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CYCLICAL DYNAMICS OF KEY FISCAL AGGREGATES IN BULGARIA OVER THE PERIOD 1998-2014

We present an overview of the dynamics of fiscal aggregates in Bulgaria in the period 1998 to 2014. The paper investigates the cyclical dynamics of budget revenue and expenditure and their major components. Using time series of deflated statistical data we calculate the elasticity of individual revenue and expenditure components to GDP growth – both for the overall period and for the post-crisis years. The major conclusion is that the Bulgarian fiscal aggregates are characterized mainly by procyclical dynamics, with the wages and maintenance expenditures being the least sensitive, and investment – the most sensitive to upturns and downturns in growth. These results can feed into fiscal policy and outline the potential to use public investment as an instrument for macroeconomic stabilization in the country.

JEL: H50; H61

The public sector is a key component in modern economies – in the different countries it occupies between a third and a half of GDP, and is responsible for a large scope of activities such as the production and supply of goods and services, implementing regulations, and undertaking transfers to other sectors. Given its size and importance, the dynamics of public financial flows have important influence on the overall economic development. Targeted fiscal policy can be used as either a tool for economic stabilization or a turn into an catalyst for unfavorable macro-economic trends.

This puts the issue of the connection between economic growth and public finance flows into the core of the discussion about optimal economic policy. Following Lane (2003) we can define cyclical dynamics as the behavior of fiscal policy over the economic cycle. A procyclical trajectory of the fiscal aggregates supports growth in the boom phase of the cycle, whereas it reinforces recessionary pressures in the bust phase. Anticyclical behavior has the exact opposite characteristics – it slows growth when the economy is booming but it likewise slows the downturn during recessions. Even though the desired optimal policy is often anticyclial (or at least acyclical) this is rarely easy to achieve in practice. Fiscal policy is often devised against the backdrop of complex conflict between stakeholders leading to pressure for increased expenditures during upturns and strong resistance against austerity during downturns. In reality, this environment often leads to a policy implementation, being far from optimal.

This paper considers empirical data for the Bulgarian economy over the period 1998-2014 to investigate whether fiscal policy has been procyclical or countercyclical. Using annual data on key economic and fiscal aggregates from the Ministry of Finance and the National Statistical Institute, we can characterize quantitatively the sensitivity of budget revenue and expenditure towards GDP

movement through their elasticities. The robustness of the elasticity coefficients is investigated by calculating their values after the country has entered a cyclical downturn in 2009, outlining the key conclusions as to the management of public finance in Bulgaria, as a result of these trends.

Review of theoretical and empirical results

From the standpoint of macroeconomic theory there is hardly a clear-cut positive prediction on what the fiscal dynamics should be. They tend to give a more normative prescription with the (neo-)classics being in favor of a balanced budget under all circumstances, while the (neo-)Keynesians would advise for a balanced budget over the entire cycle, (Perotti, 2004). Classical and neo-classical theory doubt the effectiveness of the fiscal policy due to the tendency of the national economy to realize small deviations from potential GDP and then to reach its optimal production point relatively quickly even after large shocks. In this case economic policy has limited benefit as there is little need for economic stabilization.

The theory of rational expectations supplements this argument by stating that the very conduct of policy is almost impossible as the behavior of economic agents, guided by their expectations about the future, will render policy ineffective. This impotence of policy is seen in the hypothesis of the Ricardian equivalence which states that government deficits are met with an equal in size decrease in private consumption, thus leading to a negligible aggregate effect of government interventions (Barro, 1974; Gruen, 1997). The (neo-)classical prescription for balanced budget where revenue equals expenditure every year stems directly from those arguments.

In contrast to the classical tradition, the Keynesians believe in the possibility of fiscal policy to have a positive effect on economic development and thus the conduct of public finance is seen as a strong instrument for economic management. This means that during upturns the government should maintain surpluses and use the accumulated resource to run deficits during downturns, thus stimulating the economy. Throughout the whole business cycle, the net present value of expenditure should equal the net present value of revenue. Even under the assumption of perfect rationality, markets are fraught with inefficiency such as wage and price rigidity, and agents cannot pursue their optimal behavior in all cases. This opens the possibility for governments to improve welfare by policy interventions, including fiscal policy. Although activist policy has been very controversial in the run-up to the global financial crisis, many governments have taken advantage of it after the onset of recession (Feldstein, 2009). In this sense, the theoretical prescription is that fiscal aggregates have anticyclical or acyclical dynamics since Keynesians believe in their importance as a tool to stabilize the macroeconomy.

