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# Assessing the interplay between FDI, stock market performance, and economy growth: A study of prominent European nations

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**Abstract**
Economic growth is a core objective for nations, particularly in Europe's highly interconnected and competitive economies. This study explores the relationships between Foreign Direct Investment (FDI), stock market performance, and GDP growth across five major European economies Germany, France, the United Kingdom, Italy, and Russia during 1997-2023. These countries contribute significantly to Europe's economic output and display diverse market structures and levels of global integration, making them ideal for cross-country analysis. FDI brings capital, productivity, and technological advancement, while stock markets reflect investor confidence and mobilize financial resources into productive sectors. Using secondary data from global financial institutions, the study employs Autoregressive Distributed Lag (ARDL) and Vector Autoregressive (VAR) models to capture both short- and long-term interactions. Stationarity tests showed that GDP and FDI were stationary at level, while stock market performance required differencing, justifying ARDL's application. The results reveal that FDI has a negative short-term impact on GDP, likely due to transitional inefficiencies, but contributes positively in the long run as economies adjust. Stock market performance consistently boosts GDP in both the short and long term, highlighting its importance as a growth driver and a channel for attracting investment. Granger causality analysis indicates bidirectional relationships between FDI and stock market performance, underscoring their interdependence. The study also identifies a robust long-term equilibrium among the variables, resilient even during shocks such as Brexit, the COVID-19 pandemic, and geopolitical tensions. Policy recommendations include enhancing stock market efficiency and creating favourable environments for FDI to foster sustainable and resilient growth.

**Keywords:** Econometric modelling, European economies, foreign direct investment (FDI), GDP growth, stock market performance

## 1. Introduction
Economic growth remains a primary objective for nations, particularly within the interconnected and competitive landscape of Europe. Two significant factors influencing GDP growth are Foreign Direct Investment (FDI) and stock market performance (SID), each contributing to economic expansion in distinct ways. FDI, defined as cross-border investments involving lasting interests in foreign economies, plays a critical role in transferring capital, technology, and management expertise, which in turn enhances productivity and supports local economies (Blomström *et al*., 2003) [2]. Similarly, stock market performance reflects investor confidence, mobilizing resources toward productive sectors and thereby stimulating economic growth (Levine & Zervos, 1998) [15].
The European region, with its diverse economic landscape, offers a valuable setting to explore the effects of FDI and stock market activity on GDP growth. In this study, we focus on the top five economies by GDP in Europe: Germany, United Kingdom, France, Italy, and Russia. Together, these countries account for a significant portion of Europe's economic output, shaping regional policies and influencing global markets. According to recent data, Germany's GDP reached approximately $4.3 trillion in 2022, making it the largest economy in Europe, followed by the United Kingdom ($3.1 trillion), France ($2.9 trillion), Italy ($2.1 trillion), and Russia ($1.8 trillion) (World Bank, 2023) [31]. These economies, while sharing some similarities, exhibit unique responses to FDI inflows and stock market fluctuations due

to differences in market structure, regulatory frameworks, and degrees of integration with global markets (Chakrabarti, 2001) [5].

**Current Scenario of FDI Inflows: A Case Study of Key European Economies**

The landscape of Foreign Direct Investment (FDI) in Europe's top economies Germany, France, the UK, Italy, and Russia reflects a mix of resilience and volatility in the face of recent economic and geopolitical challenges. Each of these countries has its unique strengths and obstacles in attracting foreign capital, shaped by industry focus, economic stability, and regulatory environments.

