

# FISCAL POLICY AND ECONOMIC GROWTH: THE CASE OF ALBANIA

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*This discussion material analysis the effects of fiscal policy on the economic growth in the case of a small open developing country, Albania, by employing an endogenous growth model on a GMM approach. The results obtained show that government revenue growth has a higher effect on economic growth than government expenditure. The impact of revenue and expenditure on growth were analysed by categorising tax revenue into distortionary and non-distortionary, whilst government expenditure were divided into productive and non-productive. Under such composition we found that revenue sub-categories reduce growth, while distortionary taxation has much larger and statistically significant effect. Besides, the parameter values show that growth is effected positively by productive expenditure and negatively by non-productive. This material also analysis the impact of public debt on growth and finds that the size of public debt is negatively related to growth rate.*

## 1 Introduction

The role of fiscal policy (FP) on economic growth has driven several studies both on the theoretical and on the empirical fronts. Modern macroeconomic literature emphasises both the short run and the long run objectives of FP (Romer, 2006). In the short run it can be used to counter output cyclicity and/or stabilise volatility in macro variables, which is descriptively same as the effects of the short run monetary policy. Further for the long-run, FP and the debt financing methods can also affect both demand and supply side of the economy. The subject on the effects of FP on economic growth is quite relevant, since the development of appropriate fiscal instruments could lead to a persistent and sustainable boost on economic growth. Thus, the aim of this paper is to examine the fiscal policy-growth relationship in the case of a small open developing country, Albania, as it is crucial to know how public activities through taxation and expenditure policies have served as an incentive to growth.

By the end of the '90s and during the last decade, Albanian economic policies aimed at maintaining macroeconomic stability, enable poverty-reducing and non-inflationary economic growth policies and achieving fiscal consolidation through budget deficit and public debt reduction. As such public finance saw major reformation aiming at government expenditure cuts and boosting revenues, expanding the tax base, simplifying and implementing new tax system, promoting tax intensive through reducing tax burden on business, and reducing informality and tax evasion. Tax revenues witnessed major reductions in custom duties rate due to Free Trade Agreements under the Stabilization and Association agreement with the European Union, the CEFTA and World Trade Organization membership. This was followed by considerable raise in national, local and excise tax level, cuts in social contributions and small business tax and the changes in the threshold for VAT registration. In addition, tax legislation changes were finalised with the elimination of all exclusions and facilitations under the old tax system, the approval of a 10 per cent flat income tax in 2007 and the reduction of the profit tax to only 10 per cent in 2008.

Further, the Albanian economy took advantages of macroeconomic stimulus in the form of fiscal expansion during 2007-09, mainly as a result of previous work to consolidate the fiscal

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The views expressed herein are of the authors and do not necessarily reflect the views of the Bank of Albania.

position and the anchoring of macroeconomic policies and public expectations. Albanian economy, hence, was faced with the effect of global crisis enjoying a counter-cyclical FP during 2009, reinforcing the trend that began during the period 2007-08. On the other hand, apparently these economic incentives mitigated the adverse effects that had on the Albanian economy the global financial crisis.

In this case the questions coming up relate to the analysis of what are the concrete effects of fiscal policies on economic growth, in the case of Albania? Have they stimulated economic growth? This discussion paper focused on how the government activities, namely composition of expenditures and revenues, affect the long run growth rate? The answer to these questions is quite difficult because the transmission operation mechanisms of the effects of FP are quite complex and above all the effects take time to be displayed fully.

To our best knowledge, fiscal-growth relationship has only recently been empirically studied in the case of Albania, so far. In a recent discussion material, Mançellari (2011) studied the effects of FP in Albania based on a model with four macroeconomics variables, namely FP, Gross Domestic Product (GDP), interest rates and the prices level, through a SVAR and impulse responses approach. The analysis was based on the methodology developed by Blanchard and Perotti (2002). The main findings of this paper, concluded that FP does affect economic activity, cuts in tax burden has the highest cumulative GDP multiplier and the GDP multiplier of capital expenditure is greater than current expenditure multiplier.

In this paper, unlike Mançellari (2011), we contribute to the fiscal-growth subject in the case of Albania in various ways. First, FP is considered to be endogenous, but we based our empirical analysis of fiscal-growth relationship on a different endogenous economic growth model. This approach incorporates the public sector, namely FP, into the growth model of Solow. Second, by doing so, we can include a richer menu of FP effects by identifying and incorporating the specific FP variables as to enhance economic growth in Albania, namely the distortionary and non-distortionary public revenues and productive and non-productive public expenditures. Additionally, we consider the effect of public debt to GDP ratio to examine whether financing capital expenditures through borrowing (indebtedness) has served as growth-promoting or reducing. Finally, we tried to empirically identify the effect of FP throughout different time-samples, mainly 1998-2006 and 1998-2010.

In Section 2 we summarise some key developments in Albanian FP during 1998-2010. The relevant empirical model and the data are outlined in following section. Then, Section 4 presents the empirical results. The material concludes with main findings in Section 5.

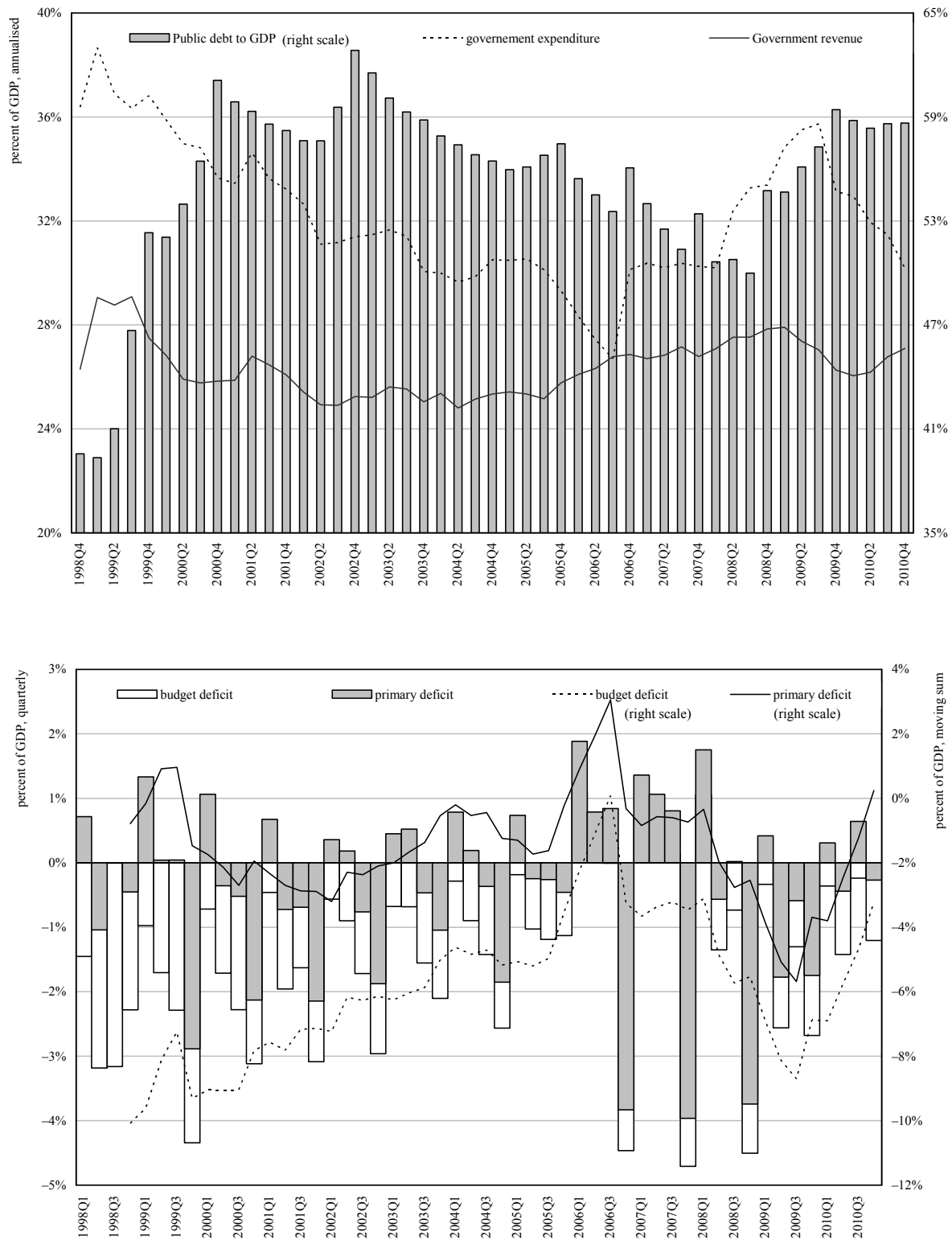
## **2 Albanian fiscal policy during 1998-2010**

Under the IMF program support, the Albanian government focused on maintaining macroeconomic stability, reducing poverty and achieving sustainable non-inflationary economic growth,<sup>1</sup> after gradual orientation towards a market economy in early 1990 and fast improvement of an important part of economic indicators by the end of the '90s. The government also aimed at achieving fiscal consolidation through budget deficit and public debt reduction through continuous fiscal consolidation. For this reason, public finance has been under continuous scrutiny of major reformation on expenditure and tax collection system. The philosophy of these fiscal reforms was based on the idea of reducing current expenditures (mainly personnel expenditure, subsidies and

<sup>1</sup> See: Enhanced Structural Adjustment Facility (ESAF – 1998-2001), Poverty Reduction and Economic Growth (PREG – 2002-05) and it was extended to Extended Fund Facility (EFF – 2006-09). In January 2009, Albania graduated from the Fund-supported program.

