INSTITUTIONAL QUALITY AND FDI

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Abstract

This study examines the impact of institutional quality on foreign direct investment inflows using panel data for European Union countries, including the United Kingdom. The analysis considers the period 2004–2023 and applies the generalized method of moments (GMM) system. The coefficients of the individual dimensions of institutional quality are positive and mostly significant. This suggests that institutional quality has a positive impact on FDI inflows in European economies. The analysis showed that control of corruption, rule of law, voice and accountability are the most influential factors affecting FDI inflows, which indicates the importance of strengthening these dimensions in economic policy. GDP per capita and inflation have a negative impact on FDI inflows, while trade openness has a positive impact. Agriculture and the number of mobile subscriptions have been found to be statistically insignificant variables with mixed effects on FDI inflows. The results of the study support the need to strengthen key institutional factors to increase FDI inflows in European countries.

Key words: FDI, institutional quality, European countries, GMM

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Introduction

Foreign direct investment plays a key role in promoting economic growth, innovation and technological progress in the European Union. In this integration group, countries follow the same trends, which can be explained by their compilance with Maastrich criteria. Thanks to close trade flows between countries, we can see similarities in development. European Union trade flows and investment flows are mainly within the economies themselves.

Traditional factors that influence FDI inflows are still considered important and relevant, but there is also an emphasis on the quality of institutions. Institutional quality represents the transparency and efficiency of a country's political and judicial environment. Countries with effective institutions and a fixed set of rules are able to reduce transaction costs, ensure fair justice, and create a stable environment. The quality of institutions can be devided

into six dimensions: control of corruption, government effectiveness, regulatory quality, rule of law, voice and accountability, and political stability and absence of terrorism.

Most studies focus on examining the impact of institutional quality on FDI inflows in the context of developing or developed countries. Less attention is paid to analyzing the individual dimensions of institutional quality and their impact on the largest integration group.

The aim of this analysis is to fill the gap through a panel analysis of EU countries, including the United Kingdom, which has been part of this integration group for many years. We specifically examine six dimensions of institutional quality. We estimate six separate models, comparing the strength of each dimension on FDI inflows in European economies. This approach allows us to identify which aspects are the most important to investors and have greatest potential.

1 Literature review

The economic performance of an economy and the quality of institutions have been focus of interest for many authors. (Buchanan et. al., 2012; Sabir et. al., 2019; Behera et. al., 2020; Khan et. al., 2024) In the 20th century, North and Thomas (1973) argued that economic factors are not the only ones responsible for differences in the development of centuries. The authors state that the institutional environment of economies plays a key role in the development process and maintaining macroeconomic stability. (Stawicka, 2014) An investor typically makes decisions based on a combination of several factors rather than on a single one. Certain factors plays a more significant role in decision-making process than others. However, it is evident that foreign direct investment (FDI) inflows have a positive impact on the host country's economic growth, regardless of the primary motive behind the investment.

The authors classify institutions as effective or ineffective. However, a system considered effectively designed in one region may not yield the same outcomes in another region. On the other hand, differently designed institutional systems may affect economies in different ways across countries, yet still lead to the same overall outcome. (Rodríguez-Pose, 2013) It is important to recognize the differences between economies in terms of their institutional environments. For economies experiencing rapid economic growth, the role of institutions in fostering growth is particularly significant. In contrast, in economies experiencing slow growth, institutions may fail to generate positive short-term outcomes. Sustainable economic growth may slow down, particularly due to low production efficiency. (Buterin et al., 2017)

Countries can achieve a comparative advantage thanks to a high-quality institutional environment. A fixed system of rules, support for business, and a clearly defined regulatory framework aim to create a fair judicial system and reduce uncertainty of economic subjects. (Sari, 2023) Kaufmann (2010) points out that high-quality institutions promote investor confidence, while low-quality institutions represent a barrier to technological progress and investment efficiency. Buchanan (2012) argues that ineffective institutions act as a tax, increasing the cost of FDI and preventing its inflow. In countries where corruption and bureaucratic burdens prevail, investors are unwilling to invest because these factors increase the cost of doing business.

