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Taxation, government spending and economic growth: The case of Bulgaria

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ABSTRACT
The objective of this article is to estimate the impact of three fiscal instruments (direct taxes, indirect taxes, and government expenditure) on Bulgaria's economic growth. The study employs an autoregressive distributed lag model (ARDL) and Eurostat quarterly seasonally adjusted data for the period 1999–2020. Four control variables (the shares of gross capital formation, household consumption, and exports in GDP as well as the economic growth in the euro area) are included in the model to account for the influence of non-fiscal factors on Bulgaria's real GDP growth rate. The empirical results indicate a long-run equilibrium relationship between Bulgaria's economic growth and the independent variables in the ARDL. In the short term, Bulgaria's real GDP growth rate is affected by its own past values and the previous values of the shares of direct tax revenue, exports, government consumption, and indirect tax revenue in GDP. In the long term, Bulgaria's economic growth is influenced by its own previous values and the past values of the share of household consumption in GDP and the euro area's real GDP growth rate. Fiscal instruments can be used to stabilize Bulgaria's growth in the short run but they are neutral in the long run. The direct tax revenue, government consumption, and indirect tax revenue are highly effective and can be used as tools for invigorating and stabilizing Bulgaria's economic growth in the short run. However, in the long term, the real GDP growth rate can be hastened only by encouraging domestic demand (final consumption expenditure of households) and promoting exports. This research cannot answer the question of whether flat income taxation stabilizes the economy or not, since it does not separate the impact of tax rate changes from the influence of tax base modifications.

KEYWORDS
Bulgaria, taxation, government spending, economic growth, autoregressive distributed lag model

JEL E62, F43, H24, H25, O47

Оригинальная статья

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Налогообложение, государственные расходы и экономический рост: оценка взаимосвязи на примере Болгарии

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АННОТАЦИЯ
Целью статьи является оценка влияния трех фискальных инструментов (прямые налоги, косвенные налоги и государственные расходы) на экономический рост в Болгарии. В качестве метода исследования выбрана авторегрессионная модель с распределенным лагом. Эмпирическую базу исследования составили ежеквар-

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тальные сезонно скорректированные данные Евростата за период 1999–2020 гг. Для учета влияния нефискальных факторов на темпы роста реального ВВП Болгарии в модель включены четыре контрольные переменные (доли валового накопления, потребления и экспорта домашних хозяйств в ВВП, а также экономический рост в зоне евро). Эмпирические результаты исследования указывают на долгосрочную равновесную связь между экономическим ростом в Болгарии и независимыми переменными в выбранной модели. В краткосрочной перспективе темпы роста реального ВВП Болгарии показали зависимость от предыдущих значений следующих показателей: ВВП и доля в нем прямых и косвенных налогов, экспорта и государственных расходов. В долгосрочной перспективе на экономический рост оказывают влияние предыдущие значения ВВП и доля в нем потребления домашних хозяйств, а также темпы роста реального ВВП в зоне евро. Сделан вывод, что для стабилизации экономического роста в Болгарии фискальные инструменты могут использоваться только в краткосрочной перспективе, в долгосрочной перспективе они нейтральны. В краткосрочной перспективе прямые налоги, косвенные налоги и государственные расходы очень эффективны. Они могут использоваться для оживления и стабилизации экономического роста. В долгосрочной перспективе рост реального ВВП может быть ускорен только за счет поощрения внутреннего спроса (расходы на конечное потребление домашних хозяйств) и стимулирования экспорта. Исследование не позволило ответить на вопрос о влиянии плоской шкалы подоходного налога на стабилизацию экономики, так как анализ раздельного влияния изменений налоговой ставки и налоговой базы не проводился.

КЛЮЧЕВЫЕ СЛОВА
Болгария, налогообложение, государственные расходы, экономический рост, авторегрессионная модель с распределенным лагом

1. Introduction

Small open economies with a fixed exchange rate regime such as Bulgaria, cannot use the monetary policy instrument to stabilize economic growth and can rely only on fiscal tools. The latter, according to the standard Mundell-Fleming IS-LM model, is efficient under free capital mobility [1]. The research, based on the case of transition economies demonstrates, that different exchange rate regimes imply different effect of macroeconomic policy variables on economic growth [2]. The fixed exchange rate rule leads to indeterminate macroeconomic performance in the case of developed market economies too [3]. Similar results are reported from Canada [4]. So, the present paper aims at obtaining results about the role of the government spending under fixed exchange rate currency board rule in Bulgaria.

