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Fiscal Policy and the Recession: The Case of Greece

Ersi Athanassiou

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Research Fellow
Centre for Planning and Economic Research (KEPE), Athens, Greece
e-mail for correspondence: eathan@kepe.gr

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CENTRE FOR PLANNING AND ECONOMIC RESEARCH

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Abstract

This paper presents an analysis of the implications of Greece's intense and long-lasting fiscal and external imbalances for the potential efficacy of a discretionary fiscal policy response to the current recession. It argues that, given recent developments in interest rate spreads and the credit markets' increased sensitivity to risk, the interest rates applicable to the entire amount of Greece's external debt would tend to be higher *with* a fiscal expansion than *without* one. Moreover, it deduces from a simple model that the leakages associated with increased interest payments to foreign creditors could well cancel-out any positive multiplier effects generated by a fiscal expansion, resulting in a failure to stimulate growth. The implications of this finding for policy is that Greece should continue to avoid the adoption of a fiscal stimulus package, not only out of respect to its fiscal obligations as an EU member, but, ultimately, because such a package would be ineffective as an economic recovery tool. While the focus of the analysis is on the Greek economy, its conclusion may be of relevance to other EU economies suffering from serious macroeconomic imbalances.

1. Introduction

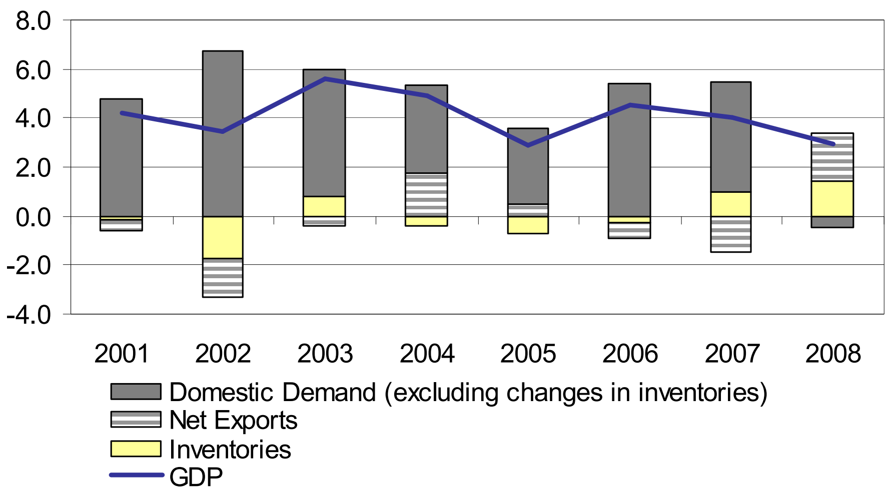
Under the current conditions of global financial market turmoil and economic downturn, one of the primary concerns of economic policy makers worldwide is the containment of the impact of the crisis on growth and employment and the facilitation of recovery. A generally applicable answer to how this concern might be addressed is not available, given that both the causes and impact of the crisis and the paths through which recovery may be brought about are bound to vary substantially across countries depending on their strengths and weaknesses, as well as on the tools available to their policy makers. Drawing on the example of the Greek economy, it will be argued in this paper that, besides the limitations on policy options arising from Greece's status as a Member State of the European Union (EU), the Greek economy's intense and long lasting fiscal and external imbalances limit substantially the potential efficacy of an expansionary fiscal policy that has been adopted by other countries dealing with the crisis. While the focus of our analysis is on the Greek economy, our argument may be of relevance to other EU Member State economies suffering from serious macroeconomic imbalances.

2. Pre-crisis economic conditions in Greece

In recent years Greece has developed into one of the fastest growing economies in Europe while, at the same time, achieving a significant reduction in its rate of unemployment. More specifically, over the period 2000-2007, Greece's real GDP expanded at an average annual rate of 4.2%, versus 1.9% in the Euro zone, while its unemployment rate decreased by 2.9 percentage points, standing at 8.3% in 2007 versus 7.4% in the Euro zone.

Looking at the sources of Greece's economic expansion over the aforementioned period (Figure 1), what one observes is that this was driven by a rapid increase in domestic demand, with the overall contribution of the external sector being, on average, negative. The increase in domestic demand was supported by an expansionary fiscal policy, reflected in public deficits exceeding the EU's Stability and Growth Pact (SGP)[1] threshold of 3% of the GDP in most years (Table 1), and was boosted further through credit expansion to households and private businesses at average annual rates of 29.6% and 14.8% respectively, over the same period.