A significant study on institutional quality is the one by Kaufmann et al. (2010). The authors identified six key dimensions of institutional quality. These dimensions have become the standard for measuring the institutional environment and are widely used in empirical studies. (Sabir et. al., 2019; Behera et. al., 2020; Khan et. al., 2024) The data are courced from the Worldwide Governance Indicators (WGI) database, which provides a comprehensive view of countries' institutional arrangements through the following indicators: control of corruption, government effectiveness, regulatory quality, rule of law, voice and accountability, political stability and absence of terrorism. These indicators form the basis for assessing the level of institutional quality across countries and are essential for analyzing their impact on economic performance, foreign investment and long-term development.

Theoretical insights and numerous empirical studies confirm the positive impact of institutional quality on economic growth and FDI inflows. High-quality institutions ensure macroeconomic stability, reduce uncertainty, and create a favorable and predictable environment for investors. This effect has been demonstrated across various regions and country samples, often showing a stronger and more complex impact in developed economies. Some studies also highlight the indirect influence of institutional quality through factors such as trade openness and technological innovation. (Buchnan, 2012; Sabir et. al., 2019)

2 Metodology

This research explores the impact of institutional quality on FDI inflow in 28 European countries from 2004 to 2023. The study used panel data downloaded from the World Bank database and World Governance Indicators (WGI). The variables used in this model were selected based on the study by Sabir et al. (2019), where the authors also examined the impact of institutional quality on FDI in both developed and developing countries. However, this study

focuses only on EU countries. These countries are mostly developed countries with a tendency toward similar trends and a high level of trade openness. However the influence of specific dimensions of institutional quality may differ — which is what we aim to explore.

The dependent variable represents FDI net inflows in European countries over a 20-year period. The independent variables represent six dimensions of institutional quality. However, due to the mutual correlation among these dimensions, we constructed six separate models to test the impact of each specific dimension on FDI. These variables are from the WGI database where the scores range from -2.5 to 2.5. The higher the value of the indicator, the better and higher-quality the institutions. Effective institutional governance or a stable institutional environment, positively influence FDI inflows, as they create a stable and low-risk environment for investors. Regulatory quality contributes to the development of market-friendly policies and reflects the government's ability to formulate and implement policies that support economic development. (Sabir et al., 2019)

The control variables, following Sabir et al. (2019), include GDP per capita, which captures economic growth and purchasing power; inflation, indicating economic stability; and trade openness, reflecting restrictions on trade and capital flows. Additional controls are agricultural value added, representing the share of agriculture in GDP, and infrastructure, measured by mobile phone subscriptions per 100 inhabitants.

To examine the impact of institutional quality on FDI, we use the Generalized Method of Moments (GMM) originally proposed by Holtz-Eakin et al. (1990), and later extended by Arellano and Bond (1991), Arellano and Bover (1995), and subsequently by Blundell and Bond (1998) (Azman-Saini et al., 2018). The method is commonly used in dynamic panel data model, and there is concern about endogeneity, autocorrelation or omitted variable bias.

Some variables may be influenced by the dependent variable, leading to inconsistent estimates. Using another method could therefore result in biased outcomes (Azman-Saini et al., 2018; Sabir et al., 2019). For this reason, we decided to address this issue by applying the GMM method in this research.

The dynamic equation is defined as follows:

$$\Delta y_{it} = \alpha_0 + \omega \Delta y_{i,t-1} + \beta \ln X_{it} + \gamma \ln Z_{it} + u_{it} + v_i \quad (1)$$

where,

- Δy_{it} represents the dependent variable in country *i* at time *t*.

