Stock market correlation and geographical distance: does the degree of economic integration matter?

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Abstract

This paper investigates the effects of geographical distance on stock market correlations between countries within economic blocs. Specifically, this paper examines whether the degree of economic integration influences the nexus between geographical distance and stock market correlation. As the study compares two economic blocs, the European Union (EU) and the North Atlantic Free Trade Area (NAFTA), it finds that geographical distance negatively affects stock market correlations in the two economic blocs, but that effect is less significant for economic blocs with advanced economic integration. Contrary to past studies, this paper postulates that the negative impact of geographical distance on stock market correlation is a result of portfolio reallocation by foreign investors seeking high yields and safe havens in the local stock market when taking advantage of possible capital market liberalization.

1. INTRODUCTION

The current trend of globalisation and the advent of the fourth industrial revolution, characterised by an unprecedented technological revolution, led to the notion that the world is becoming like one village and that distance between countries should not matter for economic and financial transactions. This reality is often dubbed the 'death of distance' (see Tranos and Nijkamp, 2013). However, several studies provide mixed results on the effects of distance on international trade. For example, Feyrer (2021) assess the impact of temporary shocks to distance on international trade following the closing of the Suez Canal in 1967. The author finds a positive effect of distance on international trade, mainly triggered through trade in goods channels rather than technology and tourism channels. On the contrary, Borchert and Yotov (2017), in assessing how globalisation affects manufacturing trade, show that geographical distance has decreased manufacturing trade, with countries in the middle of the per-capita income distribution having the steepest fall compared to low-income countries. Bergstrand et al. (2015) show that the effect of distance on international trade is biased upward in many gravity models as they fail to account for the impact of economic integration agreements and unobserved country-pair heterogeneity. Kandilov and

Grennes (2012) show that empirical studies using gravity models will continue to provide controversial results if they fail to account for all non-transport trade costs.

While there is rich literature on the effects of geographical distance on economic interactions, especially international trade, studies are limited on the impact of geographical distance on global financial interactions and transactions. This limitation may be due to the expectation that contrary to economic transactions or international trade, international financial transactions may not involve transport costs and, thus, be immune to the distance puzzle. Despite this expectation, there is still no consensus on studies that assess the relationship between geographical distance and international financial interactions. For example, Brei and Van Peter (2018) show that similar to trade, the effect of geographical distance has a sizeable impact on international banking transactions, although at a decreasing rate.

In the context of distance and stock market linkages, Many studies have identified negative relationships between the two variables (see Grinblatt and Keloharju, 2001; Flavin, Hurley and Rousseau, 2002; Chong, Wong and Zhang, 2011). For example, Chong, Wong and Zang (2011) assess the impact of geographical distance on international financial linkages by using the panel data of bilateral cross-country stock market correlations of 23 countries. The authors find that stock market correlations are negatively associated with the Great Circular Distance (GCD) between the financial centres of these 23 countries. Guo and Tu (2021) find that institutional distances significantly affect the stock market synchronisation of 22 developed and emerging markets, thereby rejecting the liability of foreigners (LOF) hypothesis. abroad by analysing the extent to which distance may contribute to LOF in capital markets. The authors use a sample of 361 firms from 45 countries over a 24-year time period. They find that institutional distances lead to increased cost of debt in that the frequency of foreign debt issuance assists in alleviating the LOF.

In the context of LOF, Denk et al., (2012)state that firms operating in foreign markets may incur additional costs related to unfamiliarity and information. Also, geographical distances reflect not only transport costs but also informational barriers for these firms. While studies attributed the influence of geographical distances on international financial interactions to the asymmetry of information (see Gu et al., 2019), studies show that asymmetric information between investors in different countries reflects various indicators that suggest much less than complete financial integration (Gordon and Bovenberg, 1996). Likewise, Mondria and Wu (2013) show that imperfect financial integration and informational asymmetries are complementary ideas to explain why investors prefer to hold local rather than foreign assets in their portfolio, the home bias puzzle. It becomes essential to assess whether the extent of economic or financial integration may affect the link between geographical distance and international financial interaction, such as the stock market correlation between countries.