Figure 1
Real GDP growth in Greece and contributions to growth (%)



Source: National Accounts of Greece, 2000-2008.

The persistence of large public sector deficits, combined with the heavy indebtedness of Greece's public sector already at the start our reference period, meant that in 2007 Greece's government debt to GDP ratio was the second highest in the Euro zone. More specifically, although the rise in the size of the debt was more than offset by rapid GDP growth, therefore inducing a decline of the ratio of the debt to the GDP from 103.2% in 2000 to 94.8% in 2007, the latter figure was 28.6 percentage points higher than the respective Euro zone average and short only to that of Italy.

In addition to high public sector indebtedness, the private sector's debt burden increased heavily over the 2000-2007 period, as a result of the rapid credit expansion to households and private businesses mentioned above. More specifically, the outstanding balance of MFI credit to Greek households climbed to 45.6% of the GDP in 2007 from only 12.5% in 2000, while the corresponding balance of credit to domestic businesses increased from 31.1% in 2000 to 48.8% in 2007 (Table 1).

[1] The reference is to the framework *inter alia* consisting of a June 1997 European Council Resolution and Regulations 1466/1997 and 1467/1999 (as amended in 2005, subsequent to the SGP's near collapse in 2003) setting the medium term objective of budgetary positions in surplus or close to balance while keeping the government deficit within the 3% of GDP reference value.

Given that net savings in the Greek economy were, on average, negative over the period 2000-2007 (see Table 1), high public deficits and rapidly increasing private sector debt could only be financed through external borrowing. Indeed, Greece's net annual external borrowing was, on average, equal to 10% of its GDP over this period, leading to a critical augmentation of the country's external debt.

Table 1

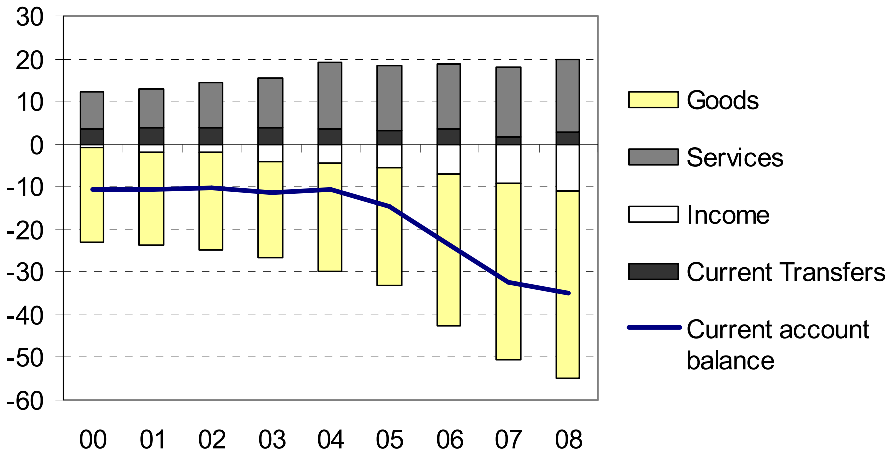
Evolution of Public and Private Sector Indebtedness and Net Saving/Borrowing of the Greek Economy (% of the GDP)

	Public Balance	Government Debt	Domestic MFI Credit to Enterprises	Domestic MFI Credit to Households	Net Saving	Net Borrowing of the Economy
2000	-3.7	103.2	31.1	12.5	-0.1	9.6
2001	-4.5	103.6	34.3	16.3	0.2	10.2
2002	-4.7	100.6	35.1	20.1	0.0	11.7
2003	-5.7	97.9	37.1	23.5	0.0	11.0
2004	-7.5	98.6	38.4	28.3	1.4	8.9
2005	-5.1	98.8	41.0	34.9	-0.6	9.3
2006	-2.8	95.9	43.9	40.3	-0.6	9.1
2007	-3.5	94.8	48.8	45.6	-2.2	12.1
2008	-5.0	97.6	54.5	48.2	-2.7	11.0

Source: National Statistical Service of Greece, Bank of Greece.