Figure 1

## Selected Fiscal Indicators, 1998-2010

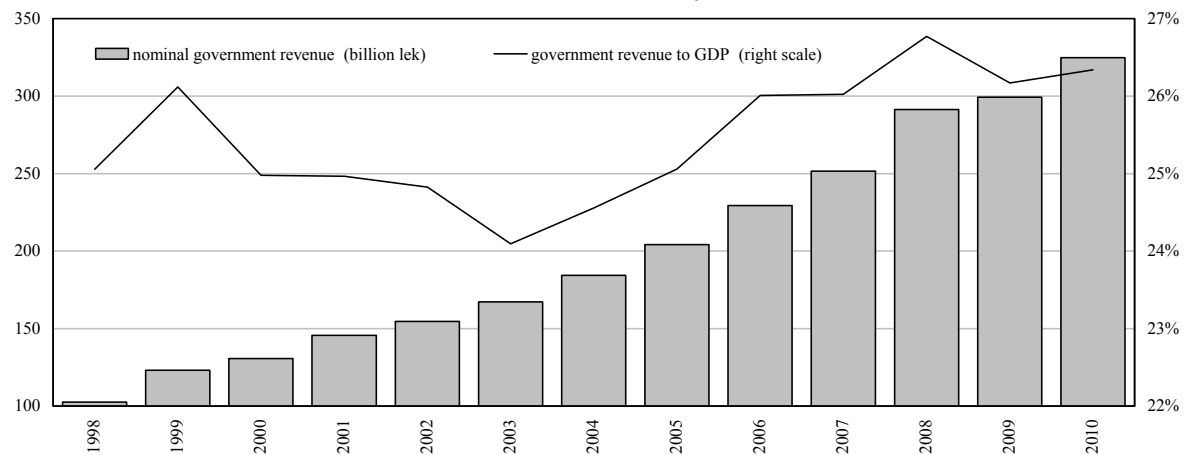
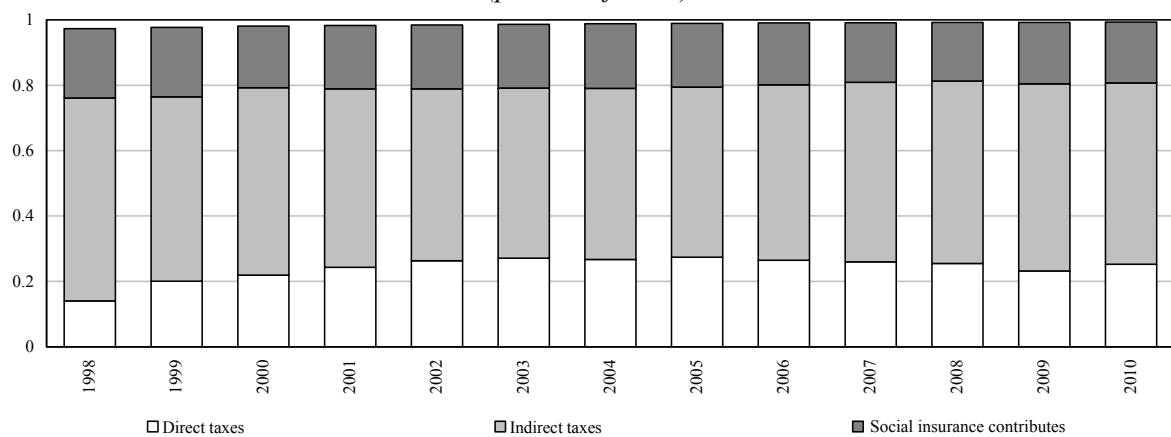


Source: Ministry of Finance.

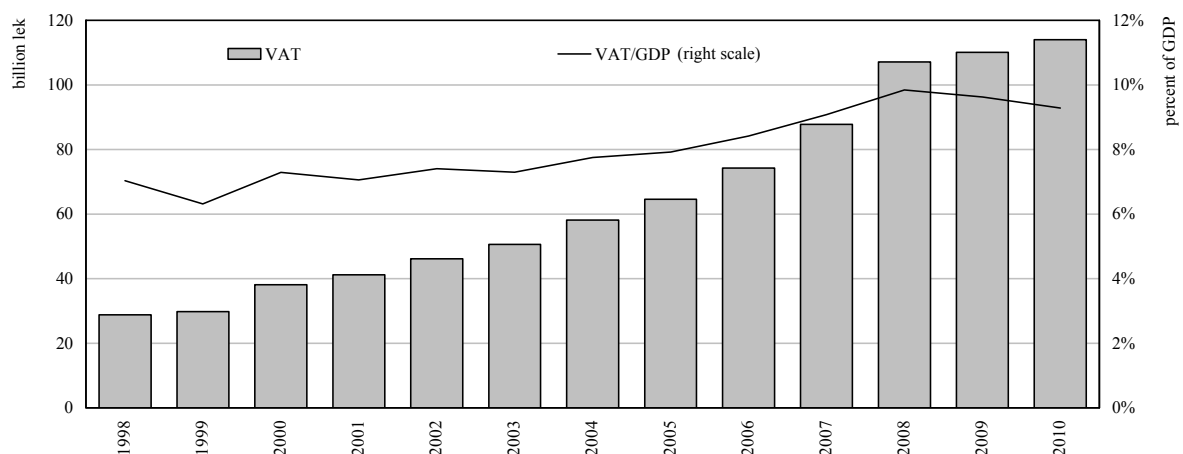
Figure 2

## Government Revenue Indicators, 1998-2010

## Government Revenue Dynamics

Main Revenue Sources  
(percent of GDP)