It is worth noting that a few studies assess the link between geographical distance and the synchronisation or correlation of stock markets (Guo and Tu, 2021; Chong et al., 2011). However, no studies do so by accounting for the degree of the economic integration of these markets or economies. According to Mondria and Wu (2013), one could assume that countries that have reached the highest level of economic integration may mitigate the effect of geographical distance in the synchronisation of their stock markets. This mitigation occurs as asymmetric information is eliminated at a higher level of economic integration. In order to verify this assumption, this paper assesses the link between the dynamic correlation of stock markets and geographical distances in the European Union (EU) and NAFTA (North Atlantic Free Tade Area) groupings. The former has achieved the level of an economic union, while the latter represents the case of a free trade area. Thus, the contribution of this paper is twofold; firstly, the paper assesses the effects of geographical distance on the dynamic correlation of stock markets by exogenously accounting for the level of economic integration of groups of countries. Secondly, the paper model the dynamic correlation of stock markets by accounting for heterosccedasticy, using the DCC-GARCH model and modelling the gravity model estimated based on Poisson pseudo-maximum likelihood (PPML) rather than ordinary least squares (OLS).

The remainder of the paper is structured as follows; section 2 presents the paper's methodology. Section 3 estimates the model and discusses the results obtained. Section 4 concludes the paper.

2. METHODOLOGY

In this section we present the methodology employed to investigate whether geographical distance has an influence on stock market correlation when accounting for the degree of integration of different economic blocks, namely NATFTA and EU. To this end, firstly we construct stock market correlation series by applying the Dynamic Conditional Correlation GARCH (DCC GARCH) model. Then, we assess the relationship between stock market correlation and geographical distance by applying the gravity model. The first part of this section details how the dynamic conditional correlations are estimated, followed by a description of the baseline gravity model.

2.1 DCC GARCH Model.

The DCC GARCH model is a form of the multivariate GARCH family. These models are an extension of the popular univariate GARCH models with the major difference being that the multivariate forms accounts for the interaction effects between volatility of different assets. This then enables the multivariate models to capture and estimate the volatility covariation of assets. The DCC model is selected for two main reasons, firstly, unlike the Constant Conditional Correlation GARCH, the DCC model allows for the correlation structure to be dynamic and change over time. Secondly, according to Engle (2002), the DCC model is less complex to estimate when compared to other multivariate GARCH models, since in DCC the number of parameters to be estimated in the correlation process is independent of the number of series that are to be estimated which renders in a large computational advantage when estimating large covariances. The DCC model as presented by Engle (2002) can be formally presented as follows:

$$H_t = D_t R_t D_t \quad (1)$$

Where H_t id the conditional covariance matrix and R_t is the conditional correlation matrix. D_t is generally viewed as univariate GARCH model. The DCC model inputs ca be broken down as follows

$$D_t = diag\{\sqrt{h_{i,t}}\} \quad (2)$$

$$h_{i,t} = w_i + \sum_{p=1}^{P} \alpha_{ip} a_{i,t-p}^2 + \sum_{q=1}^{Q} \beta_{iq} h_{i,t-q}^2 \quad (3)$$

In equation (2) the elements of D_t are written as a univariate GARCH model.

where $h_{i,t}$ is the conditional variance at time t , $a_t$is the mean corrected return of an asset at time t. α_i and β_i are parameters to be estimated, q and p are the lag orders of the GARCH model.