Further evidence of the high and increasing foreign indebtedness of the Greek economy is provided by the evolution of Greece's balance of payments. As shown in Figure 2, Greece's current account deficit remained high over the period 2000-2004 and deteriorated further from 2005 onwards, reaching 14.2% of the country's GDP in 2007. The evolution of Greece's external deficit reflects strong imbalances in the trade of goods, as well as a rapid deterioration of the incomes' balance. With respect to the trade of goods, imports have consistently exceeded exports by a wide margin and have increased very rapidly, reflecting a serious deficiency in competitiveness. Regarding the incomes' deficit, its nearly tenfold rise over the period 2000-2007 is attributable primarily to a rapid rise of the interest deficit to 3.2% of the GDP in 2007 from just 0.7% in 2000.

Figure 2
Evolution of the current account balance and its components (billion €)



Source: Bank of Greece.

While the high and increasing current account imbalances automatically point to a pattern of rapidly rising foreign obligations, the increase of the interest deficit, in particular, is a strong indicator of rising foreign indebtedness[2]. Indeed, as seen in Table 2, Greece's gross external debt reached 149% of the country's GDP in 2008, versus just 95% in 2003[3], a development resulting from a sharp increase in the amount of General government debt held by foreigners, combined with an even shaper rise in the external debt burden of the rest of the economy.

Table 2
Gross external debt position of the Greek Economy

	General government		Rest of the economy		Total	
	billion €	*% of GDP*	billion €	*% of GDP*	billion €	*% of GDP*
2003	101	*59%*	62	*36%*	162	*95%*
2004	125	*67%*	61	*33%*	186	*100%*
2005	145	*73%*	78	*39%*	223	*113%*
2006	154	*72%*	96	*45%*	250	*117%*
2007	178	*78%*	132	*58%*	311	*136%*
2008	192	*79%*	171	*70%*	363	*149%*

Source: Quarterly External Debt Statistics (QEDS), IMF and World Bank.

[2] With interest rates in 2000 being much higher compared to those of subsequent years, the rise in the interest deficit can only be attributed to a rise in the country's foreign debt.
[3] 2003 is the earliest year for which data on Greece's gross external debt are available.

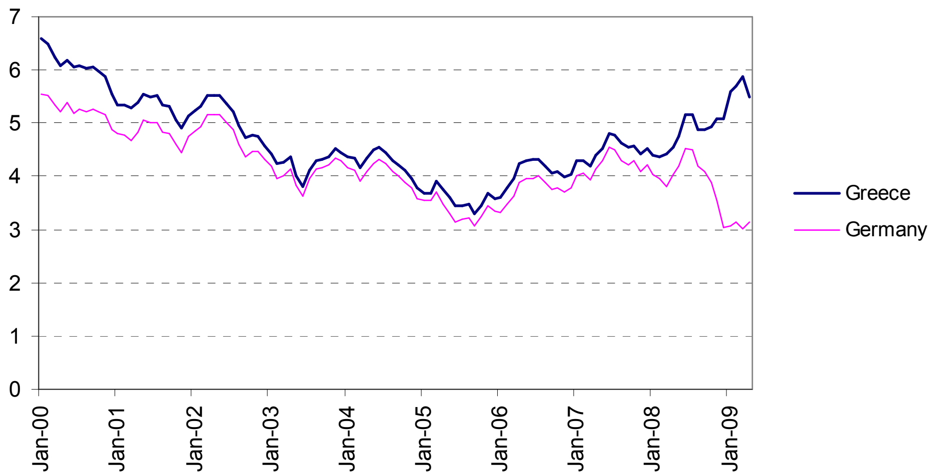
3. Impact of Greece's Euro zone participation on its debt position

Looking at Greece's mounting imbalances and growing debt over the period 2000-2007, one may legitimately wonder how it was possible for such a wide gap between the country's income and expenditure to be maintained throughout this period without some sort of stabilizing mechanism setting in to restore equilibrium. The answer to this question lies with Greece's status as a relatively small-sized Euro zone Member State. Had Greece not acceded to the Euro zone, high external imbalances would have sooner or later triggered a devaluation of its currency that would, *ceteris paribus*, curtail the demand for imports while helping to boost exports. However, instead of that happening, Greece's participation in the Euro zone entailed an exchange rate virtually independent of the country's external position[4]. Indeed, far from depreciating, Greece's real effective exchange rate actually appreciated by 17% over the period 2002-2007, contributing to a further exacerbation of its current account situation[5].

