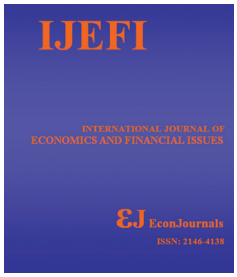

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Comparative Analysis of the Tax Structures of Bulgaria, Denmark and France

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ABSTRACT

The survey analyzes the type of tax structure and the link with economic growth. The tax revenue types of Bulgaria, Denmark and France were investigated under a different tax structure. The survey covers countries with different tax structures, incl. Income, consumer, and hybrid (mixed). The choice of countries surveyed results from the fact that they generate revenue in the budget as a ratio between direct and indirect taxes in a different way. For the empirical analysis, a linear regression model was used in the form of the least squares method. On this basis, the state's redistributive function was assessed as a burden of taxation.

Keywords: Taxes, Tax Structure, Economic Growth, Government Expenditure
JEL Classifications: H24, H25, H63

1. INTRODUCTION

The tax structure is the main form of government revenue and a major tool for fiscal policy implementation by the state. With the development of society, the theories on tax systems, their types and ways of implementation are developing. The formation of the type of tax structure is a major problem for each country. Numerous economists write in this area and set out their theoretical justifications in which they reflect their preferences and opinions about one or another type of tax, as well as the degree of state intervention. According to Brennan and James (1980) the public sector is Leviathan, whose goal is to maximize revenue by increasing taxes and other fiscal instruments leading to a decline in economic activity. In this order, the income, the consumer or the hybrid tax system is a matter of a specific government choice that is based on a number of factors - the economic situation of the state, social policy, the size of the gray economy, the level of employment and unemployment, etc. The three countries in question are typical representatives of different parts of Europe - Denmark, representing the Scandinavian Peninsula, Bulgaria as part of Eastern Europe and France, which is from Western Europe.

The aim of the article is to reflect the similarities and differences between the tax systems of the three countries. The approach is based on the impact of the type of tax structure and the relationship with economic growth. The redistributive function of the state, broken down through the prism of the various tax systems, is considered.

It should be noted that the study and conclusions do not claim ultimate exhaustiveness on the subject, but aim to show the similarities and differences between the three types of tax structures and their link with economic growth.

2. LITERATURE REVIEW

A study of Xing (2011) shows that there is an increasing number of countries that reform their tax systems by restructuring budget revenues from income taxes on income taxes on consumption. According to Atkinson and Stiglitz (1976) governments use indirect taxes because of their redistributive function. He concludes that there is a direct relationship between consumer taxes and government spending.

Ilaboya (2012) explores annual data for the period 1980-2011 year for the economy of Nigeria. Empirically confirms that indirect taxes have a negative impact on consumption and government revenue. There is an inversely proportional link between indirect taxes and growth.

Gordon and Li (2005) claim that the main income source of the wealthy countries is the personal income tax between 42.7% and 54.3%. For the poorer countries, consumption taxes are the main ones, which manage to generate about 51.2% of tax revenues.

According to Mendoza et al. (1997) whose study covers 11 OECD countries for the period 1965-1991, corporate taxes and personal income taxes have a greater impact on investment in human resources than consumption taxes.

For example, Tanchev (2016) investigates the income from direct and indirect taxes in the budget of Bulgaria during economic growth and crisis in terms of consumer tax structure. Heanalyzes quarterly data for the period 2003-2015 with the least squares method (LSM) regression method with a dummy variable included. He concludes that in a period of economic growth, revenue from consumption taxes forms the necessary revenue in the budget. In a period of crisis, a tax structure that relies primarily on consumption taxes is not able to provide the necessary revenue in the budget.

In a research for the period 1980-2010, McNabb and Le May-Boucher (2014) examine 100 countries by analyzing their tax systems. They find that, in developing and developed countries, the formation of income primarily from income taxes has a positive effect on growth. Therefore, increasing the percentage point in direct taxes and reducing the share of indirect taxes leads to a decline in the percentage growth of gross domestic product (GDP).