Moreover, the conditional correlation matrix is derived as:

$$R_t = Q_t^{*-1} Q_t Q_t^{*-1} \quad (4)$$

where

$$Q_t = (1 - \sum_m^M \alpha_m - \sum_{n=1}^N \beta_n)\bar{Q} + \sum_m^M \alpha_m (\epsilon_{tm} - \epsilon_{t-m}^{\mathrm{I}}) + \sum_{n=1}^N \beta_n Q_{t-n}$$

And

$$Q_t^* = \begin{bmatrix} \sqrt{q_{11}} & 0 & 0 \\ 0 & \sqrt{q_{22}} & 0 \\ 0 & 0 & \sqrt{q_{33}} \end{bmatrix} \quad (5)$$

and $\bar{Q}$ is the unconditional covariance of standardised residuals from the first stage of estimation

2.2. The Gravity Model

In this study we analyse the effects of geographic distance on stock market correlations by applying the gravity model, similar to the one used in international trade literature. This study builds on the recent literature of stock market correlations by employing a gravity model estimated via Poisson pseudo-maximum likelihood (PPML) rather than ordinary least squares (OLS). Applying the PPML presents two main advantages compared to applying the OLS technique. First, heteroscedasticity will not result in biased estimates. Second, observations with zeros can be can be included and estimator will still be consistent. The control variables allowed to influence the level of equity market correlations include great circular distance, income, inflation, trade intensity, stock market size, credit to private sector and existence of a border between two countries as in Chong et al. (2011). The gravity model employed in this study is expressed as follows:

$$Corr_{ij,t} = \alpha_0 + \beta_1 ln(GCD_{ij}) + \beta_1 ln(INC_{ij}) + \beta_1 ln(INF_{ij}) + \beta_1 ln(TRDI_{ij}) + \beta_1 ln(Size_{ij}) + \beta_1 ln(MKTC_{ij}) + \beta_1 ln(CRPS_{ij}) + \beta_1 lnBorder_{ij} + \varepsilon_{ij} \quad (6)$$

where the $\alpha_0$term is a regression constant, and the $\beta_i$terms are coefficients to be estimated. $Corr_{ij,t}$is the dependent variable in the model, quantifying the conditional correlation between of equity market i and equity market j at time t. This variable is calculated using the DCC GARCH model, GCD_{ij} is the great circular distance between the capital cities of country i and country j. $Border_{ij}$ is a dummy variable, which takes the value one if the two countries share a common land border and zero otherwise. $TRDI_{ij}$ is the variable that measures the intensity of trade between country i and country j. Trade Intensity is calculated as follows:

$$TRDI_{ij} = \frac{Exp_{ij,t} + Imp_{ij,t}}{Exp_{i,t} + Imp_{i,t}} + \frac{Exp_{ij,t} + Imp_{ij,t}}{Exp_{j,t} + Imp_{j,t}} \quad (7)$$

Where $Exp_{ij,t}$and $Imp_{ij,t}$ represent the value of exports and imports from country i to country j respectively. $Exp_{i,t}$, $Imp_{i,t}$ represent the total exports and imports of country i, and $Exp_{j,t}$, $Imp_{j,t}$ are the total exports of country j.

INC_{ij} measures the per capita income difference between country i and country j. A larger value indicates greater differences between two countries in terms of their income levels. $CRPS_{ij}$ measures the difference between country i and country j in terms credit to private sector as a percent of GDP. A larger value of $CRPS_{ij}$ indicates big gap between the countries in terms of their financial sector development. Size_{ij} quantifies the total size of equity markets i and j. market size is measured by the average annual market capitalization in each year of the panel.

3. DATA, EMPIRICAL RESULTS AND DISCUSSION

3.1 Data

In our attempt to assess the effect of geographic distance on stock market correlation in the European Union block and the NAFTA block, we follow earlier literature on stock market correlation (Dellas and Hess, 2005; Flavin et al. 2002; Lucey and Zhang, 2010), by making use of dynamic stock market correlations as the dependent variable. However, in this study unlike previous literature that used unconditional correlation to model stock market correlation , we use conditional correlation to account for heteroscedasticity in stock market returns. It is in that context that we use Dynamic Conditional Correlation GARCH model to obtained stock market correlation between countries in trading blocs.