- α_0 is the model constant.
- $\omega \Delta\, y_{i,t-1}$ represents the dynamic term accounting for the lagged effect of the dependent variable
- $\beta\ ln\ X_{it}$ is the effect of the logarithmically transformed independent variable.
- $\gamma\ ln\ Z_{it}$ is the effect of the logarithmically transformed control variable.
- u_{it} is the error term of the model.
- v_i is the individual effect.

The GMM system requires the significance of first-order autoregression and the non-significance of second-order autoregression. Compared to other methods, the GMM method is more flexible and offers a wide range of econometric models, while accounting for issues such as heteroskedasticity and autocorrelation. Moreover, it allows for the inclusion of endogenous variables, which is likely in this type of data.

The Sargan test is sused to verify the validity of instruments. The null hypotesis states that the instruments are exogenous and uncorrelated with the error term. Failure to reject the null hypotesis (p-value > 0.05) indicates that the selected instruments are valid and therefore the model is correctly specified.

The Wald test is used to verify the statistical significance of regression coefficients in a model. The null hypotesis tests the assumption that all regression coefficient (except for the constant) are equal to zero. If this is indeed the case, than none of variables has an effect on the depended variable. In this case, it is desirable to reject the null hypotesis (i.e., p-value < 0.05). This would mean that at least one regression coefficient is different from zero, and thus at least one variable has a significant effect.

3 Results

Table 2 shows the results of GMM models for six dimmensions of institutional quality in EU countries and the United Kingdom during the 20 year period. We tested each dimmension of institutional quality separately because if we had used all areas in one model, the high correlation between variables would have distorted the results. The main finding confirms the results of several studies (Sabir et. al., 2019; Khan et. al., 2024) that institutional quality has a positive and significant effect on FDI inflow. This confirms the hypotesis that high-quality institutions contribute to improving the investment environment and thus to higher FDI inflows. The coefficient estimate are high and positive for all institutional dimensions.

Regulatory quality has a positive effect on FDI inflows, but this effect is statistically insignificant. This result may be explained by low variability between countries, possible overlap with other indicators, or the stability of the regulatory framework. Control of corruption has a strong positive effect on FDI inflows – the estimated coefficient is significant at the 1% level. Investors prefer an environment with fair judiciary and no abuse of public power, as they perceive corruption as an informal tax. This informal tax on business increases risks and transaction costs. The higher the level of control of corruption, the lower the uncertainty for investors. (Buchanan et al., 2012) Rule of Law and Voice and Accountability are also significant at the 1% level. Rule of Law has the strongest positive and statistically significant impact. This result highlights the key role of this area for foreign investors, e.g. in the form of protection of property rights and enforceability of law. Voice and Accountability also has a positive and statistically significant impact on FDI, with the results confirming that transparent institutions create a more favorable business environment. (Khan et. al., 2024) Government Effectiveness and Political Stability are statistically significant at the 5% level. This positive impact suggests that investors prefer European economies with a stable political environment, functional public administration, and proper policy implementation.

The lagged FDI value was statistically significant at the 1% level in all models. This suggests that countries attractive to investors in the past tend to attract investment in the future. (Sabir et. al., 2019) The results shows that GDP per capita shows a significant negative effect in European economiesare classified as high-income or middle-income. This finding is consistent with Sabir et al. (2019). Possible explanations include foreign investors not considering development level as a key factor or increased business costs associated with higher living standards. (Buchanan et al., 2012) The inflation rate exhibited a negative and mostly significant effect on FDI inflows, highlighting the importance of price stability for foreign investors. (Khan et al., 2024) In contrast, trade openness showed a positive and significant impact in most models, indicating that lower trade barriers and easier market access encourage FDI. (Sabir et al., 2019; Samargandi et al., 2022) Thus, while higher inflation creates uncertainty and may reduce FDI, greater trade openness facilitates its inflow. The last two control variables – mobile cellular subscriptions and agriculture (%GDP) – showed mixed, insignificant results. The varying sign of mobile subscriptions suggests it does not reflect investment attractiveness in European economies. Similarly, agriculture was mostly negative except for control of corruption and regulatory quality, indicating these variables may not capture key factors for foreign investors in this context.

