

## The Composition of Government Revenues in Cyprus, 2002-2008†

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### Abstract

Between 2002 and 2008 the Cypriot economy has been growing at an annual average rate of about 3½% in real terms, significantly above euro area. In parallel, total tax receipts grew on average at 11% per year, leading to an average annual elasticity with respect to GDP of about 1½. This increase in tax revenues has contributed significantly to the improvement of the Cypriot budget balance. The purpose of this paper is to assess the extent to which the tax-revenue increase is of a permanent nature or is to a large extent associated with temporary changes in GDP composition. The conclusion is that in Cyprus, a large part of the increases in tax revenues is structural, being the result of tax harmonisation measures adopted in the run-up to EU accession. However, the developments which led to the remarkable revenue performance in 2007 might be of a temporary nature, driven by a short lived asset boom. This, at the current juncture when a significant slowdown of the Cyprus economy is in sight and tax revenues could shrink, calls for maintaining fiscal prudence, especially in the light of the high external imbalance.

**Keywords:** Cyprus' tax elasticities, composition of government revenues, tax burden, asset repricing and tax revenues.

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## 1. Introduction

With an average GDP growth of 3½% in 2002-2008, the Cypriot economy has enjoyed buoyant demand-driven activity. GDP grew above potential for the largest part of the period, while output gaps have been closing in the latter years. A number of revenue-enhancing tax reforms have been adopted during the same period, only partly offset by measures aiming at reducing the tax burden on personal and corporate income. Concomitantly, the average tax revenue<sup>1</sup> elasticity with respect to GDP averaged above 1½. Tax revenues have been growing in nominal terms at 11% per year, while nominal GDP grew at an average rate of almost 7%.

The purpose of this paper is to assess the extent to which the tax-revenue increase recorded in Cyprus during the last decade is of a permanent nature or is associated with temporary changes in GDP composition. The Stability Programme of Cyprus (2007-2011) acknowledged that part of the recently recorded increase in tax revenues could be associated with the extraordinary profitability of the financial sector and the buoyant activity in real estate. Consequently, tax revenues were projected by the Programme to return to historical trends in the coming years. In its Opinion on the 2007 stability programme of Cyprus, the Council referred to the expected normalisation of tax revenues and invited Cyprus to use revenue windfalls to further reduce public debt.

This paper presents the main drivers of revenue growth, paying particular attention to developments in the tax bases, and decomposes the growth of the main categories of government receipts (direct taxes, indirect taxes and social contributions) into cyclical, composition and discretionary effects, and a residual.<sup>2</sup> The paper ends with some policy implications regarding the budgetary planning.

## 2. Robust economic growth and buoyant revenues

Since 2002 the Cypriot economy has been growing at an annual average rate of about 3½% in real terms, which compares with 1¾% in the euro area. Excluding the 2002-2003 period, which marks the impact of the global

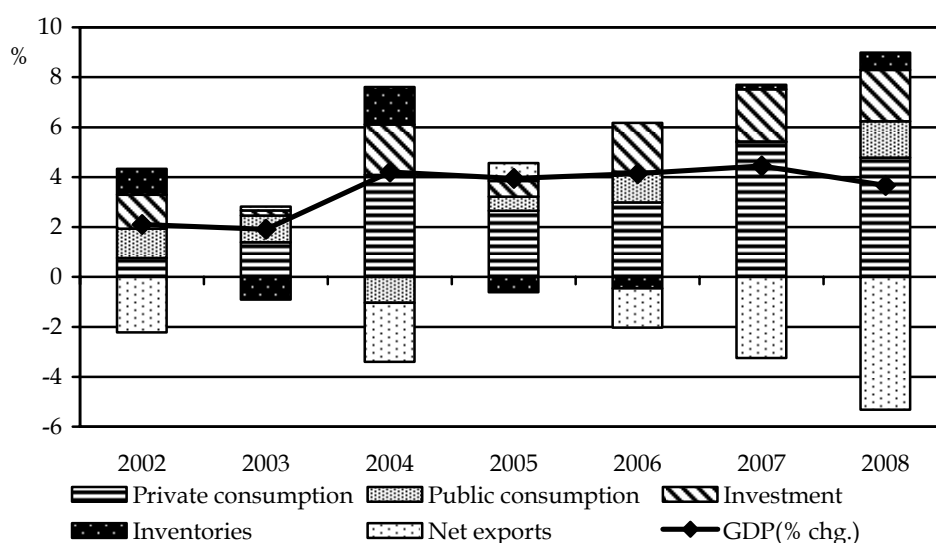
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<sup>1</sup> Total tax burden including imputed social security contributions.