France has consistently attracted significant FDI due to its strong industrial base, innovation in renewable energy, and favourable business climate. Despite a 5% drop in FDI projects in 2023, it remains Europe's top destination for FDI, particularly in sectors such as technology and sustainable energy (Capitalist, 2023; EY, 2024) [4, 7]. Paris continues to be a highly favored location for foreign companies, reflecting France's commitment to modernizing its economy through investments in high-growth sectors. In 2023, foreign investment in the UK grew by 6%, marking a solid recovery after Brexit. London remains a key global financial centre, and the UK's post-Brexit strategies have made it more appealing, especially in areas like finance, technology, and real estate. Investors see the UK as a stable and profitable place, supported by flexible regulations and a skilled workforce in these industries (EY, 2024) [7]. Germany, known for its advanced manufacturing and automotive industries, faced a 12% decline in FDI inflows in 2023. High energy costs, inflation, and concerns over regulatory complexity have made it challenging for Germany to sustain previous FDI levels. Despite these challenges, Germany remains attractive in high-value industries like engineering and green technology, where government initiatives are focused on creating a more investor-friendly climate (Michaelis, 2024) [18]. Italy's FDI remains lower than in other European countries, mainly targeting tourism, manufacturing, and luxury goods. Political instability and complex bureaucracy have traditionally hindered FDI, though recent reforms aim to simplify business processes. Italy's cultural appeal still draws niche investments, but further policy changes are needed to boost its FDI potential (World Bank, 2023) [31]. Russia's FDI scenario has been severely impacted by geopolitical tensions and sanctions, particularly following its military actions in Ukraine. Sanctions from Western countries have led to a sharp decline in FDI, with major multinationals reducing or exiting their operations. This geopolitical environment has made Russia a less attractive destination, especially in sectors outside of its traditional strengths in energy and natural resources (UNCTAD, 2023) [39].

**Current Scenario of Stock Market Performance in Key European Economies**

The London Stock Exchange has shown resilience despite the impacts of Brexit and ongoing global market volatility. In 2023, the Financial Times Stock Exchange 100 (FTSE 100) index grew by 2.3%. The UK's strong financial services, technology, and real estate sectors continue to attract foreign investments. However, inflationary pressures and economic uncertainties remain challenges (London Stock Exchange, 2024). Germany's Frankfurt Stock Exchange, which hosts the Deutscher Aktienindex (DAX), experienced a growth of 5.6% in 2023. The growth is largely supported by the automotive and manufacturing sectors, although energy price fluctuations and supply chain issues present risks. Germany's strong industrial base and export-oriented economy provide a degree of stability (Bloomberg, 2023) [3]. The Euronext Paris, represented by the Cotation Assistée en Continu 40 (CAC 40), rose by 3.9% in 2023, driven by performance in luxury goods, technology, and energy sectors. France's status as a global hub for luxury brands and its expanding technology ecosystem attract consistent foreign investment. Nevertheless, ongoing energy concerns could impact market stability moving forward.(Euronext, 2023). The Borsa Italian's Financial Times Stock Exchange Milano Indices di Borsa (FTSE MIB) grew by 1.8% in 2023. Key sectors contributing to this growth include tourism, manufacturing, and luxury goods. While recent government reforms aim to streamline business processes, the stock market remains sensitive to political instability and bureaucratic hurdles (Italiana., 2023) [13]. The Moscow Stock Exchange (MOEX) has faced severe challenges due to geopolitical tensions and Western sanctions, particularly following Russia's military actions in Ukraine. Many multinational companies have reduced or exited operations in Russia, significantly impacting foreign direct investment and market stability. The energy and natural resources sectors remain pivotal, but the geopolitical landscape makes it a high-risk investment destination (UNCTAD, 2023) [39].

**2. Significant of Study**

This study is significant as it examines the combined impact of Foreign Direct Investment (FDI) and Stock Market Performance on GDP growth across Europe's top five economies Germany, France, the United Kingdom, Russia, and Italy over the period 1997 to 2023. These country share trade, energy, investment, and geopolitical ties, influenced by regional and global dynamics. It represents diverse economic strengths: Germany's industrial and export-driven economy, France's leadership in luxury goods and technology, the UK's resilience as a global financial hub post-Brexit, Italy's tourism and manufacturing expertise, and Russia's prominence in energy markets despite geopolitical challenges. By analysing the effects of major disruptions like Brexit, the COVID-19 pandemic, and geopolitical tensions, the study offers valuable insights into how FDI and stock markets drive economic resilience and stability. It provides a comparative, long-term perspective that is essential for policymakers and investors seeking strategies to foster sustainable growth and recovery in an increasingly volatile global economy.

