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Highlights in this issue:

- Inefficiencies in the **tax system appear to be hampering tax collection**
- **Medium-term budgetary targets need to be underpinned with effective reforms in the tax system**

TAX SHORTFALLS IN GREECE

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Summary

Expressed in terms of GDP, tax revenues have been steadily decreasing in Greece since 2000. This is happening in a context of demand-driven growth, positive cyclical conditions and revenue-enhancing discretionary policies. It would therefore appear that factors other than growth strength and composition, such as those associated with inefficiencies in tax administration, are hampering tax collection. Although recent efforts to improve tax administration appear to have lessened the impact of these inefficiencies in recent years, they are still significant. This has implications when assessing the medium-term revenue and overall budgetary targets, as presented in the latest update of the stability programme. The main conclusion of this Country Focus is that medium-term budgetary targets would need to be underpinned with further revenue-enhancing measures, including effective reforms of the tax administration and enforcement, as recommended by the ECOFIN Council of 4 March 2008[1].

Introduction

In spite of a tax-friendly growth model, tax revenues have been underperforming since 2000.

With growth of 4%, the Greek economy has been enjoying buoyant demand-driven activity during the current decade. The cyclical position of the economy has also improved, posting increasingly positive output gaps. In the same period, a number of revenue-enhancing tax reforms were carried out, only partly offset by measures aiming at reducing the tax burden on personal and corporate incomes. Consequently, within a context of a tax-friendly growth model, the average tax revenue elasticity with respect to GDP should have hovered above 1, as observed in other Member States, such as Cyprus or Spain. However, this has not been the case in Greece, where tax revenues have been growing in nominal terms at about 7% per year, while nominal GDP grew at an average rate of 8¼%.

Following Martinez-Mongay et al., (2007), this Country Focus presents the main drivers of economic growth, paying particular attention to developments in tax bases and decomposes the main categories of government receipts' growth (direct taxes, indirect taxes and social contributions) into cyclical, composition and discretionary effects, and a residual. It takes a more specific look at the relative importance of this residual and its components, in particular those factors that seem to hamper tax collection. It also looks at the possible consequences for the medium-term budgetary targets set by the December 2007 update of the Greece's Stability programme and considers some policy implications.

*** Directorate for the Economies of the Member States.**

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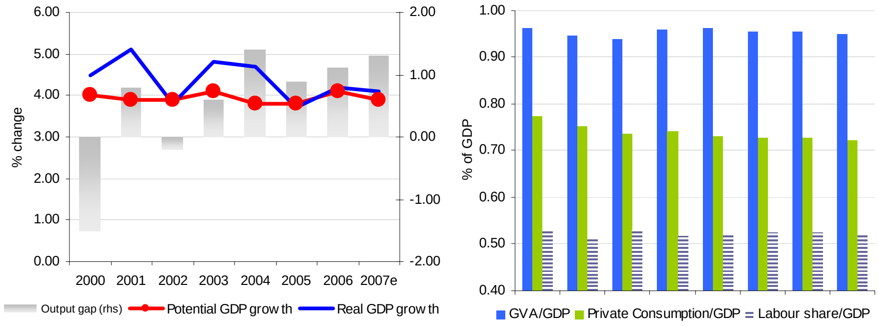
Robust growth in Greece: what happened with tax revenues?

Although cyclical conditions have been positive,…

The cyclical position of the Greek economy has been improving since the early 2000s, with real GDP growing above potential (Figure 1). Domestic demand has been the most important contributor to GDP growth on the back of dynamic private consumption, supplemented by public consumption and investment until 2004 (the Olympic Games) and, afterwards, by private investment, especially dwellings. The main factor behind the strong domestic demand was the surge in credit growth from the late 1990s, on the back of the fall in risk premia and financial integration and liberalisation. Economic growth has been accompanied by relatively high job creation (1% per year on average).

Figure 1: GDP growth and tax bases



Source: AMECO, autumn 2007 Commission services' forecast

Developments in tax receipts have not, however, reflected the buoyant economic activity recorded. Between 2000 and 2007, total taxes grew at 7% per year on average, which compares with a nominal GDP growth rate of 8¼%, resulting in an average annual elasticity below the unit. As a result, the total tax burden decreased by 2¼ percentage points of GDP. This is in contrast with other euro area members with similar economic growth, which recorded tax bonuses well beyond what standard elasticities justified over the same period (Table 1). Even other euro area members with lower GDP growth rates, such as Portugal or Italy, recorded also above-the-unit average tax revenue elasticities[2].

