

The Flexibility of Institutional Environment and Economic Performance in EU Countries

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Abstract

This paper examines the impact of institutional flexibility and institutional quality and their interactions on economic performance. Studies show that while institutional quality reduces transaction market costs, this leads to an immediate but short-term growth in economic growth. On the contrary, the increase in institutional flexibility leads to a steady growth. This paper suggests that past institutional studies place too much emphasis on the stability of institutional settings. The aim of the research is to provide new insights on the issue of institutional flexibility and quality in terms of economic performance. The analytical part of research focuses on the characteristics of the EU states in the period 1996-2016. The results show significant effects of institutional flexibility and quality measures on economic performance.

Keywords: *economic performance, institutional environment, European Union*

JEL Classification: *E02, O10, O43*

1. Introduction

Institutions and their impact on the economy have been a subject of economic studies already many years. There are many studies currently underway to help understand the mechanism of economic growth. Determinants of economic growth that reflect the quality of institutions have long been important indicators. Institutional flexibility has only recently come to attention. Earlier studies had a simple assumption regarding the stability of the institutional environment. These studies (such as Acemoglu et al., 2001) point to a positive link between economic growth and institutional stability. However, later studies (such as Davis, 2010) show that while institutional quality reduces transaction costs on the market, it leads to an immediate but short-term growth in economic growth. On the contrary, the increase in institutional flexibility leads to a steady growth. Exploring these effects is particularly important for the continuation of European integration, as the European Commission (2012) stresses the need to continued reforms that can be postponed due to the fear of a negative effect caused by institutional instability.

This paper suggests that some past institutional studies place too much emphasis on the quality of institutional settings. Research shows the significance of both of these characteristics (both quality and flexibility (instability)). The goal of this paper is to investigate the impact of selected institutional indexes (in terms of both quality and flexibility of institutional environment) and their interactions on economic growth in 28 member states of the European Union. The analytical part of research focuses on the institutional characteristics of the EU states in the period 1996-2016. More precisely, six institutional indexes from World

Government Indexes is taken into account. To determine the impact of these institutional indexes on economic growth a panel data analysis, based on a growth model, is provided for the examined period. The analysis in this paper shows both influences of institutional quality and flexibility on economic growth.

The structure of the paper is as follows. After a short introduction, the second section provides an overview of the theoretical relations between institutional quality, institutional flexibility, and economic growth. The second part of the section is devoted to a description of methodological issues. The empirical results of the model derived in the second section are consequently presented (in the third section). The last section summarizes main findings.

2. Theoretical Background and Methodology

Institutions and their impact on the economy were investigated in many studies. Many of them were inspired by the insights of Douglas North (1991). These insights were later applied in a variety of econometric studies that confirmed the importance of the institutional environment as an important determinant of economic growth (e.g. Barro 1996; Knack and Keefer, 1995). Many of mentioned studies were focused on positive impacts of institutional quality to economic growth. However, the crucial role of institutions was found not only regards the economic growth. Some studies were also focused on the relationship between quality of the institutional environment and innovational performance (Tebaldi and Elmslie, 2013).

On the other hand, there are not so many studies focused on institutional flexibility. One of the most important research in this field is study by Lewis S. Davis (2010), who developed a theoretical model of institutional flexibility and economic performance. According to this work, while institutional quality plays an important role in the short run, institutional flexibility plays an irreplaceable role, especially in long-run economic performance. It can be stated that notion of efficient institutions is based on circumstances because as conditions change over time, 'what are good institutional forms at one stage are no longer appropriate at others' (Storper, 2005). The institutional environment was considered as important determinant also for economic resilience (Melecký and Staničková, 2015) and in connection with technological resilience (Balland, Rigby and Boschma, 2015). Last mentioned study has proven the innovative capability of US cities and shows that cities with greater institutional flexibility are also less likely to fall into so-called technological crises (their results shows that an increase in the institutional flexibility of cities significantly lowers the risk of entering a technological crisis).

2.1 Theoretical Channel between Institutional Flexibility and Economic Growth

One of the main criticism focused on the research of the institutional environment and its impact on economic growth is the lack of a dynamic perspective. Many studies highlight the stability of institutions as the only aspect of the institutional environment (for example, Acemoglu et al.; 2001). Still, in the literature, a deviation from a static point of view can be found. For example, Abramovitz (1986) notes the country's ability to adopt new foreign technologies, while noting that while country institutions can be well designed, they may not have the ability to adapt to new requirements. The ability of the policy and the legal system to respond to the changing institutional demands of an evolving economy thus appears to be a longer-term aspect of the institutional environment than the very quality of economic policy or trade laws.