Aizenman et al. (2015) make a comparative analysis of panel data for the period 1993-2012 on tax revenues in Asian and Latin American countries. They find that revenue from indirect taxes could increase even if their tax rate is reduced, but given that the quality of the institutions has improved, as well as the efficiency of the government.

Dackehag and Hansson conducted a survey of the OECD countries' 1975-2010 panel data analyzing the impact of corporate and personal income on the dynamics of economic growth. They prove that there is a negative impact of corporate and personal income tax on economic growth.

Gordon and Li (2005) with their 1996-2001 survey covering 26 developing and 19 developed countries find that direct taxes have a more significant impact on economic growth in developed countries than in developing countries.

Macek in analyses (2014) of the OECD conntries reviews the links between direct and indirect taxes and economic growth. It finds that direct taxes have a negative effect on economic growth. Taxes on consumption have a positive impact on the dynamics of economic growth.

Finding that the tax system is a set of tax revenue multipliers, it should be noted that the amount of the total tax burden shows the redistribution through the state budget. Economists have opposing views on the role and place of the state regarding redistribution.

In a study, Marlow (1988) proves that public spending is limited by the state budget. He argues that the amount of legally defined taxes, inflationary revenue and government debt determine the size of the public sector and state intervention. A study about Bulgaria by Tanchev (2016) found that redistribution in the budget had decreased as a result of the adoption of the proportional income tax. Quarterly data for the period 2004-2012 are analyzed using the LSM with a dummy variable included. It proves that the proportional tax is inversely proportional to economic growth. As a result of this change, the country has switched to a customized tax system. Therefore, budget revenues are mainly dependent on consumption taxes.

This article focuses on Bulgaria, Denmark and France because they are typical representatives of the three types of tax systems.

3. DATA AND ESTIMATION TECHNIQUES

3.1. Data

The countries studied in this paper are Bulgaria, Denmark and France. The three countries in question are typical representatives of different parts of Europe-Denmark, representing the Scandinavian Peninsula, Bulgaria as part of Eastern Europe and France, which is from Western Europe. Bulgaria is a country with a consumer tax system, Denmark has an income tax system and France is a representative of hybrid taxation. If the following formulas are used to determine a country's tax system:

$$\frac{\text{Indirect taxes}}{\text{Direct taxes}} < 1 \text{ - Income tax system,}$$

$$\frac{\text{Indirect taxes}}{\text{Direct taxes}} > 1 \text{ – Consumer tax system}$$

Indirect taxes ≈ direct taxes – Hybrid tax system

Then the countries surveyed have the following ratios: Bulgaria- 2.29, Denmark - 0.46, France - 0.85.

3.2. Model Specification

For the empirical analysis, a linear regression model was used in the form of the LSM.

The use of a unit root is a major part of the statistical survey. The issue of data unstability, and in particular the single root, was introduced back in 1974 in Granger and Newbold's publication of "doubtful regressions." Later, other authors write about it - Fuller (1976), Dickey and Fuller (1979), Evans and Savin (1981; 1984).

To conduct empirical studies, it is of utmost importance to specify the random errors, the deviations of the equation, and thus determine the deterministic part. This approach implies that the series has a deterministic trend and that the remainder of the series is "white noise," incidental. Here is the place to outline the essence of stationary time series, namely time series, in which the mean arithmetic, the dispersion and the autocovariation of the presented phenomena and processes are independent over time (Arcadiev,

2005). The conclusion is that in order for a time line Y_t to be fixed as a fixed one, it must meet certain requirements, namely:

$E(Y_t) = \mu$

$D(Y_t) = E(Y_t - \mu)^2 = \sigma^2$

$cov\ (Y_t, Y_{t+k}) = E(Y_t - \mu)(Y_{t+k} - \mu) = \gamma_k$

The first and second equations show that the arithmetic and the dispersion must be constant over time. The third equation requires the covariance between two of the variable's values to depend only on the temporal interval between them, not on their location over time. When performing these processes, the requirement of independence over time is also present. Therefore, if this process has the specified properties, it is known as the white noise explained above. In the absence of these properties, this process is non-stationary and a unit root is present.