Apart from the elimination of the exchange rate mechanism as a means of correcting external imbalances, Greece's participation in the Euro zone had an analogous effect upon the interest rate mechanism. With Greece's country risk minimised upon accession to the Euro zone and with ample liquidity in the credit markets, the Greek public and private sectors were in a position to secure financing at the low interest rates applicable to all Euro area economies, irrespective of the country's rising indebtedness and elevated inflation. For example, as demonstrated in Figure 3, interest rates on Greek and German public debt securities differed only marginally from Greece's entry to the Euro zone in 2002 up until the end of 2007. In the case of Greece, the combination of low nominal interest rates with an inflation rate that during the period 2002-2007 was, on average, 1.2 percentage points higher than the Euro zone mean of 2.2%, meant that real interest rates were kept very low or, in some cases, even negative. This inevitably discouraged saving while encouraging credit expansion, thereby playing a crucial role in the persistence of imbalances and the increase of Greece's foreign indebtedness.

[4] For a study of the effects of the accession of Greece to the Euro zone, see Argyrou, 2006.
[5] See Bulletin of Conjunctural Indicators, Bank of Greece (various isssues).

Figure 3
Yields of 10-year government securities (%)



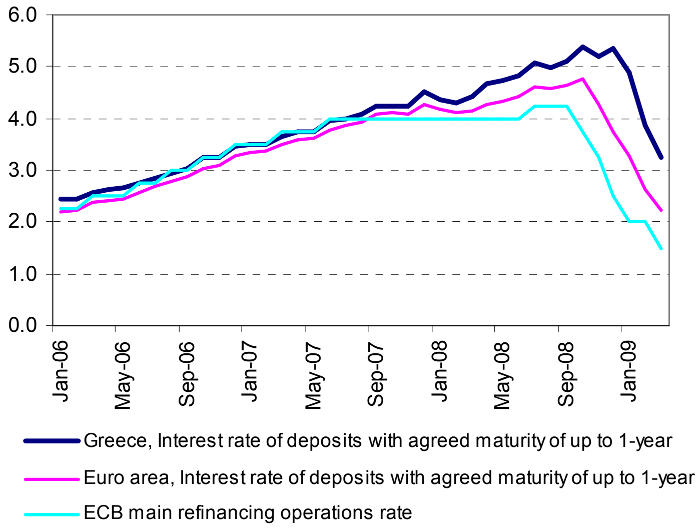
Source: Bank of Greece, Deutsche Bundesbank.

Given the implications of Greece's accession to the Euro for the evolution of the exchange rate and interest rates, it is clear that, prior to the outbreak of the ongoing crisis, the only policy option for containing the rise in foreign indebtedness would have been the pursuit of fiscal consolidation. Nevertheless, as evident from the public deficit developments already mentioned, the fiscal stance that was actually adopted was expansionary, a choice probably influenced by a positive outlook for the Greek and the international economy and facilitated by a widespread perception that 'in view of Greece's EMU membership, the availability of external financing was not a concern' (IMF, 2008a, p.10).

4. Interest rate developments in Greece in the course of the crisis

From what has been discussed thus far, it is clear that the global crisis started to unfold at a time when the Greek economy was weighed upon by chronic imbalances and magnified foreign indebtedness. As it turns out, this combination has recently placed Greece at a serious disadvantage with respect to the cost of servicing its debt. With increased indebtedness implying a higher risk of default and with risk premia considerably elevated as a result of the crisis, a high spread was to emerge between interest rates on Greek and other Euro zone Member State debt, and Euro zone interest policy decisions lost much of their relevance for the determination of Greece's financing costs. Indicatively, the spread between Greek and German government security rates reached 2.87 percentage points in March 2009 from an average of 0.26 points over the period 2002-2007 (see Figure 3). Furthermore, the spread between Greece's rate for deposits of agreed maturity of up to 1-year and the ECB's main refinancing rate expanded to 2.89 percentage points by January 2009 and was equal to 1.75 points in March 2009, from an average of 0.07 points over 2006 (see Figure 4).

Figure 4
Deposit interest rates and the ECB's policy rate (%)



Source: ECB.