The positive effect of institutional flexibility is explained by two basic mechanisms. The first is the idea that countries need to endure a period of change when implementing reforms to improve institutional quality. This necessarily leads to a temporary increase in institutional instability. This idea is in line with Hayek's (Hayek, 1973) explanation of institution-building, in which there is a need for experimentation with institutional settings to achieve growth. Without the trial-and-error process, political decision-makers often cannot get information on how concrete reforms work. The second idea is Olson mechanism (Olson, 1982). This explains negative side effect of excessive institutional stability, with the anticipated increase in influential groups that, by tracking their own interests, contribute to reducing the rate of economic growth. Conversely, achieving the necessary degree of institutional instability (or flexibility) weakens the influence of interest groups (and their rent-seeking activities).

2.2 Methods and Data

In this section, the baseline model and dataset used to evaluate the impact of selected institutions measures is described. Following similar studies (e.g. Berggren et al., 2015) a panel regression analysis is used to answer the research question: what are the effects of institutional flexibility and quality on growth. In order to determine the impact of institutional flexibility and quality on economic growth a panel data method especially regression models with time- and country-fixed effects are employed. The dependent variable is the annual growth rate of GDP per capita in purchasing power standards. However, here is the question about correct specification of growth regression especially the question about what may be control variables in it. Unfortunately, there is no complete agreement on what control variables to use in such growth models (there are many studies about control variables in growth regressions, see, e.g. Barro (1996)). Similarly to mentioned studies, a standard set of control variables is included (i.e. initial GDP, government expenditures as a share of GDP, gross fixed capital formation as a share of GDP (GFCF) and labour force growth (measured as annual growth of economic activity rate). All four control variables were acquired from Eurostat (Eurostat, 2018)). Although the interdependence of variables is probably much more complex, economic growth is perceived as a result of activities, while other variables in the study are perceived as driving forces.

Table 1 gives variable description and sources for the data used in regression analysis (except mentioned control variables) so that variables measuring institutional quality and instability are described there. In order to use suitable institutional quality and institutional flexibility measures, World Government Indices (WGI) is employed (Kaufman et al., 2010). The Worldwide Governance Indicators (WGI) is a research data set that summarizes views on the quality of governance provided by a large number of respondents from businesses, citizens and expert surveys in industrialized and developing countries. This data set is suitable for this analysis because it is based on hundreds of surveys. The mentioned dataset consists of six different indexes (see Table 1) which covers six different institutional areas.

Table 1: Description and Sources of Variables based on WGI

Variable	Source	Description
VA	WGI	Voice and Accountability
PLST	WGI	Political Stability and Absence of Violence/Terrorism
GOEF	WGI	Government Effectiveness
RQ	WGI	Regulatory Quality
RL	WGI	Rule of Law
CC	WGI	Control of Corruption
GovernanceCV	WGI, own	Coefficient of variation across periods of PFA scores
GovernanceQ	WGI, own	Average of PFA scores across a five-year periods
GovernanceTR	WGI, own	Trend of PFA scores across a five-year periods
CV_	-	Coefficient of variation across periods of WGI indexes
avg_	-	Averages of given WGI indexes across periods

Source: Own construction

This data are available for 28 member states of the European Union within period 1996 – 2016 (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom).

The choice of the period was determined by the availability of data for the given period. Indicators are used both separately and also in aggregated form. In order to get not arbitrary aggregation principal factor analysis (PFA) is performed. This approach could be difficult regards to interpretation of calculated factor, but in our case, PFA gets only one easily interpretable factor. This factor (or main component) is correlated with all six WGI indexes and cover approximately 80 % of dataset variation. For purpose of this paper is this factor named “Governance quality”. To construct measures of quality, five averages for five-year periods 1996-2000, 2000-2004, 2004-2008, 2008-2012, 2012-2016 was calculated for each country. Institutional flexibility is measured by the coefficient of variability calculated for given country within the same five five-year periods. Each of this variable (except initial GDP) is calculated as average for each a five-year period). Initial GDP corresponds to the first of each five-year period.