Table 1: Descriptive Analysis for Stock Market Returns

	Mean	Standard Deviation	Sample Variance	Kurtosis	Skewness	Minimum	Maximum
Germany	0,0687	3,2203	10,3701	5,2855	-0,6639	-24,3470	14,9421
France	-0,0045	2,9905	8,9432	6,5003	-0,8790	-25,0504	12,4321
Italy	-0,0650	3,2780	10,7453	6,3114	-0,8962	-24,3603	19,3609
Netherlands	-0,0180	3,0645	9,3912	9,8215	-1,2002	-28,7546	13,5816
Spain	-0,0107	3,1579	9,9723	4,5524	-0,7395	-23,8266	11,8234
Sweden	0,0334	3,0133	9,0798	4,5293	-0,7352	-22,5279	12,2751
Belgium	0,0253	2,7821	7,7402	10,3682	-1,3238	-26,1109	12,9057
Poland	0,0257	3,2060	10,2787	2,3727	-0,1791	-16,6386	16,0127
Canada	0,0697	2,3900	5,7122	7,5605	-0,9717	-17,5418	12,8171
USA	0,0659	2,4336	5,9222	7,5935	-0,8761	-20,0837	11,3559
Mexico	0,2075	2,9920	8,9521	6,1818	-0,2783	-17,9285	18,5786

Table 2: Descriptive Statistics for Stock Market Conditional Correlation

	Mean	Standard Deviation	Sample Variance	Kurtosis	Skewness	Minimum	Maximum
Belgium_France	0,8158	0,1581	0,0250	10,3806	-2,9782	-0,0621	0,9702
Belgium_Germany	0,7840	0,1157	0,0134	8,4397	-2,4387	0,0543	0,9346
Belgium_Italy	0,7655	0,1327	0,0176	9,7559	-2,7432	0,0062	0,9412
Belgium_Netherlands	0,8326	0,0765	0,0058	6,1721	-2,1203	0,4445	0,9600
Belgium_Poland	0,4820	0,0847	0,0072	-0,8751	0,1067	0,2990	0,6611
Belgium_Spain	0,7381	0,1018	0,0104	5,8528	-2,1277	0,2268	0,9129
Belgium_Sweden	0,6972	0,1610	0,0259	3,2460	-1,6539	-0,0425	0,9279
France_Germany	0,9019	0,0361	0,0013	4,4682	-1,6773	0,6980	0,9770
France_Italy	0,8744	0,0385	0,0015	0,4213	-0,6416	0,7394	0,9643
France_Netherland	0,9117	0,0315	0,0010	4,0450	-1,5577	0,7578	0,9584
France_Poland	0,5539	0,0454	0,0021	-0,6874	0,4084	0,4673	0,6604
France_Spain	0,8365	0,0343	0,0012	0,9862	-0,5814	0,7040	0,9391
France_Sweden	0,8164	0,0447	0,0020	3,6103	-1,2902	0,5806	0,9425
Germany_Italy	0,8145	0,0449	0,0020	0,7717	-0,4780	0,6576	0,9596
Germany_Netherlands	0,8772	0,0299	0,0009	0,1659	-0,7015	0,7753	0,9334
Germany_Poland	0,5567	0,0694	0,0048	-0,8406	0,3416	0,4196	0,7005
Germany_Spain	0,7797	0,0537	0,0029	1,3142	-0,8209	0,5734	0,9342
Germany_Sweden	0,8168	0,0454	0,0021	2,3301	-1,0487	0,5881	0,9500
Italy_Netherlands	0,8232	0,0410	0,0017	-0,7623	-0,1255	0,7133	0,9130
Italy_Poland	0,5066	0,0338	0,0011	0,4674	0,7302	0,4250	0,6162
Italy_Spain	0,8420	0,0500	0,0025	2,2246	-1,1844	0,6213	0,9348
Italy_Sweden	0,7248	0,0577	0,0033	1,6116	-0,7552	0,4917	0,8963
Netherlands_Poland	0,5497	0,0698	0,0049	-0,6611	0,4916	0,4010	0,7313
Netherlands_Spain	0,7809	0,0336	0,0011	0,0664	-0,5077	0,6680	0,8758
Netherlands_Sweden	0,7930	0,0501	0,0025	0,5322	-0,5245	0,5747	0,9049
Poland_Spain	0,5088	0,0523	0,0027	0,4114	0,6704	0,3737	0,6624
Poland_Sweden	0,5348	0,0606	0,0037	-1,0017	0,2632	0,4175	0,6656
Spain_Sweden	0,7147	0,0422	0,0018	1,2610	-0,3278	0,5521	0,8597
Canada_Mexico	0,7398	0,4313	0,1861	1,5952	-1,6874	-0,2781	0,9993
Canada_USA	0,7030	0,4684	0,2194	5,4160	-2,1775	-0,7903	0,9982
Mexico_USA	0,6014	0,5952	0,3543	0,8834	-1,4313	-0,8431	0,9982