Another test that is used is a test of Johansen. This is a cointegration test. It is done in case of non-stationarity. In this case, the alternative hypothesis suggests cointegration, while the zero hypothesis denies that the variables are cointegrated. The correlation analysis helps to draw conclusions and outputs. The basis of correlation analysis is the description of the strength of correlation dependencies. There is a table of coefficients that determine the effect of dependencies between variables. It is precisely on this Table 1 that the present analysis is made.

With the help of the above mentioned tests, this analysis was made. All results of the tests are shown in the next chapter.

4. EMPIRICAL RESULTS

In the preparation of empirical analysis statistics, the necessary condition is the application of a seasonal adjustment procedure for the time series when monthly or quarterly data are used. Removing the trend and smoothing the rows was done with the seasonal adjustment (Census X12).

After smoothing the rows, a unit root (non-stationarity) check was performed at a pre-set error probability level of 5%. Used is the advanced augmented Dickey-Fuller's test. The results of the application show the following results:

For Bulgaria, there is a single root in the variables of: Capital duty, dividend tax and income tax, GDP per capita, consumption and labor taxes and budget expenditures. A landline process is recorded under time series of duties, excise duties, government expenditures, revenue and value added tax (VAT).

Table 1: Correlation coefficients

Value of r	Effect of dependence
r=0	No dependence
r<0.3	Weak dependence
0.3<r< 0.5	Moderate dependence
0.5<r<0.7	Significant dependence
0.7<r<0.9	Great dependence
r>0.9	Very great dependence
r=1	Functional dependence

For Denmark, there is a single root in the variables - capital duty, dividend tax and income tax, GDP per capita, consumption and labor taxes, as well as budget expenditures. A landline process is recorded under time series of duties, excise duties, government expenditures, revenue and VAT.

For France, a non-stationary process exists in the variables - dividend tax, customs duties, excise duties, government expenditure and revenue, GDP per capita, income from consumption and labor taxes, budget expenditures, while stationarity is established for the variables –tax on capital, on income and on VAT.

Where a non-stationary process in the time series is recorded, first differences are calculated as a condition for using a linear regression method.

As a result of the non-stationary process of the variables used, it is necessary to check cointegration dependencies. A Johensen test is applied to establish long-term dependencies. There are prerequisites that can summarize the following results:

The results for Bulgaria show strong co-integration between GDP per capita and tax revenues, both from consumption and from labor. However, co-integration dependencies show a much stronger relationship between GDP per capita and tax revenue from consumption, i.e. indirect taxes. Again, the consumer character of the tax system is outlined. For Denmark, there is again a co-integration of GDP per capita with tax revenue and labor and consumption, with a stronger dependency between GDP per capita and labor income, which means direct tax revenue. This tax depicts Denmark's income tax system. Analyzing the cointegration test for France, it turns out that cointegration dependence between GDP per capita and tax revenue from labor and consumption is almost equal. Relatively uniform figures show that France maintains a hybrid tax system. A correlation test is applied by first tracking the correlation between budget revenue and examined three direct and three indirect types. The following results have been identified:

For Bulgaria, the highest correlation coefficient exists between budget revenues and income tax revenues (0.686258), for indirect taxes the correlation coefficients are the following - customs duties (0.04530), excises (0.038987) and VAT (0.080437), showing the strongest link with the VAT.

For Denmark, highest correlation is recorded for income from income tax (0.793224), and indirect taxes have the strongest relationship between budget revenues and VAT revenues (0.223679).

For France, the strongest correlation with direct taxes was established for income tax (0.792025). The weakest relationship has been established between the total amount of revenue and dividend income. For indirect taxes, there is a strong link between revenue and customs duties (0.718250).