<sup>2</sup> 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 Affairs, Economic Papers No. 293, November 2007.

slowdown in the post-11 September 2001 period, annual average growth in Cyprus attained 4¼%. Such an expansionary period of the Cypriot economy appears to be explained by a succession of credit-led impulses, demographics and adjustment processes, such as the convergence of the nominal interest rates towards the levels of euro area on the road to EU accession in 2004 and the macroeconomic-stability policy framework put in place by Cyprus to ensure euro adoption in 2008.

FIGURE 1  
*Contributions to GDP growth*



Source: AMECO, Commission services.

Economic activity has been mainly driven by buoyant domestic demand. A dynamic private consumption has been supplemented by private investment, especially construction, and to a lesser extent, public consumption, whereas net exports have contributed negatively to GDP growth (Figure 1). Strong domestic demand benefited from a surge in credit growth, on the back of a fall in risk premia, financial integration, capital liberalisation and excess liquidity in the banking sector. Furthermore, for the small open economy of Cyprus, the confidence effect of EU accession and subsequent euro adoption, on both consumers and investors, has not been negligible. Nevertheless, the growth composition of economic activity based mainly on buoyant domestic demand, coupled with factors such as the hike in oil and commodity prices, led the current account deficit to rise from a deficit of 3.5% of GDP to about 18% of GDP in 2008. Economic growth has been accompanied by conditions of almost full employment, with remarkably high job creation (of 3% per year on average) and rising real

disposable income. The latter has largely benefited from wage increases significantly higher than in the euro area (Eliofotou, 2008) and from a broad tax reform that shifted taxation from direct to indirect taxes, aiming mainly to harmonise the Cypriot tax system to the EU acquis.<sup>3</sup>

These factors, coupled with large migratory inflows during 2002 and 2007 (Eliofotou, 2008), significantly raised demand, stimulated an asset repricing, mainly of land, and engendered a higher level of private sector indebtedness.<sup>4</sup> These phenomena seemed to have induced a higher contribution from investment in construction, although not to the extent we have seen in other Member States, like Ireland or Spain. Moreover, corporate profits soared in the latter years of the period, benefiting from extraordinarily high income associated to asset repricing.

TABLE 1

*Average total tax elasticities in selected Member States, 2002-2008*

Member States	Average nominal % growth		Average total tax elasticity
	GDP	Taxes	
CY	6.9	11.1	1.6
PT	3.7	4.9	1.3
IT	3.3	3.8	1.1
ES	7.0	6.9	1.0
IE	6.9	6.6	1.0
EL	7.5	6.9	0.9
FR	3.9	3.5	0.9
DE	2.4	2.1	0.9

*Source:* AMECO, Commission services.

Between 2002 and 2008, tax receipts evolved consistently with the strong domestic demand and the asset repricing, growing on average at about 11% per year. This compares with a nominal GDP growth rate of almost 7%, thus leading to an average annual elasticity clearly above unit and above that of other EU countries (Table 1). As a result, the total tax burden (direct and indirect taxes plus social security contributions) rose from

<sup>3</sup> For a more detailed review of the tax reform see the Convergence Programme 2003-2007 (Annex II) and the Stability Programme 2007-2011 (Box 5), Cyprus' Ministry of Finance.

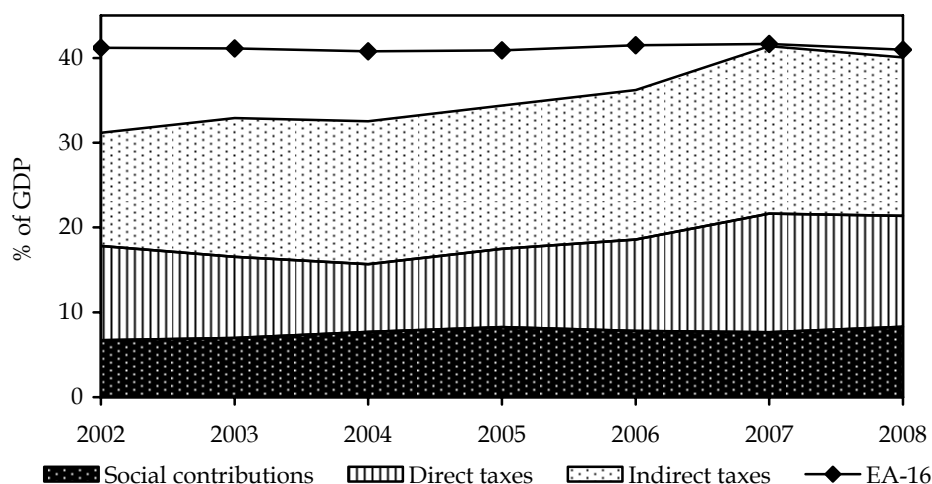
<sup>4</sup> According to Pissarides (2008), the adjustments that are currently taking place in Cyprus in the relative prices of land and services are inevitable, after joining a union characterised by higher wages and prices.

