

# Institutional Determinants of Economic Growth in Georgia and in Other Post-Communist Economies

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**Abstract**—The institutional development is one of the actual topics in economics science. New trends and directions of institutional development mostly depend on its structure and framework. Transformation of institutions is an important problem for every economy, especially for developing countries. The first research goal is to determine the importance and interactions between different institutions in Georgia. Using World Governance Indicators and Economic Freedom indexes it can be calculated the size for each institutional group. The second aim of this research is to evaluate Georgian institutional backwardness in comparison to other post-communist economies. We use statistical and econometric methods to evaluate the difference between the levels of institutional development in Georgia and in leading post-communist economies. Within the scope of this research, major findings are coefficients which are an assessment of their deviation (i.e. lag) of institutional indicators between Georgia and leading post-communist country which should be compared. The last part of the article includes analysis around the selected coefficients.

**Keywords**—Post-communist transition, institutions, economic growth, institutional development.

## I. INTRODUCTION

GEORGIA is a post-transition developing country with a very interesting transition history. Post-Communist Georgia was characterized by both institutional and economic backwardness. Population living standards have also declined sharply [7].

Economic development is mostly determined by institutional foundations. Institutions mostly lead economic and other social activities [2]. They are different by their importance, structure and nature. Thus, in order to analyze the institutions, it is first necessary to arrange them into different groups characterized by specific features [3].

Institutions are not permanent and institutional space is always transforming. Some institutions are replaced by new ones, while others change their structure and continue to function. Construction and destruction – economic and non-economic – do not occur in a vacuum, but are the result of peoples' perceptions stemming from historically derived opportunities and values [4]. Changes in institutional structure have a price. Volume of costs is one of the important factors to promote transforming processes. The institutional framework will affect both transformation and transaction costs, first by influencing the technology employed and second because there are direct connections between institutions and

transaction costs [5].

To analyze institutional foundations of corruption in post-communist economies, it is better to review them separately by formal and informal institutions because different institutions have diverse characteristics. This is the most popular distinction between institutions. Informal institutions are defined by codes of conduct, norms of behavior and conventions. They come from socially transmitted information and are a part of the heritage that we call culture. Unlike informal ones, formal institutions are written and include political (and judicial) rules from constitutions to statutes and common laws, to specific bylaws, and finally, to individual contracts defined constraints, from general rules to particular specifications [6].

## II. BODY OF THE PAPER

Within the scope of the survey, the level of institutional development of the country was evaluated by indicators given from major international organizations. According to the approach, instead of indicators, we use the assessment of their deviation (i.e. lag) from an indicator of different country which should be compared.

Multiple linear regression model was chosen. The following variables were selected at the model specification stage:

Worldwide Governance Indicators (WGI) have been chosen as the dependent variable. They are based on World Bank researches from the 1990s. The indicators (indexes) are calculated from 1996 covering 200 countries. It consists of six major composite indicators related to state governance [8]:

- 1) Voice and Accountability (VA) – capturing perceptions of participation in selecting government, freedom of expression, freedom of association and a free media.
- 2) Political Stability and Absence of Violence/Terrorism (PV) – capturing perceptions of the political destabilization, politically motivated violence and terrorism.
- 3) Government Effectiveness (GE) – capturing perceptions of the quality of public and civil services, its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- 4) Regulatory Quality (RQ) – capturing perceptions of the ability of the government in formulating and implementing policies to promote private sector development.
- 5) Rule of Law (RL) – capturing perceptions of the quality of contract enforcement, property rights, the police and

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courts, and the likelihood of crime and violence.

- 6) Control of Corruption (CC) – capturing perceptions of the petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

The aggregate indicators are based on several hundred individual underlying variables. The data sources are respondents and public, private, and NGO sector experts worldwide.

WGI indicators range from -2.5 to 2.5. At the same time, the higher the significance of state management, the higher the level of development of the institution is.