From these conclusions (Table 2), the most important taxes on total revenue are VAT as a representative of indirect taxes, and income tax as a representative of direct taxes.

As can be seen from the VAT and income tax figures on annual basis for the period 2000-2015, the type of tax systems of the three countries can be determined. The average size for Bulgaria of VAT revenue in the budget revenues is about 9%, and revenue of income tax is 5.48 (Table 2). This clearly outlines the consumer tax system. In Denmark there is an income tax system, proven by only 9.5% VAT revenue, at the expense of almost 28% income tax income. France is a representative of the hybrid tax system because VAT and income tax revenues are almost equal, namely 6.9% and 10.6%. It is found that the state's redistributive function is budget revenue, which is then reallocated by the state through budget expenditures. The role of the state in the economy is reflected precisely in the size of government expenditure and its relative share in GDP. This ratio is called a state quota. The average quotient of the quarterly data for the period 1999-2016 was used. The results show that Bulgaria allocates 38% of GDP and Denmark and France allocate 54%. Aiming to find the relationship between the type of tax system and the level of state intervention, the data for the period 2000-2015 for the countries of the European Union are traced. To determine the redistributive function of the state as a strong or weak, the average percentage of the expenditures of all the countries of the European Union was used - it is 48%. All countries that have a percentage above it are defined as countries with strong state interference. It is determined that in the revenue system there are countries that redistribute more, and others that redistribute less. In the consumer tax system, it can be stated that state intervention is weaker.

The results of the correlation test could be interpreted as follows: The correlation between income taxes and GDP per capita is the strongest for both Bulgaria and Denmark, with (0.550046) and (−0.186386) respectively. Correlation dependency is negative, which means that a rise in the respective tax would lead to a decline in GDP per capita, or could be seen as a drop in the economic situation of both countries. For France the picture is different. There is a strong correlation between VAT and GDP per capita (−0.598230). The negative sign shows in reverse the proportional dependence between them and means that if the VAT in France rises, it will have a very harmful impact on economic growth.

On the basis of the annual data for the period 2000-2012, the variables - consumption tax revenues, labor tax revenues, budget expenditures and GDP per capita were examined. The aim is to trace the link between direct and indirect taxes in economic growth and the role of the redistributive function of the state in different tax structures. The statistically averaged values of these variables are extremely different, which is important for the study - to examine different countries in terms of economy and geography.

The average rate of tax revenue for labor for Bulgaria, Denmark and France, is as follows: 30.41%, 37%, and 38.98%. The average percentage of consumption tax revenues is again the same: 20.9%, 32.8%, and19.96%, budget expenditures - 37.5%, 53.4%, and 53.6% and GDP per capita income respectively is - 3538, 38,853, 27,823. Income tax revenues include indirect tax revenues, and income from labor - direct tax revenues.

Tables 3-5 show the results of the applied LSM regression method for the period 2000-2012.

The linear equation takes the following standard form:

$$y_t = b_0 + b_1 + b_2 + b_3 + \varepsilon_t$$

Where,
y_t - GDP per capita,
b_0 – Constant,
b_1 – Consumption,
b_2 – Expenditure,
b_3 – Labour,
ε_t - Residue vectors.

The results of the regression method for Bulgaria are shown in Table 3, for Denmark in Table 4 and for France in Table 5.

For the three countries, the dependent variable GDP per capita and the three independent variables - tax revenue from consumption, labor and government expenditure are included.