Table 1: Average total tax elasticities in selected Member States

Member States	average % growth (2000 - 2007)		Average total tax elasticity
	Nominal GDP	Nominal taxes	(2000-2007)
EL	8.06	6.74	0.89
ES	7.70	8.74	1.15
IE	9.54	9.21	1.14
CY	6.71	11.01	1.73
PT	4.51	5.28	1.03
IT	4.00	4.33	1.16
FR	3.93	3.79	1.01
DE*	2.38	1.59	0.62
Euro-area	**4.16**	**3.84**	**0.92**

*The introduction of tax cuts Germany in 2001 and 2004 brought its 2000-2007 average total tax elasticity below one, and therefore, the euro-area

Source: AMECO

If taxes were strictly proportional and (i) GDP had grown in line with potential (cyclical effect[3]), (ii) the share of tax bases in the GDP had remained constant (composition effect) and (iii) assuming no discretionary measures (discretionary effect), total tax revenues would have grown in line with nominal GDP. Therefore, in the absence of other factors, total tax elasticity below 1 should a priori point to negative cyclical conditions, composition effects or discretionary effects. However, this is not the case in Greece (Table 2). As Table 2 shows cyclical effects have been positive since 2000, reflecting the positive output gaps recorded over the period. Consequently, a below-the-unit elasticity cannot be attributed to cyclical factors.

Table 2: Aggregate effect of changes in tax revenues

% of GDP, averages		**2000-2004**	**2005-2007**
Aggregate	Cyclical effect	0.28%	0.03%
	Composition effect	-0.22%	-0.03%
	Discreationary effect	0.21%	0.51%
	Other	-0.45%	-0.33%

Source: AMECO, autumn 2007 Commission services' forecast and successive Budget laws

…changes in tax bases only marginal,…

These developments in tax revenues could be explained by growth-composition effects. However, figure 1 shows that the evolution of the relevant tax bases, private consumption (the tax base for indirect taxes), gross value added (direct taxes) and labour share[4] (social security contributions) remained broadly constant over the period. In concrete terms, although GDP share of private consumption fell from 77% in 2000 to 73% in 2002, it remained broadly unchanged afterwards. Moreover, both gross value added and labour share also remained broadly unchanged as percentage of GDP over time, at 95% and 52% respectively.

…and the impact of discretionary measures positive,

Although several changes in the tax codes took place during the same period, the net effect of discretionary measures on overall tax revenues was positive. Although taxes on households and corporations were gradually reduced, property and capital tax was increased, which, ceteris paribus, would have led to a neutral net effect on receipts from direct taxes. Moreover, rises in excise duties and VAT actually boosted indirect tax revenues. However, both indirect and direct taxes declined by 1½ and 1¾ percentage points of GDP respectively while their aggregate share in the total tax burden fell from 65% in 2000 to 60% in 2007. In contrast, social contributions increased by some ¾ percentage points of GDP, although there were no significant changes in the related tax codes.

…tax revenues have been steadily decreasing,

Therefore, factors other than cyclical, composition and discretionary effects seem to have hampered tax collection in Greece. The lower than 1 elasticity of tax revenues in Greece cannot be explained by regressive taxation. Most of the direct taxes and indirect taxes (VAT) are progressive, while social security contributions are more or less proportional.

…due predominantly to the impact of tax system weaknesses.

The tax revenue shortfalls in Greece thus appear to be due to the negative effect of factors included in the residual of the decomposition, in particular, the performance of tax administration and enforcement. This negative effect amounted to 0.78% of GDP over the period 2000-2007. However, this conceals two different periods. Between 2000 and 2004, the GDP share of total taxes declined by 2¾ percentage points. However, the implementation of a reform package in the tax administration and enforcement, after the general elections in March 2004 seems to have contributed to an increase of the total taxes-to-GDP ratio by ½ percentage point between 2005 and 2007. This reform package also helps to explain the reduction in the negative residual recorded after 2004, from 0.45% of GDP to 0.33%. These reforms included better technological support to the tax enforcement services, which permitted a more complete and better targeted cross-checking of invoices issued and received by enterprises and professionals. Furthermore, the electronic filing out of invoice lists was made mandatory, and the Information System for Auditing Services was redesigned[5], based on new software supportive of auditing procedures. Finally, a new service for Special Audits with a strong mandate was created, while audit sub-directorates were set-up in regional tax offices across the country.