about 31¼% of GDP in 2002 to 40% in 2008. Although partially offset by a concurrent increase in expenditure, this increase in tax revenues led to the improvement of the Cypriot budget balance, from a deficit of 4½% of GDP in 2002 to a surplus of 1%, after recording a historically high surplus 3½% in 2007.

The reforms of direct and indirect taxation changed significantly the tax mix of public receipts (Figure 2). While direct tax revenues accounted for 35¾% of total tax revenues in 2002, the share fell to 32¾% in 2008. Reflecting the introduction of the VAT regime, the share of indirect tax revenues in total tax revenues rose from 42¾% to 46½% (18¾% of GDP). On the other hand, social contributions declined from 21½% of the total tax burden to 20¾%.

FIGURE 2

*Tax burden in % of GDP, 2002-2008*



*Note:* In 2002 a tax reform was initiated that was completed by 2004, during which the weight shifted from direct to indirect taxes.

Source: AMECO, Commission services.

### 3. Development and structure of tax revenues 2002-2006

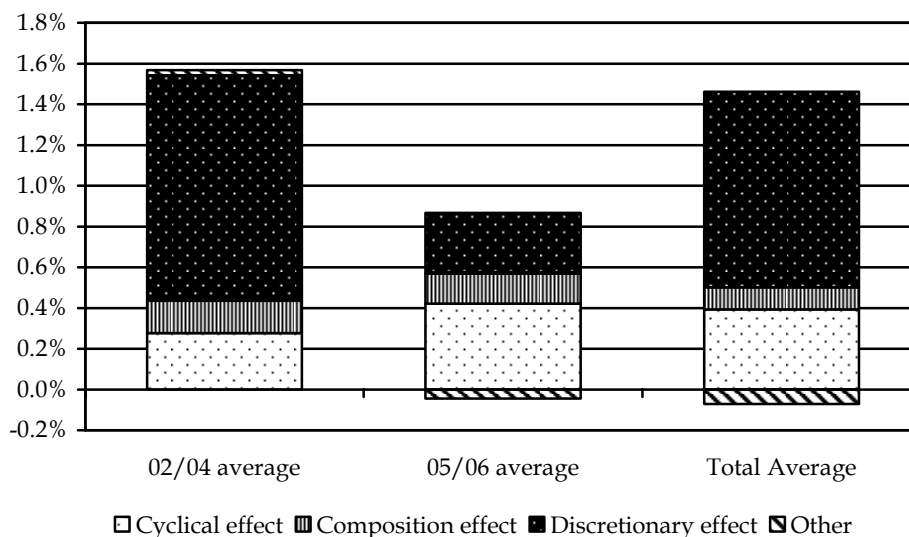
This section analyses the main drivers behind the recorded developments in tax receipts and spells out main tax policy measures behind such developments. If taxes were strictly proportional with respect to their tax

base and (i) GDP had grown in line with potential (cyclical effect<sup>5</sup>), (ii) the share of tax bases in the GDP had remained constant (composition effect) and (iii) assuming no discretionary measures (discretionary effect), the corresponding revenues would have changed in the same proportion as nominal GDP. Therefore, in the absence of other factors, a total tax elasticity above 1 should a priori point to a change in cyclical conditions, composition effects and/or discretionary effects. Indeed, these three effects may not exhaust the changes in tax revenues. The residual effects would reflect unobservable composition effects within the observable tax base, improvements in tax administration, progressivity or regressivity of the tax system etc.

The developments observed in tax receipts over the period 2002-2006 are decomposed into the three main categories of taxes (indirect, direct and social contributions). It is important to note that the period covering the years 2002-2006 marks the period during which the EU harmonisation and the main tax reform took place. Given their extraordinary nature, developments in 2007 and 2008 are analysed separately in the next section.