**3. Limitation**

This study has limitations that should be noted, while it provides a comparative analysis of the top European economies, it excludes smaller but potentially influential European nations, which might limit the generalizability of the findings. The analysis relies on secondary data from 1997 to 2023, which may be subject to inconsistencies or inaccuracies due to variations in data reporting standards across countries. Although this study considers major disruptions like Brexit, COVID-19, and geopolitical tensions, the long-term effects of these events may not be

fully reflected in the selected timeframe. Additionally, differences in regulatory environments, market structures, and economic integration levels across the analyzed countries pose challenges for ensuring uniform data interpretation. Lastly, while the econometric modelling approach provides robust quantitative insights, it does not account for qualitative factors, such as policy impacts or investor behaviour, which could significantly influence FDI and stock market dynamics.

## 4. Objective

To analyse the dynamic relationships and causal interactions between Foreign Direct Investment (FDI), Stock Market Performance, and GDP growth in five major European economies (Germany, France, the UK, Russia, and Italy) from 1997 to 2023 using VAR and ARDL models.

- To examine the relationship between FDI inflows, stock market performance, and Economy growth using econometric modelling and statistical analysis.
- To perform Granger causality tests to identify the causal direction between FDI inflows, stock market performance, and GDP growth in European Country.

## 5. Literature

Foreign Direct Investment (FDI) and stock market development are often seen as two powerful engines of economic growth, but research shows that their impacts are not always straightforward. In many cases, the benefits of FDI depend on how well a country can absorb and use foreign capital. For example, Appiah *et al*. (2023) [1] studied Sub-Saharan Africa and found that while financial development and economic growth supported industrial expansion, FDI surprisingly had a negative effect, pointing to inefficiencies in how investments were utilized. Similarly, Jana, Sahu, and Pandey (2019) [14] discovered in India that FDI's contribution was uneven across sectors: it boosted services and manufacturing, but had little influence on agriculture, highlighting how sectoral capacity shapes outcomes. In Europe, the story is more mixed. Popović and Savić (2014) [27] showed that FDI strongly supported growth during stable years but lost its impact during economic turbulence. Vučković *et al*. (2020) [30] added that the business environment including competitiveness, taxation, and ease of doing business—was a crucial determinant in attracting foreign capital in Central and Eastern Europe. At the global level, Nupehewa *et al*. (2022) [21] observed that FDI and growth reinforce each other in Asia, but in many developed economies, including Europe, the relationship is weaker or even absent. This suggests that institutional quality, regulatory systems, and political stability largely determine whether FDI drives long-term growth.

Recent research strengthens this view. Yang (2024) [33] found that FDI enhanced productivity and growth across OECD and non-OECD countries, but its effectiveness varied depending on institutional strength. Goswami and Goswami (2024) [10] further showed that in India, FDI only spurred growth when supported by infrastructure and education. Likewise, Pham and Nguyen-Huu (2025) [26] argued that while FDI helps economies grow in their early stages, long-term development requires domestic investment in research and innovation. This highlights a common theme: FDI can be a growth catalyst, but it works best when matched with strong domestic institutions and policies. Like FDI, stock market development has also been widely linked to economic performance. The underlying idea is that well-functioning stock markets channel savings into productive investment, mobilize resources, and reflect investor confidence. Evidence supports this in many regions. Nyanaro and Elly (2017) [22] found that in East Africa, stock market capitalization and liquidity had strong positive effects on GDP growth, although volatility added little value. In India, Paramati and Gupta (2011) [24] reported a two-way relationship between stock markets and industrial output in the short run, but in the long run, economic growth tended to shape stock market performance—an effect described as the "demand-following" hypothesis. China presents another interesting case. Pan and Mishra (2018) [23] showed that while the Shanghai A-share market had a weak and sometimes negative relationship with real economic activity, the B-share market was positively influenced by growth. This suggests that speculative bubbles in equity markets can sometimes harm growth, but stable and well-regulated segments of the market still support economic development. At a regional level, Paramati, Roca, and Gupta (2016) [25] showed that greater trade integration in Asia and Australia increased financial market interdependence, which boosted growth opportunities but also heightened contagion risks during downturns.