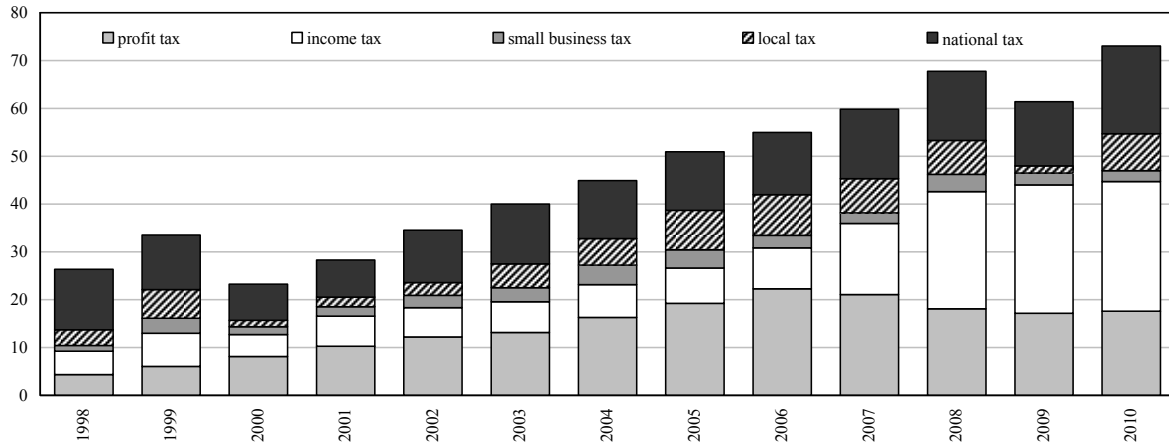
## Value Added Tax Burden



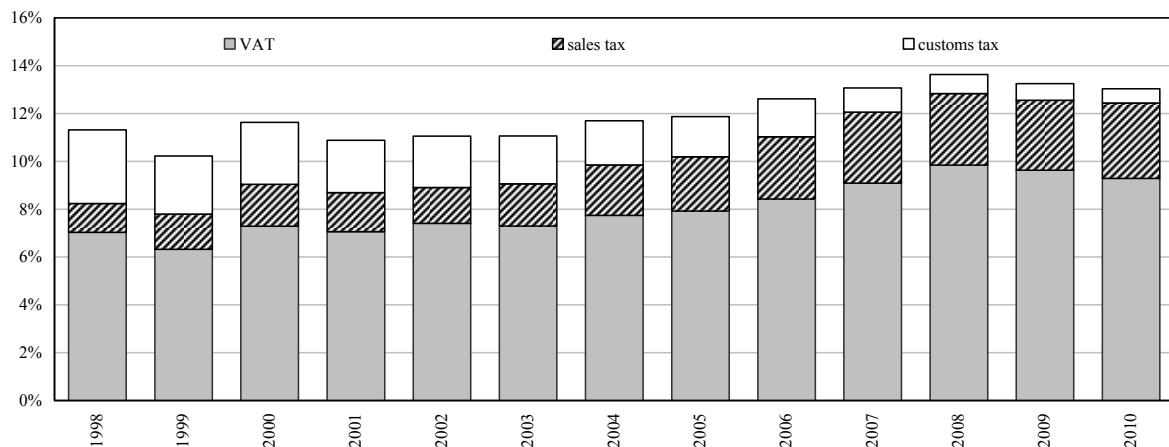
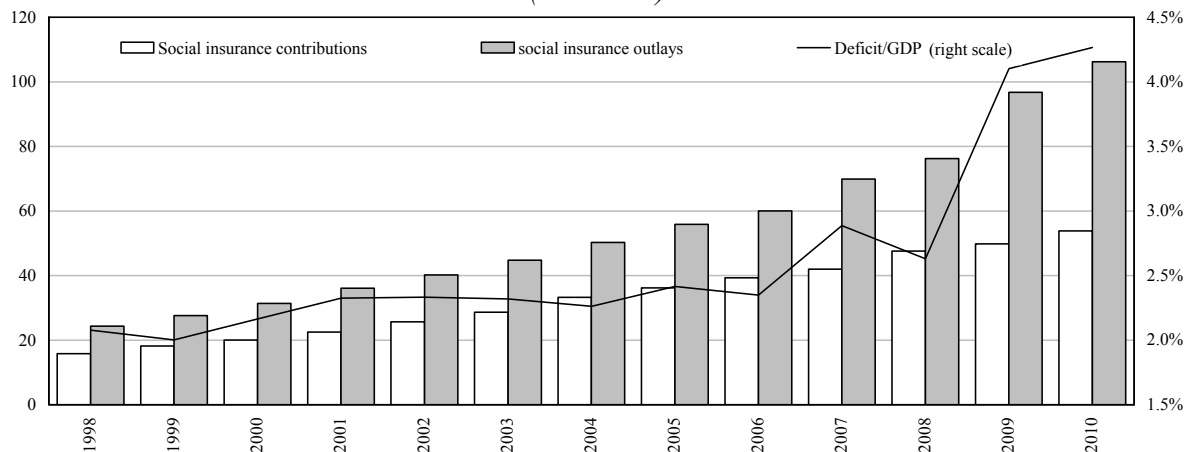
Source: Ministry of Finance.

Figure 2 (continued)

## Government Revenue Indicators, 1998-2010

Performance of Direct Tax Burden  
(billion lek)

## Performance of Indirect Tax Burden

Social Insurance Deficit  
(billion lek)

Source: Ministry of Finance.

privatising public-owned companies), expanding the tax base, simplifying and implementing new tax system, promoting tax intensive through reducing tax burden on business, and reducing informality and tax evasion.<sup>2</sup> As a result, budget deficit in 2010 was gradually reduced to 3.2 per cent of GDP from 9.6 per cent in 1998, mainly through cuts in government subsidies, personnel expenditure and interest payments on debt servicing. However, raising budget deficit and public debt during 2007-09 reflected both the action of automatic stabilizers in the form of reduced income and the countercyclical FP through wages and capital expenditure increases.

During the last decade, Albanian tax system also saw major reformations.<sup>3</sup> A series of additional initiatives took place as part of tax legislation changes and were finalised with the approval of a new fiscal package in the second half of 2007. Some of these changes intended to stimulate business incentives and at the same time regenerate more tax revenues. Such reforms consisted of the change from a progressive to a 10 percentage flat income (2007) and profit (2008) tax system and the elimination of all exclusions and facilitations under the old tax system. Besides, there were major reductions in customs duties due to the CEFTA and World Trade Organization membership, the Stabilization and Association agreement with the European Union, etc. Other changes spotted were a considerable rise in national, local and excise tax levels, cuts in social contributions from 42.5 per cent in 2006 to only 17 per cent in 2009, the diminishing of the small business tax to 1.5 per cent in 2006 from 4 per cent in 2005 and a change in the threshold for VAT registration to 5 million ALL turnover per calendar year (2010). All these reforms and structural changes have resulted in a moderated balance growth of government tax revenues, even though increasingly in nominal terms. Indirect taxes such as customs duties, VAT and excise tax are among main indicators of economic activity movements of the country and give the main contribute of tax revenues, reaching round 50 per cent of total level. Profit tax and personal income tax are the main contributors in the group of direct taxes, counting about 13.8 per cent of total revenue in 2010 from only 8 per cent in 1998, even though they are applicable to several categories of income and have been affected by fiscal evasion and non-declaration.

In addition, the public expenditure policies have been focused on promoting sustainable growth and reducing poverty and wealth inequalities. Thus, based on the medium-term fiscal framework (MTFF),<sup>4</sup> a reducing-oriented government expenditure policy aimed at cutting current expenditure to create more funds for strategic capital expenditure identified in the MTFF. As a result, total public expenditure to GDP ratio has shown a declining tendency from 35 per cent in 1998 to approximately 29 per cent in 2010. Current expenditures to GDP ratio have been diminishing, decreasing in 2010 to 24.4 per cent from 28.7 per cent in 1998, even though they capture more than 80 per cent of total expenditure. During this period, personnel (26 per cent), interest payment (18 per cent) and social contribution (27 per cent) represent the highest percentage share of the total current expenditure. Although, FP is oriented to raise wages in the public sector, cuts in personal expenditure are mainly due to reducing the number of employees in the public sector through increasing efficiency and privatisation process and lowering of social contribution expenditure. Interest payments have been diminishing mainly through improvements in government timescale borrowing and cuts in public debt and in interest rates and extending the debt maturity period, followed by considerable raise in social insurance outlays. Further, capital expenditures have on average remained at 6.3 per cent of GDP in the period 1998-2010, even though they have been subject of raise and/or cut based on the Albanian macroeconomic conditions and priorities identified in the MTFF. As such, due to the priorities in infrastructure investment, capital investments reached 8.6 per cent and 8.4 in 2008 and 2009. The distribution of capital

<sup>2</sup> See also Shijaku (2009).

