BUDGET TRANSPARENCY - SUPPORTING FACTOR IN THE CAUSAL RELATIONSHIP BETWEEN GLOBAL COMPETITIVENESS AND CONTROL OF CORRUPTION

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Abstract
In the last two decades, international institutions, donors, academics are interested in budgetary transparency that promotes public access to information about budgets, government policies and financial activities of governments in order to make them accessible to citizens. Social reformers promote the idea that a high score of open budget index is the main incentive to influence policymakers to adopt policies to reliably optimize public finances. The purpose of this paper is to analyze the influence of corruption at the level of sustainable prosperity, having as support factor the budgetary transparency. We also investigate the reasoning in reverse, where, in turn, corruption is influenced by the level of sustainable prosperity and we discover that the relationship between these two variables is circular. Evaluation of the results could serve as guidance for governments to investigate the effects of the adopted strategies for sustainable development and improving governance policies at national level through direct contribution to economic growth.

Key words: budgetary transparency, control of corruption, sustainable prosperity

JEL Classification: H1, H83, O11

I. INTRODUCTION

Transparency in the literature is defined as a concept that varies from information issues to issues of responsibility. Information, as part of transparency, focuses more on issues of accountability, as well as its use as a measure of constraint (Andrew Williams, 2014). A statement on the economy, though not necessarily uncontroversial is that "more information is always preferable to fewer". To the standard microeconomic models of market competitiveness, the information is assumed to be "perfect". Indeed, models of imperfect market competitiveness are often characterized by information asymmetries that they possess (Stiglitz, 2000, and Others by Andrew Williams, 2014).

Budgetary transparency has become an integral part of the public sector, and systematic evaluation and measurement is a recent phenomenon. The International Monetary Fund (IMF), World Bank and OECD have developed extensive questionnaires and diagnostic tools to examine the budgetary transparency and budgetary practices and procedures (World Bank, 2003, IMF, 2007, OECD, 2001, quoted by Badun, 2009).

In 1998, driven by the fiscal problems caused by the Asian financial crisis, the IMF has published a "Code of good practices on budgetary transparency", which was reviewed in 2001 and 2007. This code is a first attempt to define the budgetary transparency in detail. The International Monetary Fund (IMF, 2008, quoted by Badun, 2009) defines the budgetary transparency as: "the level of population access to past, present and future activities of the government, as well as to the structure and functions that determine the fiscal policies and outcomes".

However, governments should strive to increase the budgetary transparency, so that the citizens and the financial markets may assess the financial positions of governments in order to make proposals for the purpose of improving the decision-making process in public institutions (Badun, 2009).

The study conducted by Heald (2012) stresses that budgetary transparency has a fundamental importance, but should not be regarded as being undeniable. He considers that the role of public audit is vital for effective transparency, both in terms of validation of financial reporting (financial certification of financial audit, similar to the one from the private sector), and in terms of regulations validation (expenses are in accordance with the authorization), decency (absence of fraud and corruption) and performance (value for money earned is now a key point for many supreme audit institutions). Transparency creates a conflict between process and substance. Some actors may give absolute priority to subjective results of public policies (for example, the structure and coverage of public health), while others may give absolute priority to the fiscal autonomy of
national governments, and others are likely to be indecisive, having reactions influenced partially by principles and partially by opportunism.

The main message conveyed by Heald (2012) is that the directions and types of transparency must be carefully studied, both at a generic level and in specific cases (public expenditure). Transparency cannot provide answers to profound questions of ideology and practice concerning the scope of the state, as measured by public expenditure relative to the size of the economy. But effective transparency about public spending can improve the evidence based on informed views, so transparency can be founded (Heald, 2012).

Budgetary transparency promotes the public access to information about public expenditure and financial activities of governments. The more budgetary transparency is higher it enhances governance management by improving the government responsibilities, providing vital information to the public and reducing corruption. Transparency of government operations is regarded as an important precondition for sustainable economy, good governance and the general budgetary rectitude (Kopits and Craig, 1998).