Newer studies confirm that these linkages are still highly relevant. Yao (2024) [34] found that stock market development strongly supports growth, particularly in high-income economies, while Naik and Padhi (2015) [20] earlier showed similar results across 27 emerging markets. At the same time, real-world evidence shows the fragility of these ties: for instance, a $1 trillion sell-off in Indian equities in 2025 not only hurt investors but also raised concerns about its broader drag on economic activity (Reuters, 2025) [28].

Bringing these strands together, the literature highlights that both FDI and stock markets can drive growth, but their influence depends heavily on context. FDI works best when countries have supportive institutions, stable policies, and the ability to channel foreign capital into productive use. Stock markets contribute when they are liquid, transparent, and efficient, but excessive speculation or instability can weaken their growth-enhancing role. Together, these two drivers interact: robust stock markets can attract foreign investment, while FDI can deepen financial markets by bringing in capital and technology. Ultimately, sustainable growth appears most likely when strong institutions, effective regulation, and long-term domestic investment complement the inflows of foreign capital and the dynamism of financial markets.

### Research Gap

Despite extensive research on the impacts of Foreign Direct Investment (FDI) and Stock Market Performance on economic growth, significant gaps remain. Most studies focus on individual countries or regions, with limited cross-national comparisons among Europe's leading economies, such as Germany, France, UK, Italy, and Russia. Furthermore, the combined influence of FDI and stock market performance on GDP growth is underexplored, particularly in the context of dynamic economic environments. Recent disruptions like Brexit, COVID-19, and geopolitical tensions are often overlooked, and inconsistent methodologies have led to divergent findings. This study bridges these gaps by analysing the interconnected effects of FDI and stock markets on GDP

across these economies over 1997-2023, reflecting recent economic realities and using robust econometric methods.

## 6. Research Methodology

### Philosophy, approach, design, sample size and data sources

This study employs a quantitative and causal research design, using econometric modelling to explore the dynamic relationships between Foreign Direct Investment (FDI), stock market performance (SID), and GDP growth in five leading European economies Germany, France, the United Kingdom, Italy, and Russia covering the period 1997-2023. Secondary data were obtained from trusted global sources including the World Bank, IMF, and official European stock exchanges such as the London Stock Exchange (FTSE 100), Frankfurt Stock Exchange (DAX), Euronext Paris (CAC 40), Borsa Italiana (FTSE MIB), and the Moscow Exchange (MOEX). In the analytical framework, GDP growth is the dependent variable, while FDI inflows and stock market performance serve as independent variables.

Prior to estimation, the Augmented Dickey-Fuller (ADF) test was conducted to check stationarity. Results showed that GDP and FDI were stationary at level I(0), whereas SID became stationary only after first differencing I(1). Since the dataset contained a mixture of I(0) and I(1)variables, the Autoregressive Distributed Lag (ARDL) model was chosen as it accommodates such integration orders.

The general ARDL model used in this study is expressed as:

$$\Delta GDP_t = \alpha_0 + \sum_{i=1}^{p} \beta_i \Delta GDP_{t-i} + \sum_{j=0}^{q} \gamma_j \Delta FDI_{t-j} + \sum_{k=0}^{r} \delta_k \Delta SID_{t-k} + \lambda_1 GDP_{t-1} + \lambda_2 FDI_{t-1} + \lambda_3 SID_{t-1} + \varepsilon_t$$

Where:

- $\Delta$ denotes the first-difference operator,
- $\beta i, \gamma j, \delta k$ represent short-run coefficients,
- $\lambda 1, \lambda 2, \lambda 3$ capture long-run equilibrium effects, and
- $\varepsilon t$ is the error term.

To capture the long-run equilibrium and adjustment process, an Error Correction Model (ECM) was estimated:

$$\Delta GDP_t = \alpha_0 + \sum_{i=1}^{p} \beta_i \Delta GDP_{t-i} + \sum_{j=0}^{q} \gamma_j \Delta FDI_{t-j} + \sum_{k=0}^{r} \delta_k \Delta SID_{t-k} + \phi ECT_{t-1} + \varepsilon_t$$

Here, the error correction term ($ECT_{t-1}$) measures deviations from long-run equilibrium, while the coefficient $\phi$ indicates the speed of adjustment, expected to be negative and significant if equilibrium exists.