FIGURE 3

*Decomposition of changes in indirect taxes (% of GDP)*

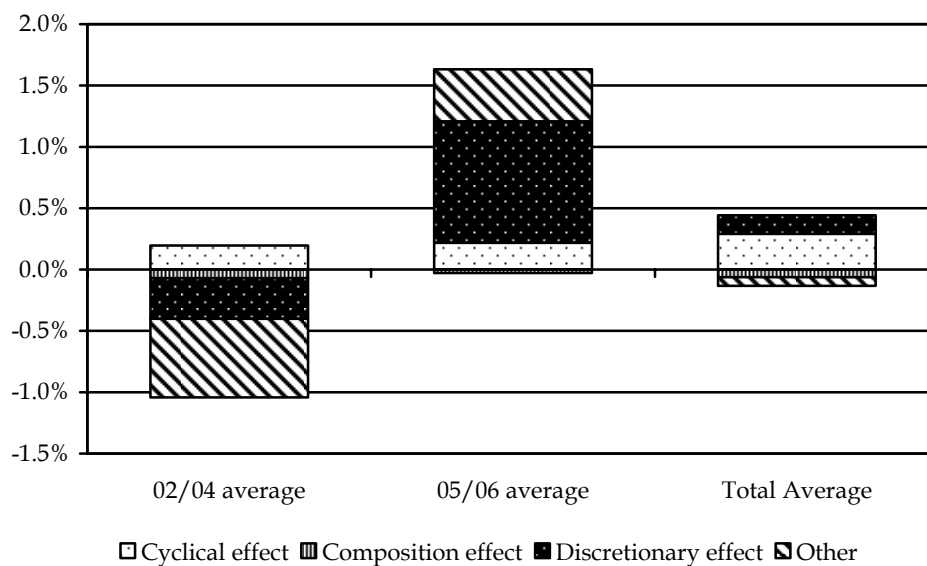


Source: AMECO, Commission services and Budget Laws.

<sup>5</sup> 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.

FIGURE 4

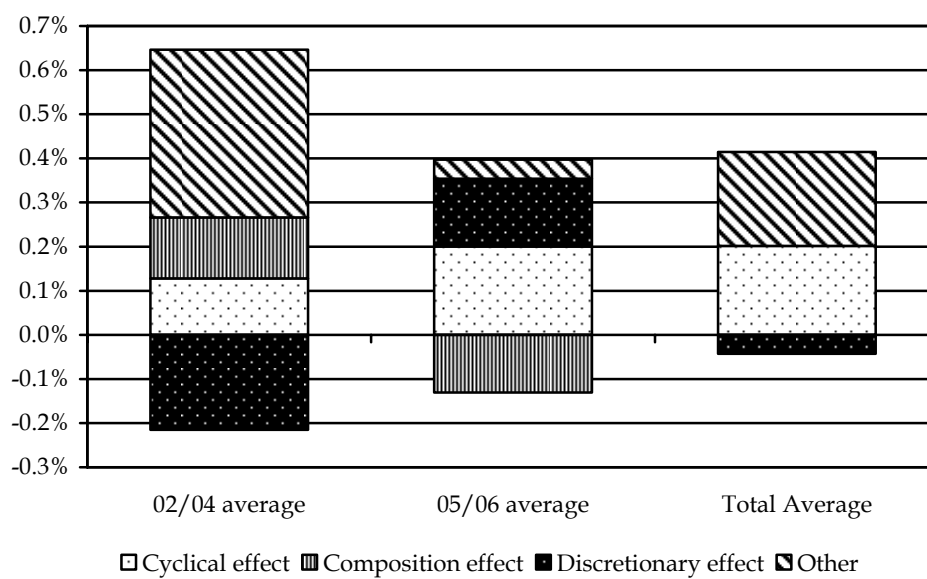
*Decomposition of changes in direct taxes (% of GDP)*



Source: AMECO, Commission services and Budget Laws.

FIGURE 5

*Decomposition of changes in social contributions (% of GDP)*



Source: AMECO, Commission services and Budget Laws.