Even though mainstream economic schools recommend balanced budget the empirical reality is different as many governments have a tendency to realize budget deficits. Recent work in the field of political economy claims that the very structure of fiscal decision-making has a built-in deficit bias. The election cycle is

seen as an important determinant for the public financial flows (Alesina et al., 1997; Drazen, 2001). As elections near governments are tempted to spend more in an attempt to win over voters which in turn leads to a worsening in the country's fiscal position. The desire for increased expenditure through public projects or higher budget expenditures, is directly related to the desire to win political dividends. Empirically this phenomenon is observed in many countries and under very different institutional configurations (Persson, 2001; Shi & Svensson, 2006). For example Persson (2001) investigates a panel of 61 countries over the period 1960-1998 and using a number of panel regressions finds a clear and statistically significant connection between fiscal results and election cycles.

In another large-scale research Shi & Svensson (2006) use data on 85 countries over the period 1975-1995 and find a statistically and practically significant effect of electoral cycle on fiscal aggregates. Data reveal that election years tend to have deficits which are on average 1% of GDP larger than their usual values. We should note that the structure of government itself may have an effect on fiscal decisions – lack of monolithic majorities or the presence of many centers of influence can lead to inconsistency in fiscal decisions and to practical inability to conduct countercyclical policy (Persson & Tabellini, 2008).

Other centers of power outside of government can also be influential in the process of making fiscal decisions. Special interest groups enter a competition for the distribution of budget surpluses realizing that even if they did not compete the resources will be distributed among the others (Lane & Tornell, 1996, 1998; Tornell & Lane, 1998, 1999). In this sense the budget surplus is viewed as a common good at the disposal of certain elites or centers of influence. This process hinders the conduct of a balanced budget policy as the more widespread power is, the more procyclical will policy tend to be.

The general trend for increase in public expenditure during an economic boom is also of particular importance (Talvi & Vegh, 2000). During the upturn revenues are above their long-run structural values, and expenditures are below, thus leading to surpluses. The available free fiscal resources in this case make different stakeholders (households, companies, public sector units, NGOs, etc.) to intensively, and sometimes successfully, lobby for extra expenses. A potential driver of this process is the failure to realize the real tax price of this action because of imperfect information – the so-called "fiscal illusion" (Wagner, 1976). It is through this mechanism that volatility in production causes a fiscal procyclicality.

We can thus conclude that despite the normative theoretical prescription for countercyclical fiscal policy, the policy-making environment often supports the opposite. This is an empirical regularity in many countries, and there is a lot of scholarly research on budget components point in this direction (Fiorito & Kolintzas, 1994; Ballabriga & Martinez-Mongay, 2002; Afonso & Clayes, 2008). In a major study on this issue Lane (2003) focuses on countries from the Organization for Economic Cooperation and Development (OECD) and analyzes the dynamics of their fiscal aggregates over the period 1960-1998. He finds a marked procyclical behavior of

government consumption, largely driven by the dynamics of public sector employees compensation.

In a recent study Lamo et al (2013) investigate the member states of the Eurozone, USA, Japan, Denmark, Sweden, and the United Kingdom. They look into the dynamics of budget expenditure against a set of economic activity indicators (GDP per capita, real GDP, unemployment), which they adjust cyclically. Using a variety of econometric techniques, the authors study the cyclical dynamics of key aggregates – public sector consumption, public sector wages, compensation of the employed, public sector employment, and intermediate consumption. They find out a clear-cut procyclicality of expenditure, particularly in those related to collective consumption and its components. Procyclicality is also caused by discretionary fiscal policy of most countries under scrutiny as they have a tendency to balance their budgets and sometimes implement fiscal consolidation.

Research in the field of fiscal policy and key fiscal variables shows that in practice we observe an overwhelming procyclical policy dynamics which is stronger during periods of elections or political instability. This trend is more pronounced in budgetary expenditure items and less pronounced in revenue items, which is likely due to the action of automatic stabilizers. The procyclical tendencies are especially obvious in the case of developing economies and less obvious in the case of more developed countries with well-established fiscal institutions.