From the six indicators, the first and second are characterized by political factors, while the remaining four indicators are influenced by economic factors. As the purpose of this study is to identify the economic reasons of institutional lags of Georgia, the survey included the four economic indicators of GE, RQ, RL and CC.

As stated at the beginning of this chapter, the research aims not to discuss any of the indexes, but to consider the extent of their lag (difference). Due to the fact that WGI indicators consist of several components, the average arithmetic mean was taken to consider a variable of different institutions within a single variable. Estonia is one of the most developed and stable countries institutionalized [1]. Consequently, the differences in the average values of the four selected WGI indicators between Estonia and Georgia were taken as a dependent variable.

The Heritage Foundation 2015 Index of Economic Freedom was chosen as an independent variable. The Total Index consists of 10 Independent Indicators: Property Rights, Freedom from Corruption, Fiscal Freedom, Government Spending, Business Freedom, Labor Freedom, Monetary Freedom, Trade Freedom, Investment Freedom and Financial Freedom. Because the indicator of corruption has already been included as the dependent variable, it is excluded from independent ones. Also, there is no data for Labor Freedom for past years, and therefore, it cannot be included in the model. Conversion of the factor variables was made to get the factor variables; each indicator was modified as the difference between Georgian and Estonian data.

It is noteworthy that before model building, it was necessary to convert dynamic columns into a standardized variable as a factor, because variables are from different sources, respectively in different units. To assess the quantitative impact of independent variables and comparing with other factors, the data of each variable are deduced by the

arithmetic mean value of the corresponding row and divided into the standard deviation of the same row.

Modified data for the regression are given in Table I. Column WGA dif represents the dependent variable, while the remaining columns are the independent variables.

Results show (Table II) that regression line approximates the real data points based on high coefficients of determination (R Square and Adjusted R Square). Therefore, the dependent variable is explained by the independent variables. However, all of the selected variables were not statistically significant (10% of significance). It can be said that 2<sup>nd</sup>, 3<sup>rd</sup>, 6<sup>th</sup> and 8<sup>th</sup> variables are statistically significant at 10% significance level. These variables are: fiscal freedom, government spending, trade freedom and financial freedom. Therefore, it is recommended to leave only these variables in the model. The results of the regression evaluation are only shown below using these variables (Table III). As shown in Table III, the coefficient of determination in the model is somewhat lower compared to the first model, but it is still high enough.

Since initially we have modeled for variables in a standardized scale, it is possible to make conclusions about which variables are stronger and about their influence on dependent variables. Table IV below consists of systematized independent variables with appropriate coefficients.

### III. CONCLUSION

Institutional analysis shows the important correlation between developments of different institutional groups. Three of the four independent variables have a positive coefficient. Considering the fact that variables are different between two countries indicators, the positive coefficient means independent variables are increasing through deepening differences between countries (difference between the values of the WGI indicator). This is the rationale, as one of decreasing causes of institutional backwardness in the country. Also, it is noteworthy that the 2<sup>nd</sup> variable (government spending) is characterized by a negative coefficient. In addition, results can be used to compare the strength of variables. Depending on the absolute value of the coefficients, trade freedom has highest share to eliminate institutional backwardness of the country. This is followed by financial freedom and fiscal freedom, respectively. The role of government spending impact is relatively small compared to the rest of the factors and, as already noted, its impact is negative.