On the other hand, the second key objective of the current article is to investigate the effects of taxation on GDP growth rate independently of public expenditure. As a result, the problem of equilibrium indeterminacy becomes central. The reason is that if we disregard the role of fundamentals, the influence of factors, such as aggregate instability, sunspots, sink, animal spirits, or self-fulfilling prophecies, obtain decisive importance. For this purpose, we introduce the gross fixed capital formation, household consumption and exports as control variables.

Given this context, the main points of the present research can be summarized as follows:

- To analyze the theoretical fundamentals of the relationship between fiscal policy and economic growth.
- To estimate empirically the impact of direct and indirect tax revenue and government spending on Bulgaria's economic growth.
- To formulate sensible macroeconomic policy suggestions for encouraging the short-run and the long-run growth of the Bulgarian economy.

Four hypotheses are tested in the case of Bulgaria:

H1. Fiscal policy can affect and stabilize economic growth both in short and in long term.

H2. Fiscal policy influences economic growth in the short run but is neutral in the long run.

H3. Fiscal policy impacts economic growth neither in the short nor in the long term.

H4. The income and consumption tax schedule affect negatively the stability of economic growth.

This research applies an ARDL bounds testing approach based on the Eurostat quarterly seasonally adjusted data in the 1999–2020 span.

2. Theoretical foundations of the link between tax policy and economic growth

The fiscal policy can affect the economy via variety of ways under expansionary or contractionary general policy objectives [5]. In particular, the expansionary fiscal policy can result in rising interest rates, growing trade deficits, and accelerating inflation, while the contractionary policy may result in slowing economic activity and decreasing individuals' disposable income and consequently in lower spending on goods and services.

The particularity of Bulgaria is the combination of the fixed exchange rate currency board regime and proportional personal income tax. From theoretical point of view, we distinguish between two principal approaches to the problem of fiscal policy under fixed exchange rate regime.

According to the Keynesian school, government spending affects strongly output, since prices, wages and the real exchange rate react with lags [6]. Conversely, the neoclassical methodology puts the fast adjustment of the real exchange rate at the center of the analysis coming to the conclusion that government spending affects output only marginally [7]. Some authors take the median position of asymmetric government spending shocks under an exchange-rate peg. In conformity with this view, in the case of government spending contraction, the downward rigidity of prices and wages prevents adjustment of the real exchange rate and the economy reacts with tightening. In the opposite case, prices and wages increase, thus causing real exchange rate appreciation. This prevents output from rising [8; 9].

Another theoretical approach to the problem is the New Open Economy Macroeconomics School [10]. The central point of this theoretical line of thinking is the consumption home bias, or the preference of consumers to buy home made goods. The paper of Lai [11] is dedicated to the puzzle about the role of the consumption home bias on the effect of fiscal expenditure under the fixed exchange rate regime. The author concludes, that "in an economic system where there are only two countries, if consumers of both countries have consumption bias for the products produced by the home country, there will be no crowding out effect, and the relation of government spending with output and price will be changed" [11].

Other papers confirm, that under the New Open Economy Macroeconomics framework, the fiscal policy can be effective under high capital mobility [12]. This is important, since Bulgaria, as a member of the EU, enjoys free movement of capital conditions.

The empirical research, based on the cases of Croatia and Macedonia, demonstrates that fiscal policies have different affect under flexible and floating exchange rate [13].

In particular, as it concerns taxation, Bhattarai [14] admits, that the country and the time specific factors seem to play more prominent role than the taxes, in terms of impact on economic growth. Particularly, real factors, including the rate of capital formation, human capital and technology are more important for growth, than the tax rates. This is due to the fact, that higher tax rates are associated with higher rate of public services. Consequently, the negative effects of taxes are often compensated by the positive effects of public goods, thus, leaving a very small net negative impact on growth. Several empirical research papers seem to confirm this conclusion [15].