Between 2002 and 2006, indirect-tax revenues, mainly consisting of receipts from VAT and excise duties, grew at an average annual rate of 13½%. This is well above the nominal GDP growth of 6¼% per year. Consequently, while indirect taxes represented 13¼% of GDP in 2002, they climbed to about 17½% in 2006 and the annual elasticity with respect to GDP averaged around 2. If private consumption and gross fixed capital formation on dwellings are taken as the tax base, instead of private consumption alone, the elasticity of indirect tax revenues with respect to the tax base hovers at about the same level on average (at 1.8) over the same period. This would point to negligible composition effects. However, it should be borne in mind that housing investment can be a poor proxy of transactions in the housing markets, especially in an asset-price boom context. Unfortunately, official information on house prices in Cyprus is not available.

This high elasticity of indirect taxes over 2002-2006 seems to be mainly explained by large positive discretionary effects, especially in the earlier years of the period. These are mainly associated with the harmonisation process that preceded EU accession in 2004. Policy measures encompassed the VAT and excise duties laws. Specifically, Cyprus adopted the minimum requirements prescribed by the EU acquis with respect to the excise duties (on petroleum products, tobacco and alcohol). Similarly, the minimum VAT rate was gradually introduced and the VAT base was widened in line with the acquis, including the establishment of a common value added tax base. Furthermore, the VAT rate was further raised from 8% in 2002 to 15% in late 2003. Moreover, as from 1 May 2004, a 15% VAT charge was applied on the sale of premises built with a permit issued after EU accession. In addition, as from the beginning of 2006, the VAT rate on hotel and restaurant services was increased from 5% to 8% which was estimated to add an additional 0.1% of GDP in indirect tax receipts.

Direct taxes, which include personal and corporate income taxes as well as property and capital gains taxes, have on average been growing during 2002-2006 at a nominal annual average rate of 6¾%. As a result, average elasticity with respect to nominal GDP and its tax base, namely the gross value added of total economy, was around 1.

Interestingly, this unit elasticity was observed despite the discretionary measures adopted during 2002-2006, aiming at reducing direct taxation in order to render the tax system less distortionary. The measures included a reduction of direct taxes to levels among the lowest in Europe, through the increase of tax-free income and the adjustment of the income tax brackets and the simultaneous abolition of tax allowances. The corporate tax system was also reformed during the EU harmonisation process. The hitherto preferential tax treatment of offshore companies was abandoned, by

introducing a common corporate tax rate, at 10%, for both domestic and international companies. This implied a significant reduction of the corporate tax imposed on domestic companies, which had been paying a rate of 25% before the reform.

On the other hand, a tax amnesty, which took place in 2004 and 2005, yielded a one-off increase in revenue of about  $\frac{3}{4}$  and 1 percentage points of GDP, respectively. The tax amnesty was also supplemented with measures to enhance tax administration and secure better tax compliance. In addition, the application of a “deemed dividend distribution” tax, a 15% tax on 70% of profits not distributed within two years, was introduced in 2002. Direct tax revenues seem to have been positively affected by the withholding tax on interest earned. This is a 10% charge on interest earned by both physical and legal persons, a measure that was introduced in 2004.

During the period, cyclical effects had a small positive contribution. In addition, developments in observable tax bases point to negligible composition effects. Therefore, given that discretionary measures had an unambiguous negative effect on revenues, other factors would explain the relatively high growth of direct taxes. This residual seems to reflect the improvement in tax administration as well as measurement errors in the tax base. The next section provides some evidence on the size and nature of the asset boom in Cyprus. The fast credit expansion, the buoyant activity in the real estate sector and the asset repricing, particularly of land, observed especially in the latter years of the period are all evidence of an underlying asset boom. However, the net operating surplus, which is the usual tax base for corporate profits in the national accounts, and actual profits, which is the actual tax base, may widely diverge if financial operations lead to unusually high profits, as is the case in asset booms.

Finally, social contributions also grew faster than nominal GDP over the whole period, by 9%, on the back of strong employment and wage growth. As a result, the elasticity with respect to both GDP and its tax base has concomitantly remained above the unit ( $1\frac{1}{2}$  and  $1\frac{1}{4}$  respectively). Accordingly, while social security contributions represented  $6\frac{3}{4}\%$  of GDP in 2002, they rose to  $7\frac{3}{4}\%$  of GDP in 2006. Cyclical effects contributed positively throughout the reference period. Composition effects seem to have overall been negligible. Discretionary effects have also overall been negligible, as a negative impact associated with the tax reform, later offset by the adoption of measures from the authorities to ensure better tax administration and compliance from the self employed persons. In particular, the contribution levels to the Social Security Funds of specific occupations of self-employed were increased and aligned with the actual level of earnings. Consequently, the improvement in tax administration would likely be behind the recorded developments in social contributions.