Some authors analysis, such as Wehner and Renzio (2013), shows that internal political factors play a key role in establishing the level of fiscal transparency and that free and honest elections have an important positive effect on budgetary disclosure. This is more visible in countries where the democracy is not fully developed. Wehner and Renzio also stipulated that, on average, oil and gas reserves has not a positive effect on fiscal disclosure. Nevertheless, some recent experience with square and honest elections, more than full democracy, makes less strong the harmful effect on fiscal transparency of dependence on natural resource incomes. Eventually it was obtain strong results that dividing the legislature is related with superior levels of budgetary disclosure. This case is valid only in states with square and honest elections (Wehner and Renzio, 2013).

Published research on the relationship between fiscal transparency and fiscal performance confirms expectations that increased budget transparency is associated with lower budget deficits and public debt reduced.

The authors Sedmihradská and Jakub (2012) in their study have identified three ways in which a greater degree of transparency could limit excessive government spending which lead to budget deficit and public debt as follows: (1) reduced fiscal illusion, (2) decrease the difference of information between politicians and voters that can improve accountability and increase political competition, and (3) strengthening tax enforcement. Results of statistical analysis on the relationship between fiscal transparency and fiscal performance has not proved a significant negative relationship between budgetary transparency, as measured by the index is opened and budget deficit and public debt. Instead, was found a statistically significant negative relationship between corruption and transparency and budget (Sedmihradská, L. and Haas, J., 2012).

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The World Bank considers corruption as an action that is realized when the officials are using their power in a private interest. Corruption is a phenomenon encountered in both developed and developing countries. Corruption has both political and economic valences. The literature reveals that bureaucrats need high salaries to reduce corruption. An important topic in economics becomes the relation between the size of government and its inefficiency (Kotera, G. B., Okada, K. and Samreth, S., 2012).

The purpose of this paper is to analyze the influence of corruption and budgetary transparency on the level of global competitiveness. Also, we want to show that the relationship between global competitiveness and control of corruption is a circular one, which means that a high control of corruption leads to a higher level of global competitiveness and transparency in the management of public resources but the reverse is also true.

The paper is organized as follows: a brief introduction, followed by related literature and then by the research methodology and database, statistical data analysis, estimation results and conclusions drawn from the empirical study.
II. RELATED LITERATURE

Beginning with Mauro (1995) many empirical studies (e.g. Svensson (2005), Asiedu and Freeman, 2009) have demonstrated that corruption can reduce the economical growth, the investments and the budgetary transparency.

Empirical research conducted by Haque and Neanidis (2009) suggests that budgetary transparency, measured by budget transparency index (OBI, 2006) has significant negative impact on corruption, as measured by the corruption perception index (CPI).

Other empirical studies have shown that transparency of public finance management leads to governments efficient sustainable performance (Alt and Lassen 2006), to reduce sovereign borrowing costs (Glennerster and Shin, 2008) and lower levels of corruption (Treisman, 2000, 2007, Reinikka and Svensson, 2004, Freille et al, 2007, quoted by Haque and Neanidis, 2009).

As pointed out by Weil (2008), the corrupt officials would be able to squander public funds, for example, through the award of contracts to private operators who pay the highest bribes rather than to those who are more efficient, or by putting taxes collected directly into their own pockets. Corruption takes many forms, such as bribes paid to government officials, public contracts for marketing money, and embezzlement of public funds. As such, it is now widely accepted that government corruption is a serious obstacle for improving the transparency of the budgetary and economic development.

Theoretical literature on the links between a free and transparent media generally revolve around a main agent type analysis (Besley and Prat, 2006; Besley and Burgess, 2002; Prat, 2006, quoted by Andrew Williams, 2014) where of the existence of asymmetric information between government and citizen, a free press can play in making governments more responsive to its citizens. Previous these models can be found in Persson and Tabellini (2000) and their “career concerns” wherein the agent model (politician) would like a credible signal to decision makers (people) on what type of politician is therefore to be reelected. Press essentially can act as a check of the type of politician because the politician actions on their own are not credible (Andrew Williams, 2014).

Empirical evidence on this is relatively strong. For example, in an influential publication, Besley and Burgess (2001) use the example of Indian states between 1958 and 1992 to see the link between the degree of freedom of the media in each country and their government responsiveness to food shortages.

They noted a clear link between freedom of the press and the government’s response to food shortages. Djankov et al. (2003) constructed an indicator assumed by the media to show that if the media is owned by the state, this is associated with less freedom of the press, civil and political rights and social outcomes weaker. Therefore, this paper highlights the importance of freedom and independent media. They noted a clear link between freedom of the press and the government’s response to food shortages.