Decomposition of changes in main categories of tax revenue

The aggregated effect of changes in tax revenues hides the different impact of cyclical, composition, discretionary and other (residual) effects on each category of taxes. Indirect-tax revenues, which mainly consist of receipts from VAT and excise duties, have been growing at an average annual rate of 6¼% since 2000, well below nominal GDP growth of 8% per year, thus resulting in an annual average elasticity of 0.8. Consequently, while indirect taxes represented 13¾% of GDP in 2000, they accounted for only 12% in 2007. If private consumption is taken as the tax base, the elasticity hovers at about the same level on average.

Table 3: Decomposition of changes in main categories of tax revenues

% of GDP, averages		2000-2004	2005-2007
Indirect taxes	Cyclical effect	0.11%	0.01%
	Composition effect	-0.11%	-0.02%
	Discretionary effect	0.10%	0.40%
	Other	-0.41%	-0.23%
Direct taxes	Cyclical effect	0.07%	0.01%
	Composition effect	0.03%	-0.02%
	Discretionary effect	0.20%	0.11%
	Other	-0.43%	-0.12%
Social contributions	Cyclical effect	0.10%	0.01%
	Composition effect	-0.14%	0.00%
	Discretionary effect	-0.09%	0.00%
	Other	0.40%	0.03%

Source: AMECO, autumn 2007 Commission services' forecast and successive Budget laws

Positive effects of discretionary measures have been offset by negative effects of other factors, both in direct and indirect taxes

In the first period both cyclical and composition effects appear to be relatively small. Cyclical effects are positive, on the back of an improving cyclical position, but fully offset by negative composition effects reflecting a lower GDP share of private consumption between 2000 and 2002. Positive discretionary effects in turn reflect revenue-enhancing discretionary measures implemented in early 2000s, such as the increase in road-tax for private vehicles and the rise in excise duties on oil products, which were partly offsets by cuts in other indirect taxes such as tax rate on stock exchange transactions and excise duties on fuel for agricultural and industrial use. However, the large negative effect of other factors[6] more than offset the aggregated positive results obtained from cyclical and discretionary effects. In the second period, cyclical and composition effects are marginal. However, the positive effect of discretionary measures is higher, reflecting a VAT rate increase in mid-2005 by 1 percentage point, which boosted indirect tax revenues by about ½% of GDP, mainly in 2006. The fall in other effects on indirect taxes may be explained by the positive outcome from the reforms introduced in 2004 and, in particular, by implementing an integrated electronic system of cross-checking of invoices, on the basis of mandatory electronic filing of periodic VAT declarations by all enterprises or professionals. In contrast to the first period, the positive effects of discretionary measures after 2004 are only partly offset by the effects of other factors.

Direct taxes, which include personal and corporate income taxes, as well as property and capital taxes, have been growing since 2000 at a nominal annual average rate of close to 6½%, thus resulting in an average elasticity close to ¾ with respect to nominal GDP. This does not differ much from the elasticity with respect to the tax base, namely the gross value added of total economy (GVA). As a result, while direct taxes represented 9.7% of GDP in 2000, they accounted for 7.9% in 2007. This outcome is surprising, in a context of economic expansion, with incomes and profits growing fast. Indeed, the progressivity of income taxation in Greece should have led to above-the-unit elasticities over the period 2000-2007. Table 3 shows that in the first period, cyclical effects are positive and relatively small, as are indirect taxes. Composition effects are marginal. The sizeable discretionary effects are explained by a positive net effect of the implementation of revenue-decreasing measures, namely income tax cuts[7] aiming at reducing the tax burden on low-income households and enhancing Greek firms' competitiveness, and revenue-enhancing measures, namely increases in the legal value of properties, the introduction of tax on deposits in repos and the imposition of tax on properties owned by off-shore companies. However, the positive effect of discretionary measures is more than offset by a significant negative effect of other factors. In the second period, both cyclical and composition effects are marginal. Discretionary effects are still positive, but lower. The negative effect of other factors is significantly reduced, on the back of reforms in the tax collection mechanism after 2004, such as the introduction of an integrated information system of cross-checking of income and property tax declarations, the development of national data base of properties and real estate transactions, several organisational changes in the auditing services and the settlement of past tax disputes, including the collection of delinquent obligations to the state. However, this negative effect is high enough to fully offset the positive impact of discretionary measures.