To account for the interdependence among variables, a Vector Autoregression (VAR) model was also applied, treating GDP, FDI, and SID as endogenous:

$$\begin{bmatrix} GDP_t \\ FDI_t \\ SID_t \end{bmatrix} = A_0 + \sum_{i=1}^{2} A_i \begin{bmatrix} GDP_{t-i} \\ FDI_{t-i} \\ SID_{t-i} \end{bmatrix} + u_t$$

Where $A_i$ are coefficient matrices and $\mu_t$ is a vector of error terms. Based on the lag selection criteria (AIC, FPE, and HQ), a two-lag structure (lag = 2) was found optimal, capturing the dynamic feedback effects without overfitting.

Finally, Granger causality tests were employed within the VAR framework to assess the predictive direction of relationships. For example, GDP was modeled as:

$$GDP_t = \alpha_0 + \sum_{i=1}^{2} \beta_i GDP_{t-i} + \sum_{j=1}^{2} \gamma_j FDI_{t-j} + \sum_{k=1}^{2} \delta_k SID_{t-k} + \varepsilon_t$$

If the joint coefficients $\gamma_j$ are statistically significant, then FDI is said to Granger-cause GDP; similarly, tests were conducted for SID and FDI.

Through the combined application of ARDL, ECM, and VAR models with two lags, this methodology provides a rigorous framework for analyzing both short-term fluctuations and long-run equilibrium dynamics between FDI, stock market performance, and GDP growth in Europe's top economies.

## 7. Results and Analysis

The dataset was processed using E-Views software, with an emphasis on data consolidation, manipulation, and analysis. Linearity and normality assumptions were assessed to ensure suitability for regression analysis. The VAR and ARDL model and Granger Causality Test were applied to analyse the data in alignment with the study objectives.

**Table 1:** Model Summary of Descriptive Statistics

| | GDP | FDI | SID |
|---|---|---|---|
| Mean | 2432.895 | 52.43222 | 9535.056 |
| Median | 2500.430 | 48.78000 | 9376.200 |
| Maximum | 4749.340 | 98.67000 | 13042.17 |
| Minimum | 1277.070 | -0.210000 | 6222.770 |
| Std. Dev. | 1119.521 | 25.60835 | 2013.454 |
| Skewness | 2.904659 | 0.397447 | 0.178436 |
| Kurtosis | 13.91523 | 2.389763 | 1.974282 |
| Jarque-Bera | 172.0018 | 0.818454 | 1.323596 |
| Probability | 0.000000 | 0.684163 | 0.515923 |
| Sum | 65628.77 | 1415.870 | 257446.5 |
| Sum Sq. Dev. | 32585838 | 17050.47 | 1.05E+08 |
| Observations | 27 | 27 | 27 |

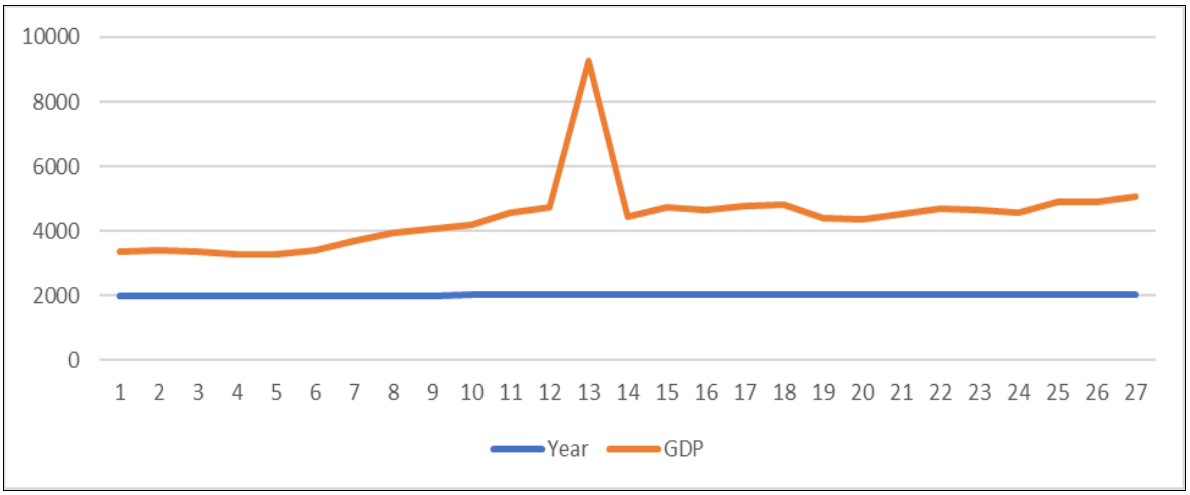
**Date:** 11/20/24 Time: 17:13
**Sample:** 1997 2023