At the same time, recent theoretical research [16] demonstrates that fiscal po-

licy, under the realistic conditions of the overlapping generations' theoretical concept, is independent from the constraints of the monetary policy, what means, that countries with extreme monetary regimes, such as currency board arrangement in Bulgaria, can rely on fiscal instruments.

The fact that the taxation is less important than the fundamentals, means that the tax policy maybe vital in terms of indeterminacy, understood as phenomenon related to the existence of externalities [17], since taxation can often be distortive. This is confirmed by the paper of Menuet et al. [18] which asserts, that the emergence of aggregate instability dramatically depends on the level of public spending.

Some models demonstrate [19] that if endogenous growth is not allowed, the non-linear income tax may restore saddle point stability in a small open economy. The literature survey broadly confirms this conclusion [20].

This result can be further complemented with the conclusion that when the government finances its expenditures via an endogenous consumption tax, there exists a unique steady state which is always saddle-path stable. As a result, combining income taxes with consumption taxes makes the ranges of indeterminacy shrink, thus reducing the possibility of aggregate instability [21].

Specifically, Bulgaria can be defined as a champion of proportional taxation. The personal income tax for example is 10%, without any non-taxable income. The supposed advantages of proportional taxation can be summarized as follows: reduced complexity and administrative cost of tax system; higher compliance by taxpayers; incentives for investment and saving via lower marginal tax rates; diminished tax-induced distortions in investment behavior; improved labor force participation, especially concerning individuals in higher income brackets and possibly also with higher skills [22]. In principle all this implies that government spending, financed by proportional taxation, should have a positive impact on growth.

At the same time, the proportional taxation may be viewed as the shortest way from egalitarianism to inequality [23]. Low proportional taxation may be explained also by political economy reasons, because better-off individuals tend to have more political influence, for example, through lobbying, access to the media, and greater political engagement [24].

On the other hand, the recent development in taxation literature demonstrates, that the impact of the tax regime on economic dynamics strongly depends upon the external trade and capital flows. In particular, in an influential paper Chen et al. [25] revealed that if the income taxation is progressive, then a small open economy will not generate equilibrium indeterminacy. Alternatively, if the taxation on the interest income from financial assets is regressive, we should expect equilibrium instability.

However, Vasilev [26] comes to the opposite conclusion. He demonstrates that an exogenous growth model with Epstein-Zin recursive preferences, calibrated to Bulgarian data under a progressive taxation regime, exhibits equilibrium indeterminacy. On the other hand, the author reveals that the model, adjusted to Bulgarian data, displays saddle-path stability under flat tax rule. Similarly, there are some evidences that progressive taxation has stronger negative impact on output, compared to flat tax [27].

So, given the evidence of the inconclusiveness of tax policy, one of the intentions of the present paper is to demonstrate whether the Bulgarian tax regime can be associated with stability or indeterminacy, the former being approximated with equilibrium convergence.

3. Methodology and data

The present research is based on an autoregressive distributed lag model (ARDL). Quarterly seasonally adjusted Eurostat data over the period 1999–2020 was processed. The popularity of ARDL technique increased, since it turned out that for non-stationary variables co-integration is equivalent to an error-correction mechanism [28].

This particular ARDL specification includes the following variables:

BGGR – growth rate of Bulgaria's real GDP (percentage change on the previous period);

DIR_TAX – direct tax revenue (percentage share in GDP);

EAGR – growth rate of the real GDP in the euro area (percentage change on the previous period);

EX – percentage share of exports in GDP;

GCF – percentage share of gross capital formation in GDP;

GOV_CONS – final consumption expenditure of government (percentage share in GDP);

HOUS_CONS – final consumption expenditure of households (percentage share in GDP);

IND_TAX – indirect tax revenue (percentage share in GDP).

The target (dependent variable) is **BGGR**. The independent variable of interest to this research are the fiscal instruments **DIR_TAX, IND_TAX** and **GOV_CONS. EAGR, EX, GCF** and **HOUS_CONS** are control variables, which reflect the effects of non-fiscal factors of the economic growth of Bulgaria.

4. Results

We start the statistical analysis with stationarity tests. The variables **BGGR, DIR_TAX, HOUS_CONS** and **IND_TAX** are stationary at level, while **EAGR, EX, GCF** and **GOV_CONS** are integrated of order one (see Tables 1 and 2).