Brunetti and Weder (2003) examines the links between a free press and corruption, indicating a strong causal relationship running from a free press in a less corruption.

Alt and Lowry (2010) conducted an empirical study for US states and showed that the transparency of the budget process lowers electoral costs for politicians and increase taxes. This increase in taxes is accepted by voters when they know how to spend public resources, making more likely the reelection.

The authors Ulman, S. R. and Bujanac, G. V. (2014) have proved that the corruption phenomenon and the macroeconomic environment impact each other, the reciprocal influence reveals that the economic, social and political reality is very complex and its component elements cannot be explain rationing in a single sense.

Munteanu, A. I. (2015) sustains that “the safest way to obtain competitive advantage by organizations, innovation is only in the hands of human resources of the organization” and in the same way increasing transparency and decreasing corruption is in governments hands.

III. RESEARCH METHODOLOGY AND DATA

To facilitate the properly understanding of the circular relationship between global competitiveness and control of corruption, having as support factor the budgetary transparency, we defined two research hypotheses which are tested using econometric models based on panel data.

Assumptions defined are:
H1: The level of corruption control in X country is correlated positively with the level of global competitiveness and budgetary transparency for that country
H2: Sustainable prosperity in the country X is correlated with the increase of budget transparency and decrease of corruption in the country.

Studies in the literature have dealt with various types of indicators to assess the level of corruption, budgetary transparency and economic growth, but our research analyzed the impact of the following macroeconomic
indicators, as variables: Open Budget Index - OBI, Global Competitive Index - GCI and Control of Corruption - CC.

*Open Budget Index* is a tool that documents the states’ budgetary transparency around the world, providing useful data that are used both for research purposes and for decision-making transparency. Calculated every two years since 2006 for 59 countries in different stages of development (Angola, Bangladesh, Burkina Faso, Cameroon, Chad, Ghana, India, Kenya, Malawi, Nepal, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Tanzania, Uganda, Vietnam, Zambia, Albania, Algeria, Azerbaijan, Bolivia, Botswana, Bulgaria, Colombia, Costa Rica, Ecuador, Egypt, El Salvador, Georgia, Guatemala, Honduras, Indonesia, Jordan, Mongolia, Morocco, Namibia, Philippines, Romania, South Africa, Sri Lanka, Argentina, Brazil, Croatia, Czech Republic, France, Kazakhstan, Mexico, New Zealand, Norway, Pakistan, Poland, Russia, Slovenia, South Korea, Sweden, Turkey, United Kingdom and the United States), OBI began to provide interesting comparative evidence relating to information that governments shall make available to the public on how they manage the public finances (www.openbudgetindex.com).

*Control of Corruption* represents the level at which is exercised the public pressure over private gain, including both large scale and lower scale corruption and the submission of the state to the private interests (www.govindicators.org).

*Global Competitiveness Index* (or sustainable prosperity) - conducted by the World Economic Forum is based, as a structure, on twelve analytical pillars which covers: basic factors (public and private institutions, infrastructure, macroeconomy, health and primary education), efficiency factors (higher education and training, market efficiency, labor market efficiency, financial market complexity, technology, market size) and innovation factors (complexity of business and innovation) (WEF, 2012).

In order to achieve the proposed objective, I used a fundamental research based on scientific literature and a quantitative method to collect data, based on a regression in panel model. As a first step, I've created the database with model variables in MS Excel, then I analyzed the data and I tested the linear dependence using Eviews 7.

To determine the influence factors on the dependent variables, we started from a data set, with the following structure: data series necessary to estimate the model values are transversal data for a set of 59 countries, in various stages of economical development. This data set is characterized by a geographical heterogeneity; we take the Open Budget Index - OBI values for 4 years, i.e. 2006, 2008, 2010 and 2012 (taking into account that the OBI is calculated every two years) and Global Competitiveness Index - GCI values for the same period, to which we add the Control of Corruption - CC values. The data set thus constructed is a transversal one, more specifically each of the three above-mentioned variables is defined by two sections, a temporal one (2006-2012) and a geographical one (59 countries).