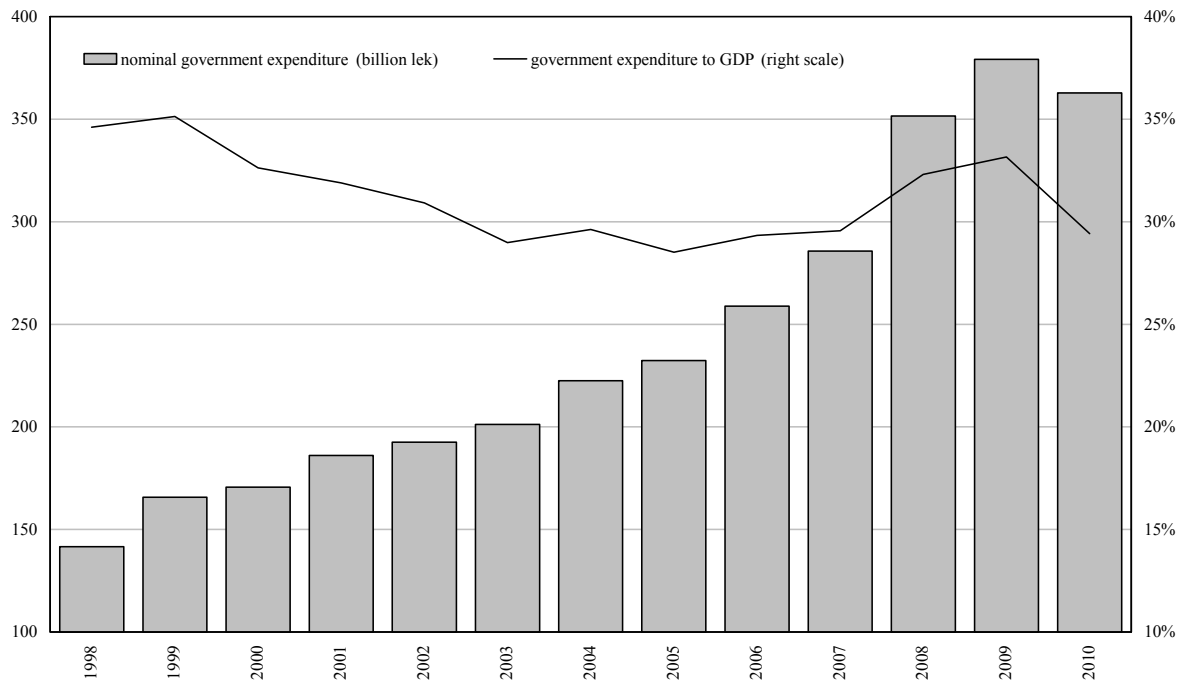
<sup>3</sup> Following the introduction of profit (1994) and VAT (1996) tax, the Albanian tax system introduced an income and small and medium business enterprise tax (1998) and customs duties tax (1999).

<sup>4</sup> Known also as Medium-Term Economic Program

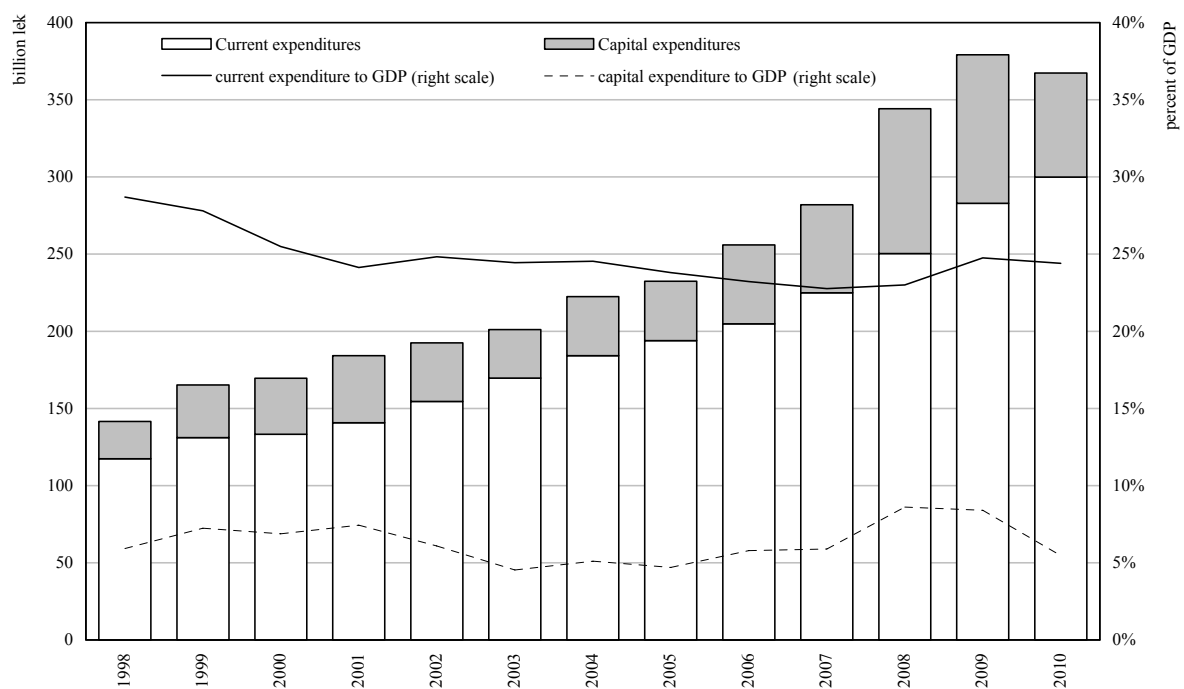
Figure 3

## Government Expenditure Indicators, 1998-2010

## Government Expenditure Dynamics



## Current and Capital Expenditures



Source: Ministry of Finance.

expenditure, in general, was orientated to maintain a relatively high level of spending for areas such as health, education and infrastructure. Mainly these expenditures are financed mostly through domestic borrowing contributing on average by more than 60 per cent.

### 3 The methodology and data

#### 3.1 Methodology

Neoclassical growth models, based upon the rational expectations assumption, imply that FP can affect only output level but not the long-run growth rate. The steady-state growth rate is driven by the exogenous factors e.g. population growth and technological progress, whilst FP can affect only transition path to this steady state (Judd, 1985). By contrast, under the growth model of Solow, Barro (1990) and Baxter and King (1993) considered a Cobb-Douglas production function and incorporated channels through which FP can determine both the level of the output path and the steady-state growth rate.<sup>5</sup> Instead of only including physical and human capital, the growth rate now depends on the government activity as well, by putting public sector into the production function. To put it formally, we follow Kneller *et al.* (1999) basing the growth model on the following equation:

$$\theta_t = f(X_i, Z_i) \quad (1)$$

or:

$$\theta_t = \alpha + \sum_{i=1}^k \beta_i X_{it} + \sum_{j=1}^m \gamma_j Z_{jt} + \varepsilon_t \quad (2)$$

where  $\theta_t$  is the growth rate of country  $i$  at time  $t$ , which is a function of conditioning (non-fiscal) variables ( $X_{it}$ ) based on Solow growth model and fiscal variables ( $Z_{it}$ ) based on budgetary indicators.<sup>6</sup> Further,  $\alpha$ ,  $\beta_i$  and  $\gamma_j$  represent the constant term and the slope coefficient of the growth impact of non-fiscal and fiscal variables and  $\varepsilon_t \sim iid(0, \sigma^2)$  represents the stochastic error term.

Turning to the specification of our model, we build and estimated three variants of endogenous growth model based on identity (2), as follows:

<sup>5</sup> According to Barro and Sala-i-Martin (1992), output ( $y$ ) is provided by both private and public sector according to the production function:

$$y = Ak^{1-x}g_x \quad (a)$$

where  $k$  represents private capital and  $g$  is a publicly provided input. Considering the inter-temporal budget constraint, the government balances its budget in each period by raising a proportional tax on output at rate  $\tau$  and lump-sum taxes of  $L$ , expressed as follows:

$$g + C = L + \tau y \quad (b)$$

where  $C$  represents government consumption goods. Taxes on output, in contrast to the lump-sum taxes, will affect private sector incentives to invest in the input goods, such that under such utility function the growth rate will take the form:

$$\theta = \lambda(1-\tau)(1-\alpha)A^{\frac{1}{1-x}}\left(\frac{g}{y}\right)^{\frac{x}{1-x}} - \varepsilon \quad (c)$$

where  $\lambda$  and  $\varepsilon$  are constant and reflect parameters in the utility function, while the growth rate is decreasing by the rate of  $(\tau)$  and increasing by the rate of  $(g)$ . In practice, however government budget is not balanced in every period, so the constraint becomes:

$$g + C + b = L + \tau y \quad (d)$$

where  $b$  is budget surplus.