### APPENDIX

TABLE I  
INDEPENDENT AND DEPENDENT VARIABLES FOR MODEL

|      | WGA dif | Property rights | Fiscal freedom | Government spending | Business freedom | Monetary freedom | Trade freedom | Investment freedom | Financial freedom |
|------|---------|-----------------|----------------|---------------------|------------------|------------------|---------------|--------------------|-------------------|
| 1996 | -1.58   | 33.71           | 16.73          | 0.66                | 28.58            | 16.52            | 3.65          | 37.70              | 37.63             |
| 1998 | -1.73   | 33.71           | 17.43          | 43.96               | 28.58            | 61.52            | 12.65         | 37.70              | 37.63             |
| 2000 | -1.71   | 33.71           | 16.23          | 60.36               | 28.58            | 6.62             | 14.65         | 37.70              | 37.63             |
| 2002 | -1.42   | 33.71           | 8.63           | 29.66               | 28.58            | 18.82            | 4.45          | 37.70              | 57.63             |
| 2003 | -1.65   | 33.71           | 8.13           | 29.16               | 28.58            | 10.12            | 18.05         | 37.70              | 37.63             |
| 2004 | -1.71   | 33.71           | 4.73           | 33.16               | 28.58            | 5.82             | 17.65         | 37.70              | 37.63             |

|      | WGA dif | Property rights | Fiscal freedom | Government spending | Business freedom | Monetary freedom | Trade freedom | Investment freedom | Financial freedom |
|------|---------|-----------------|----------------|---------------------|------------------|------------------|---------------|--------------------|-------------------|
| 2005 | -1.74   | 33.71           | 4.93           | 27.46               | 28.58            | 8.82             | 18.25         | 57.70              | 37.63             |
| 2006 | -1.97   | 33.71           | 8.23           | 31.96               | 6.58             | 8.72             | 13.45         | 37.70              | 17.63             |
| 2007 | -2.14   | 53.71           | 4.63           | 25.16               | -0.52            | 4.42             | 13.45         | 27.70              | 17.63             |
| 2008 | -2.22   | 48.71           | 2.63           | 17.76               | -1.12            | 9.82             | 13.65         | 17.70              | 17.63             |
| 2009 | -2.28   | 48.71           | 3.23           | 5.86                | 9.28             | 8.02             | 3.85          | 17.70              | 17.63             |
| 2010 | -2.31   | 33.71           | 6.83           | 1.66                | 3.38             | 0.12             | 0.25          | 17.70              | 17.63             |
| 2011 | -2.42   | 33.71           | 4.73           | 6.66                | 4.98             | 1.22             | 0.25          | 17.70              | 17.63             |
| 2012 | -2.55   | 33.71           | 6.63           | 15.56               | 9.78             | 4.12             | 0.75          | 17.70              | 17.63             |
| 2013 | -2.52   | 33.71           | 6.43           | 11.26               | 10.98            | 3.72             | 1.05          | 12.70              | 17.63             |
| 2014 | -2.55   | 43.71           | 4.83           | 12.26               | 8.78             | 0.72             | -0.55         | 7.70               | 17.63             |

Source: Authors Calculation from World Bank and Heritage Foundation [9] [10]