Table 1

Augmented Dickey-Fuller Unit Root Test on the level values of BGGR, DIR_TAX, EAGR, EX, GCF, GOV_CONS, HOUS_CONS and IND_TAX

Variable	Probability
BGGR	0.0000
DIR_TAX	0.0146
EAGR	0.9823
EX	0.6314
GCF	0.2193
GOV_CONS	0.0608
HOUS_CONS	0.0067
IND_TAX	0.0088

Source: Prepared by the authors.

Table 2

Augmented Dickey-Fuller Unit Root Test on the first differences of EAGR, EX, GCF and GOV_CONS

Variable	Probability
D(EAGR)	0.0000
D(EX)	0.0000
D(GCF)	0.0001
D(GOV_CONS)	0.0000

Source: Prepared by the authors.

The different order of integration of the variables requires the application of an ARDL approach. The test for the optimal number of lags in the ARDL indicates that according to the Schwarz and Hannan-Quinn information criteria, this number is one (see Table 3).

Table 3

Optimal lag length in the ARDL

Number of lags	FPE	AIC	SC	HQ
0	263.1975	28.27591	28.51762*	28.37267*
1	238.0926	28.16742	30.34284	29.03828
2	201.4631*	27.95178	32.06091	29.59674
3	234.3084	27.97236	34.01521	30.39142
4	347.8137	28.10097	36.07753	31.29413
5	441.4490	27.85769	37.76795	31.82495
6	717.0211	27.51427	39.35825	32.25563
7	397.0664	25.49341*	39.27109	31.00887

* Shows the optimal number of lags according to the respective criterion
Source: Prepared by the authors.

Table 4

Results from the econometric estimation of the ARDL

Variable	Coefficient	Standard error	t-Statistic	Probability
C	–29.77623	11.40349	–2.611152	0.0111
D(BGGR(-1))	0.363832	0.101890	3.570838	0.0007
D(DIR_TAX(-1))	–1.056372	0.478272	–2.208724	0.0306
D(EAGR(-1))	–0.754802	0.395137	–1.910231	0.0604
D(EX(-1))	0.031513	0.121245	0.259912	0.7957
D(GCF(-1))	–0.088859	0.129529	–0.686017	0.4951
D(GOV_CONS(-1))	0.133444	0.282429	0.472486	0.6381
D(HOUS_CONS(-1))	–0.309779	0.212910	–1.454976	0.1503
D(IND_TAX(-1))	–0.608503	0.348379	–1.746670	0.0853
BGGR(-1)	–1.594936	0.158130	–10.08623	0.0000
DIR_TAX(-1)	0.310879	0.368488	0.843660	0.4019
EAGR(-1)	2.339544	0.518179	4.514930	0.0000
EX(-1)	0.066496	0.059558	1.116497	0.2682
GCF(-1)	0.074198	0.082802	0.896092	0.3734
GOV_CONS(-1)	0.384899	0.345062	1.115447	0.2686
HOUS_CONS(-1)	0.242527	0.140065	1.731536	0.0880
IND_TAX(-1)	0.225701	0.389504	0.579457	0.5642

Source: Prepared by the authors.

The ARDL is estimated with one lag. The ARDL is expressed by the equation (1):

(1) D(BGGR) = C(1) +
+ C(2)*D(BGGR(-1)) +
+ C(3)*D(DIR_TAX(-1)) +
+ C(4)*D(EAGR(-1)) + C(5)*D(EX(-1)) +
+ C(6)*D(GCF(-1)) +
+ C(7)*D(GOV_CONS(-1)) +
+ C(8)*D(HOUS_CONS(-1)) +
+ C(9)*D(IND_TAX(-1)) +
C(10)*BGGR(-1) +
+ C(11)*DIR_TAX(-1) + C(12)*EAGR(-1) +
+ C(13)*EX(-1) + C(14)*GCF(-1) +
+ C(15)*GOV_CONS(-1) +
+ C(16)*HOUS_CONS(-1) +
+ C(17)*IND_TAX(-1).

The results from the econometric estimation of the ARDL are reported in Table 4.