In the following, the regression analysis is employed as in the equations below, where:

- X stands for control variables,
- Q stands for a set of measures of quality of institutions calculated as average,
- CV_q capturing institutional instability as the coefficient of variation of Q across each five-year periods,
- GovernanceCV is the coefficient of variation across a five-year period of PFA score,
- GovernanceQ stands for an average of PFA score across a five-year periods,
- GovernanceTR is a trend based on “Governance quality” factor (described below),
- ε stands for error term.

Then first regression equation is as follows:

$$gGDP = \alpha + \beta X + \gamma CV_Q + \delta Q + \varepsilon \quad (1)$$

When interpreting the effects of institutional flexibility, interactions of institutional quality and flexibility have been considered as important aspects (e.g. Brambor, Clark and Golder, 2006). In order to concern this approach, interactions between quality and flexibility of each WGI

index is included in regression analysis. Another often-neglected aspect is an evaluation of different institutional trends. That is why the trend of factor “Governance level” is calculated based on the beta coefficient of regression line constructed for each five-year period from PFA scores. This trend evaluation is categorical value and separate positive trend (trend=1, above the 75th percentile of beta coefficients); negative trend (trend=-1, below the 25th percentile of beta coefficients) or roughly constant trend (trend=0, between first and third quartile).

The second and third regression equations are as follows:

$$gGDP = \alpha + \beta X + \gamma CV_Q + \delta Q + \text{interactions of CV and Q} + \varepsilon \quad (2)$$

$$gGDP = \alpha + \beta X + \delta \text{GovernanceCV} + \gamma \text{GovernanceQ} + \varphi \text{GovernanceTR} + \varepsilon \quad (3)$$

3. Empirical Results

Using the data and concept of regression models described above, series of panel regression with fixed effect was performed. The empirical results of panel regression analysis for the baseline model (1) and its extensions (2) and model based on aggregated data (3) are reported in Table 2. The signs of control variables are as expected but not all of them are significant. GDP is strongly significant. This result illustrates the strong convergence effects that could be expected in relatively similar countries. Government expenditures are also negatively and significantly related to economic growth. Conversely, Gross Fixed Capital Formation is insignificant. Regarding the institutional variables, only in the case of the second model (2) two of the institutional flexibility measures (CV_RQ, CV_RL) have statistically significant impact on economic growth, however, with different signs. While variability of the Regulatory Quality (which reflects the ability of the government to develop desired policies permitting private sector development) has a positive effect, variability of the Rule of Law (which reflects perceptions of the extent to which agents have confidence in the rules of society) is negative. The first finding is in compliance with assumptions about the Olson mechanism and Hayek notion. The latter finding is similar to other studies, but there is a question about the explanation of the negative sign.

Another strange result, in contrast with expectations, was found in the case of the first model (1), where one of the institutional quality measures (avg_RQ) has negative effect on economic growth (but this result is not so strange in comparison with similar findings (e.g. Berggren et al., 2015)). The results of the model based on aggregated data (3) approve the importance of neither flexibility nor institutional quality based on aggregated PFA scores (trend as well as). The second column of Table 2 includes also the estimates of interactions between variability and quality of given WGI indexes. The results show that only two pairwise interactions, CV_RQ x avg_RQ and CV_RL x avg_RL, significantly explain economic growth. The second one refers to the following relation: the higher the “Rule of Law” is conditioned by institutional flexibility, the greater the effect it has on economic growth. It is, however, the opposite, when the effect of quality is unconditional by instability. This result shows that the quality of the institution environment measured by Rule of Law WGI index does not affect growth when it stands separately. Effect on economic growth can only be seen in interaction, which is entirely in line with similar studies. In addition, it is evidence for the effect of the so-called Olson mechanism or the Hayek mechanism. Opposite result is in the case of the first pairwise interaction (CV_RQ x avg_RQ) - effect is negative.

