year period considered. In per capita terms, the purchasing power of the privately produced GDP in eastern Germany has been surpassed already by that of Slovenia, even though Slovenia joined the European Union 14 years later and had no comparable support from the outside.

Even 20 years after unification, there are no indications that eastern Germany's economic power will, in the foreseeable future, converge to that of western Germany and that the public transfers from west to

³² See Blum et al. (2009).

east, which are about 60 billion euros per year, will become superfluous.

This disappointing development can be attributed to the above-mentioned Dutch disease. Just as the natural-resource sector in the Netherlands had weakened industry by raising the Dutch wage level, the high wages paid in eastern Germany's government sector and the wage replacement incomes offered by the social system had driven up eastern German wages above the level compatible with a self-sustained growth process. The persistent flow of public funds has in the end helped eastern Germany only a little, if at all. It has made it another European Mezzogiorno – a region stuck in a low-development equilibrium.

The Italian Mezzogiorno has been caught in such an equilibrium for half a century and more. Its GDP per capita is about 60 percent of that of the rest of Italy and does not show any sign of convergence. In Italy, the causes for this situation can be sought in a common wage policy, mainly dictated by the conditions of the North, which has always resulted in wages that were way too high for the South and resulted in persistent mass unemployment. The under-development has forced the state to help out with transfers from the North. These transfers have provided an alternative income source in the South to which the political system and the economy have grown accustomed, perpetuating the situation, as it seems, even more (see Sinn and Westermann 2006).

For these reasons, the EEAG is sceptical about replacing the capital flows with transfers that involve more international redistribution in the European Union or the euro area. Instead it argues for helping out Greece under the general rules specified in Chapter 2.

3.6.4 Necessary tax reforms in Greece

Whichever of the above options are chosen for Greece, the country itself must carry out substantial reforms to improve its competitiveness as quickly as possible. Reforms of the tax system are the most urgent of all, because they would not only help the Greek government reduce its budget deficit but could also improve the competitiveness of the Greek economy, thus mitigating the adjustment problems that accompany with internal or external depreciations.

A notable feature of the Greek economy is that its supply-side structure is tilted towards producing non-traded goods. Adopting the concept of “tradedness” as a proxy for tradability (Kravis and Lipsey 1988), one can construct either “narrow” or “broad” measures of the size of the tradable sector. Engler et al. (2009) find that Greece has one of the lowest shares of traded sector output among the OECD countries when the narrow definition is adopted, and the lowest share of traded sector output if the broader definition is adopted.

We believe that an important explanation for the small traded sector is related to the features of the Greek tax system, and especially the differential incidence of tax evasion between the traded and non-traded sectors. We are convinced that tax evasion, among other things, affects the specialisation of the economy between traded and non-traded sectors and that this negatively influences the aggregate productivity level. The reason for this is that tax evasion is more prevalent in non-traded goods (medical and law services, car repairs, etc.) than in traded goods. It is well known (see e.g. de Paula and Scheinkman 2009) that exporting firms usually transact with other formal-sector firms, like financial intermediaries, and also need the appropriate documentation to export. This certainly limits the possibilities to evade taxation.

The implication of the above is that the effective, after-tax relative price of the traded sector is smaller than can be surmised by simply looking at the market prices of the two sectors. As a result, the traded sector attracts fewer resources than it would attract in the absence of tax evasion. Fighting tax evasion results in a rise in the effective relative price of the traded sector and reduces the attractiveness of non-traded sector activities. Thus, measures to reduce tax evasion may help restore the external balance in the same way as a change in the real exchange rate but without many of the negative side effects. In addition, since formal-sector firms are more productive than informal sector firms, a reduction in tax evasion would raise the economy's overall productivity and also lead to higher government revenues.³³ Thus, fighting tax evasion could be the “mother” of structural reforms for Greece.

However, combating tax evasion is easier said than done in Greece. Nevertheless, if the objective is to

³³ See Rausch (1991) and Moutos (2001).

boost the size of the tradable sector, a rise in VAT rates would go some way towards rebalancing relative prices. The suggestion by Blanchard (2007), with reference to Portugal, to increase VAT rates and reduce social security contributions (payroll tax rates) would be particularly beneficial for Greece given,

- the proclivity of the non-traded sector to evade on the payment of payroll taxes by more than the traded sector,
- that it is difficult to totally evade the payment of VAT given the system of tax credits for the purchase of intermediate inputs, and
- that exporters are not burdened by the rise in VAT.

In effect, the rise in VAT rates combined with the reduction in payroll tax rates mimics the effects of devaluation (but without its costs) since it succeeds in increasing the relative price of imports relative to domestic production and in decreasing the relative price of exports. Clearly, the tax shift has to be substantial in order to have effects as strong as a devaluation.