Finally, social contributions appear to be the only tax revenue category that has grown faster than nominal GDP over the whole period. The elasticity with respect to GDP has concomitantly remained above the unit (1.1). As a result, while social security contributions represented 12½% of GDP in 2000, they rose to 13¼% of GDP in 2007. Given the large share of self-employed in the Greek economy[8], labour costs (including the imputed wages on the self-employed) could be a good proxy for labour income tax base. Interestingly, total wage costs rose at 8¼% on average in nominal terms, thus resulting in an even higher elasticity of 1.2 on average. The decomposition of changes in social contributions suggests that cyclical, composition and discretionary effects are relatively small in the first period and marginal in the second. In the case of discretionary effects, this is explained by the absence of any significant changes in the related tax codes. However, in contrast to indirect and direct taxes, the contribution of other factors was clearly positive in the first period, owing to temporary events in the general economic regulatory framework, such as the regularisation of a significant number of immigrants and the modernisation/computerisation of the social security funds information system, while it was only negligible after 2005.

The role of taxes in the medium-term fiscal consolidation strategy

By using the approach followed in the previous section, we identify the main drivers behind the projected developments in tax revenues and look at their implications for the budgetary targets over the medium-term, as presented in the 2007 update of the Greek stability programme.

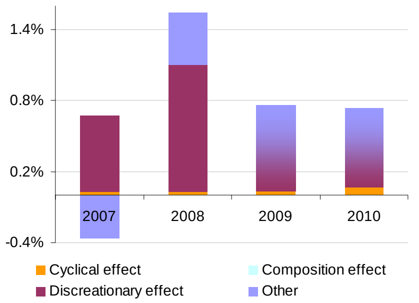
Medium-term budgetary targets need to be backed up…

The programme anticipates that domestic demand will be the main driver of growth, remaining strong and above potential at 4% per year over the period 2008 – 2010. Buoyant private consumption and investment activity are expected to fuel robust GDP growth, supported by significant job creation. The budgetary strategy outlined in the programme aims at a revenue-driven fiscal adjustment towards a balanced budget by 2010. Total revenue is projected to increase by 2¼ percentage points of GDP over the programme period. As a result, the implied tax elasticity with respect to GDP of around 1.4 is thus clearly above the historical levels. While the programme underpins the 2008 targets with discretionary measures (indirect taxes and property taxes) and other initiatives (improvements in the tax collection mechanism), there is no information on measures for 2009 and 2010. In the rest of this section we take the projections of the programme at face value and assume that there will be no discretionary measures.

The decomposition of the changes projected in tax revenues suggests that both composition and cyclical effects will be marginal over the lifetime of the programme. For 2008, discretionary effects appear significant, reflecting the positive impact of increases in excise duties on fuel oil-products, the full effect of the imposition of VAT on new dwelling transactions[9] and the introduction of a flat tax on property. Unlike in the past, the residual effect of other factors is positive, on the back of expected positive outcomes from the reforms undertaken to improve the efficiency of tax administration and improve tax compliance. These reforms include the elimination of the dual price system in the tax scheme for heating oil, which appeared to be at the origin of a generalised tax fraud in heating oil distribution, the setting up of the National Committee against tax evasion, organizational changes in the tax auditing services, an increase of the penalties applying to tax evasion and fraud and the adoption of the new transactions validation system, '*i-Tax*'. Figure 2 reflects this highly positive effect implied by the projections in the programme, which according to the Commission services autumn 2007 forecast appears optimistic. On this basis, the final budgetary outcome of these reforms could turn out less favourable than projected in the programme, leading to a lower (positive) residual effect and thus to a revenue shortfall.

…with further improvements in the tax administration and enforcement.

Figure 2: Decomposition of changes in total tax revenue (% GDP)



Source: AMECO, December 2007 update of the Greek stability and growth programme 2007-2010

For 2009 and 2010, the residual effect is significantly positive and stands at ¾ percentage points of GDP in each year. However, given the persistently negative effect of the residual factors observed in the past, the targets for 2009 and 2010 appear optimistic unless discretionary measures and/or further improvements in the tax administration are implemented. To this end, on 4th March 2008, the Council invited Greece to pursue the ongoing reforms of its tax administration[10], which should enhance tax revenues and tackle the structural inefficiencies of the tax system.