Table 2: Regression Results – Growth Effects of Institutional Quality and Flexibility, dependent variable: gGDP

Effect of	(1)	(2)	(3)
const	0,944*** (0,27)	1,004*** (0,277)	0,681*** (0,251)
CV_VA	-0,693** (0,286)	-0,716 (3,985)	-
CV_PLST	0,03 (0,103)	-1,268 (1,058)	-
CV_GOEF	0,137 (0,167)	0,370 (1,460)	-
CV_RQ	-0,051 (0,176)	3,153** (1,525)	-
CV_RL	0,093 (0,245)	-5,307** (2,334)	-
CV_CC	0,031 (0,167)	0,89 (1,135)	-
avg_VA	0,026 (0,029)	0,026 (0,039)	-
avg_PLST	-0,002 (0,011)	-0,003 (0,013)	-
avg_GOEF	-0,02 (0,015)	-0,011 (0,017)	-
avg_RQ	-0,05** (0,019)	-0,039* (0,02)	-
avg_RL	-0,016 (0,023)	-0,039 (0,025)	-
avg_CC	0,019 (0,001)	0,024 (0,017)	-
Initial GDP per capita	-2,730e-6*** (4,113e-7)	-2,765e-6*** (4,09e-7)	-3,286-6*** (3,26e-7)
Government expenditures	-0,004*** (0,001)	-0,004*** (0,001)	-0,003*** (0,001)
GFCF	0,001 (0,001)	0,001 (0,001)	0,001 (0,001)
Labour force grow.	0,502** (0,235)	0,461* (0,239)	0,596** (0,244)
GovernanceCV	-	-	-0,022 (0,085)
GovernanceQ	-	-	-0,01 (0,009)
GovernanceTR	-	-	0,001 (0,002)
CV_VA x avg_VA	-	0,019 (0,85)	-
CV_PLST x avg_PLST	-	0,301 (0,244)	-
CV_GOEF x avg_GOEF	-	-0,035 (0,314)	-
CV_RQ x avg_RQ	-	-0,718** (0,346)	-
CV_RL x avg_RL	-	1,216** (0,523)	-
CV_CC x avg_CC	-	-0,179 (0,265)	-
Hausmann test	77,05***	106,22***	76,49***
Observations	131	131	131
Within R²	0,77	0,80	0,72
P-value (F)	8,3e-20	4,53e-19	8,77e-21

Source: Own calculations using GRETL software

4. Conclusion

In this paper, we were interested in the question whether the institutional flexibility and quality of the European countries could be related to the economic growth in the member states. The empirical results based on a panel of 28 European countries observed across five five-year periods between 1996 and 2016 suggest significant effect of interaction of institutional quality and flexibility on growth (in the case of Regulatory Quality and Rule of Law indexes – $CV_RQ \times avg_RQ$ and $CV_RL \times avg_RL$). However, in contrast with the theory, first mentioned relationship is negatively related with growth. The same significant result (only with opposite sign) was found in the case of estimating separate flexibility effect (i.e. coefficients of variability of Regulatory Quality (CV_RQ) and Rule of Law (CV_RL) indexes).

With regard to indicators reflecting only institutional quality, except for one case, all estimates were insignificant. The only case concerns the Regulatory Quality Index (avg_RQ), which, however, also in contrast with the theory, shows negative dependence with growth. On the other hand, this surprising result is in line with the results of other study (Berggren et al, 2015), where the quality of legal-administrative institutions is negatively associated with growth. Results also show the interdependence of institutional flexibility and quality (especially in the case of interaction $CV_RL \times avg_RL$ this is in line with the Olsonian idea that stable institutions can simplify influence of interest groups on the political process and create policies that are harmful to long-term growth.

Without overstating the causal relationship between flexibility and economic growth (because this issue could be answered only with longer time series), two results deserve to be emphasized. First, at least in the case of the $CV_RL \times avg_RL$ beneficial association between growth and high institutional quality is not weakened by flexibility, but instead seems to be growth-promoting. In other words, there is no clear evidence that the short-term instability created by reforms impedes the positive effects of these reforms. This is very important from the point of view of European integration because it seems irrelevant to expect negative effects in the case of rapid reform compared to the slow implementation of reforms. Second, while the results should be particularly carefully interpreted, at least part of them are compatible with the idea that institutional instability can mitigate negative growth effects of Olsonian sclerosis and institutional adjustments in the spirit of Hayek could have a growth-enhancing effect. European data, therefore, indicate that it seems that the simplifying view that instability of institutions is always detrimental to growth has not been the case for European Union over the past two decades. In upcoming studies, it could be interesting to re-estimate the growth equation using different data sets of institutional quality to find out how the influence of different institutional measures varies and solve the causality issue.

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