Research by Bulgarian economists also focuses significant attention on the issues of fiscal policy and its importance for the economic development of the country. The management and programming of public finances is tackled predominantly by large theoretical and practical studies (Nenova, 2006; Minassian, 2008) where it is seen as an important tool of economic policy. Neycheva (2005) investigates the influence of the fiscal position on macroeconomic dynamics in Bulgaria using a Hodrick-Prescott filter to cyclically adjust data on the budget deficit. Her model shows that fiscal policy in Bulgaria can be either procyclical or countercyclical depending on the time period under study. Houbenova-Delisivkova (2009) puts fiscal policy in the light of Bulgaria's accession to the European Union (EU) and takes into account the convergence to the EU of the Bulgarian policy practices.

In a recent paper Kalchev (2013) reviews fiscal dynamics in Bulgaria. He highlights few key characteristics of revenues and expenditures and gives policy recommendations for stabilizing the dynamics, thus establishing fiscal policy as an important instrument for economic governance. Conscious of risks, associated with the procyclical policy, other authors (Manliev, 2012) recommend a decrease in the discretionary policy component and introduction of fiscal rules that can constrain politicians during economic booms. This is supposed to lead to acyclical or procyclical fiscal dynamics.

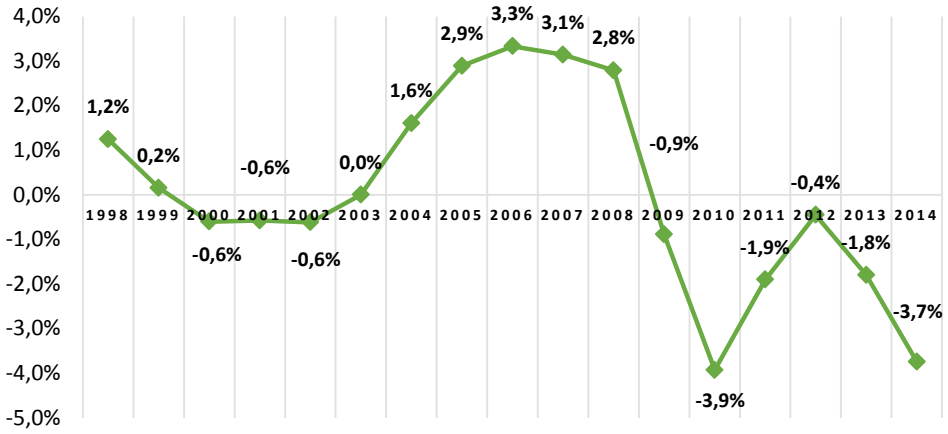
In the context of the literature, this paper's main aim is to investigate the main budget components and to estimate econometrically their elasticities to growth. Doing this, we can analyze the volatility of fiscal aggregates with greater precision over a period that has not yet been studied completely.

Dynamics of budget revenue and expenditures in Bulgaria

The period 1998-2014 is characterized by an especially pronounced dynamics of fiscal aggregates in Bulgaria. Its beginning is marked by the recovery from the 1996-1997 economic crisis and followed by rapid GDP growth through 2008. This period is also notable for the rise in public revenue and expenditures and the maintenance of a positive budget balance. The budget after 2003 is invariably in surplus with a peak of 3.3% of GDP in 2006.

Figure 1

Budget balance over the period 1998-2014



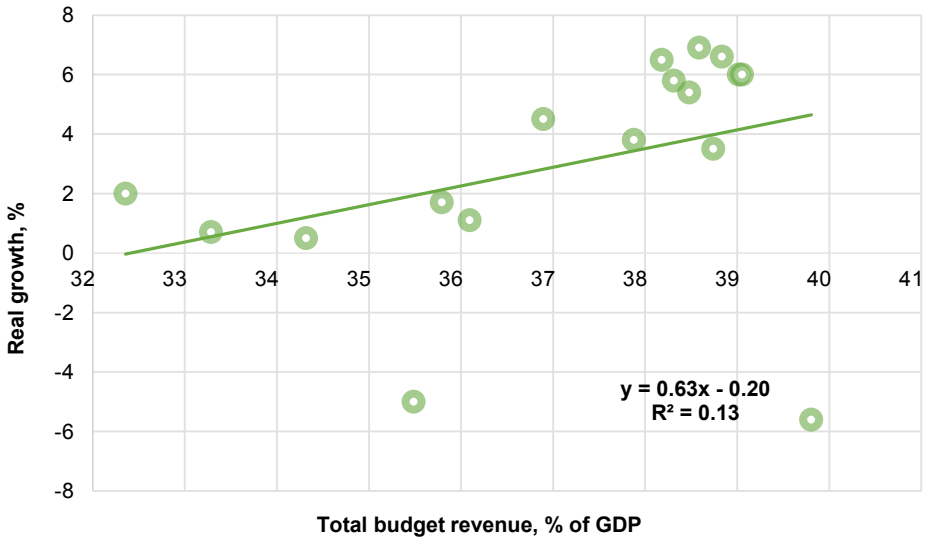
Source. Ministry of Finance, Data on the Consolidated Fiscal Program (annual), 1998-2014

