

**INTERNATIONAL NETWORK FOR ECONOMIC RESEARCH**

## **Which are the long-run determinants of US outward FDI?**

Mariam Camarero<sup>1</sup>, Sergi Moliner<sup>2</sup>, Cecilio Tamarit<sup>3</sup>

*1 Universitat Jaume I and INTECO, 2 Universitat de València, 3 Universitat de València and INTECO.*

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*This paper, based on Camarero et al. (2023), analyzes the long-run determinants of US outward FDI (OFDI) stock, focusing mainly on the Euro Area (EA) for the period 1985-2019. We consider a sample of 54 developed and emerging host countries representing over 70% of the total US OFDI stock. We implement a Dynamic Common Correlated Effects Pooled Mean Group (DCCEPMG) estimator for this aim. Our econometric approach is especially suited for analyzing integrated economic areas as it allows us to deal with cross-section dependence (CSD), non-stationarity, structural breaks, and slope homogeneity usually present in large panel data. Our main results suggest that horizontal (HFDI) and vertical (VFDI) strategies coexist for all country groups. However, as we move towards more homogeneous groups, the results show the greater importance of VFDI. Additionally, we find that some variables have a common long-run effect on US OFDI, especially for smaller and more homogeneous groups.*

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In this paper, we analyze the long-run determinants of US outward foreign direct investment (OFDI) stock with a particular focus on the European Union (EU). Our empirical approach aims to efficiently account for the effects that the different steps in the process of economic integration in the EU have had on US OFDI. Uncovering the reasons that attract FDI to the EU is a difficult task.

Aristotelous and Fountas (1996) or Kim (2004), find that firms outside the EU invest

in the union for multiple reasons. First, to avoid trade barriers and take advantage of a larger market size. This strategy is known as horizontal FDI (HFDI). Second, internal FDI increased with the creation of the Single Market due to the significant differences in labor costs and relatively short supply chains. This motivation, known as vertical FDI (VFDI) is especially relevant in the new Central and Eastern member states (Bevan and Estrin, 2004). Moreover, both HFDI and VFDI strategies may coexist within the EU, as pointed out by Dauti (2016), Dorakh (2020),

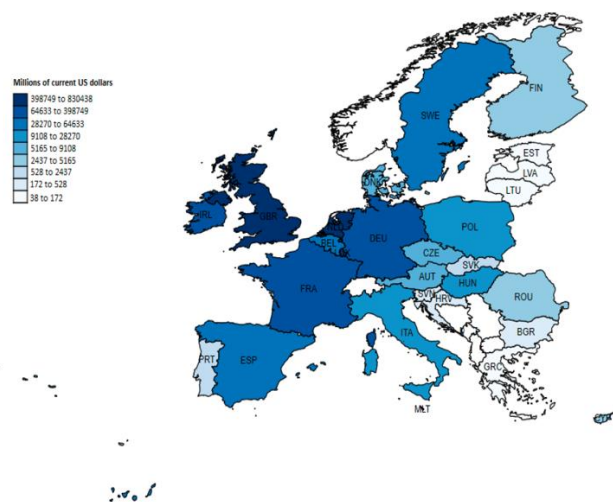
and more recently Camarero et al. (2022). In addition, the introduction of the common currency in 1999 can be considered an additional step to reinforce the integration achieved with the Single Market. Finally, some external shocks, such as the Great Recession, or the Covid-19 may have affected the process of economic integration in terms of trade and FDI and call for an analysis that accounts for possible structural breaks in the series, where not only economic but geopolitical factors can play an increasing role as determinants of US FDI.

Our sample contains the stock of US OFDI in 54 developed and emerging countries from 1985 to 2019, which represents over the 70% of the total US OFDI stock in 2019. Furthermore, we focus on EU and Euro Area (EA) countries separately (See Figure 1). Additionally, within the EA, we distinguish between the core and the periphery. The breakdown of the countries in the area into smaller and more homogeneous groups help us to identify similar characteristics to explain the different behavior of US OFDI in EU countries.

We apply a version of the gravity model to approximate the cross-country patterns of US OFDI stock in the long run. Our empirical approach looks at three elements: long-run relationships, the paths toward the long-run equilibrium after a shock (break), and the short-run impact. Additionally, one of our primary motivations is the search for similarities across country groups in the long-run. In order to handle dynamic and homogeneous coefficients of a panel model that incorporates lagged dependent and weakly exogenous regressors, we use the Dynamic Common Correlated Effects Pooled Mean Group (DCCEPMG) estimator. The DCCEPMG is a modified estimator that combines the Dynamic Common Correlated Effects approach (DCCE) due to Chudik and Pesaran (2015) with the Pesaran et al. (1999)

Pooled Mean Group (PMG) estimator. In addition, we extend this estimator to allow for the existence of common structural break endogenously detected.