The sample data covers the period January 2000 through December 2017. The data is collected on a weekly frequency to eliminate the problem of non-synchronicity. Table 1 reports the summary statistics of the equities returns. From Table 1 we note that the standard deviations are quite high, and all the skewness coefficients are negative showing that this data has characteristics that are common in financial timeseries data

In this study to measure geographic distance we use the great circular distance (GCD) between capital cities. This data is collected from the CEPII data base and has been widely used in the literature. Table 2 displays the characteristics of the conditional correlations between the pair of countries obtained from the DCC GARCH model. During the period under consideration, we see that average conditional correlation varies from 0.555 to 0.911, indicating very strong co-movement between the stock markets of different countries in the EU and NAFTA blocks.

3.2 Empirical results and discussion

Before estimating Equation 6 by using the gravity model, it is essential to assess the trend of the dynamic correlation of stock markets in each of the regional blocks. Figure 1 displays the conditional dynamic correlation of EU's stock markets, especially the correlation between Germany and other EU member countries. The common feature in Figure 1 is that there is sharp variation of correlations during important economic and financial crises, such as the global financial and European debt crises showing possible contagions between EU's stock markets.

Figure 1 Conditional dynamic correlation of EU's stock markets

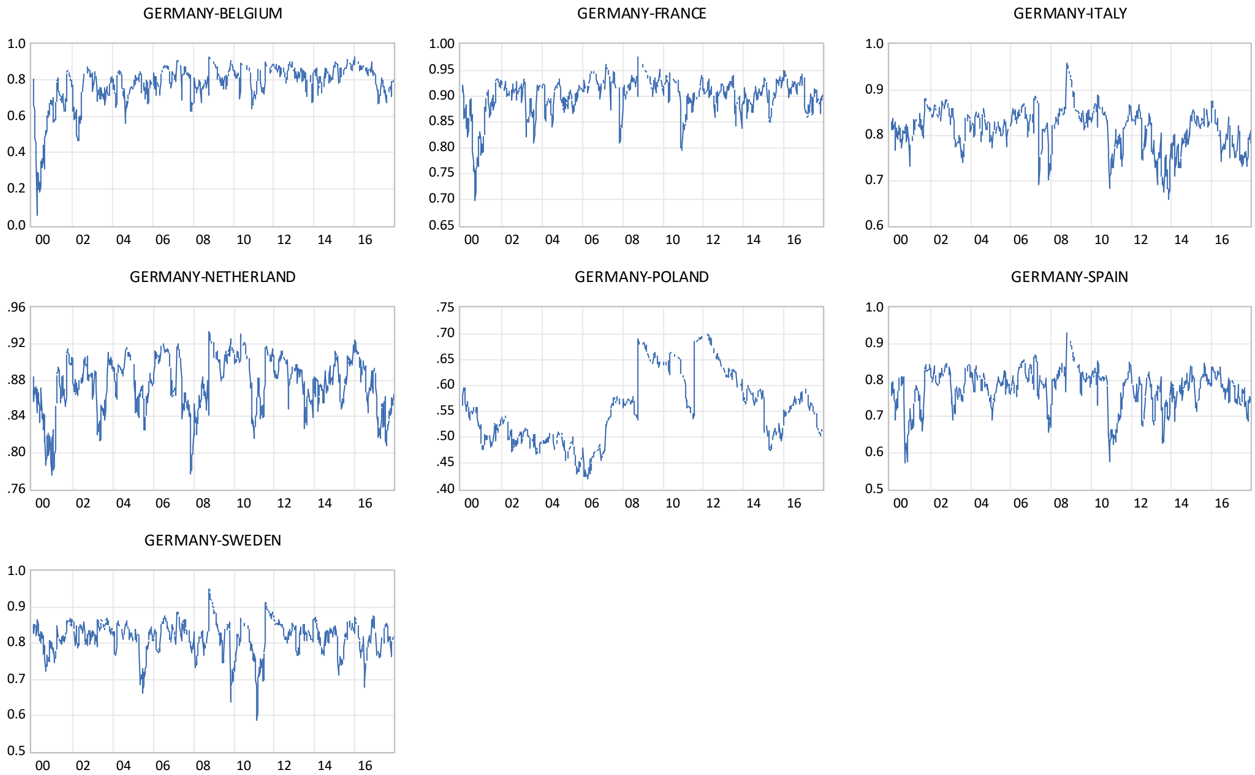
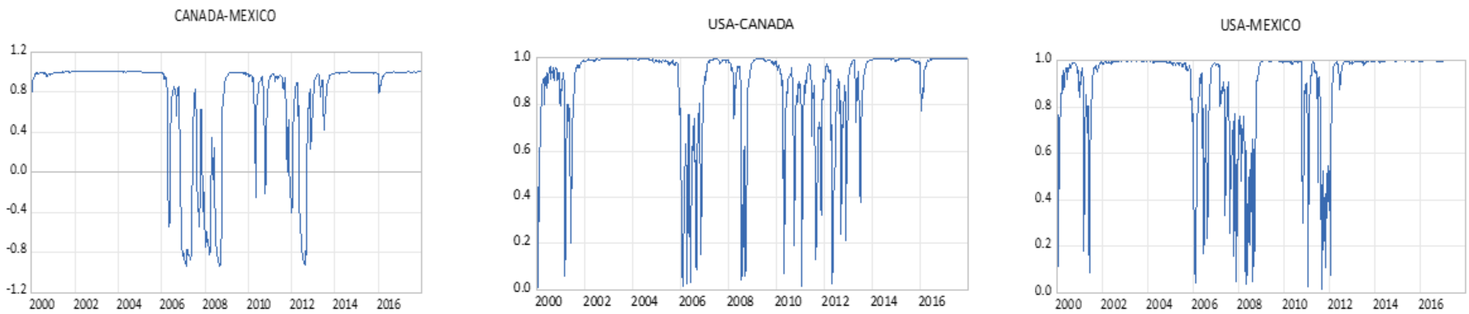


Figure 2 displays the conditional dynamic correlation between NAFTA countries. Contrary to the correlation between EU stock markets, the correlation between stock markets show a sharp decline during important financial and economic crises with instances of negative correlation between CANADA and MEXICO, for example. This outcome should be attributed to a possible 'decoupling' during important crises between NAFTA countries. Given that MEXICO is an emerging economy, while the US and CANADA are developed economies, literature abounds on showing the possible decoupling between emerging and developed economies during important financial and economic crises (See Omoshoro-Jones and Bonga-Bonga, 2019).