The usual argument against such a policy is that it may not be politically viable. Unlike the working population, who will not necessarily be hurt by the mix of lower payroll tax rates and higher VAT rates, pensioners will suffer. However, the government can devise supplementary schemes that directly compensate the pensioners for the loss of real purchasing power, and that do not, in tandem with the change in the tax mix, deteriorate the budget balance. This policy is certainly preferable to the standard IMF prescription that the substantial wage reductions in the public sector should be followed by equally substantial reductions in private-sector wages. As Corsetti (2010) has argued, internal depreciation has effects on the debt burden similar to the ones identified with respect to exchange rate devaluation in the “original sin” literature (see Eichengreen and Hausmann 1999). The usual IMF prescription of coordinated wage reductions in both the public and private sectors may provide the government with some savings on its wage bill,³⁴ but when the stock of public debt is large these savings will be dwarfed by the larger real value of the public debt and the associated rise in the real value of debt servicing.

³⁴ The reduction in the government’s wage bill depends, among other things, on the share of government and private sector employees in total employment, since the saving on the wages of public employees, net of taxes, must be counted against the lower tax receipts from private sector employees.

3.6.5 Greece does not graduate in time – another bailout package in 2013?

We have argued that even if Greek society accepts the policies detailed in the Memorandum, it is by no means certain that by the second quarter of 2013 the Greek government will be able to roll over its debt at default-avoiding interest rates. What will happen in this case?

Let us examine the case that by spring 2013 both the public debt-to-GDP ratio and the foreign debt-to-GDP ratio appear to have stabilized at levels similar or only slightly higher than those predicted by the European Union and the IMF, and that there is a primary budget surplus. If foreign lenders remain unwilling to lend to Greece at default-preventing interest rates (say, because they consider that the smallest shock could derail the planned reduction of the debt ratio), the Greek government, the IMF and the EU countries may or may not be willing to agree on a further bailout programme.

It is important in this context to note that no majority decisions of the European Union will be sufficient for a continuation of the bailout programme. After all, the agreement of the EU countries on 16–17 December 2010 (see Chapter 2 for details) explicitly rules out the use of Community instruments with majority-based decision-making for this purpose, and the inter-governmental help as specified in the decisions of May 2010 were illegal, as French Finance Minister Christine Lagarde has declared, implicitly confirming a rumour that the German Constitutional Court required a treaty change because the decisions were illegal.³⁵ All will depend on how the envisaged reform of the Community treaty will be designed.

In Chapter 2 we have given our proposals for specifying the decisions of 16–17 December. In principle we foresee a three-step procedure, with liquidity help in the first stage, a breakwater procedure that avoids full insolvency in the second stage and full insolvency.

There is a good chance that Greece will be able to find new funds in the capital market if it is able to offer the new CAC bonds, which offer the privilege of being convertible, after a haircut, into partially secured replacement bonds should Greece not be able to ser-

³⁵ Lagarde said: “We violated all the rules because we wanted to close ranks and really rescue the euro zone”, Reuters, “France’s Lagarde: EU rescues “violated” rules: report”, www.reuters.com/article/idUSTRE6BH0V020101218, 18 December 2010.

vice them. As this limits the possible loss to investors, it will be possible to sell these bonds in the market if they are endowed with an appropriate and limited interest rate spread over safer assets.

Should Greece nevertheless not be able or willing to issue such bonds, it might have the chance of receiving more liquidity help from the new European Stability Mechanism (ESM) for a limited time span under the rules we have specified.

If not, it will have to reach an agreement with its creditors about restructuring its debt, perhaps using partially secured replacement bonds under the rules we have outlined. The ESM agreed on 16–17 December 2010 could help, as we have pointed out, but only after private creditors have agreed to a haircut.

Politically, the question of whether or not Greece will or should exit from the euro area will depend on which of these choices are made, but from an economic perspective it is a separate issue, as we have argued above. Greece should make this decision based on its judgement of whether or not an internal or external depreciation will bring about less hardship.

3.7 Concluding remarks

We end this chapter with some summary conclusions.

- Without help Greece is not likely to be able to return to market financing at default-avoiding interest rates by the time the current bailout package expires (2013). The chances of this happening have certainly been reduced as a result of the large upward revisions of its budget deficit and debt for 2009, and the consequent upward drift of the corresponding figures for 2010.
- With the new CAC bonds that we have proposed in Chapter 2, Greece would however have access to a new debt instrument that limits the investment risk and with it the necessary interest surcharges over risk-free assets. These bonds would significantly enhance the possibility of a self-sustained recovery.
- If Greece nevertheless is not able or willing to issue the new debt instruments, it will have to seek an agreement with its creditors about a debt rescheduling programme. The European Stability Mechanism could help by offering a limited amount of secured replacement bonds, as specified in Chapter 2.

- To reduce its huge current account deficit, Greece will have to undergo a period of internal or external depreciation, which will lower the euro-value of Greek wages, prices and GDP. We have pointed out the advantages and disadvantages of the two possibilities.
- Although one cannot deny the importance of the planned product market reforms, fighting tax evasion should be the top priority of Greek policymakers. Tax evasion is responsible not only for the Greek budget deficits, but it results in a misallocation of resources away from production of traded goods that the country must reverse if it is to improve its trade balance.

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