The emergence of the aforementioned spreads suggests that, in the case of the Greek economy, interest rates have quite unexpectedly started to reassume their role as a mechanism for the correction of imbalances. For the economy's private sector, higher deposit rates and the correspondingly elevated cost of borrowing would be expected to encourage saving and discourage credit expansion for consumption and investment, therefore exerting a dampening effect on the demand for imports. For the public sector, the higher cost of servicing the public debt imposes a heavy burden upon the government budget but, at the same time, creates an additional motive for curtailing the public deficit, as an improvement in government finances would tend to have a beneficial effect upon the country's borrowing terms.

While contributing towards the correction of structural imbalances, large movements in interest rates related to Greece's indebtedness are likely to have serious implications for the country's growth. It will be argued further in this paper that these implications could be crucial for the potential effectiveness of fiscal expansion as a policy response to the current economic downturn.

5. Economic slowdown and the appropriate fiscal policy response

Apart from the aforementioned interest rate developments, policy makers in Greece have lately been faced with a rapid deterioration of economic conditions related to the crisis. In the course of 2008, economic expansion gradually decelerated, bringing the annual GDP growth rate down to 2.9%, while in the first quarter of 2009 Greece's GDP expanded by only 0.3% compared to the previous quarter. For 2009 as a whole growth prospects appear gloomy, with recent forecasts ranging from a positive growth rate of 1.1% (Ministry of the Economy and Finance, 2009) to a GDP contraction of 0.9% (European Commission, 2009). In the labour marker front, the unemployment rate picked up to 8.7% by March 2009 versus 7.2% in mid 2008 and is expected to increase further in the near future, in line with the slowdown in economic activity.

As the deterioration of growth and employment conditions and prospects is, currently, a worldwide phenomenon, there has been a renewed interest in the old-standing debate around the use of discretionary fiscal policy as an instrument to support growth[6]. At the international level, discretionary fiscal stimuli (including increased government spending for consumption and investment, tax cuts and additional government transfers) are widely promoted as indispensable components of an effective global policy response to the crisis (see e.g. IMF, 2008b). In the EU, the total size of discretionary fiscal policy packages adopted by Member States as part of the European Recovery Plan is estimated to 1.1% of the EU GDP for 2009 (European Commission, 2009), while in the US, China and Japan the corresponding figures amount to 1.9%, 2.1% and 1.4% respectively (Prasad and Sorkin, 2009). The economic rationale behind these packages lies both in the exceptional depth and worldwide nature of the crisis, which arguably calls for drastic government interventions, and in the fact that alternative macroeconomic policies for the support of aggregate demand are, in the present conditions, less effective: with global trade in

[6] See e.g. Leijonhufvud (2008), Barrell, Fic and Liadze (2009), Belke (2009), ECB (2009).

sharp decline, the pursuit of an export-led recovery would, in all likelihood, prove unproductive; in the same vein, with the monetary transmission mechanism weakened due to the financial nature of the crisis and with central bank rates already at record low levels in many countries, the margins for supporting growth through interest rate policy are in most cases limited (IMF, 2008b).

In the case of Greece, the rise of the public deficit to 3.5% of GDP in 2007 and to 5% of the GDP in 2008 triggered the opening of an Excessive Deficit Procedure (EDP), under which the Greek economy will be monitored closely by the European Commission to ensure a reduction of its headline deficit below 3% of the GDP by 2010. Greece's subjection to the EDP automatically implies an obligation to refrain from fiscal stimulus measures. With no room for fiscal manoeuvre available, the Greek government has so far avoided the adoption of a fiscal stimulus package, despite domestic political pressures to act in that direction.

Leaving aside Greece's fiscal policy obligations as an EU Member State, a question worth examining is whether, absent these obligations or in the event that policy makers were to choose not to fully comply therewith, the use of fiscal stimulus measures would, under current conditions, be an effective means of boosting Greece's GDP growth. In other words, an interesting issue to examine is whether the EDP is *protecting* Greece from engaging in a further deterioration of its fiscal position with unlikely benefits for growth or whether it obstructs fiscal action that, despite its costs, would be effective in aiding economic recovery.

To address this issue, let us assume that the Greek government decides to introduce a fiscal stimulus package equivalent to an increase in government spending equal to ΔG_j at the beginning of period j. Under the basic Keynesian framework of the effects of fiscal expansion on demand, this increase in government spending would have a positive effect on the economy's GDP in period j, equal to

$$k_j \, \Delta G_j$$

where $k_j = 1/(1 - c_j\,(1 - t_j) + m_j)$ stands for the multiplier, c_j is the marginal propensity to consume, t_j is the marginal tax rate and m_j is the marginal propensity to import.