Figure 2 Conditional dynamic correlation of NAFTA's stock returns



We then estimate Equation 6 employing the gravity model by regressing the conditional correlation on geographic distance and a set of control, variables. The gravity model applied in this case is based on the Pseudo Poison Maximum Likelihood (PPML) estimator. The PPML estimator of Silva and Tenreyro (2006) assumes that the variance is proportional to the mean so that the only condition required for estimator to be consistent is the correct specification of the conditional mean. The PPML also gives the same weight to each observation in the estimation and so is desirable when there is not much available information on the nature of heteroscedasticity in the data. The results reported in Table 3 show that the estimated coefficients for geographic distance are negative and statistically significant. This implies that the greater the distance between two markets, the lower the correlation, and that the stock markets in close proximity move together. These results hold both in a purely economic agreement (NAFTA) and in a well-integrated block that has developed into a political, social and territorial union (EU). Other observations from Table 3 are that higher inflation in EU countries reduces their stock market correlation or synchronisation. This outcome may be due to the fact that during high inflation capital flows from volatile to safe haven countries leading to the negative correlation between their stock market returns. The negative relationship between stock market correlation and market capitalisation should be explained by the fact that simultaneous decrease in market capitalisation within the trading blocs is often the results of economic crises. In response to these crises, stock markets become contagious, resulting in their positive correlation.

On the negative correlation between geographical distance and stock market correlation, it is important to note that many studies find the same results. For example, Guo and Tu (2021) find that geographic distance has a negative effect on stock markets synchronization. The authors attributed this negative relationship to the liability of foreignness (LOF), which postulates that foreign investors incur additional costs related to the collection of relevant information of local firm due to their unfamiliarity with the local environment. Other studies, including Grinblatt and Keloharju (2001), Flavin, Hurley and Rousseau (2002) and Chong, Wong and Zhang (2011), attribute the negative relationship between geographical distance and stock market linkages to the liability of foreignness as well.

Table 3: Gravity Model Estimation Results

	EU	**NAFTA**
Intercept	-2.9920***	8,6780*
	(0,3710)	(4,7179)
Distance	-0,07338***	-1,2235**
	(0,0322)	(0,5612)
Income	-0,0467***	0,0458
	(0,01508)	(0,0854)
Inflation	-0,0153*	0,0203**
	(0,0080)	(0,0096)
Market_Capitalisation	-0,3710***	-0,0020**
	(0,0199)	(0,0008)
Market Size	0,2126***	0,0356
	(0,0137)	(0,0460)
Trade Intensity	0,01774	-0,0851
	(0,0190)	(0,0590)
Border	0,0476*	0,3102*
	(0,0258)	(0,1746)
Credit to Private Sector	-0,0005*	-0,0010
	(0,0002)	(0,0012)

*Note: ***, **and * respectively shows statistical significance at 1% ,5% and 10 % level.*
The values in parenthesis are standard errors

Although, this paper finds the negative relationship between geographical distance and stock market correlations like in previous studies, however, we contend that this outcome has nothing to do with the liability of foreignness as supported by these studies. The LOF's argument should imply that foreign investors' returns should be less than that of local investors in a given stock market. Still, it cannot justify why the returns of the two stock markets should be negatively correlated. Our hypothesis is that geographical distance negatively affects stock market correlation as a result of portfolio reallocation by foreign investors seeking high yields and safe havens in local stock market when taking advantage of capital market liberalisation. When portfolios are reallocated, local and foreign stock markets experience opposite capital allocation, which leads to the negative correlation of stock market returns. Such portfolio reallocation possibly happens between distant stock markets as studies have shown that stock market convergence or spillover impacts are more prevalent in nearby countries (see Ferreira and Gama, 2007). This reality entails that portfolio reallocation between foreign and local stock markets in close proximity is unnecessary as their returns are likely to converge.

The argument that stock market convergence or spillover impacts are more prevalent in nearby countries is supported by the results provided in Table 3, whereby border effects have positive impacts on stock markets correlations in both EU and NAFTA. The positive border effects on stock market correlation implies that nearby stock markets within integrated countries are likely to have their stock market returns equalized.