The value of the coefficient of determination (R-squared = 0.71) implies that 71% of the variation of Bulgaria's economic growth can be explained by changes in the independent variables in Equation (1). The probability of the F-statistic (0.00) indicates that the alternative hypothesis of adequacy of the model used is confirmed. It should be made clear that this does not mean that the model is the best possible, but simply that it adequately reflects the relationship between the dependent and the independent variables.

The residuals in the ARDL are normally distributed (see Figure 1), serially uncorrelated (see Table 5) and non-heteroscedastic (see Table 6).

The ARDL is dynamically stable (see Figure 2) and correctly specified (see Table 7). The ARDL bounds test (see Table 8) provides evidence of the existence of a long-run relationship between the variables in the ARDL, which requires the estimation of an error correction model (ECM).

The ECM has the form:

(2) D(BGGR) = C(1) +
+ C(2)*D(BGGR(-1)) +
+ C(3)*D(DIR_TAX(-1)) +
+ C(4)*D(EAGR(-1)) + C(5)*D(EX(-1)) +
+ C(6)*D(GCF(-1)) +
+ C(7)*D(GOV_CONS(-1)) +
+ C(8)*D(HOUS_CONS(-1)) +
+ C(9)*D(IND_TAX(-1)) + C(10)*ECT(-1).

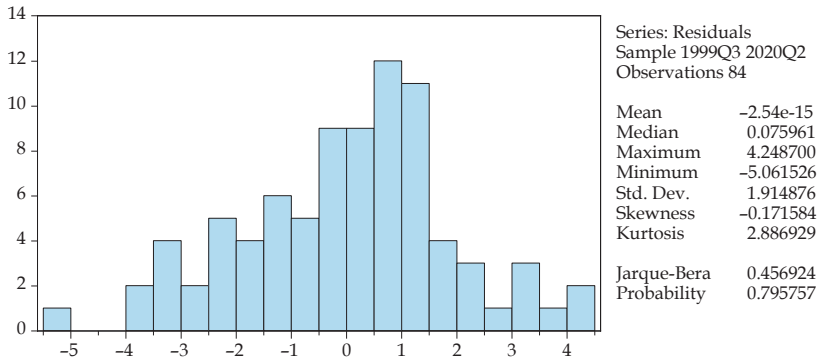

Figure 1. **Normal distribution test on the ARDL residuals**

Source: Prepared by the authors

Table 5

Serial correlation test on the ARDL residuals

F-statistic	0.062426	Probability F (1,66)	0.8035
Observations R^2	0.079377	Probability Chi-square (1)	0.7781

Source: Prepared by the authors.

Table 6

Heteroscedasticity test on the ARDL residuals

F-statistic	1.074801	Probability F (16,67)	0.3958
Observations R^2	17.15662	Probability Chi-square (16)	0.3755

Source: Prepared by the authors.

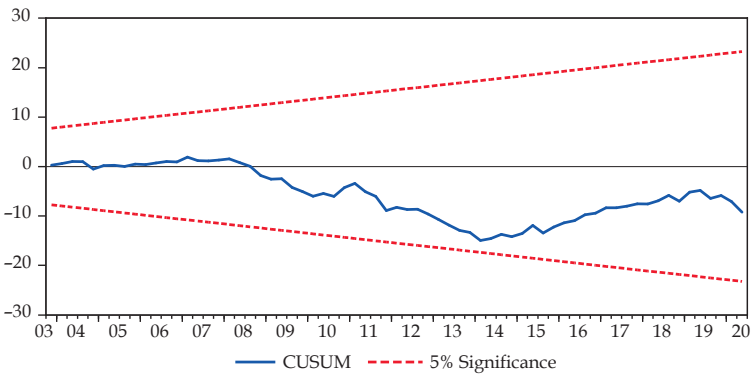

Figure 2. **CUSUM test for dynamic stability of the ARDL**

Source: Prepared by the authors

Table 7

Ramsey Regression Equation Specification Error Test on the ARDL

Statistic	Value	Degree of freedom	Probability
t-statistic	0.510230	66	0.6116
F-statistic	0.260334	(1,66)	0.6116
Likelihood ratio	0.330683	1	0.5653

Source: Prepared by the authors.

