

THE ECONOMIC FREEDOM, COUNTRY RISK AND FOREIGN DIRECT INVESTMENTS

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Abstract: *The interlinkages between country risk and foreign direct investments are the subject of research interest. The article tests the intuitive hypothesis that economic freedom is associated with low country risk and is an incentive for foreign direct investments. The research paper employs empirical quantitative within-between models to analyze the relationship between foreign direct investments and five indices: trade openness, freedom from corruption, trade freedom, investment freedom, and economic freedom. The database used is The Global Economy for 44 European Countries resulting a panel data employed for between within models, growth curve models, contextual models, generalized estimating equations models (GEE), and asymmetric effects models. Interesting is the different significance of the five indicators in different models. For the first three models within -between model, the growth curve model and the contextual model- statistical significance have trade openness, freedom from corruption, and investment freedom. For the Generalized equations model (GEE) the only indicator that has statistical significance is Investment freedom. For the asymmetric effects model that shows the effect of asymmetric increase and decrease of each indicator, there is no statistical significance for the analyzed indicators. The within – between models combine the robustness of the fix effects models with the flexibility of the random-effects models.*

Keywords: *economic freedom; country risk; foreign direct investments*

JEL Classification: *F63, E02*

1. Literature review, country risk

In defining country risk, there are multiple approaches: i) Das and Niyogi (2021) define country risk as an indicator of business risk within a country, attributed to economic, demographic, political, legal and social factors of that country; ii) A collection of risks related to a country, depending on the economic situation and political situation, affecting the status of countries, used only to assess and rank countries (Okay, 2018); iii) A risk related to investment in a particular country and the ability or inability of the country to repay its financial obligations. It also highlights the stability and profitability of the country and the lower risk of default (Gupta, Kaur and Sarva, 2020); iv) It is the risk that the political and/or economic

situation in a country will affect the amount of investment in that country (Ayhan, 2019).

Moosa (2002) defines "country risk as the exposure to economic loss in transnational operations caused by events in a particular economy", events that are "within the control of the government", these events can be high inflation, deterioration in the current account of the balance of payments, increase in external debt. Events can also be political, such as government interference or breach of contract, but both political and economic events have their origin in politics, and therefore the author considers political risk or country risk as the cause of these losses in cross-border operations. Rodriquez (2016) assesses country risk through the following elements: (i) transfer and convertibility risks, (ii) restrictions on currency convertibility exchange rate risk, (iii) confiscation, expropriation and nationalization of foreign assets, (iv) war and political violence, and (v) the risk of government default on its debts-sovereign risk.

2. Aim of the paper and research methodology

The general objective of the paper is to analyse the impact of country risk on foreign direct investment in Europe on the basis of statistical database-ICRG-International Country Risk Guide, provided by the most prestigious political risk assessment institution-Political Risk Service PRS Group, while the specific objectives are derived from the general objective and concern, on the one hand, the identification of the main components of country risk from the point of view of the literature, economic, political, social, environmental, operational, etc. components with an impact on foreign investment and, on the other hand, to conduct econometric research on the impact of country risk on foreign direct investments (FDI), substantiating and statistically validating the impact of the country risk components, identified, defined and mapped under the first partial objective, on FDI.

The research method takes into account the identification of econometric models that capture the complex influence of country risk components on FDI, such as the mixed nature of the influence of country risk as measured by mixed linear between-within models that combine the advantages of "fixed effects" models (robustness to the presence of time-invariant effects) with the flexibility given by "random effects" models. The research results support, through the variety of econometric models used, the hypothesis of the significant influence of the analysed country risk components on foreign direct investment. Each model used offers its own perspective on explaining the influence of country risk, In the within-between models it is observed that all indicators: corruption perception index, trade openness, investment freedom index and economic freedom have a positive and statistically significant influence on foreign direct investment. The "growth curve" models demonstrate the existence of a statistically significant temporary effect coding each time period within the analysis horizon 2000-2020. In this time period, the economic crisis of 2007-2010 and the Covid pandemic 2020-2021 occurred and the effect resulting in the "growth curve" model suggesting the existence of shocks in the analysis period impacting the dependent variable under

analysis FDI is plausible. This model is chosen as the best analysis model also from the perspective of economic sense, with the lowest reported values for AIC and BIC (Bayesian Information Criterion and Akaike Information Criterion) among all the linear mixed models analysed.