The results of Bulgaria (Table 3) show that there is a direct relation between GDP per capita dynamics by factor (8653.419) and tax revenue on consumption by a factor of coefficient (109.2666). Therefore, it is concluded that there is an increase in tax revenue on consumption per unit of GDP growth per capita. It is found that if the economy grows, this also leads to a growth in consumption tax revenue. It is noteworthy that there is a stronger relationship between direct tax revenues and GDP per capita. However, the link is inversely proportional, which implies that taxes levied on labor lead to a decrease in the GDP per capita dynamics. This is determined by the coefficient of the labor income variable that is (217.7036) against the GDP ratio and its coefficient (8653.419). Therefore, a unit increase in direct tax revenues will result in a reduction in GDP per capita. The relationship between budget expenditures and economic growth is again inverse – with a unitary increase in government spending, GDP per capita will be reduced.

The results for Denmark (Table 4) differ significantly from those for Bulgaria. An inverse relationship between GDP per capita and tax revenue from consumption (−2396.165) has been established. A unit increase in indirect tax revenues will lead to a decrease in GDP per capita, respectively to a drop in economic growth. The

Table 2: Main direct and indirect taxes

Country	VAT	Duties	Excise	Other taxes	Income tax	Capital tax	Dividend tax	Total amount of tax income
Bulgaria	8.98	0.38	4.36	0.12	5.48	0.25	0.25	20.73
Denmark	9.5	0.18	3.58	0.01	27.93	0.2	0.2	46.26
France	6.9	0.1	2.2	0.3	10.6	0.5	0.45	27.3

Table 3: Dependent variable: GDP per capita – results for Bulgaria

Variables	Coefficient	Standard error	t-statistic	P
C	8653.419	2982.590	2.901310	0.0176
CONS	109.2666	58.17424	1.878264	0.0931
EXP	−20.75431	65.38238	−0.317430	0.7582
LABOUR	−217.7036	29.55588	−7.365831	0.0000
R^2	0.941576			
Adjusted R^2	0.922102			
SE of regression	366.4896			
Sum squared residual	1,208,832			
Log likelihood	−92.80760			
F-statistic	48.34900			
P (F-statistic)	0.000007			
Mean dependent variable	3538.462			
SD dependent variable	1313.100			
Akaike info criterion	14.89348			
Schwarz criterion	15.06731			
Hannan–Quinn criterion	14.85775			
Durbin–Watson statistics	1.908645			

Computations: The author. GDP: Gross domestic product, SE: Standard error, SD: Standard deviation

Table 4: Dependent variable: GDP per capita – results for Denmark

Variables	Coefficient	SE	t-statistic	P
C	227603.8	33092.77	6.877749	0.0001
CONS	−2396.165	754.9123	−3.174097	0.0113
EXP	−1089.228	255.7263	−4.259350	0.0021
LABOUR	−1404.054	213.7825	−6.567675	0.0001
R^2	0.947958			
Adjusted R^2	0.930611			
SE of regression	1065.003			
Sum squared residual	10,208,079			
Log likelihood	−106.6755			
F-statistic	54.64620			
P (F-statistic)	0.000004			
Mean dependent variable	38,853.85			
SD dependent variable	4043.022			
Akaike info criterion	17.02700			
Schwarz criterion	17.20083			
Hannan–Quinn criterion	16.99127			
Durbin–Watson statistics	1.141710			

Computations: The author. GDP: Gross domestic product, SE: Standard error, SD: Standard deviation

relationship between budget expenditures and GDP per capita is relatively weak, but again with a negative sign. This is outlined by the coefficient (−1089.228).Consequently, a decline in GDP per capita will entail an increase in government spending. From the labor income tax ratio (−1404.054) it is evident that the link with GDP per capita is again inverse, which means that a unit of the direct tax rise would lead to a decrease in GDP per capita, i.e. decline in economic growth.

Data for France (Table 5) shows a direct link between labor taxes (2340.952) and GDP per capita, which means that a unit increase in labor income leads to positive GDP per capita dynamics. But the increase in indirect tax revenues leads to a fall in GDP per capita, respectively a decline in economic growth. This conclusion is reached by the coefficient of the tax revenue variable (−3273.866). A straightforward link is registered between government expenditure and GDP per capita, as evidenced by the cost variable (389.1106). From this, it can be concluded that economic growth leads to an increase in costs. The next step in the econometric analysis the Granger connections are used in which the zero hypothesis rejects the causality and the alternative determines the opposite. The calculations are assumed to be reliable at an error rate of up to 5%. The results show that in Denmark and France there is no causal link between revenue and budget expenditure and vice versa. In the results from Bulgaria such a link exists and it can be argued that tax revenues determine the country's spending policy.