IV. MAIN EMPIRICAL RESULTS

*The first proposed hypothesis:*

**H1:** we introduce the hypothesis: *The level of corruption control in X country is correlated positively with the level of global competitiveness and budgetary transparency for that country*

A higher corruption control leads to transparency in the management of public resources and a higher level of total welfare (education, health, culture, security, etc.) Estimating the parameters by the method of Pooled Least Squares for the proposed model, which quantifies the correlation between the dependent variable (CC) and independent variables (GCI and OBI), we get the following formula for the regression equation (table 1).

\[
\text{CONTROL\_CORRUPTION} = -60.05187 + 0.349167 \times OBI + 21.84196 \times GCI
\]

The determination coefficient (0.642277) shows that the influence of the independent variables over the dependent variable CC is about 65%. The adjusted value of the determination coefficient (expresses the quality of the variables included in the model) suggests that the relevance of the information of independent variables in describing the dynamics of dependent variable is quite high (0.639206 - 64%).

The probability of statistical F-test = 0.000 < 0.05, so we can guarantee with over 95% probability that the model is correct specified – the model is valid.
Table 1. Parameter estimation results of the regression model

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<tbody>
<tr>
<td>CC=C(1)+C(2)*OBI+C(3)*GCI</td>
<td>Coefficient</td>
<td>Std. Error</td>
<td>t-Statistic</td>
<td>Prob.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C(1)</td>
<td>-60.05187</td>
<td>6.596770</td>
<td>-9.103223</td>
<td>0.0000</td>
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<tr>
<td>C(2)</td>
<td>0.349167</td>
<td>0.059993</td>
<td>5.820107</td>
<td>0.0000</td>
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<tr>
<td>C(3)</td>
<td>21.84196</td>
<td>2.006371</td>
<td>10.88630</td>
<td>0.0000</td>
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<td></td>
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<tr>
<td>R-squared</td>
<td>0.642277</td>
<td>Mean dependent var</td>
<td>44.82653</td>
<td></td>
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<tr>
<td>Adjusted R-squared</td>
<td>0.639206</td>
<td>S.D. dependent var</td>
<td>25.44661</td>
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<td>S.E. of regression</td>
<td>15.28480</td>
<td>Akaike info criterion</td>
<td>8.304225</td>
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<td>Sum squared resid</td>
<td>54434.62</td>
<td>Schwarz criterion</td>
<td>8.348256</td>
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<td>Log likelihood</td>
<td>-976.8985</td>
<td>Hannan-Quinn criter.</td>
<td>8.321974</td>
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<tr>
<td>F-statistic</td>
<td>209.1705</td>
<td>Durbin-Watson stat</td>
<td>0.219852</td>
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<tr>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
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Results and discussion

The results confirm the assumption made in research and we interpret the regression equation as follows: as expected, the coefficient GCI has a strong positive impact and indicates that an increase of 1 unit of this leads to an increase of the CC indicator with 21,84196 units; as regards the independent variable OBI, the obtained coefficient is statistically significant and determines a positive impact (but lower than GCI) which means that an increase of 1 unit of OBI lead to an increase by 0.349167 units of the CC indicator.

The validity of this model is supported on account of low-probability values (all variables are significant at a threshold of 95%), the standard error values, statistical tests applied and on the determination report which is 0.642277 (approximately 65%). Free term value indicates that the variables that were not included in the econometric model, as a whole, have a negative effect on the development of CC (-60.05187).

Statistical relationship between endogenous variable and exogenous variables is strong enough. In other words, 65% of the variation of the CC indicator is explained by the two independent variables (global competitiveness index and open budget index), which have a significant positive influence on the indicator CC.

The second proposed hypothesis:

\[ H2: \text{we introduce the hypothesis: Sustainable prosperity in the country X is correlated with the increase of budget transparency and decrease of corruption in the country.} \]

The significant impact of determinant factors (budgetary transparency - represented by OBI and control of corruption - represented by CC) of country X on sustainable development represented by GCI determines the increase of sustainable prosperity for the country.

Estimating the parameters by the method of Pooled Least Squares for the proposed model, which quantifies the correlation between the dependent variable (GCI) and independent variables (CC and OBI), we get the following formula for the regression equation (table 2).

\[ \text{COMPETITIVENESS\_GLOBAL} = 2.955529 + 0.007694\times\text{OBI} + 0.015436 \times \text{CC} \]

The determination coefficient (0.626005) shows that the influence of the independent variables over the dependent variable GCI is about 63%. The adjusted value of the determination coefficient (expresses the quality of the variables included in the model) suggests that the relevance of the information of independent variables in describing the dynamics of dependent variable is quite high (0.622795 - 62%).