Tab. 1 GMM Estimation Results

Variables	(1)	(2)	(3)	(4)	(5)	(6)
$FDI_{(t-1)}$	0.272*** (0.000)	0.263*** (0.000)	0.287*** (0.000)	0.259*** (0.000)	0.271*** (0.000)	0.267*** (0.000)
CC	21.801** (0.009)					
GE		20.004* (0.016)				
RQ			13.541 (0.089)			
RL				37.253** (0.001)		
VA					22.618** (0.003)	
PS						21.484* (0.027)
GDP	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.001)	-0.001*** (0.000)	-0.001*** (0.000)
INFL	-0.684* (0.017)	-0.681* (0.020)	-1.068** (0.002)	-0.496 (0.152)	-0.692** (0.002)	-1.015* (0.034)
OPEN	0.139* (0.022)	0.181** (0.004)	0.190** (0.002)	0.116 (0.185)	0.121* (0.014)	0.152· (0.059)
MOB	-0.039 (0.528)	0.008 (0.859)	0.004 (0.959)	-0.123 (0.112)	-0.028 (0.681)	0.074 (0.412)
AGR	1.516 (0.337)	-2.814 (0.289)	-2.750 (0.334)	0.594 (0.778)	-2.754 (0.179)	-4.476 (0.170)
Sargan test	0.127	0.119	0.165	0.084	0.154	0.182
AR(1)	0.139	0.225	0.243	0.109	0.215	0.184
AR(2)	0.987	0.976	0.991	0.999	0.985	0.987

Source: own elaboration based on results from R Studio

The testing of GMM assuptions for the institutional quality models produced mixed results. The outcomes of the AR(1) test do not show statistical significance, as the null hypotesis was not rejected (p-value > 0.05). While this is not a frequent result, it is not uncommon either. The studies by Appiah et al. (2020), Saha et al. (2022) and Khan et al. (2024) also achieved higher AR(1) values. This result could be due to weak panel data dynamics or model balance. As a result, autocorrelation may not be detected even though it is present within the model.

Since the AR(2) test does not confirm the presence of second-order autocorrelation and Hansen's test did not detect any problems with instrument overideterminantion, the chosen instruments are valid. We consider these results of GMM models to be reliable in terms of interpretation.

Conclusion

This study focused on examining the impact of institutional quality on foreign direct investment inflows in EU countries, including the United Kingdom, over a period of twenty years. The period under review begins in 2004, when the EU underwent its largest expansion, which stimulated the convergence of economic and institutional rules. We have constructed six separate models due to the high correlation between institutional variables. The analysis includes the impact of gross domestic product, trade openness, inflation, agricultural value added, and infrastructure measured as the number of mobile subscriptions per 100 inhabitants. We used the GMM system method, which allowed us to work with endogenous variables that are likely in these types of data.

The main finding of this study is that most dimensions of institutional quality in European economies have a positive and statistically significant impact on FDI inflows. Regulatory quality is the only dimension of institutional quality that has a positive but statistically insignificant impact. FDI from the previous period also has a positive and significant impact, increasing investor confidence and stability. GDP per capita and inflation in these countries have a significant but negative impact on FDI inflows. Conversely, trade openness has a positive impact, but it is not statistically significant in all models. The last control variables – agriculture and the number of mobile subscriptions – yielded mixed results, with both variables being statistically insignificant. Similarly, the effect varies – it is positive in some cases and negative in others. These variables do not reflect the attractiveness of the investment environment in European economies.

Overall, the findings highlight the crucial role of institutional quality in foreign direct investment inflows. Strengthening key institutional dimensions can enhance investment attractiveness and rapid economic growth. The results provide relevant recommendations for policymakers and also point to the need for further research. In future research, it would be appropriate to examine individual dimensions of institutional quality separately. This would allow us to better identify their specific impact on foreign direct investment. This approach would help policymakers focus more precisely on areas with the most potential.

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