From 2000 to 2008 budget surpluses and debt repayment drive a rapid decrease of public debt, leaving it at a low of 13% of GDP in 2008. In 2009 the unfavorable international economic environment affects Bulgaria which enters a period of recession. In 2009 alone the economy shrinks by 5%, followed by a relatively slow and anemic recovery over the next few years. These trends also affect the public sector fiscal position. It worsens significantly as the country enters a period of deficits, the biggest of which takes place in 2010 and amounts to 3.9% of GDP.

A slow and subdued recovery prevents the government from balancing the budget as expenditures remain stable, while revenue is lower. The deficits from this period also lead to a hike in public debt over this period and by the end of 2014 it already stands at 28% of GDP. The middle-term government plans prescribe for a decrease of deficits across the Consolidated Fiscal Program that should rein in the increase of debt. From the standpoint of cyclical dynamics one should note the strong sensitivity of revenue aggregates to the volatility of the business cycle.

Figure 2

Association between growth and budget revenue over the period 1998-2014



Source. Ministry of Finance. Data on the Consolidated Fiscal Program (annual), 1998-2014.

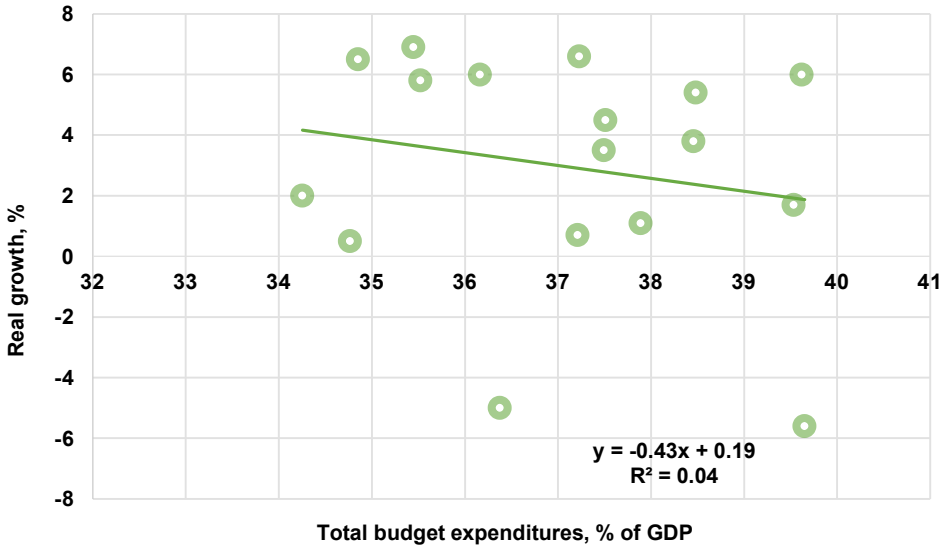
Economic growth is also strongly associated with a rise in government revenue which is largely due to increases in the major revenue source – taxes. When the economy is booming, so are the disposable incomes of households, production and profits. Additionally, growth boosts individual expectations which stimulates investment and business activities. Those trends lead to an enlargement of the taxable base and thus increase revenue even under no change in tax rates. Because of this the revenue side of the budget also depends on economic growth – their correlation coefficient is positive and stands at r = 0.37,

In contrast to the obvious connection between fiscal revenue and the business cycle, this relationship is less apparent in the case of fiscal expenditures. Despite the fact that long-run expenses should be covered by long-run inflows, short run fiscal policy depends on a discretionary political decision. The public sector can very well spend more than it collects and finance its deficits through debt, seigniorage, or direct monetization. Due to its currency board Bulgaria has to rely predominantly on debt because the board rules out both deficit monetization and discretionary expansion of the monetary base, which is needed for seigniorage. This leads to expectations for more subdued volatility of expenses which happens to be the case in Bulgaria over the studied period (Figure 3). Economic downturn leads to a

significantly lower decrease in budget expenditure as percent of GDP, and the trend all but disappears over the sub-period 2000-2014. Across the whole period there is a relatively small-scale fiscal consolidation and the correlation between revenue and expenditures remains weak – it stands at a mere -0.2 (the negative sign is due to divergent directionality of revenue and expenditures). The correlation coefficient for the sub-period 2000-2014 is even smaller at r = 0.033 which shows a very weak association between the two indicators. Irrespective of whether we look at the complete period or a one of its sub-periods we can conclude that budget expenditures have a much weaker association to the business cycle than to budget revenues.