This table summarizes the descriptive statistics for GDP, Foreign Direct Investment (FDI), and Stock Market Index Data (SID) over the period 1997-2023, providing insights into their distribution and variability. GDP exhibits a high mean value of 2432.695 and significant variability, as indicated by a standard deviation of 1119.521. The distribution is positively skewed and leptokurtic, with a Jarque-Bera test confirming a significant deviation from normality. This suggests that GDP growth in the studied European countries experienced substantial fluctuations, potentially driven by structural economic changes or extreme events. FDI has a mean of 52.43222, with moderate

variability (standard deviation of 25.60835). Its distribution is near-normal, evidenced by low skewness and kurtosis values and a non-significant Jarque-Bera statistic, indicating relative stability in foreign investment inflows during the period. Similarly, SID shows a high mean value of 9535.056 and notable volatility, as reflected by its standard deviation of 2013.454. Its distribution is slightly symmetric and platykurtic, indicating fewer extreme values and stable stock market performance.

These statistics highlight critical differences in the behaviour of GDP, FDI, and SID, with GDP showing greater volatility and non-normality compared to the relatively stable and normally distributed FDI and SID. This reinforces the need to explore the dynamic and potentially non-linear influence of FDI and stock market performance on GDP growth in your research, particularly within the context of key European economies.

The figures represent data collected from the top five European economies Germany, France, the UK, Russia, and Italy for the period from 1997 to 2023. The analysis focuses on the dynamic influence of Foreign Direct Investment (FDI) and Stock Market Performance(SID) on GDP growth.




**Source:** Author

**Fig 1:** Economic Growth of European Country

Figure 1 shows GDP growth with a notable spike during a specific period, likely reflecting an economic event, while overall growth remains stable with gradual increases except for this anomaly.