The dependent variable used is the FDI input stock, calculated as a percentage of GDP. In the econometric estimation we used this indicator to eliminate the effect of differences in the size of the economies of the reporting countries. The independent variables of interest are: corruption perception index (FreedCorr), trade freedom (TradeFreed), trade openness (TradeOpen), investment freedom index (InvestFreed), economic freedom (EconFreed).

3. Econometric analysis

The within-between models show that all indicators of trade openness, corruption perception index, trade freedom index, and investment freedom index are statistically significant and positive, indicating an increase in FDI by the coefficient value with a one unit increase in the independent variable. The only indicator with a negative coefficient value but no statistical significance is the economic freedom index. Of all the indicators analysed, the trade freedom index has the largest impact on the evolution of the FDI; when trade freedom increases by one percentage point, the FDI increases by 2.67%. The second indicator in terms of impact on the evolution of FDI is trade openness, but the impact is significantly lower than in the case of trade freedom representing a 0.71% increase in FDI when trade openness increases by one percentage point.

The "growth curve" models include a temporary effect, which is statistically significant in the model under analysis and indicates the existence of shocks within the analysis period that have an impact on the dependent variable. are invited to use figures and tables in your paper wherever they will help to illustrate your text. The proceedings are delivered to conference participants in electronic format and therefore support colour figures, however, the book version is printed in black and white and therefore you are advised to refrain from using colours to deliver important information in your figures.

3.1. Modelling the impact of country risk indicators on the stock of FDI (from inflows)

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Figure 1: Modelling the impact of country risk indicators on the stock of FDI (from inflows)

| | Linear Mixed Effects Specification: within-between | Linear Mixed Effects, Specification Within-between Growth Curve Models | Linear Generalized Estimating Equations Models Specification on within-between | Linear Mixed Effects Specification: Contextual |
|---------------------------------------|---|---|---|---|
| | 0.71*** | 0.18 | -0.15 | 0.71*** |
| FeedCorr | 0.42*** | 0.47*** | 0.22** | 0.42*** |
| TradeFreed | 2.67*** | 1.61*** | 0.93** | 2.67*** |
| InvestFreed | 0.21** | 0.01 | -0.10 | 0.21** |
| EconFreed | -0.44 | -0.88*** | 0.18 | -0.44 |
| | | Contextual effects | | |
| (Intercept) | -3.88 | -72.41*** | -1.19 | -3.88 |
| lmean(TradeOpen) | 1.31*** | 1.31*** | 1.32*** | 0.61** |
| imean(FeedCorr) | -0.15 | -0.15 | -0.07 | -0.57 |
| imean(TradeFreed) | -2.65 | -2.64 | -3.24** | -5.32 |
| imean(InvestFreed) | -0.02 | -0.03 | 0.21 | -0.24 |
| imean(EconFreed) | 3.36 | 3.37 | 3.01 | 3.79 |
| time | | 0.03*** | | |
| Pseudo-R ² (fixed effects) | 0.54 | 0.56 | | |
| Pseudo-R ² (total) | 0.86 | 0.88 | | |
| AIC | 895.98 | 793.82 | QIC 410.27 | |
| BIC | 957.15 | 859.7 | QICu413.58 | |
| Standard Dev Residual | 0.375 | 0.3497 | | |