Figure 3

Association between growth and budget expenditure
over the period 1998-2014

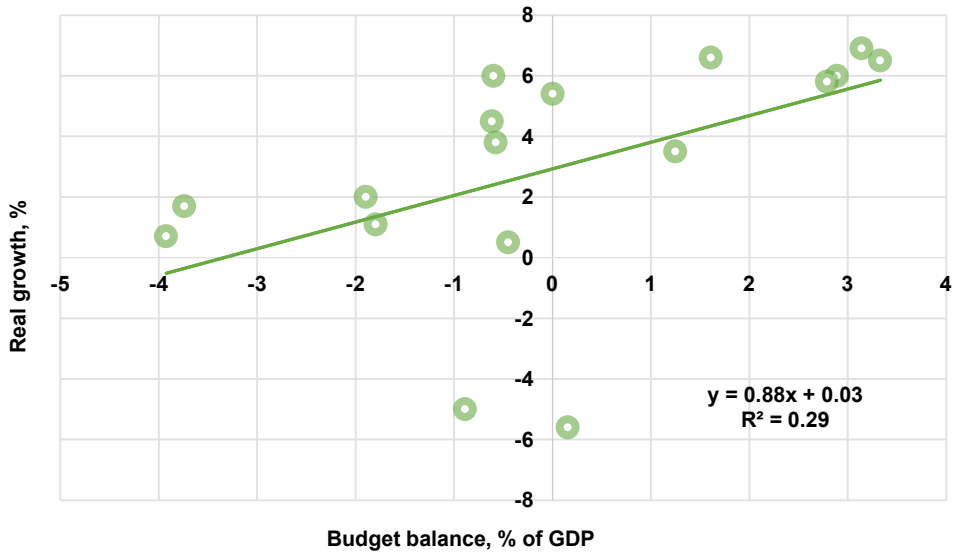


Source. Ministry of Finance. Data on the Consolidated Fiscal Program (annual), 1998-2014.

Fiscal data for Bulgaria do not show any episodes of abrupt fiscal consolidation as can be evidenced by the lack of parallel cyclical dynamics of revenue and expenditures – the former are much more sensitive to the economic situation than the latter. This also determines the movements of the budget balance which is strongly and positively correlated to growth. In the years of economic boom the budget is in surplus which turns into deficit as growth slows down (Figure 4). This can be also be seen in the large correlation between the two – it stands at r = 0.52.

Figure 4

Association between growth and the budget balance
over the period 1998-2014



Source. Ministry of Finance. Data on the Consolidated Fiscal Program (annual), 1998-2014.

The aggregate dynamics of fiscal variables in Bulgaria is much closer to what political economy models of fiscal decision-making would predict (Alesina et al., 1997; Tornell & Lane, 1998; Talvi & Vegh, 2000) than to the normative recommendations of major schools of macroeconomic thought. Against this backdrop we investigate two major questions – what is the exact size of the elasticity coefficients of fiscal aggregates with respect to the business cycle, and what is the behavior of their components.

Cyclical dynamics of revenue and expenditures

The sensitivity of a given dependent variable to an independent variable can be quantified by using the elasticity coefficients. The elasticity ε_j of a fiscal variable F_i to GDP Y is defined as follows:

$$\varepsilon_j = \frac{\frac{\Delta F_j}{F_j}}{\frac{\Delta Y}{Y}} = \frac{Y \Delta F_j}{F_j \Delta Y}.$$

This measure represents the proportion of the percentage change of the two variables. One of the most intuitive ways to estimate it econometrically is through a simple regression between the two variables in natural logarithmic form. Here we use β_i to denote regression coefficients and θ to denote the error term, and thus the regression equation is of the following form:

$$\ln F_j = \beta_0 + \beta_{1j} \ln Y + \theta.$$

Estimating this equation for *i* observation using the method of ordinary least squares (OLS), we get an estimate for coefficient β_1, which is also the desired elasticity of each given fiscal variable F_i:

$$\beta_1 = \varepsilon_j = \frac{\Sigma Y_i F_i - \frac{1}{n}\Sigma Y_i \Sigma F_i}{\Sigma Y_i^2 - \frac{1}{n}(\Sigma Y_i)^2}.$$

Elasticities can take both positive and negative values. Positive coefficients show that the change of a given fiscal variable is of the same direction as the rate of growth, whereas negative one signify different directions. If the value is above one we can say that this fiscal variable is sensitive (or elastic) to changes in the economic environment while if it is below one, then the variable has low sensitivity to the business cycle.