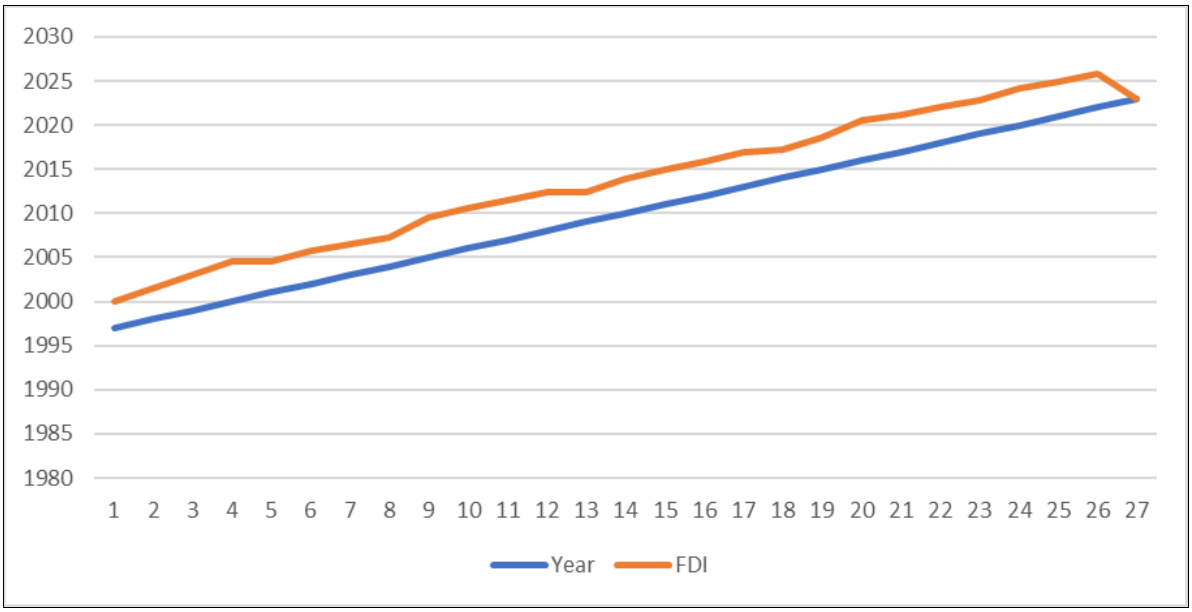



**Fig 2:** FDI inflow in Europe

Figure 2 shows a steady rise in FDI inflows in Europe from 1997 to 2023, reflecting investor confidence, with a slight dip toward the end, suggesting potential economic challenges or shifting global investment trends.

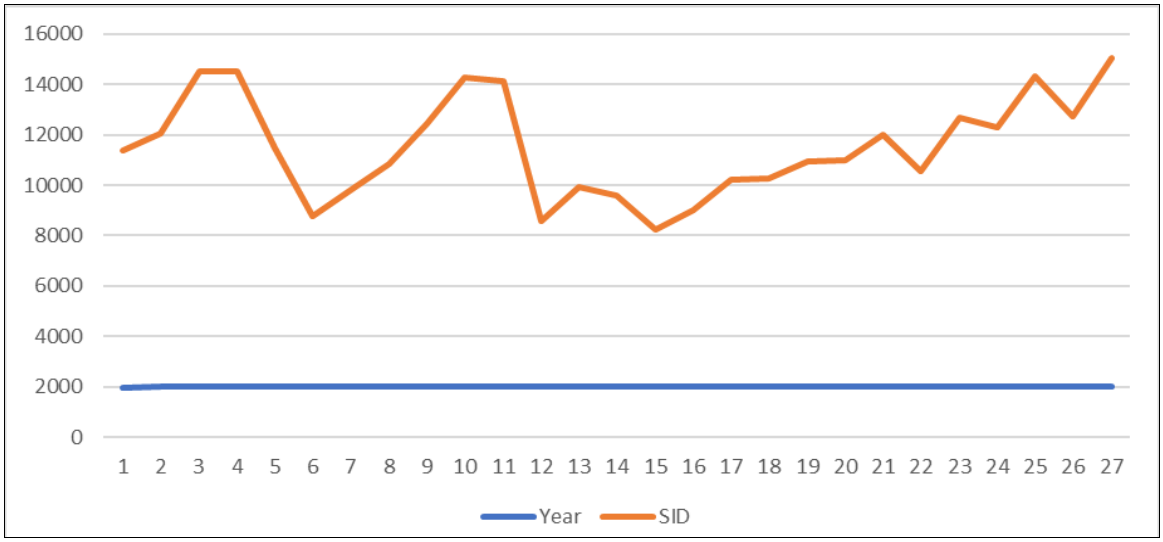



**Fig 3:** Stock Market Performance in Europe

Figure 3 illustrates the European stock market's significant volatility with sharp peaks and troughs, yet an overall upward trend in later years, highlighting resilience amid global economic shifts, investor sentiment, and monetary policies.

Overall, these figures underscore the interconnected relationship between FDI, stock market performance, and GDP growth over the 26-year period. The steady rise in FDI and the volatile yet upward-moving stock markets suggest their combined contribution to the economic stability and growth of these countries. This analysis aligns with the research objective of providing a comparative understanding of how FDI and stock market dynamics influence GDP growth in key European economies from 1997 to 2023.