<sup>6</sup> Kneller *et al.* (1999) specified a model including investment to GDP ratio, labour force growth rate, net lending, budget surplus, while classified fiscal variables into one of six types. Government revenues are divided into distortionary, non-distortionary and other revenues and government expenditures are classified into productive, non-productive and other expenditures.



$$\mathcal{O}_t = \alpha + \beta_1^* \eta_t + \beta_2^* \varphi_t + \beta_3^* \mu_t + \beta_4^* \tau_t + \beta_5^* g_t + \beta_6^* \text{debt}_t + \varepsilon_t \quad (3.1)$$

and:

$$\mathcal{O}_t = \alpha + \beta_1^* \eta_t + \beta_2^* \varphi_t + \beta_3^* \mu_t + \beta_4^* \theta_t + \beta_5^* \sigma_t + \beta_6^* \rho_t + \beta_7^* \pi_t + \beta_8^* \text{debt}_t + \varepsilon_t \quad (3.2)$$

where  $\mathcal{O}_t$  is Albanian annual real economic growth rate (recongr\_yoy);  $\eta_t$  is the fixed gross capital formation<sup>7</sup> (fgcf\_ratio);  $\varphi_t$  is the employment annual growth rate (empgr\_yoy);  $\mu_t$  is a proxy for trade openness index measured as the sum of total import + exports to nominal GDP ratio (opentb\_ratio);  $\tau_t$  and  $g_t$  represent fiscal indicators and stands for government revenues excluding grants (rev\_ratio) and expenditure (exp\_ratio);  $\theta_t$  and  $\sigma_t$  represents revenue counterpart sub-categories, standing for the distortionary (disrev\_ratio) and non-distortionary (nddrev\_ratio) revenues;  $\rho_t$  and  $\pi_t$  stand for the expenditure counterpart sub-categories, representing productive (pexp\_ratio) and non-productive (npexp\_ratio) expenditure;  $\text{debt}_t$  represents the ratio of public debt to nominal GDP (debt\_ratio).

From a theoretical point of view, physical and human capitals are the main factors of production in the growth model of Solow. Thus, fixed gross capital formation to GDP ratio (fgcf\_ratio) and employment annual growth rate (EMPGR) entered the model as explanatory variables. Besides, EMPGR controls for business cycle effects on growth (Benos, 2009). Regarding other non-fiscal variables, we used the sum of imports and exports as a proportion of GDP (opentb\_ratio), to account for external effects on the economic growth. Regarding fiscal variables, accordingly, we considered some notable exceptions when modelling endogenous fiscal-growth relationship. First, a model suffers from substantial bias coefficients estimation if both sides of budget are not taken into account, given that FP affects output through taxation and expenditures policies (Kneller *et al.*, 1999). Thus, in our model the fiscal variables encounter to capture full effects of FP by entering into the model both government revenues and expenditures indicators. Second, Kneller *et al.* (1999) and Benos (2009) finds out that some types of government expenditures and taxation can be either growth-enhancing or reducing. Hence, following Barro and Sala-i-Martin (2004), the public revenues were categorised into distortionary (disrev\_ratio), non-distortionary (nddrev\_ratio) and other public revenues (orev\_ratio), whilst public expenditure were categorised into productive (pexp\_ratio), non-productive (npexp\_ratio) and other public expenditures, (oexp\_ratio).

Additionally, according to Kneller *et al.* (1999), if budget constraint is fully specified, so that:

$$\sum_{j=1}^m X_{jt} = 0$$

One element of  $Z$  must be omitted in the estimation of equation (2) in order to avoid perfect colinearity. In other words, this exclusion also offers a proper way to interpret any changes in fiscal variables included in the model. As such, we omitted the variables of other revenue and expenditure from our model, given their relatively size and impact on economic growth and the critical value of the  $F$ -test based on an omitted variables test and correlation test (Table 3). Finally, empirical models of FP may suffer from bias estimation if they do not impose debt indicators (Favero and Giavazzi, 2007). But, the debt financing methods can affect both the supply and demand side of the economy (Klaid *et al.*, 2007). Besides, as it increases, indebtedness can turn from initially growth-enhancing (or neutral) to eventually growth reducing (Cecchetti *et al.*, 2011). Thus, we have also included in our model public debt to GDP ratio to examine potential effects of the level of indebtedness on growth and to distinguish whether debt is growth-enhancing or reducing.

<sup>7</sup> Refer also as total capital investments. We also specify the growth model using as proxy the private investment to GDP ratio and found the same results.

The endogenous fiscal-growth model does not place restrictions on the sign of the coefficients. But a negative sign (–) represents a negative impact on growth and vice versa. Kneller *et al.* (1999) suggested that increasing burden of taxation weakens the incentives to invest, hence reducing growth. Government expenditures influence the marginal product of private capital through increase consumption goods and services, henceforth boost growth. Amanja and Morrissey (2006) imply that taxation and expenditure policies can harm or promote growth. A tax system that causes distortions to private agents' investment incentives can retard investment and growth. Analogously, if the system is such that it leads to internationalization of externalities by private agents, it may induce efficiency in resource allocation and thus foster investment and growth. The same applies with the nature of government expenditure, where excessive current expenditure at the expense of investment is likely to discourage growth and vice versa.

In addition, some types of government expenditures and taxation can be either growth-enhancing or reducing. We expect that distortionary taxation weakens the incentives to invest in physical/human capital, hence reducing growth. Benos (2009) reveals that non-distortionary taxation does not affect the above incentives, therefore growth, due to the nature of the utility function assumed for the private agents. However, we would expect that raising non-distortionary taxation would affect production through increasing marginal costs whether tax is levied on producers or consumers. Therefore, if tax is levied on producers it reduces the marginal return to private capital and if it is levied on consumers it effects the incentives to consume more, hence harming growth. Further, an augmenting productive spending financed by non-distortionary taxes will boost growth. But, this effect is ambiguous if distortionary taxation is used. In the latter case, there is a growth-maximizing level of productive expenditure, which may or may not be Pareto efficient (Irmen-Kuehnel, 2008). Rising also non-productive spending financed by non-distortionary taxes will be neutral for growth. But, if distortionary taxes are used the impact on growth will be negative. Besides, if non-productive expenditure serves as means to create consumption based expenditure, then an increase will boost growth.

Finally, as Cecchetti *et al.* (2011) puts forward, the impact of debt burden to growth is ambiguous, given that raising indebtedness can turn from initially growth-enhancing (or neutral) to eventually growth reducing. Public debt burden can smooth consumption not only through lifetime, but also across generations, by providing more human capital and productive technology as long as they are not constrained by macroeconomic instability, distorted policies and institutional weaknesses. It can also provide liquidity services and increase financial intermediation, which can contribute to easing the credit conditions faced by firms and households, thus crowding in private investment and helping growth. Above a certain threshold, however, debt is found to reduce growth as rising indebtedness, including its domestic component, above a country's repayment ability would discourage private investment due to the expectation of higher future taxes (Blavy, 2006). Several types of risk factors related to rising debt would account on raising domestic interest rates, crowding out public investment within the budget and private investment in general, a rowing portion of savings would go towards purchases of government debt, rather than capital investments and higher marginal tax rates may be used to pay rising interest cost, leading to reducing of saving rates and discouraged work. This may harm the economic growth.

In the specified models, we also assumed that there exist some strong potential for endogeneity of the fiscal and debt variables, especially reverse causation (low or negative growth rates are likely to induce higher expenditure–revenues and debt burdens).<sup>8</sup> The models, hence, are estimated by Generalised Moments of Movements (GMM). GMM approach allows the usage of instrumental variables regression to deal with a situation where some of the right-hand side (RHS)

<sup>8</sup> While the economic growth rate is likely to have a linear negative impact on the public debt-to-GDP ratio, high levels of public debt are also likely to be deleterious for growth.

variables are correlated with disturbances due to endogeneity problems.<sup>9</sup> The idea behind instrumental variables is to find a set of variables, termed instruments, which are both correlated with the explanatory variables in the equation and eliminate the correlation between RHS variables and the disturbances. For the GMM estimator to be identified, there must be at least as many instrumental variables as there are parameters to estimate. As such, RHS with four lags are used as the relevant instrumental variables in our GMM models, given also that empirical evidence<sup>10</sup> suggests that there are lagged effects of fiscal and non-fiscal policy on growth. In models for which there are more moment conditions than model parameters, GMM estimation provides a straightforward way to test the specification of the proposed model through the *J*-statistic hypothesis test. A simple application of the *J*-statistic is to test the validity of overidentifying restrictions, under the null hypothesis that the overidentifying restrictions are satisfied.

### 3.2 Data

The paper considers quarterly data from 1998Q01 to 2010Q04, but we also tried to evaluate the effect of FP prior to the effects of fiscal expansion and reforms after 2007 and also prior to the effects of the recent financial and economic crisis that affected the economic activity in Albania. Thus, we tried to empirically identify the effect of FP throughout different time-samples, mainly 1998-2006 and 1998-2010. The economic growth model is based on capital, labour, trade openness and fiscal variables. The data on fixed gross capital formation, real economic growth and employment rate are taken from the Albanian Institute of Statistics (INSTAT). Quarterly FGCF is interpolated from annual data by linear match last approach using E-views. The series on FGCF and private investment are extended to 2010Q04 by an Autoregressive Integrated Moving Average (ARIMA) forecast process.<sup>11</sup> The data on exports and imports of goods and services are taken from Bank of Albania.