The elasticities of budget revenue and expenditure as well as their components are estimated empirically by using annual time series on fiscal performance from the Ministry of Finance and on GDP from the National Statistical Institute (NSI). Data are deflated with the annualized rate of growth of the Consumer Price Index (CPI data from NSI). The results are presented in Tables 1, 2, and 3, with elasticities covering both the whole period as well as two sub-periods – the pre-crisis years up to 2008, and the post-crisis ones (2009-2014). Since post-crisis elasticities are calculated using few observations, results should be interpreted with care. Also, elasticity estimates in the sub-periods are characterized by larger confidence intervals which should also be noted.

Table 1 presents the elasticities of revenues to growth. Most components have relatively high values. The overall elasticity of tax revenue stands a 0.84, and during the crisis and post-crisis years reaches 1.04. These estimates show that with every percent slowdown in growth we would expect an average fall of tax revenue by 0.8-1%. Consumption taxes have a particularly high elasticity – the VAT one stands at 1.37 for the whole period, and the excise one – at 1.89. Consumers are very conscious of increases in these taxes and seem prepared to substitute their consumption. It is likely that some of them decrease consumption altogether while others find supplies in the informal markets. This holds particularly true for excise goods such as fuel, cigarettes or alcohol. It is interesting to note the relatively lower elasticity of excise taxes over the last six years of the period, which hints at possible stabilization of the ratio of consumption between formal and informal markets.

Table 1

Elasticity of budget revenue with respect to cyclical dynamics

Source of Revenue	1998-2014	1998-2008	2009-2014
Tax revenue	*0,835*	*1,074*	*1,038*
Profit taxes	0,128	0,635	-0,280
Personal income taxes	0,287	0,027	2,003
Value added tax	1,366	1,762	0,698
Excise duties	1,892	2,071	0,146
Customs duties and fees	-2,808	-1,303	1,856
Social security and healthcare contributions	0,350	0,546	1,914
Other taxes	1,511	1,741	1,430
Non-tax revenues	*-0,148*	*0,253*	*-1,147*

We should note the significant rise in the elasticity of personal income taxes – over the last six years the elasticity coefficients have significantly larger values than the ones for the overall period under study. This is possibly due to changes in labor supply during crisis and the move of some employment into the informal sector of the economy. Such an unexpectedly large value is likely due to the combination of economic downturn and the rise of unemployment.

Those factors also drive the elasticities of some key non-tax revenues such as social security and healthcare contributions as they depend strongly on the decreasing disposable income of households. Apart from the key sources of tax revenue, we observe a relatively high elasticity for other taxes – it stands at 1.5. Those values are also influenced by the external environment – the dynamics of customs taxes and fees is largely driven by Bulgaria's accession to the EU.

Table 2

Elasticity of expenditure by use with respect to cyclical dynamics

Expenditure by use	1998-2014	1998-2008	2009-2014
Total Expenditure	*0,848*	*0,773*	*1,385*
Current Expenditure	*0,652*	*0,556*	*1,302*
Compensation of Employees	0,505	0,437	0,833
Maintenance	0,223	0,552	-0,280
Subsidies	0,734	0,408	0,502
Interest	-2,647	-2,320	1,015
Social expenditures, scholarships and care	1,406	1,158	2,236
Capital expenditures and state reserve gain	*1,626*	*1,784*	*1,437*

Budget expenditures are a key instrument for the conduct of a fiscal policy and, as already noted, they are much less sensitive to the business cycle than revenue. During an economic downturn of 1%, expenditures decline by 0.8% but this rate has been increased in the last years as the government attempted a gradual fiscal consolidation. Current expenditures are the slowest to adapt – they decrease by just 0.65% as the economy shrinks by 1%. Their least sensitive components are wages and social security contributions on the one hand, and maintenance costs on the other – their elasticities stand at 0.51 and 0.22, respectively. In the case of maintenance costs the last six years have seen even a reversal of sign.