Policy implications

The government's recent tax policy reforms go in the right direction and should be continued.

The Greek government's recent initiatives are in line with the Council recommendations. However, as suggested by the IMF (2006) and the OECD (2007), reforms in the tax administration should also include improvements in the allocation of resources in terms of high-level personnel, infrastructure and equipment support, managerial organisation and information-sharing systems, which should be accompanied by a certain degree of political independence. In addition, the legal tax framework should be further simplified including the elimination of remaining exemptions and deductions in corporate taxes, which may be leading to uneven effective taxation of enterprises. Broadening the tax base in such a way would allow further tax cuts thereby further strengthen incentives for tax compliance. Moreover, improvement in the tax administration would lessen the need to resort to discretionary measures, which could put pressure on inflation and worsen the persistently high inflation gap with the euro area (increases in indirect taxes), introduce additional distortions and further erode the competitiveness of the economy (increases on direct taxes), or worsen the relatively high unemployment rate (increases in social contributions).

References

European Commission (2007), Public finances in EMU – 2007, *European Economy*, No. 3

IMF, 2006, Greece: Report on Observance of Standards and Codes Fiscal Transparency Module., *IMF Country Report No. 06/49*, Washington, D.C.

Koutsogeorgopoulou, V. and D. Turner 2007, The Costs of Delaying Fiscal Consolidation: How Rapidly should Greece React to Future Fiscal Pressures from Ageing?, *Economics Department Working Papers*, OECD, Paris.

Martinez-Mongay C., Maza Lasierra L.A., Yaniz Igal J., 2007, Asset Booms and Tax receipts: The case of Spain, 1995-2006, European Commission Directorate General for Economics and Financial Affaires, *Occasional Papers No. 293*, November 2007

Martinez-Mongay, C, 2003, Labour taxation in the European Union. Convergence, competition, insurance? In D. Franco (ed): Tax Policy, chapter 1, Banca d'Italia, Rome

Ministry of Economy and Finance, Update of the Stability and Growth Programme 2005 - 2008*,* December 2008

Ministry of Economy and Finance, Update of the Stability and Growth Programme 2007 - 2010*,* December 2007.

OECD (2005), *OECD Economic Surveys: Greece*, No. 12, OECD, Paris.

OECD (2007), *Going for Growth,* Economic Policy Reforms*,* OECD, Paris.

Tatsos N., 2001. Black Economy and Tax Evasion in Greece, IOBE Foundation of Economic and Industrial Research, Papazisi Publications, 2001, p. 94 (in Greek).

[1] http://www.consilium.europa.eu/uedocs/cmsUpload/st07057.en08.pdf

[2] The introduction of tax cuts Germany in 2001 and 2004 brought the 2000-2007 average total tax elasticity below one, and therefore, the euro-area.

[3] Cyclical effect is calculated as the difference obtained from applying the growth rates of nominal GDP and potential GDP to the tax revenue of given base year.

[4] Martinez-Mongay, C, 2003, Labour taxation in the European Union. Convergence, competition, insurance? In D. Franco (ed): Tax Policy, chapter 1, Banca d'Italia, Rome

[5] The Secretariat General of Information Systems designed and developed eight different kinds of cross-checking in 2005-2007, compared to only two during the period 2000-2003. This resulted to an increased and better targeted number of cases to audit (792,787 in 2005, instead of only 110,924 in 2003).

[6] The negative effect of other factors in indirect taxes, apart from changes in the tax collection or other institutional changes, might be attributed to the fact that many of the indirect taxes are excise duties independent of the price of the goods, thus displaying a regressive profile when prices rise, as in the case of oil derivatives. However, given their share in total indirect tax revenues which does not exceed 1/5, the impact should be marginal.

[7] Laws 2873/2000, 2892/2001 and 3091/2002

[8] According to the OECD Labour Force Statistics 2006, the self-employment share in Greece exceeds 36%, compared to an average of around 17% in the EU.

[9] The measure was introduced in 2007; however, the main bulk of the VAT introduction on new dwellings is expected to take place in 2008.

[10] In the European Commission's assessment of the Greek National Reform Programme and the October 2007 Implementation report, it is also recommended that Greece should implement reforms in the public administration, by building up effective regulatory, control and enforcement capacities, by modernising its human resources policy http://ec.europa.eu/growthandjobs/european-dimension/200712-annual-progress-report/index_en.htm

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