As the public sector of Greece is already running high deficits, the cost of a fiscal stimulus package would have to be financed predominantly through the issue of new government debt. Since Greece's private sector is characterized by a very low savings' rate, it would be reasonable to assume that a very large proportion of this debt would be purchased by foreigners. Therefore, in the case of Greece, a substantial fiscal expansion would result in a significant augmentation of its external indebtedness. If we were to assume, for simplicity's sake, that the fiscal expansion were to be financed entirely through government borrowing, so that $\Delta G_j = \Delta GD_j$, where ΔGD_j the increase in the government debt coinciding with the expansion, and if we set $0 \leq a_j \leq 1$ as the proportion of new government debt that is purchased by foreigners, then by definition

$$a_j \Delta G_j = \Delta ED_j$$

where ΔED_j is, *ceteris paribus*, the augmentation of the country's external debt resulting from the stimulus package[7].

Assuming a constant interest rate $r_j = r_{j-1} = r$, the increase of the external debt would cause an outflow of income from the country in the form of interest payments by the public sector to the foreign creditors owning the new debt. Since we have assumed that both the fiscal expansion and the associated external debt increase occur at the beginning of period j, then for this period as a whole the outflow of income from the expansion would amount to:

$$r\, \Delta ED_j = r\, a_j\, \Delta G_j$$

The effect of this leakage on demand would depend partly upon the government's method of financing it. Assuming that no further public borrowing is undertaken, the leakage would necessitate either a reduction in government spending or an increase in taxes, both of which would tend to have a negative impact on demand. Defining as ΔY_j the net change in the economy's output arising from the combination of the multiplier effect and this leakage, we will have

$$\Delta Y_j = k_j\, \Delta G_j - k_j\, r\, a_j\, \Delta G_j = k_j \Delta G_j\, (1 - r\, a_j) \qquad (1)$$

Under the conditions prevailing in Greece, the product $r\, a_j$ would take a small value, and therefore the effect of the income leakage on growth would be limited. Taking for example r = 5.5% (the current yield of 10-year Greek government securities) and a_j=1, we deduce that the additional outflow of interest payments resulting from of a

[7] Note that a fiscal stimulus package could also affect a country's external indebtedness by inducing an increase in the private sector's foreign debt obligations. For the sake of simplicity we hereby assume no change in the private sector's external debt, because assuming otherwise would only strengthen our conclusions.

fiscal stimulus package would reduce the effect of this package on output by only 5.5%.

While perhaps plausible for a country with low external indebtedness over a period of economic stability, the assumption of a constant interest rate would not necessarily be realistic in the case of Greece, particularly under the current sensitive financial market conditions. As discussed earlier, credit markets are already penalizing the Greek economy with high interest rate spreads for its fiscal and external imbalances. Furthermore, markets remain vigilant against the possibility of an increase in Greece's default risk, meaning that an augmentation of the country's indebtedness related to a fiscal stimulus package would be likely to either trigger a further rise in spreads or to impede their decline in the course of recovery of financial markets from the crisis. In both cases, the interest rates applicable to the *entire amount* of Greece's external debt would tend to be higher in the case of a fiscal expansion than otherwise. Given the considerable size Greece's external indebtedness, higher interest rates entail a large additional outflow of income from the country in the form of interest payments and, therefore, a substantial negative effect on growth.

To illustrate this, let us consider the case of an increase by s in the interest rate at the beginning of period j due to the fiscal expansion, so that $r_j = r_{j-1} + s = r + s$ where $s>0$. In this case, the economy's interest payments to foreign creditors would be augmented by an amount

$$(r + s)\ \Delta ED_j = (r + s)\ a_j\ \Delta G_j$$

associated with the interest payments on the new debt issued by the government to finance the expansion, *plus* an amount

$$s\ ED_{j-1}$$

associated with the additional interest payments on the total amount of preexisting external debt. As the second of these amounts is proportional to the size of the economy's external indebtedness, the income leakage resulting from a substantial interest rate increase and its negative effect on growth could be very considerable for a country with high external debt. Furthermore as ED_{j-1} consists not only of public but also of private sector debt, growth would be affected by the leakage not only through the fiscal measures required for financing the additional interest payments on the public sector's external debt but, also, more directly, through a reduction of private disposable income by the amount of the increase in the private sector's foreign interest payments[8]. Focusing on the leakage related to the public sector's outflow of income, the relevant reduction in output arising would equal