Social security and healthcare expenditures, as well as capital investment are also characterized by high elasticity. Negative growth of 1% leads to a decrease of public sector investments by 1.5-1.6% which can adversely affect future growth prospects. As a general trend we observe stability of current expenditures, especially the ones for wages, social contributions and subsidies. Those groups of expenses beg the question of how productive they are for the overall economy. On the other hand, capital expenditures are most sensitive to the business cycle. One can thus say that while government consumption is anticyclical, its investments are procyclical.

Table 3

Elasticity of expenditure by function with respect to cyclical dynamics

Expenditure by function	1998-2014	1998-2008	2009-2014
General public services	0,325	0,711	-1,087
Defense and security	0,587	0,891	-1,200
Education	0,851	0,863	0,617
Healthcare	1,208	1,145	3,539
Social security and social support	1,035	0,802	1,265
Construction and public works	1,810	1,559	3,217
Recreation, culture, and religions	0,998	0,979	3,496
Economic activities and services	0,734	0,624	2,354
Miscellaneous	-0,562	-1,033	2,165

Looking at the elasticity of functional expenditures one reaches similar conclusions. The lowest elasticity (0.33) is found in the expenditures on general government services which underlines the relatively stable expenditures for administration over most of the studied period, as well as expenditures for security and defense (0.59). Still, under gradual fiscal consolidation in the period 2009-2014 defense expenditures turn from almost acyclical to procyclical. Highest elasticity values can be seen in the expenditures on construction and public investment, which can be interpreted as mostly capital expenditures. Over the whole period a 1% growth is associated with 1.8% increase in construction expenditures, and after 2009 this number grows to 3.5%. A large part of this volatility can explained by the

fact that a sizable proportion of those expenditures are European Union funds. Because of their large size they can influence economic development directly, thus acting as an endogenous factor in the calculation. Actually, the last years have seen an increase in elasticity of government expenditure, which remain largely procyclial.

We should note that the calculated elasticities include both a discretionary and a non-discretionary component. The dynamics of budget revenue and expenditures is determined not only by political decisions but also by a number of factors that are not fully under the power of fiscal authorities – such as the economic environment and unexpected positive/negative shocks. In this sense these elasticities can not serve as an indicator for the conduct of fiscal policy but rather capture the overall dynamics of the aggregates under the action of all influences to which they are exposed.

Discussion

The elasticity of budget revenue and expenditure allows us to understand the degree to which economic agents are willing to alter their behavior in response to a change in the economic environment. Tax elasticities are a quantitative indicator of the agents' sensitivity to changes and how this affects the government's most important source of revenue. In fact, taxes on labor exhibit high elasticity while taxes on consumption exhibit lower values. From the standpoint of economic policy, authorities should provide a buffer for eventual losses from those two sources in case of a recession. Taxes on labor are also characterized by high elasticity in the crisis years, which has its negative repercussions not only on the budget but also on the economy. Overall, revenue has a clear procyclical profile which is largely due to their close connection to the business cycle.

This empirical regularity underlines the necessity to reduce the procyclical effect on the business cycle. During a recession the government can and should undertake actions to improve tax collection, thus effectively decreasing the elasticity coefficients of different revenue items. In addition, crisis years present an opportunity to adjust tax rates so as to stimulate the economy. Taking into account each individual tax's position on the Laffer curve for the Bulgarian economy, it might even be possible to realize economic stimulus by decreasing the tax rate. The potential for lowering revenue elasticity has its limits – during crisis the subdued economic activity adversely affects revenue which cannot be fully compensated by adjusting the tax system.

Expenditure elasticities are also overwhelmingly positive. Current expenditures, particularly wages and contributions, are hardly affected by economic dynamics. Capital expenditure tend to be much more sensitive, and so are social and healthcare contributions. At any rate expenditures tend to move together with the GDP fluctuations which underline their predominantly procyclical character. The only anticyclical components are the expenditures for state services and administration, and security and defense. The purely economic utility of those items remains a controversial issue. This expenditure profile leads to a general procyclical role of the public sector which

accelerates growth during upturns but deepens the recession during downturns. Those trends are in line with the recommendations for a balanced budget on a yearly basis but leave little room for effectively tacking recessionary trends or negative exogenous shocks by means of the fiscal policy.

Targeted budget management would help the fiscal authorities to tame the business cycle in both the positive and the negative phase. The expenditure items provide for flexible tools for conducting economic policy as in practice they are constrained less by tax and non-tax revenues but by the willingness and ability of the government to take up debt in the national and international financial markets. This possibility enables the fiscal authorities to significantly expand spending during crisis, thus decreasing their elasiticities and their procyclical behavior.