Table 8

ARDL bounds test

Null Hypothesis: C(10)=C(11)=C(12)=C(13)=C(14)= =C(15)=C(16)=C(17)=0

Test Statistic	Value	Degree of freedom	Probability
F-statistic	14.27756	(8,67)	0.0000
Chi-square	114.2204	8	0.0000

Source: Prepared by the authors.

The results from the econometric estimation of the ECM can be seen in Table 9. The regression coefficient before the error correction term (ECT) is statistically significant and negative, which implies the existence of a long-run equilibrium relationship between the dependent variable and the independent variables in the ECM. The absolute value of this coefficient – 1.29 – means that that each deviation from the long-term equilibrium is eliminated at a rate of 129 percent per quarter.

The short-run regression coefficients before D(BGGR(-1)), D(DIR_TAX(-1)), D(EX(-1)), D(GOV_CONS(-1)) and D(IND_TAX(-1)) are also significant, which suggests that in the short run Bulgaria's economic growth is affected by its own past values and the lagged values of direct tax revenue, exports, government consumption and indirect tax revenue.

The signs of the significant short-term regression coefficients are in agreement with theoretical expectations – positive before D(BGGR(-1)), D(EX(-1)) and D(GOV_CONS(-1)) and negative before D(DIR_TAX(-1)) and D(IND_TAX(-1)).

In the short run the growth rate of Bulgaria's real GDP can be amplified by increasing the shares of exports and government consumption in GDP and by decreasing the shares of direct tax revenue and indirect tax revenue in GDP. The values of the coefficients seem to confirm the general conclusion, that that spending cuts are less recessionary than tax hikes [29].

The absolute values of the regression coefficients before D(GOV_CONS(-1)), D(DIR_TAX(-1)) and D(IND_TAX(-1)) indicate that, ceteris paribus, in the short term, 1% change in the shares of government consumption, direct tax revenue and indirect tax revenue in GDP will lead to almost 1% change in the Bulgaria's real GDP growth rate.

In the long term, Bulgaria's economic growth depends positively on the first lags of the economic growth in the euro area and the share of household consumption in GDP (see Table 4). Bulgarian policymakers should encourage domestic consumption in order to accelerate the long-run growth of the Bulgarian economy. As to the economic growth in the euro area, it is an international factor beyond their control. However, since we can suppose that the economic activity in the euro area affects the Bulgarian economy via exports, we can assume that exports promotion can also be a useful tool of economic policy.

The value of the coefficient of determination of the ECM (*R*-squared = 0.53) means, that 53% of the variation of Bulgaria's real GDP growth rate can be explained by changes in the independent variables in the Equation (2). The probability of the F-statistic (0.00) implies that the alternative hypothesis of adequacy of the model used can be accepted. Obviously, this does not mean that the model is the best possible but simply indicates, that it adequately reflects the relationship between the dependent and the independent variables.

Table 9

Results from the econometric estimation of the ECM

Variable	Coefficient	Standard error	t-Statistic	Probability
C	–0.009030	0.283454	–0.031856	0.9747
D(BGGR(-1))	0.310827	0.121772	2.552529	0.0128
D(DIR_TAX(-1))	–0.985206	0.530244	–1.858024	0.0671
D(EAGR(-1))	–0.123522	0.353025	–0.349898	0.7274
D(EX(-1))	0.288872	0.123393	2.341082	0.0219
D(GCF(-1))	0.112750	0.139504	0.808226	0.4216
D(GOV_CONS(-1))	0.955146	0.262399	3.640055	0.0005
D(HOUS_CONS(-1))	0.167276	0.213336	0.784098	0.4355
D(IND_TAX(-1))	–0.972681	0.369449	–2.632788	0.0103
ECT(-1)	–1.288289	0.180765	–7.126880	0.0000

Source: Prepared by the authors.

The residuals in the ECM are normally distributed (see Figure 3), serially uncorrelated (see Table 10) and non-heteroscedastic (see Table 11).