#### 4. Main revenue developments in 2007 and 2008

In terms of revenue performance, 2007 has been an exceptional year. Revenue growth has been surprisingly high across the board. Direct taxes accelerated by about 40% and indirect taxes by almost 21%. By comparison, nominal GDP in 2007 registered a growth of 7¾%. As a result, the elasticity with respect to GDP, particularly that of direct taxes, increased significantly compared to the past 5-year average (Table 2). As a percentage of GDP, direct taxes increased by 3¼ percentage points to 14% while indirect taxes rose by 2 percentage points to 19¾%. Social contributions remained broadly unchanged. Consequently, the Cypriot tax burden increased about 5 percentage points of GDP in a single year.

The remarkable increase in tax revenues in 2007 has taken place in spite of a discretionary fiscal policy aimed at reducing the tax burden. In particular, the adopted reform aimed at lowering direct taxation on households, by increasing the personal income tax-free threshold and readjusting the various tax brackets. As a result, personal income tax subsided. Also, the same year, indirect taxes were affected negatively from the reallocation of a number of goods and services under a reduced VAT rate.

TABLE 2

*Elasticities in 2007 and 2008 compared with the 2002-2006 average*

Elasticity-to-GDP	2007	2008	2002-2006 average
Direct Taxes	5.0	0.2	1.1
Indirect Taxes	2.6	0.3	2.1
Tax Burden	3.0	0.61	1.4
p.m.			
Real GDP	4.4	3.7	3.3
Nominal GDP	8.0	8.7	6.3

Note: The elasticity of tax burden-to-GDP is higher than that of direct and indirect taxes, affected by a significant increase in social security contributions (SSC), due to factors such as the increase in the imputed of self-employed persons (up to 13%) and improved tax-collection.

Source: AMECO, Commission services.

Both direct and indirect taxes benefited from the positive cyclical position of the country. Real GDP growth accelerated further to almost 4½%, above its potential, resulting in a positive output gap. Economic activity was exclusively driven by domestic demand, while the external sector dragged down growth. Private consumption was particularly buoyant in 2007,

growing at the highest pace of the last 12 years. Strong employment growth coupled with the increase of the personal income tax-free threshold in 2007 and fast credit expansion supported disposable income. Furthermore, private consumption benefited from a reduction in the tax on motor vehicles, which led to a growth of 33% of registrations, compared with a stagnant and a contracting rate respectively, of the previous two years. This in turn boosted excise duties.

Given that the dynamic growth in 2007 has been exclusively driven by domestic demand, which is rich in taxes, one would expect strong composition effects affecting both direct and indirect tax receipts, stemming from a significant growth of the tax bases. However, the observed elasticities in 2007 of the used tax bases vis-à-vis the GDP are identical to their five-year average. As a result, regarding indirect taxes, the impact from private consumption growth and from gross fixed capital formation on dwellings, points to negligible composition effects. Nevertheless, it should be noted that housing investment can be a poor proxy of transactions in the housing markets, especially in an asset-price boom context. Similarly, regarding direct taxes, the analysis of developments in observable tax bases would not point to significant composition effects. As Martinez-Mongay et al. (2007) pointed out, the usual tax base for corporate profits derived from the national accounts and used in economic analyses and the actual tax base consisting of actual profits, may widely diverge if financial operations lead to unusually high profits, as is the case in asset booms. Exceptionally high tax revenues in Cyprus, as in the case of Spain, provide additional evidence of a strong credit impulse in the country (Martinez, 2008).

The examination of available indicators seems to support the case for the existence of an asset boom in 2007. Where the housing market is concerned, according to data from the Land and Survey department, the total number of real estate transactions in 2007 compared to 2006, increased by almost 20%. Although no official house prices index are available, data from the aforementioned department show that the accepted value<sup>6</sup> of property sold increased by about 80%, the bulk of which reflects developments in the price of land. Moreover, fees of the Land and

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<sup>6</sup> Persons, physical or legal, that engage in a transaction declare to the Land and Survey department the price of the sale or the purchase of a property. However, the department applies its fees and charges not on the declared value but on the value of its own assessment, which may coincide or not with the declared value. This is called the "accepted value". If the interested parties disagree with the department's assessment they have the right to dispute it in court.