Fiscal aggregates should not be analyzed only at the aggregate level – their size and dynamics is not the only important thing but also their composition and use. We note the high sensitivity of capital expenditure to fluctuations. This means that during recessions or in case of fiscal consolidation they are usually the first to cut disproportionately. Since capital expenditures and education outlays affect growth positively not only in the short run but also in the long run by expanding the productive potential of the economy (aggregate supply), they should be prioritized and retained in full. Effective countercyclical policy can include not merely their maintenance during crisis but also their possible increase.

An important task of fiscal policy during economic boom is to provide enough financial reserves that can be used to fight recessions. This buffer should also serve to compensate the potential decrease in revenue caused by the downturn. A more flexible budget for Bulgaria would be a budget, balanced on a cyclical base. On the one hand this can be changing during years of growth since it entails that the government resists the temptation to spend more; on the other hand this allows for increasing the fiscal reserve and the room for fiscal maneuvering during downturn. This can be achieved by instituting fiscal rules and increasing policy transparency, by reinforcing the fiscal institutions of the country, or by some combination of the two. A possible way towards this is by strengthening the powers of the newly-formed Fiscal Council in Bulgaria.

If fiscal consolidation is imperative due to unsustainable debt levels or because of a political decision, it should be undertaken by cutting current expenditures, especially wages and maintenance ones. Regardless of the painful short-term effects due to downsizing public employees or decreasing their salaries, medium-term effects will be positive due to improved fiscal position, less regulation, and increased economic efficiency.

This issue must be analyzed in greater detail so that public expenditures optimizations do not threaten the quality of public goods provision and the continuity of the business process in the public sector. In that sense, rationalizations need to be undertaken predominantly in regulators by removing unnecessary administrative burdens, improving efficiency, improving registries and information systems towards a general move of optimizing, reengineering, and digitizing public services. Fiscal

consolidation can be undertaken not merely by cutting personnel and facitlity expenses but also through improved resources utilization through the introduction of shared services, improved accountability, and more reliance on competition in the public sector.

The budget elasticities presented in this paper can be used as one of the tools for conducting rational and targeted fiscal policy. They represent the average fluctuations of fiscal aggregates as the economy itself fluctuates, and can thus be used to plan fiscal policy over time at a relatively low cost to computation interpretability. Optimal policy should rely on low-elasticity taxes due to their low welfare loss and to take account of the higher elasticity of some taxes. At the same time elasticities contain information of the adaptive behavior of governments and can be used as a measure of their actions and preferences. This information can meaningfully enrich the public debate on the connection between optimal and actual fiscal policy. Thus elasticities contain vital information that can improve the analysis of fiscal governance.

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This paper investigates the cyclical dynamics of key fiscal aggregates in Bulgaria over the period 1998-2014, using available public statistical data. Taking into consideration various empirical studies in this sphere, we confirm the result that budget revenue is connected to economic fluctuations, while expenditures are not. Estimated elasticities show that the overwhelming proportion of fiscal aggregates and their components move in a clear procyclical manner. This holds risks for the management of public finances both in economic booms, and in downturns. As the economy grows, public sector behavior can contribute to overheating, while it reinforces recessionary trends during crisis.

Public investment is very sensitive to volatility in production, and this has potential for risks on the downside. This expense item is procyclical and with high elasticity that only grows during post-crisis years. Unlike it, the potentially less productive expenditures on wages and maintenance have a relatively weak sensitivity to economic dynamics and decrease only slightly even during fiscal consolidations. Such a behavior is consonant with the procyclicality observed in other economic and is likely symptomatic of the political constraints on fiscal decisions.

Empirical data underline the necessity to conduct proactive fiscal policy, aimed at maintaining a balanced budget over the entire business cycle. Rational public finance management should focus less on high-level fiscal aggregates such as overall revenue or expenditures, and more on their components. In addition to that public investment is a classical instrument of macroeconomic stabilization and should be increased during recessions. The focus on investment growth per se, however, should be abandoned in favor of investing in the highest value projects after a detailed cost-benefit analysis.

A key task in the management of public finance is striking the delicate balance between long-term sustainability and the achievement of short-term economic and

social goals. Under strong fiscal procyclicity, it is perfectly possible for the former to dominate the latter, thus needlessly increasing the loss of social welfare. A possible alternative approach is to implement fiscal consolidations by cutting non-productive public sector expenses, while maintaining a high and increasing level of public investment; both courses of action should ensure stabilization in the present and enhanced growth in the future.

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