Government expenditure represents the total level and government revenues do not include grants since the later are donations and do not account for the state of the Albanian economic activity.<sup>12</sup> As noted above, within the class of endogenous growth models relevant to this study, results are driven by classification of fiscal variables into different types and a key issue is the allocation of taxes and expenditures, respectively, to distortionary vs. non-distortionary revenues and productive vs. non-productive expenditures. Distortionary government revenue is the sum of profit tax + personal income tax + national taxes and others + revenues from local government + social insurance contributions. Non-distortionary government revenue is the sum of Custom Duties + VAT + Excise Tax. Disaggregation of expenditure relates to the classification of the public expenditures based on budgetary indicators as an alternative solution to the unavailability of the appropriate time series for the public expenditures as in Barro and Sala-i-Martin (2004). Therefore, productive government expenditure is the sum of public capital expenditures. Non-productive government expenditure is the sum of personnel expenditure + subsidies + social insurance outlays + operational & maintenance + other expenditures + electricity compensation + compensation for expropriation + interest cost of bank restructuring + loans to KESH + payment for participation in

<sup>9</sup> Ordinary Least Square (OLS) and weighted LS (WLS) are biased and inconsistent if right-hand side variables are correlated with the disturbance term.

<sup>10</sup> See Amanja and Morrissey (2005) and Burger (2011).

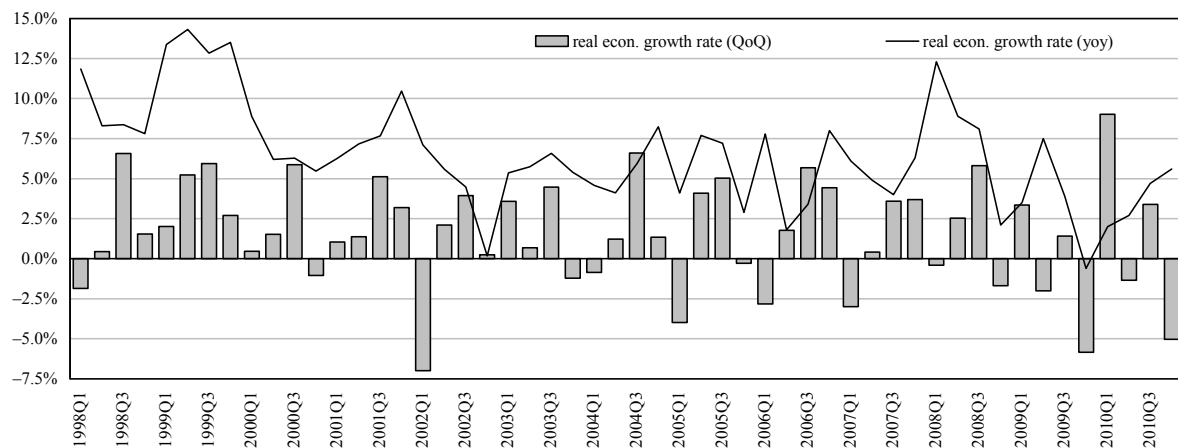
<sup>11</sup> The Albanian Institute of Statistics (INSTAT), which produces the official country statistics, has only annual data from 1996 to 2008, which can limit the purpose of this study. Kota (2007) has used the real economic growth rate as a benchmark to generate the data on FGCF for the period 2008-10.

<sup>12</sup> We also specify the growth model using as proxy the total government revenue to GDP ratio and found the same results.

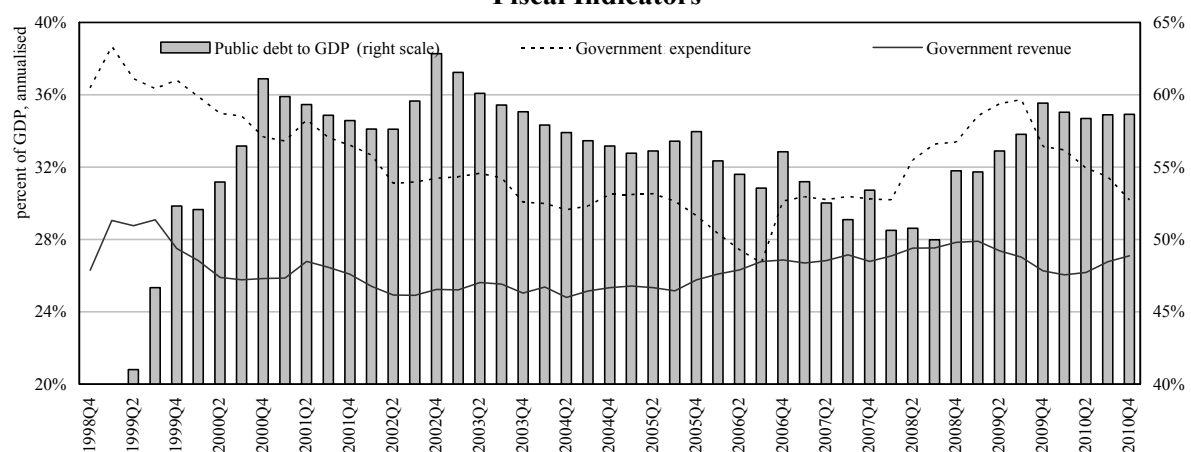
Figure 4

## Economic Growth and Explanatory Variables

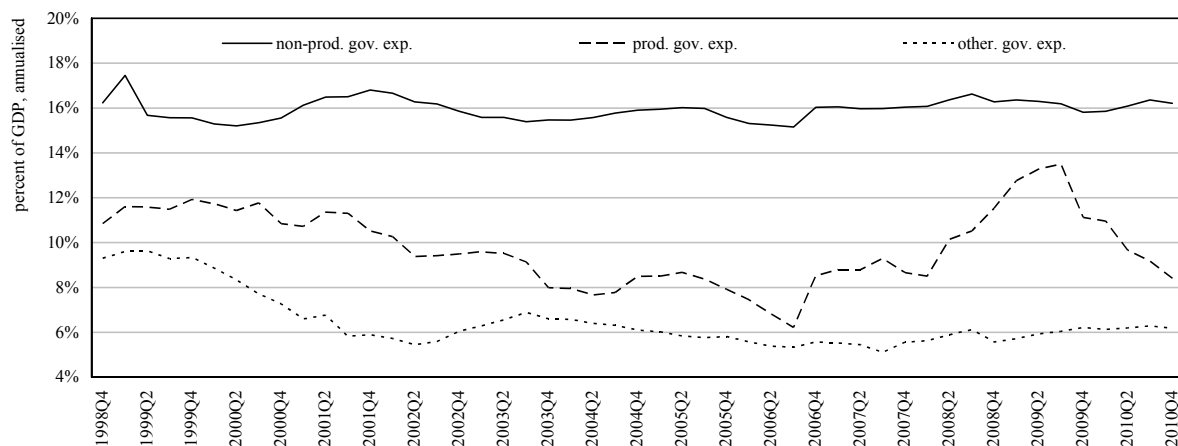
## Real Economy Growth Rate



## Fiscal Indicators



## Government Expenditures

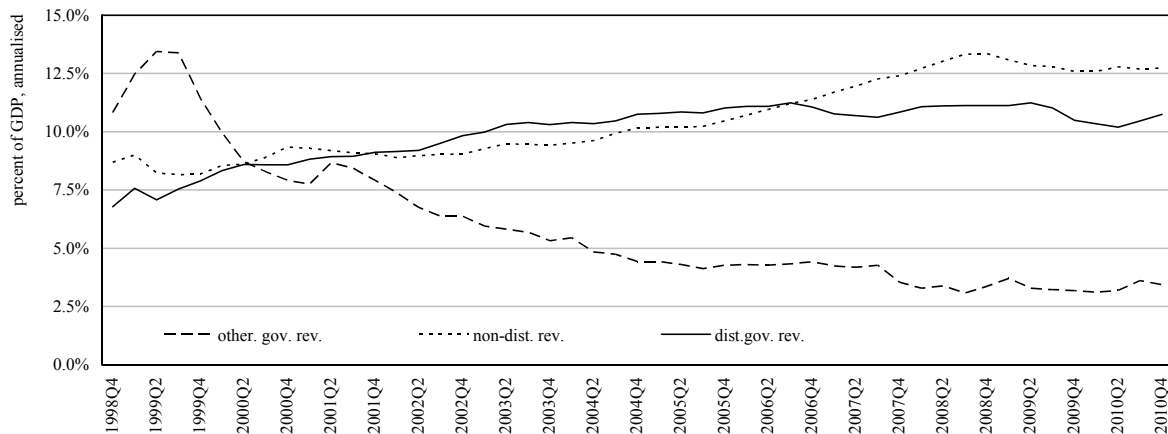


Source: Bank of Albania, Ministry of Finance and INSTAT.