TABLE II  
REGRESSION ANALYSIS RESULTS

| SUMMARY OUTPUT        |              |                |         |         |                |           |             |             |
|-----------------------|--------------|----------------|---------|---------|----------------|-----------|-------------|-------------|
| Regression Statistics |              |                |         |         |                |           |             |             |
| Multiple R            | 0.9853       |                |         |         |                |           |             |             |
| R Square              | 0.9709       |                |         |         |                |           |             |             |
| Adjusted R Square     | 0.9376       |                |         |         |                |           |             |             |
| Standard Error        | 0.0960       |                |         |         |                |           |             |             |
| Observations          | 16           |                |         |         |                |           |             |             |
| ANOVA                 |              |                |         |         |                |           |             |             |
|                       | df           | SS             | MS      | F       | Significance F |           |             |             |
| Regression            | 8            | 2.152          | 0.269   | 29.184  | 0.000          |           |             |             |
| Residual              | 7            | 0.065          | 0.009   |         |                |           |             |             |
| Total                 | 15           | 2.217          |         |         |                |           |             |             |
|                       | Coefficients | Standard Error | t Stat  | P-value | Lower 95%      | Upper 95% | Lower 90.0% | Upper 90.0% |
| Intercept             | -3.098       | 0.241          | -12.849 | 0.000   | -3.668         | -2.528    | -3.555      | -2.641      |
| X Variable 1          | 0.002        | 0.005          | 0.369   | 0.723   | -0.011         | 0.015     | -0.008      | 0.012       |
| X Variable 2          | 0.029        | 0.009          | 3.15    | 0.016   | 0.007          | 0.050     | 0.011       | 0.046       |
| X Variable 3          | -0.006       | 0.003          | -2.256  | 0.059   | -0.013         | 0.000     | -0.012      | -0.001      |
| X Variable 4          | -0.010       | 0.006          | -1.682  | 0.136   | -0.023         | 0.004     | -0.021      | 0.001       |
| X Variable 5          | -0.002       | 0.002          | -0.888  | 0.404   | -0.008         | 0.003     | -0.007      | 0.002       |
| X Variable 6          | 0.024        | 0.009          | 2.743   | 0.029   | 0.003          | 0.045     | 0.007       | 0.040       |
| X Variable 7          | 0.005        | 0.005          | 1.029   | 0.338   | -0.006         | 0.016     | -0.004      | 0.013       |
| X Variable 8          | 0.027        | 0.005          | 5.294   | 0.001   | 0.015          | 0.039     | 0.017       | 0.037       |

Source: Authors Calculation from World Bank and Heritage Foundation [9] [10]

TABLE III  
SIGNIFICANT REGRESSION COEFFICIENTS

| Indicators |                |                     |               |                   |
|------------|----------------|---------------------|---------------|-------------------|
|            | Fiscal Freedom | Government Spending | Trade Freedom | Financial Freedom |
| Value      | 0.020708092    | -0.006682334        | 0.027348468   | 0.021807581       |

Source: Authors Calculation from World Bank and Heritage Foundation [9] [10]

TABLE IV  
REGRESSION ANALYSIS RESULTS FOR SIGNIFICANT VARIABLES

| Regression Statistics |              |                |        |         |                |           |             |             |
|-----------------------|--------------|----------------|--------|---------|----------------|-----------|-------------|-------------|
| Multiple R            | 0.9740       |                |        |         |                |           |             |             |
| R Square              | 0.9486       |                |        |         |                |           |             |             |
| Adjusted R Square     | 0.9299       |                |        |         |                |           |             |             |
| Standard Error        | 0.1018       |                |        |         |                |           |             |             |
| Observations          | 16           |                |        |         |                |           |             |             |
| ANOVA                 |              |                |        |         |                |           |             |             |
|                       | df           | SS             | MS     | F       | Significance F |           |             |             |
| Regression            | 4            | 2.103          | 0.526  | 50.731  | 0.000          |           |             |             |
| Residual              | 11           | 0.114          | 0.010  |         |                |           |             |             |
| Total                 | 15           | 2.217          |        |         |                |           |             |             |
|                       | Coefficients | Standard Error | t Stat | P-value | Lower 95%      | Upper 95% | Lower 90.0% | Upper 90.0% |

|              |        |       |         |       |        |        |        |        |
|--------------|--------|-------|---------|-------|--------|--------|--------|--------|
| Intercept    | -2.879 | 0.066 | -43.547 | 0.000 | -3.025 | -2.733 | -2.998 | -2.760 |
| X Variable 1 | 0.021  | 0.007 | 2.927   | 0.014 | 0.005  | 0.036  | 0.008  | 0.033  |
| X Variable 2 | -0.007 | 0.003 | -2.473  | 0.031 | -0.013 | -0.001 | -0.012 | -0.002 |
| X Variable 3 | 0.027  | 0.005 | 4.990   | 0.000 | 0.015  | 0.039  | 0.018  | 0.037  |
| X Variable 4 | 0.022  | 0.003 | 8.296   | 0.000 | 0.016  | 0.028  | 0.017  | 0.027  |

Source: Authors Calculation from World Bank and Heritage Foundation [9] [10]

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