Survey department as well as capital gain taxes, which are paid by physical persons, have grown at exponential rates<sup>7</sup>, as a result of the buoyant activity in the real estate sector and the asset repricing.

Corporate tax revenues benefited from buoyant profitability and from the substantial increase of the number of companies that are established in Cyprus, taking advantage of the favourable corporate tax regime and an array of double tax treaties. In particular, the performance of banks and financial institutions was remarkably impressive, according to data from their 2007 annual reports. Before taxation, corporate profits from the island's three largest banking and financial institutions soared, posting an increase of 52% (Bank of Cyprus), 230% (Marfin Popular Bank) and 116% (Hellenic Bank). The improvement in corporate profitability boosted significantly direct taxes, through corporate taxes and fees of the Land and Survey Department. Therefore, while the additional tax revenues do not come from revenue-enhancing tax reforms, hence not adding to economic distortions, they could disappear along with the end of the asset boom, as has already happened in Spain.

Revenue performance developments in 2008 provide evidence on the existence of an asset boom in 2007. While cyclical conditions remained positive, with GDP growing at high levels (8¾% in nominal terms and 3¾% in real terms), tax revenues slowed significantly. Both direct and indirect taxes grew by a meagre 1¾% and almost 3%, respectively. As a result, the elasticity with respect to GDP slumped (Table 2). In terms of GDP, both direct and indirect taxes contracted by about 1% each. This performance does not appear to be the result of revenue reducing discretionary policy measures. In particular, the negative impact on direct taxes of the further increase of the tax-free threshold income and the adjustment of tax brackets (amounting to just below ½% of GDP) in 2008, has been totally offset by the increase of corporate tax revenues associated to the harmonisation of corporate rates for both domestic and international companies, introduced gradually since 2004.

Government revenues in 2008 seem to be mostly affected by the fading out of the asset boom. Subdued corporate profitability and activity in real estate posed a drag on both direct and indirect taxes. Contrary to the buoyancy of 2007, the banking sector's profitability plunged, albeit still remaining in positive territory. Developments in the housing market also point to a similar direction. More specifically, data from the Land and

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<sup>7</sup> Stability Programme of Cyprus (2007-2011).

Survey Department shows that both the total number of real estate transactions and the accepted value of property sold in 2008 compared to 2007 fell by 35%. According to the Quarterly Report on Economic Developments of the Ministry of Finance, in 2008, capital gains revenues fell by 35% and the fees of the Land and Survey department by 29%, largely due to subdued activity in the real estate sector. These outcomes are a clear sign of the normalisation process in progress from the exuberant performance observed in 2007. On the positive side though, 2008 saw the revenues from social security contributions growing by 17½% (½ percentage point of GDP), due to the increase in the imputed of self-employed persons (up to 13%), improved tax-collection as well as continued employment and wage growth.

## 5. Policy implications

Given that the changes in fiscal tax measures that the Cypriot authorities adopted in the run-up to EU accession are largely of a permanent nature, part of the associated increases in tax revenues is structural. However, notwithstanding existing data limitations, the developments which led to the remarkable revenue performance in 2007, point clearly to the existence of sizeable composition effects. Thus, the transitory nature of such effects years would suggest that the composition of the most recent consolidation process might not have been of a permanent nature, while primary current expenditure restraint has only been short lived, with most of expenditure items remaining on a rising trend. Moreover, given the large external imbalance, a prudent fiscal policy would be crucial in stabilising the economy and underpinning economic recovery. Therefore, at the current juncture, when a significant slowdown of the Cyprus economy is taking place and tax revenues are falling, in line with not only the cyclical deterioration but also reflecting a change in the composition of growth. On this basis, the Council Opinion on the 2008 stability programme of Cyprus highlighted that the implied fiscal loosening does not appear justified. The Council also stressed that, in the light of the high external imbalances, maintaining prudent policies and strengthening fiscal sustainability should be a major priority.

Therefore, the major challenges for fiscal policy in Cyprus can be summarized as follows:

- In the short term, expenditures, and in particular those of a current nature should be kept under control, in line with the expected lower tax growth.

- In the medium term, while controlling current expenditures, it would be important to shift public expenditure to a more growth-friendly and production capacity-enhancing structure, while pursuing product market reforms that would promote competition and speed up effective restructuring.
- In a longer-run perspective, the most important challenge for Cyprus public finances is to secure their long-term sustainability, namely through implementing the pension and the health care reforms.

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