Data for Bulgaria (Table 6) show a strong negative correlation between tax revenue from labor (−0.953504) and GDP per capita. This shows that taxes on income have a severe negative impact on economic prosperity in Bulgaria, while the rise in indirect taxes would lead to economic growth. It is shown with the coefficient (0.656756). There is a negative correlation between GDP per capita and government spending (−0.718904).

For Denmark too, the correlation coefficient between tax revenue from labor (−0.914910) and GDP per capita is the highest. The relationship between consumer taxes and GDP is also negative, but the ratio is much lower (−0.609351). From this it could be concluded that raising indirect taxes in Denmark would not lead to a major decline in economic prosperity, but raising income taxes would have far more negative impacts. While the positive correlation between budget expenditures (0.267722) and GDP per capita shows that there is a link between them that has a positive effect, spending increases leads to a positive GDP per capita dynamics (Table 7).

France shows a stronger correlation between indirect tax revenue (−0.807788) and GDP per capita (Table 8). For both types of tax revenue the ratios are negative, but it would be more damaging for the French economy to raise consumer taxes than revenue. The correlation between government expenditure (0.760471) and GDP per capita is directly proportional. The correlation coefficient is high, indicating that higher government expenditure shows higher economic development.

Table 5: Dependent variable: GDP per capita – results for France

Variables	Coefficient	Standard error	t-statistic	P
C	−18905.80	52781.65	−0.358189	0.7285
CONS	−3273.866	1177.705	−2.779869	0.0214
EXP	389.1106	298.1856	1.304927	0.2243
LABOUR	2340.952	1285.829	1.820578	0.1020
R^2	0.737582			
Adjusted R^2	0.685098			
SE of regression	1422.989			
Sum squared residual	20,248,976			
Log likelihood	−111.1275			
F-statistic	14.05358			
P (F-statistic)	0.001244			
Mean dependent variable	27823.08			
SD dependent variable	2535.795			
Akaike info criterion	17.55808			
Schwarz criterion	17.68845			
Hannan–Quinn criterion	17.53128			
Durbin–Watson statistics	1.650325			

Computations: The author. GDP: Gross domestic product, SE: Standard error, SD: Standard deviation

Table 6: Correlation: Data for Bulgaria

	GDP_PER_CAPITA	CONS	EXP01	LABOUR
GDP_PER_CAPITA	1.000000			
CONS	0.656756	1.000000		
EXP01	−0.718904	−0.619405	1.000000	
LABOUR	−0.953504	−0.530348	0.678885	1.000000

GDP: Gross domestic product

	GDP_PER_CAPITA	CONS	EXP01	LABOUR
Mean	3538.462	20.90000	37.52308	30.40769
Median	3400.000	21.50000	37.70000	30.40000
Maximum	5500.000	24.70000	41.10000	38.10000
Minimum	1700.000	16.60000	33.80000	23.50000
Standard deviation	1313.100	2.359732	2.424237	4.966129
Skewness	0.073511	−0.404736	−0.215926	−0.051249
Kurtosis	1.527996	2.313464	1.947912	1.611228
Jarque-Bera	1.185389	0.610229	0.700585	1.050397
P	0.552836	0.737039	0.704482	0.591438
Sum	46000.00	271.7000	487.8000	395.3000
Sum square deviation	20690769	66.82000	70.52308	295.9492
Observations	13	13	13	13