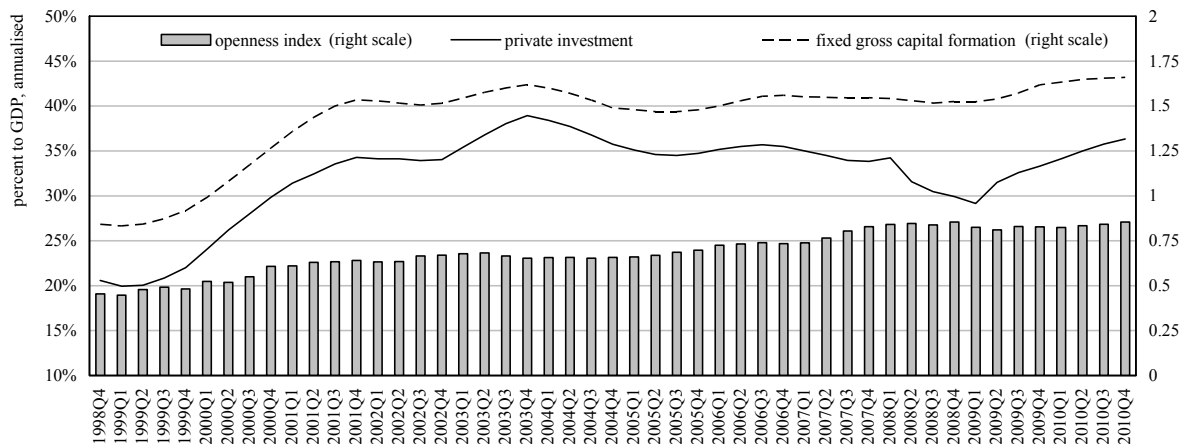
Figure 4 (continued)

## Economic Growth and Explanatory Variables

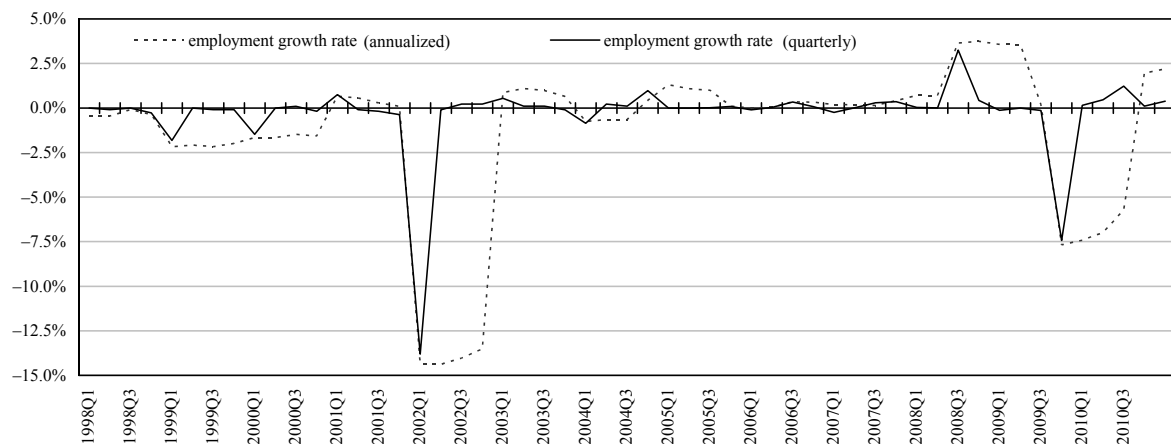
## Revenues



## Openness Index, Fixed Gross Capital Formation and Private Investment



## Employment Growth Rate



Source: Bank of Albania, Ministry of Finance and INSTAT.

BISH capital + energy support. Fiscal data and the public debt are taken from the Ministry of Finance. Data, besides economic and employment growth rate, are generated as a ratio of GDP.<sup>13</sup>

#### 4 Empirical results

Table 1 summarises the results according to the GMM techniques. Coefficients on models (A) of the table is based on the sample time: 1998:01-2010:04 estimation, models (C) add the effects of dummy variables on fiscal reforms, expansionary and effects of financial and economic crisis and model (B) estimate the relationship before these phenomena, respectively the sample time: 1998:01-2006:04. After conducting Augmented Dickey Fuller and Philips Perron unit root tests (Table 2) we find conclusive evidence only on the non-stationary of non-distortionary of government revenue. Hence, *ndrev\_ratio* entered the model in first difference. The results on GMM specification are also based on model diagnostic tests (Table 1). The statistical value of the regression determination coefficient ( $R^2$ ) and a set of diagnostic tests conducted on the model specification reveal no problems with respect to serial correlation ( $Q$ -statistic and Squared Residuals) and Hausman test on over-identification of the instrumental variables ( $J$ -statistic and Coefficient of over-ID and Prob.).

Empirical results in Table 1 demonstrate that the value of the coefficients is statistically significant at conventional levels, regarding the non-fiscal. Employment growth and fixed gross capital formation<sup>14</sup> are estimated to have a positive effect on production growth, confirming the prediction of endogenous growth theory. These are expected since labour and capital are factors of production in most growth models and they support the endogenous growth models. Furthermore, as far as economic openness is concerned, it effects growth negatively.

Regarding the fiscal variables, results (Table 1) show that their effect on growth rate is statistically significant at conventional levels. Growth is affected negatively by government revenues and positively by expenditure policies. Government revenues effected growth more than the government expenditure, given the coefficient size for the estimated sample. This follows the same conclusions drawn by Mançellari (2011). Hence, raising *rev\_ratio* by 1 percent will reduce growth by round .476 per cent and boosting *exp\_ratio* by 1 percent stimulates growth by round .146 per cent. This would re-enforce a theory already expressed by Barro and Sala-i-Martin (1992) that revenues effect growth negatively and expenditure enhance growth. Under Barro and Sala-i-Martin (2004) fiscal decomposition, we found that revenue sub-categories reduce growth, but distortionary taxation has much larger and statistically significant effect. Growth rate will diminish by .6374 per cent in response of 1 percent increase in *disrev\_ratio* (distorsionary revenues) and by round .128 percentage points in response of 1 percent raise in *ndisrev\_ratio* (non-distorsionary revenues). On the other hand, the empirical results show that growth is positively affected by productive expenditure and negatively by non-productive. Productive expenditure has a much higher effect on growth than non-productive expenditure. Raise in *pexp\_ratio* by 1 percent will boost growth positively by round .460 and a 1 percentage point decrease in *npexp\_ratio* will improve growth by more than .272 percentage points. Based on the value of the coefficients, productive expenditures have a larger impact on growth than non-productive expenditure. Based on equation (3.1A), raising any type of revenues or decreasing expenditure by government bring along negative effects in economic growth, but it clearly matters what type of revenue to rise and what type of expenditure to decrease in order to improve the budget balance and at the same time achieve the best results on GDP growth. As such, based on the

<sup>13</sup> See Afonso and Jales (2011).

<sup>14</sup> We also specify the growth model using as a proxy the private investment to GDP ratio (*invtprv\_ratio*) and found relatively the same results.

Table 1

**Results of Macroeconomics and Fiscal Indicators on Real Economic Growth Rate  
(recongr\_yoy) Based on GMM Specification Techniques<sup>(1)</sup>**

	Equation (3.1)		Equation (3.2)	
	(A)	(B)	(A)	(B)
C	.415289*	.286233*	.528287*	.482663*
FGCF RATIO	.183665	.727787	.699920*	.854009*
EMPGR YOY	.130057*	.038906	.320074*	.027685*
OPENTB RATIO	-.468705*	-.975659*	-.625912*	-.697641*
<b>FISCAL VARIABLES</b>				
REV RATIO	-.476155*	-.432053*		
EXP RATIO	.146148*	.278665*		
DISREV RATIO			-.637372*	-.610666*
NDREV RATIO			-.127742***	-.108589*
PEXP RATIO			.460154*	.344109*
NPEXP RATIO			-.271892*	-.104717*
DEBT RATIO	-.373513*	-.178836*	-.586688*	-.566797*
<b>DIAGNOSTIC TESTS</b>				
J-static	.198145	.158028	.227737	.222982
Coef. OverID	9.3128	5.2149	10.7036	6.9124
(Prob.)	.9520	.7343	.9986	.9969

Sample Time: (A) – (1998q01 – 2010q04); (B) – (1998q01 – 2006q04).