The ECM is dynamically stable (see Figure 4) and correctly specified (see Table 12). This means that ECM specification is a good approximation of the rela-

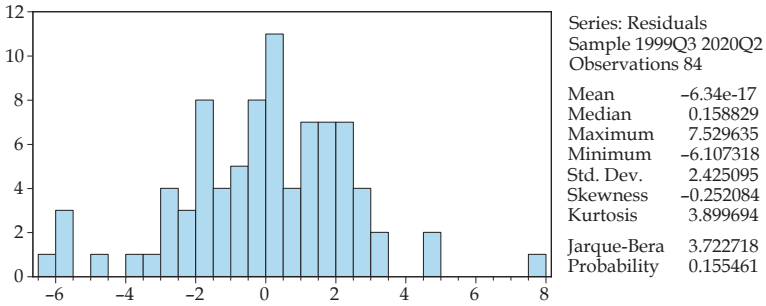

***Figure 3.* Normal distribution test on the ECM residuals**

Source: Prepared by the authors

Table 10

Serial correlation test on the ECM residuals

F-statistic	0.445810	Probability F (1,73)	0.5064
Observations R^2	0.509874	Probability Chi-square (1)	0.4752

Source: Prepared by the authors.

Table 11

Heteroscedasticity test on the ECM residuals

F-statistic	0.000321	Probability F (1,81)	0.9857
Observations R^2	0.000329	Probability Chi-square (1)	0.9855

Source: Prepared by the authors.

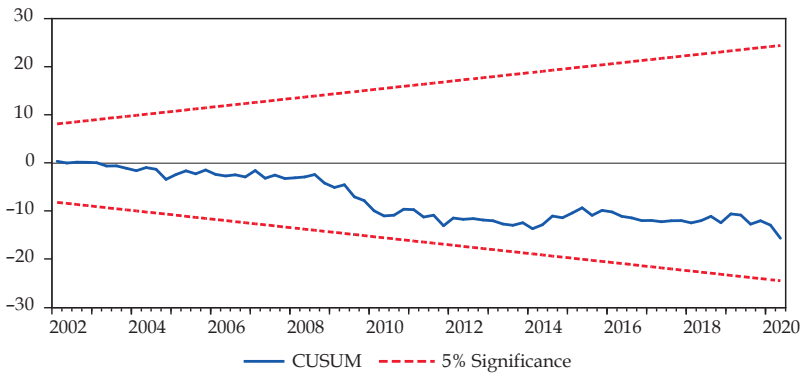

***Figure 4.* CUSUM test for dynamic stability of the ECM**

Source: Prepared by the authors

Table 12

Ramsey Regression Equation Specification Error Test on the ECM

Statistic	Value	Degree of freedom	Probability
t-statistic	0.162406	73	0.8714
F-statistic	0.026376	(1,73)	0.8714
Likelihood ratio	0.030345	1	0.8617

Source: Prepared by the authors.

tionship between dependent and independent variables.

Unlike Todorov and Durova [30], this study finds no evidence, that proportional income and consumption taxes negatively affect economic stability and fiscal policy effectiveness, since data covers period when both flat and progressive taxation were implemented.

In this particular case we cannot confirm or reject the conclusion of Vasilev [26] that flat taxation stabilizes the economy, as far as our data set covers a period were both proportional and progressive income tax were applied. We are also not able to distinguish between the impact of the tax rate changes and the tax base modifications, as in Amaglobeli et al. [31]. These are problems, subject to further research.

5. Conclusion

The empirical results of the present research have important implications for Bulgarian macroeconomic policy. They confirm the second hypothesis of the study and refute the first, the third and the fourth hypotheses. The direct tax revenue, government consumption and indirect tax revenue are highly effective can be used as tools for invigorating and stabilizing the Bulgaria's economic growth in the short run.

However, in the long term, the Bulgarian fiscal policy is neutral and the real GDP growth rate can be hastened only by encouraging domestic demand (final consumption expenditure of households) and promoting exports.

In the same time, the present research demonstrates, that the autoregressive distributed lag model is an useful tool for investigating problems, related to stability and indeterminacy, since it can be reduced to ECM specification and can answer the question whether the system converges to equilibrium or not.

From the point of view of the main theoretical approaches to the problem of the impact of the fiscal policy on economic growth under fixed exchange rate rule in Bulgaria, we can substantiate the conclusions of the Keynesian school about the positive effect of government spending on economic growth. The results are also compatible with the deductions of the New Open Economy Macroeconomics School. The neoclassical inferences about the inefficiency of the fiscal policy are not confirmed.

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