The probability of statistical F-test = 0.000 < 0.05, we can guarantee with over 95% probability that the model is correct specified – the model is valid.
Table 2. Parameter estimation results of the regression model

Dependent Variable: GCI
Method: Panel Least Squares
Date: 2015
Sample (adjusted): 2006-2012
Periods included: 4
Cross-sections included: 59
Total panel (balanced) observations: 236

GCI = C(1) + C(2)*OBI + C(3)*CC

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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<tbody>
<tr>
<td>C(1)</td>
<td>2.955529</td>
<td>0.064822</td>
<td>45.59433</td>
</tr>
<tr>
<td>C(2)</td>
<td>0.007694</td>
<td>0.001631</td>
<td>4.718352</td>
</tr>
<tr>
<td>C(3)</td>
<td>0.015436</td>
<td>0.001418</td>
<td>10.88630</td>
</tr>
</tbody>
</table>

R-squared: 0.626005
Adjusted R-squared: 0.622795
Mean dependent var: 4.022500
S.D. dependent var: 0.661591
S.E. of regression: 0.406330
Akaike info criterion: 1.049327
Schwarz criterion: 1.093358
Log likelihood: -120.8205
Hannan-Quinn criterion: 1.067076
Durbin-Watson stat: 0.193203
Prob(F-statistic): 0.000000

Results and discussions

The obtained results confirm the assumption made in research and we interpret the regression equation: as expected, the CC coefficient value has a significant positive impact (but much smaller than the impact of GCI on CC - presented above) and indicates that an increase / decrease of 1 unit of this leads to an increase / decrease of the indicator GCI of 0.015436 units; as regards the independent variable OBI, the obtained coefficient is statistically significant and causes a positive impact (but lower than CC) which means that if OBI increases / decreases by 1 unit then GCI increases / decreases by 0.007694 units.

The validity of this model is supported on account of low-probability values, (all variables are significant at a threshold of 95%), the standard error values, statistical tests applied and based on the determination report which is 0.626005 - approximately 63%. Free term value indicates that the variables that were not included in the econometric model, as a whole, have a positive effect on the development of GCI (2.955529). Statistical relationship between endogenous variable and exogenous variables is strong enough. In other words, 63% of the variation the GCI indicator is explained by two independent variables (control of corruption and open budget index), which have a significant positive influence on GCI, hence of sustainable prosperity.

V. CONCLUSIONS

The study shows that countries that include aspects of increasing transparency, reducing corruption and increasing prosperity level in economic policies of governments are more competitive and innovative, have better access to a range of information than others and are better prepared to cope unforeseen issues that may affect the sustainability performance of the country. Positive determination relationships between determinants factors and endogenous variables have confirmed our research hypotheses.

Positive influence of Global Competitiveness Index and Open Budget Index on Control of Corruption (empirically demonstrated by testing the first hypothesis defined in research) but also the positive influence of Control of Corruption and Open Budget Index on Global Competitiveness Index (empirical demonstrated by testing the second hypothesis) reflects a change in institutional strategic orientation leading to sustainable prosperity for all stakeholders.

Through this research we tried to supplement and the empirical studies made for sustainable prosperity, budgetary transparency and corruption, using panel data to explain the circular relationship between corruption and sustainable prosperity with the budgetary transparency as support factor. Evaluation of the results could serve as guidance for governments and ministries to investigate the effects of the adopted strategies for sustainable development and improving governance policies at national level through direct contribution to economic growth.
Budget Transparency is a budgetary principle with real potential for economic growth and development at the international level, which drives to higher living standards and therefore, decrease corruption and of increase sustainable prosperity.

Macroeconomic indicators such as Global Competitiveness Index, Control of Corruption and Open Budget Index are tools that have proven over time their usefulness in measuring sustainable development. A cleaner environment and a solid economic base provides the foundations of human development - health, education, culture, security - and their simultaneous action guided by the principles of sustainable development will ensure for the generation of tomorrow that today, we acted smart in obtaining performance.

VI. ACKNOWLEDGEMENT

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VII. REFERENCES

23. www.openbudgetindex.org