<sup>(1)</sup> – variables on the RHS are used as instrumental variables.

Based on: \* (1 per cent), \*\* (5 per cent), \*\*\* (10 per cent) level of significance.

value of the coefficients in Table 1 (equations (3.2A) and (3.2B)), if government wishes to boost budget revenue it should choose indirect taxes instead of direct taxes as raising this category has slightly less negative effects on growth. On the other hand, coefficients value suggests that if government wishes to reduce fiscal deficit through expenditure cuts policies it should consider non-productive rather productive expenditure cuts, as the former has a negative effect on economic growth.

Results imply that revenues have a higher negative effect on growth, compared to the estimated coefficient value for the period 1998-2006. The impact of revenue on growth has increased from .432 prior to 2007:01 to round .476 for the whole sample. Results demonstrate that amplifying negative impact is mostly due to extending effects through distortionary taxation policies. Their negative effect on growth has increased by round .0267 points compared to only round .192 points raise in non-distortionary negative impact. However, the impact of expenditure on growth is weaker compared to the estimated coefficient value for the period 1998-2006. The positive impact of expenditure on growth has shrunk to only .146 points compared to .279 it was prior to 2007, given the size of the coefficient. Considering the sub-categories of government expenditure, results imply that productive and non-productive expenditure have a higher respectively effect on growth after 2006. These reflect the attitude of the counter-cyclical FP through capital and wages increase. This proves that rising capital expenditure has provided bigger positive impact on growth and has also mitigated the negative affects that global financial and

economic crisis had on the Albanian economy. This confirms findings by Bachmann and Sims (2011) that raising government investments, especially during downturns, boost business confidence. The positive effect of *pexp\_ratio* on growth has increased by round .116 percentage points and the negative effect on *npexp\_ratio* has gone up by round .167 per cent. First, these implying effects reflect mainly the attitude of the counter-cyclical FP through capital and wages raise in the period 2007-09. This, as Afonso (2006) puts forward, reveals the Albanian public sector efficiency on resource allocation and output scores maximisation. Second, the diminishing impact of expenditure on growth is mostly due to raising negative impact of non-productive expenditures.

Further, findings show that the coefficient on debt ratio is statistically significant at conventional levels and negatively related to growth rate. This effect is even greater compared to the estimated coefficient value for the period 1998-2006. This, according to Cecchetti *et al.* (2011), suggests that debt burden is above a threshold of growth-enhancing. Hence, raising debt burden reduce growth. According to results by Shijaku (2011) in the verge of raising cost of borrowing a further increase above Albanian repayment ability or sustainability level would discourage public investment within the budget structure and may crowd-out private investments. In addition, given the magnitude of the coefficients, raising debt ratio to finance capital public investment would crowds out the effects of productive expenditure. Instead, if government wishes to stimulate economic activity through boosting productive expenditure, it should do it through lowering the non-productive expenditure rather than borrowing instruments.

## 5 Conclusion

Albania FP has been under continuous scrutiny of major reformation on expenditure and tax collection system. The philosophy of these fiscal reforms was based on the idea of reducing current expenditures and boosting government revenues. The Albanian economy took advantages of macroeconomic stimulus in the form of fiscal expansion ahead of monetary adjustments, during the financial and global crisis. Raising budget deficit and public debt reflected both the action of automatic stabilizers in the form of reduced income and the countercyclical FP through wages and capital expenditure increases and also the cost of fiscal burden as a result of government decision to stimulate the economy, while fiscal incentives were narrowing.

This discussion material analysis the Albanian FP effects upon economic growth based on an endogenous fiscal-growth model. The aim of this paper is not to resolve the raging debate on the ability of FP to affect economic growth, but to examine the case of a small open developing country, Albania. Regarding fiscal variables, the results obtained show that overall growth rate is affected negatively by government revenues and positively by expenditure policies. Considering the parameter magnitude government revenue effected growth more than government expenditure. Categorising tax revenues into distortionary and non-distortionary, we found that government revenues and the sub-categories reduce growth, but distortionary taxation has much larger and significant effect. Further, growth is positively affected by productive expenditure and negatively by non-productive, but the former has a greater impact.

Additionally, based on the coefficient value, empirical results suggest that since 2007 expenditure-growth relationship is weaker, while revenues have a higher negative impact on growth. Results demonstrate that rising revenues negative impact is mainly due to distortionary policies. Expenditure policies reflect the attitude of the counter-cyclical FP through capital and wages increase. Further, findings show that the coefficient value of debt burden is negatively related to growth rate. This effect is statistically significant. This impact is even greater since 2007. Financing government capital investment through borrowing mechanism has stimulated growth, but according to Cecchetti *et al.* (2011) debt burden is above a threshold of growth-enhancing.



## APPENDIX

Table 2

### Unit Root Tests

Variable	ADF		Phillips-Perron		ADF		Phillips-Perron		ADF		Phillips-Perron	
	Null Hypothesis: Unit Root											
	Level	First Difference	Level	First Difference	Level	First Difference	Level	First Difference	Level	First Difference	Level	First Difference
	(Prob.)											
	Intercept				Intercept and Trend				None			
recongr_yoy	(.0049)	(.0000)	(.0049)	(.0000)	(.0040)	(.0000)	(.0048)	(.0000)	(.0617)	(.0000)	(.0985)	(.0000)
fgcf_ratio	(.0462)	(.0174)	(.3230)	(.0112)	(.2111)	(.0394)	(.7667)	(.0299)	(.8853)	(.0028)	(.9308)	(.0017)
empgr_yoy	(.0000)	(.0000)	(.0000)	(.0001)	(.0000)	(.0000)	(.0000)	(.0001)	(.0000)	(.0000)	(.0000)	(.0001)
opentb_ratio	(.6175)	(.0000)	(.0916)	(.0001)	(.0569)	(.0000)	(.0000)	(.0001)	(.9974)	(.0118)	(.9539)	(.0000)
exp_ratio	(.3667)	(.0001)	(.0000)	(.0001)	(.7335)	(.0000)	(.0000)	(.0001)	(.2894)	(.0000)	(.4514)	(.0000)
npexp_ratio	(.0250)	(.0001)	(.0000)	(.0001)	(.0486)	(.0000)	(.0001)	(.0001)	(.3317)	(.0000)	(.6533)	(.0000)
pexp_ratio	(.4958)	(.0000)	(.0000)	(.0000)	(.8138)	(.0000)	(.0000)	(.0000)	(.5027)	(.0000)	(.0008)	(.0000)
rev_ratio	(.6750)	(.0000)	(.0000)	(.0001)	(.0572)	(.0000)	(.0000)	(.0001)	(.8572)	(.0000)	(.9083)	(.0000)
ndrev_ratio	(.9129)	(.0007)	(.9235)	(.0001)	(.3712)	(.0041)	(.5217)	(.0006)	(.9748)	(.0000)	(.9921)	(.0000)
disrev_ratio	(.0863)	(.0000)	(.0002)	(.0000)	(.0000)	(.0000)	(.0000)	(.0000)	(.9688)	(.0000)	(.8706)	(.0000)
debt_ratio	(.0001)	(.0000)	(.0933)	(.0000)	(.0014)	(.0000)	(.4996)	(.0000)	(.7258)	(.0000)	(.9138)	(.0000)

<sup>a</sup> Automatic lag selection based on Schwarz Info Criterion (SIC).

Table 3

### Estimated Results on Redundant Variables Test

Redundant Variables	Null Hypothesis: The Variable is Not Significant for the Model			
	F-statistic	Prob. F-statistic	Log Likelihood Ratio	Prob. Chi-square
DISREV_RATIO	1.387526	(0.2460)	1.782925	(0.1818)
NDREV_RATIO	4.385346	(0.0428)	5.434565	(0.0197)
OREV_RATIO	1.230876	(0.2740)	1.584729	(0.2081)
PEXP_RATIO	0.613775	(0.4381)	0.796378	(0.3722)
NPEXP_RATIO	0.245582	(0.6230)	0.320139	(0.5715)
OEXP_RATIO	0.639366	(0.4288)	0.829314	(0.3625)
DEBT_RATIO	2.540964	(0.1190)	3.219037	(0.0728)

Synthesis of results generated using E-views 6.

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