Several studies have identified that financial integration leads to a faster convergence of countries' financial and economic indicators through the equalization of their returns (Evans and Hnatkovska, 2014; Mann, 2021). However, other studies show that financial integration may reduce capital accumulation and market returns in countries with poor financial institutions because of their inherent high risk premium (Stiglitz, 2010; Coeurdacier et al., 2020). In the light of these studies, we may argue that investors in financially integrated countries with poor institutions should find it beneficial to reallocate part of their investments from local to foreign markets leading to negative correlation between these markets. This negative correlation is higher in integrated blocs with different levels of financial development. It is in that context that we find that in NAFTA, as an integrated bloc that include high risk countries like MEXICO and low risk country such as the US, the negative impact of geographical distance on stock markets returns is higher compared to the EU.

Although the EU has reached the highest level of economic integration, the effect of distance on stock markets remains negative owing to the different risk premiums of its members, especially with the current 27 member countries geographically clustered according to their level of financial development.

3.3. Robustness Check

In order to check the validity of our baseline findings we perform a robustness check. We do this by implementing a gravity model that is based on the non-linear least squares technique. Non-Linear techniques in the estimation of gravity models have the advantage that they cater for the problem of heteroskedasticity which by itself does not affect the parameter estimates; but it biases the variance of the estimated parameters and, ultimately, the t-values will be incorrect. The results from the non- linear least squares are reported in Table 4. We note that the coefficients are quite similar to those obtained in the baseline model. Moreover, the main dependent variable, geographic distance is still significant and maintains its negative sign indicating that there is inverse relationship between geographic distance and equity markets correlations.

Table 3: Gravity Model (NLS) Estimation Results

	EU	**NAFTA**
Intercept	-3,0060***	8,8437*
	(0,3768)	(4,6957)
Distance	-0,0741***	-1,2375**
	(0,0139)	(0,5536)
Income	-0,0601***	0,0432
	(0,0165)	(0,0816)
Inflation	-0,0132*	0,0204**
	(0,0080)	(0,0096)
Market_Capitalisation	-0,1504***	-0,0021**
	(0,0209)	(0,0008)
Market Size	0,2221***	0,0348
	(0,0140)	(0,0457)
Trade Intensity	0,0160	-0,0849
	(0,0197)	(0,0575)
Border	0,0456*	0,3394*

	(0,0274)	(0,1707)
Credit to Private Sector	-0,0005*	-0,0012
	(0,0002)	(0,0011)

*Note: ***, **and * respectively shows statistical significance at 1% ,5% and 10 % level.*
The values in parenthesis are standard errors

4. Conclusion

While many studies have focused on the effects of geographical distance on economic interaction between countries, especially international trade, few studies have focused on the nexus between geographical distance and financial interaction. It is in that context that this paper sought to investigate the effects of geographical distance on stock market correlations between countries within economic blocs. Specifically, the paper assessed whether the degree of economic integration influences the nexus between geographical distance and stock market correlation. The empirical analysis focused on two economic blocs, the European Union (EU) and the North Atlantic Free Trade Area (NAFTA). The results of the empirical analysis based on panel gravity model estimated via Poisson pseudo-maximum likelihood (PPML) find that geographical distance negatively affects stock market correlations in the two economic blocs, but that effect is less significant for economic blocs with advanced economic integration. Contrary to past studies, this paper postulates that the negative impact of geographical distance on stock market correlation is a result of portfolio reallocation by foreign investors seeking high yields and safe havens in the local stock market when taking advantage of possible capital market liberalization. The findings of this paper is relevant for investors and policymakers alike. The possible negative relationship between geographical distance and stock market correlation should provide insight to investors on how to diversitfy and allocate effiently their portfolio within economic blocs. Policymakers should use the findings of this study for possible anticipative policy to mitigate risk transmission from shock spillovers within economic groupings.

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