$$k_j\,[(r+s)\;\; a_j\,\Delta Gj + spED_{j-1}]$$

where p is the share of the public sector in the total amount of the country's external debt in period j-1. Considering in turn the aforementioned reduction of the private sector's disposable income and focusing for simplicity's sake on its consequences for private consumption, a further reduction in output would be expected, amounting to

$$c_j s\,(1-p)\,ED_{j-1}$$

The net effect of the multiplier and the above leakages on output equals

$$\Delta Y_j = k_j\,[\Delta G_j - (r+s)\;\; a_j\,\Delta Gj - spED_{j-1}] - c_j s\,(1-p)\,ED_{j-1} \qquad (2)$$

and for a considerable interest rate increase s it could turn out to be very small or negative even in the case of a sizeable multiplier.

Focusing on the case of Greece, Table 3 provides alternative scenarios of the value of ΔY_j in the case of a fiscal stimulus package amounting to 1% of the GDP and under alternative assumptions regarding the multiplier k and the interest rate adjustment s. In all scenarios:

i. ED_{j-1} was set to 149% of the GDP in period j-1, i.e. to the actual amount of Greece's external debt in 2008 (see Table 2),
ii. r was set to 5.5%, i.e. to the current yield of Greece's 10-year government securities,
iii. p was set to 0.53, i.e. to the share of the general government in Greece's external debt in 2008 (see Table 2),
iv. a_j was set to 0.9, a plausible assumption on the basis of Greece's low private savings rate and
v. c_j was set to 0.95, a value that corresponds to an approximation of Greece's average marginal propensity to consume over the period 2000-

[8] We hereby assume that the interest rate increase applies equally to both the public and the private sector. For the economy as a whole this is a valid assumption because in the case of Greece 'banks and non financial businesses usually do not draw capital from international markets at borrowing terms better that those of the public sector' (Bank of Greece, 2009b, p.32).

2006, calculated on the basis of annual data on household income and consumption for this period.

With respect to the multiplier *k*, three alternative scenarios with regard to its size were examined, as its value cannot be reliably estimated, not only due to the lack of the necessary long-term data series for Greece[9] but, also, importantly, due to a drastic shift of import and savings' habits in recent years that renders older patterns of limited relevance. Over the past few years, Greece's marginal propensity to import exhibited high variation around a sharply rising trend – a development related to the aforementioned effects of Euro area entry on the exchange rate mechanism – while from the early 1990s to the early 2000s the Greek households' propensity to consume increased rapidly, bringing their savings rate down to 2.1% of their disposable income in 2002 from 16.7% in 1991 (Athanassiou, 2008).

To determine the specific values of *k* used in the alternative scenarios, the annual values of *k* for the period after 2002 were approximated via calculations using annual data on imports, taxes, income and consumption for this period. These calculations yielded a range of values of *k* between about 1 and 2 and, therefore, two of the three scenarios examined were k=1 and k=2. A third scenario k=0.5 was also included in order to capture the case of a lower multiplier caused e.g. by an increase in the marginal propensity to save due to higher interest rates and/or to the uncertainty stemming from the crisis. For each of the three multiplier scenarios, three alternative assumptions for the interest rate increase *s* were made, i.e. s=0, s=1 percentage point and s=2 percentage points.

As shown in Table 3, in the case of an increase of 1 or 2 percentage points in the interest rate, the negative effect on growth from the outflow of income for interest payments overcomes the positive multiplier effect in all three alternative multiplier scenarios, the net outcome being a decline in output and, therefore, an utter fiscal policy failure.

On the basis of the above analysis and scenarios, one can legitimately conclude that for an economy with high public sector imbalances and elevated external indebtedness, such as Greece, the adoption of a fiscal stimulus package would most likely be an ineffective way of pursuing recovery under the current crisis conditions. This conclusion lends support to the argument that, presently, the EU

[9] Following a major revision of Greece's GDP in 2007, revised National Account data for Greece are currently available from 2000 onwards.

fiscal discipline procedures to which Greece has been subjected are actually helping protect the country from engaging in a further deterioration of its fiscal position that would have unlikely benefits for growth.