GDP: Gross domestic product

Table 7: Correlation: Data for Denmark

	GDP_PER_CAPITA	CONS	EXP01	LABOUR
GDP_PER_CAPITA	1.000000			
CONS	−0.609351	1.000000		
EXP01	0.267722	−0.881910	1.000000	
LABOUR	−0.914910	0.724361	−0.508547	1.000000

GDP: Gross domestic product

	GDP_PER_CAPITA	CONS	EXP01	LABOUR
Mean	38,853.85	32.82308	53.37692	37.00769
Median	40,200.00	33.30000	53.00000	36.90000
Maximum	43,900.00	34.20000	58.00000	41.00000
Minimum	32,500.00	30.90000	49.60000	34.20000
Standard deviation	4043.022	1.177677	2.783629	2.276862
Skewness	−0.281135	−0.561268	0.228017	0.402229
Kurtosis	1.560039	1.682227	1.843316	2.212411
Jarque-Bera	1.294386	1.623165	0.837354	0.686535
P	0.523513	0.444155	0.657917	0.709448
Sum	505100.0	426.7000	693.9000	481.1000
Sum square deviation	1.96E+08	16.64308	92.98308	62.20923
Observations	13	13	13	13
GDP: Gross domestic product				

Table 8: Correlation: Data for Denmark

	GDP_PER_CAPITA	CONS	EXP01	LABOUR
GDP_PER_CAPITA	1.000000	−0.807788	0.760471	−0.234550
CONS	−0.807788	1.000000	−0.774208	0.583559
EXP01	0.760471	−0.774208	1.000000	−0.435613
LABOUR	−0.234550	0.583559	−0.435613	1.000000

GDP: Gross domestic product

	GDP_PER_CAPITA	CONS	EXP01	LABOUR
Mean	27,823.08	19.96923	53.56923	38.98462
Median	28,400.00	20.10000	52.80000	39.00000
Maximum	31,100.00	21.10000	56.80000	39.50000
Minimum	23,700.00	18.90000	51.10000	38.10000
Standard deviation	2535.795	0.590741	2.104909	0.380452
Skewness	−0.286953	−0.058510	0.617918	−0.784051
Kurtosis	1.629117	2.625894	1.792099	3.293410
Jarque–Bera	1.196373	0.083226	1.617587	1.378560
P	0.549808	0.959241	0.445395	0.501937
Sum	361,700.0	259.6000	696.4000	506.8000
Sum square deviation	77,163,077	4.187692	53.16769	1.736923
Observations	13	13	13	13

GDP: Gross domestic product

As a result of the above-mentioned conclusions from the attached econometric toolbox, the reliability of the conclusions is further supported by the application of a linear link test. One of the widely used methods for checking the non-conformance of the functional form used is the Ramsay test. The zero hypothesis asserts that the linear form of dependence is correct and the alternative rejects this statement. In the analyzed data, compliance is established and it follows that the linear form of dependence is correct.

5. CONCLUDING REMARKS

From the conducted study and the econometric model of the LSM, some generalizations can be made:

For all three types of tax structure, the highest percentage of indirect tax revenues is from VAT, and in direct income - from income tax. Bulgaria confirms its consumer tax system with an indirect revenue/direct tax revenue ratio of 0.47, Denmark with a coefficient 2.1 and France maintaining the hybrid tax structure with a coefficient of 1.17.

The country's redistribution function is traced through the state quota in the economy, the results show that France and Denmark redistribute most of the revenue, while in Bulgaria is much less.

Analyzing the relationship between the type of tax system and the size of the redistributive function, as measured by the percentage of GDP of budget expenditures, it is determined that the income and hybrid tax system there such link does not exist, while the tax system relying on consumer taxes maintains a trend that the state intervention is low compared to the EU average. Bulgaria redeployed 38% of them, while Denmark and France reach 54%.

It was found that the increase in budget expenditures leads to a decline of the economic growth of Bulgaria. But with Denmark and France, the dependence is opposite, i.e. the rise in government spending has led to a rise in GDP per capita.

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