Source: data processed in R language by the author

The "growth curve" models include a temporary effect, which is statistically significant in the model under analysis and indicates the existence of shocks within the analysis period that have an impact on the dependent variable. Between 2000 and 2020 there were some shocks that impacted FDI in the FDI recipient countries. Considering that this period saw the economic crisis of 2007-2010 and the Covid pandemic 2020-2021 it is plausible that the resulting effect in the "growth curve" model highlights that this time dummy variable is statistically significant. The feature that differentiates these models from the other models

considered in the analysis is the introduction of this dummy variable that codes for each period within the analysis horizon

Each year in this period under analysis signifies the change in the macroeconomic environment in which countries operate and consequently the manifestation of shocks that are temporary - time-dependent in the period under investigation, also reflected by μ_t in the regression equation. In the regression equation there are also those days that reflect time-invariant factors. The growth curve model reports the same type of information as the between-within model above except that it adds that time dummy variable, which is statistically significant. In the Growth Curve models, as in the within-between models, we observe that the trade openness, corruption perception index, trade protection index, and investment freedom index are statistically significant and positive, indicating a percentage increase in the FDI with the coefficient value when the independent variable increases by one percentage point. Similar to the previous situation in the Within-Between models the only indicator with a negative coefficient value but this time statistically significant is economic freedom, indicating a 0.88% decrease in the stock of FDI when there is a 1% increase in economic freedom, the data being logarithmic 0.88% represents the elasticity of Y with respect to X.

R² is also reported in the results table. The model in its entirety explains around 86% of the evolution of the dependent variable in the case of within-between models and 86% in the case of Growth Curve models. The models also report information on $\epsilon_{i,t}$ as the standard deviation. The smaller the standard deviation of the residual error, the more accurately the model is estimated. BIC and AIC-Bayesian Information Criterion and Akaike Information Criterion (AIC) are used to rank the models. The lower the values for these two information criteria, the better a model is in terms of economy. The best model based on AIC and BIC is the Growth Curve Model, which is why it has been interpreted in more detail.

Estimation is also done by the semiparametric Generalized estimating equations (GEE) technique with within-between specification. In the GEE model, only the corruption perception index and the trade protection index have statistical significance. A one percent increase in the corruption perception index implies a 0.22% increase in the stock of FDI at a statistical significance threshold of 5%. A 1% increase in the trade protection index implies a 0.93% increase in the FDI stock. And in the case of the semiparametric GEE estimation with within-between specification, similarly to the other two Linear Mixed Effects models with within-between and contextual specifications, the largest impact on the evolution of the FDI stock is still on the trade protection index, but the magnitude of the effect of increasing FDI is much smaller, 0.93%, compared to 2.67% in the first model and 1.61% in the second model.

One version is that of a contextual model where the "trend" (mean) is not extracted from $X_{i,t}$. β_2 reflects the differences between within and between effects at the level of i entities: a significant level of this parameter indicates that these differences are substantial. In the model, β_2 is significant at the 5% significance level for T, reflecting that there are substantial differences between the within and between effects of the trade openness variable.

4. Conclusions

The research method took into account the identification of econometric models that capture the complex influence of country risk components on FDI, such as the mixed nature of the influence of country risk as measured by mixed linear between-within models that combine the advantages of "fixed effects" models (robustness to the presence of time-invariant effects) with the flexibility given by "random effects" models. The research results support, through the variety of econometric models used, the hypothesis of the significant influence of the analysed country risk components on foreign direct investment. Each model used offers its own perspective on explaining the influence of country risk, In the within-between models it is observed that all indicators: corruption perception index, trade openness, investment freedom index and economic freedom have a positive and statistically significant influence on foreign direct investment. The "growth curve" models demonstrate the existence of a statistically significant temporary effect coding each time period within the analysis horizon 2000-2020. In this time period, the economic crisis of 2007-2010 and the Covid pandemic 2020-2021 occurred and the effect resulting in the "growth curve" model suggesting the existence of shocks in the analysis period impacting the dependent variable under analysis FDI is plausible. This model is chosen as the best analysis model also from the perspective of economic sense, with the lowest reported values for AIC and BIC (Bayesian Information Criterion and Akaike Information Criterion) among all the linear mixed models analysed.

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