Figure 1: US OFDI stock distribution in the EU in 2019



Source: Own elaboration. Data obtained from Bureau of Economic Analysis (BEA).

We contribute to the empirical literature on FDI in several respects. First, instead of just focusing on a specific regression model and an ad hoc gravity setting, we build on Camarero et al. (2021) to select the incumbent drivers of our empirical model, drawing on their Bayesian Model Averaging (BMA) analysis. Second, to measure the potential long-run effects of the main events of our sample period we use the Banerjee and Carrion-i-Silvestre (2015) approach to endogenously detect structural breaks in the long-run relationships, and test for potential changes in the parameters after these events. Lastly, we focus both on the magnitude and effect of the long-run drivers of US OFDI and on which of them have a homogeneous effect.

Our main results are, first, that similar drivers attract US FDI to the country groups we analyze, although the strategies followed have been different and, sometimes, have

changed during the sample period. Those structural breaks, as we expected, are related not only to external events (such as the world financial crisis) but also to institutional changes within the EU, such as the creation of the euro or the 2004 enlargement to the East, and changes in the US trade and security policy, as are the cases of the 1999 and 2004 NATO enlargements to Eastern Europe. Second, we have found long-run relationships linking FDI and its drivers for all country-groups once we account for the structural breaks and allow for a combination of

homogeneous and heterogeneous parameters in the specification. Third, both horizontal and vertical strategies coexist in all country groups. However, as we move towards more homogeneous groups, VFDI prevails. Finally, some of the relevant variables have homogeneous parameters in the specifications. As one may expect, this fact is especially evident in smaller and more homogeneous country-groups.

# Policy Implications

The EU countries have maintained their attractiveness for US FDI through the sample period. Serving a large and expanding market with each enlargement and avoiding the non-tariff barriers that separate the US and the EU has always been a reason for the presence of US MNCs in Europe. Similarly, geopolitical security achieved by the NATO enlargements to the East have also encouraged US FDI to these countries. In addition, the participation in GVCs, both of European and non-European ownership, has grown in the last 30 years thanks to the skill level of the labor force in the European continent and relatively low salaries in Eastern and peripheral countries. Moreover, the macroeconomic stability and the institutional quality of the EU and NATO are the bases for continuing the solid bilateral FDI relationship between the EU and the US. The international context also favors strengthening this link, as the two economic areas are interested in reducing their dependence on Asian producers.

## References

- Aristotelous, K. and Fountas, S. (1996). An empirical analysis of inward foreign direct investment flows in the EU with emphasis on the market enlargement hypothesis. *Journal of Common Market Studies*, 34(4):571–583.
- Banerjee, A. and Carrion-i Silvestre, J. L. (2015). Cointegration in panel data with structural breaks and crosssection dependence. *Journal of Applied Econometrics*, 30:1–21.
- Bevan, A. A. and Estrin, S. (2004). The determinants of foreign direct investment into European transition economies. *Journal of Comparative Economics*, 32(4):775–787.
- Camarero, M., Moliner, S., and Tamarit, C. (2021). Is there a euro effect in the drivers of US FDI? New evidence using Bayesian model averaging techniques. *Review of World Economics*, 157:881–926.
- Camarero, M., Montolio, L., and Tamarit, C. (2022). Explaining German outward FDI in the EU: a reassessment using Bayesian model averaging and GLM estimators. *Empirical Economics*, 62(2):487–511.
- Camarero, M., Moliner, S., and Tamarit, C. (2023). Which are the long-run determinants of US outward FDI? Evidence using large long-memory panels. *The Journal of International Trade & Economic Development*, DOI:10.1080/09638199.2023.2225643.
- Chudik, A. and Pesaran, M. H. (2015). Common correlated effects estimation of heterogeneous dynamic panel data models with weakly exogenous regressors. *Journal of Econometrics*, 188(2):393–420.
- Dauti, B. (2016). Trade and foreign direct investment: Evidence from South East European countries and new European Union member states. *Proceedings of Rijeka School of Economics*, 34(1):63–89.

Dorakh, A. (2020). A Gravity Model Analysis of FDI across EU Member States. *Journal of Economic Integration*, 35(3):426–456.

Kim, Z. K. (2004). The Impact of the Process of Economic Integration on the Relationships between Foreign Direct Investment (FDI) and Trade: Cases of Japan and U.S. in European Union. *International Area Studies Review*, 7(2):135–148.

Pesaran, M. H., Pesaran, M. H., Shin, Y., and Smith, R. P. (1999). Pooled Mean Group Estimation of Dynamic Heterogeneous Panels. *Journal of the American Statistical Association*, 94(446):621–634.



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