Table 3

Multiplier effect and income leakage effect from a fiscal stimulus package amounting to 1% of Y_{j-1} and their net effect on Y under alternative scenarios for the values of *k* and *s**

Multiplier	Interest rate increase (in percentage points)	Multiplier effect (% of Y_{j-1}) (a)	Income leakage effect (% of Y_{j-1}) (b)	*Net percentage change in Y (a+b)*
k=0.5	s=0	0.50%	-0.02%	*0.48%*
	s=1	0.50%	-1.09%	*-0.59%*
	s=2	0.50%	-2.15%	*-1.65%*
k=1	s=0	1.00%	-0.05%	*0.95%*
	s=1	1.00%	-1.51%	*-0.51%*
	s=2	1.00%	-2.98%	*-1.98%*
k=2	s=0	2.00%	-0.10%	*1.90%*
	s=1	2.00%	-2.36%	*-0.36%*
	s=2	2.00%	-4.62%	*-2.62%*

*on the basis of equation (2) and under assumptions relevant to the case of Greece, i.e. E_{j-1}/Y_{j-1}=149%, *r*=5.5%, *p*=0.53, *a*=0.9 and *c*=0.95.

Notably, although the mix of public and external imbalances observed in Greece is quite unique in the context of the EU, the analysis and conclusions hereby presented may also be of relevance to other EU Member State economies sharing some of Greece's difficulties. Such economies include, Ireland, Italy, Spain and Portugal, all of which have also experienced a significant widening of their interest rate spreads versus Germany, as a result of their own particular fiscal and/or external imbalances (see Table 4).

It is worth mentioning that the conclusions of our analysis could be further strengthened by taking into account the potential crowding-out effects of a fiscal stimulus package. According to crowding-out theory[10], the rise in interest rates induced by a debt-financed fiscal expansion has a dampening effect on private investment and may also exert a negative influence upon private consumption as consumers divert funds to government security purchases. Although important for the determination of the exact impact of fiscal stimuli on growth, crowding-out effects are

[10]For a review of this theory see Spencer and Yohe, 1970.

not further discussed in this paper as their evaluation is not indispensable in order to establish the ineffectiveness of fiscal stimuli in the case of an economy sharing features similar to those of Greece.

Table 4

	Spread over German 10yr Government Bond in Apr 09	Macroeconomic imbalances, private sector debt and gross external debt in 2008 (% of GDP)					
		Public Balance	Current Account Balance	Government Debt	Domestic MFI Credit to Households	Domestic MFI Credit to Non-Financial Corporations	Gross External Debt
Ireland	2.14	-7.1	-4.5	43.2	79.6	99.6	895.5
Italy	1.23	-2.7	-3.4	105.8	29.8	56.0	107.9
Spain	0.95	-3.8	-9.5	39.5	80.7	88.5	152.0
Portugal	0.96	-2.6	-12.1	66.4	80.2	72.3	209.8

Source: Eurostat, Bank of Ireland, Banca d' Italia, Banco de España, Banco de Portugal, Quarterly External Debt Statistics (QEDS), IMF and World Bank.

6. Conclusions and policy recommendations

The ongoing financial crisis and worldwide economic downturn have revived interest in the old-standing debate surrounding the use of discretionary fiscal policy as a means of supporting growth. While, at an international level, discretionary fiscal stimuli are currently considered as indispensable components of an effective global policy response to the recession, such stimuli would not be advisable for economies with severe imbalances. An important reason why this is so is that, given the increased sensitivity of credit markets to risk, the adoption of fiscal stimuli in the context of such economies, would tend to elevate the cost of servicing their external debt. The model presented earlier in this paper suggests that the leakages associated with increased interest payments to foreign creditors could well cancel-out any positive multiplier effects generated by such stimuli, the net result being a failure to stimulate growth. Applying the results of our analysis to Greece, an EU Member State economy characterized by high public sector imbalances, increased foreign indebtedness and elevated interest rate spreads, we conclude that Greek policy makers should steer clear of adopting a fiscal stimulus package, not only because doing so would be inconsistent with the fiscal discipline obligations deriving from EU membership but, also, because such a package would, ultimately, be ineffective in aiding economic recovery. While the focus of the analysis is on the Greek economy, this conclusion is likely to of relevance to other EU economies suffering from serious macroeconomic imbalances.

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