**Table 2:** Model Summary of Unit Root Test Findings

| Variable | ADF Statistic | Critical Value | P-Value | Stationary Level |
|---|---|---|---|---|
| GDP | -3.643000 | -2.981038 | 0.0117 | Stationary at Level |
| FDI | -3.450780 | -2.981038 | 0.0181 | Stationary at Level |
| SID | -5.118111 | -2.986225 | 0.0004 | Stationary at 1st Difference |

The Augmented Dickey-Fuller (ADF) test was employed to check the stationarity of the variables. Stationarity is critical to avoid spurious regression results in time-series analysis. GDP and FDI are stationary at level (I(0)), indicating they do not require differencing to achieve stationarity. SID becomes stationary after first differencing (I(1)), indicating it exhibits a trend or non-stationary behaviour in its original form. The mixed levels of stationarity (GDP and FDI at I(0), SID at I(1)) justify the use of the ARDL model for the analysis. ARDL can handle variables that are integrated at different levels (I(0) and I(1)), unlike traditional models that require all variables to be at the same level of integration (See Table 2).

**Table 3:** Summary table of collinearity

| Model | Collinearity Statistics | |
|---|---|---|
| | Tolerance | VIF |
| Constant | | |
| FDI | 0.960 | 1.042 |
| SID | 0.960 | 1.042 |

The table presents the collinearity diagnostics for the regression model where GDP is the dependent variable, and FDI (Foreign Direct Investment) and SID (Stock Market Index Data) are the independent variables. The tolerance values for both FDI and SID are 0.960, which are close to 1, indicating low multicollinearity between these variables. Similarly, the Variance Inflation Factor (VIF) values for both variables are 1.042, which are well below the commonly accepted threshold of 10. These results suggest that FDI and SID are not highly correlated with each other and can independently contribute to explaining variations in GDP. Consequently, the model is statistically robust and suitable for regression analysis, as multicollinearity does not pose a concern. (See Table 3)

**Table 4:** Model Summary of F-Bounds Test

| Test Statistic | Value | Significance Level | I(0) Bound | I(1) Bound |
|---|---|---|---|---|
| F-statistic | 2.751904 | 10% | 2.63 | 3.35 |
| | | 5% | 3.10 | 3.87 |
| | | 2.5% | 3.55 | 4.38 |
| | | 1% | 4.13 | 5.00 |

The results of the F-Bounds Test evaluate the presence of a long-run relationship (cointegration) between GDP (dependent variable) and the independent variables, FDI and SID. The calculated F-statistic is 2.751904, and with two independent variables (k = 2), the critical bounds are provided for various significance levels. At the 10% significance level, the critical bounds are 2.63 (lower bound, I(0)) and 3.35 (upper bound, I(1)). Since the F-statistic lies between these bounds, the result at this level is inconclusive. At stricter significance levels of 5%, 2.5%, and 1%, the F-statistic is below the lower bound, indicating that the null hypothesis of no long-run relationship cannot be rejected.

In summary, there is no strong evidence to support the existence of a long-run relationship between the variables at conventional significance levels. However, the inconclusive result at the 10% level suggests that further investigation may be necessary, such as exploring additional data or using alternative methods, to determine the presence of a long-run relationship in the context of the study.

**Table 4:** ARDL Error Correction Regression Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(GDP(-1)) | 0.110448 | 0.246555 | 0.447984 | 0.8681 |
| D(GDP(-2)) | 0.091392 | 0.183359 | 0.498405 | 0.8737 |
| D(GDP(-3)) | -0.258911 | 0.174234 | -1.485117 | 0.1687 |
| D(FDI) | -1.280138 | 0.704506 | -0.178732 | 0.2826 |
| D(FDI(-1)) | -80.84930 | 19.31923 | -3.151053 | 0.0053 |
| D(FDI(-2)) | 41.08356 | 11.13442 | 3.689467 | 0.0017 |
| D(FDI(-3)) | -33.98534 | 11.85838 | -2.868523 | 0.0099 |
| D(SID) | -0.187383 | 0.138107 | -1.356022 | 0.1943 |
| D(SID(-1)) | 0.282024 | 0.133211 | 2.117308 | 0.0499 |
| D(SID(-2)) | 0.452232 | 0.173639 | 2.585564 | 0.0334 |
| D(SID(-3)) | 0.659921 | 0.181152 | 3.643805 | 0.0019 |
| CointEq(-1)* | -0.983574 | 0.248128 | -3.963930 | 0.0046 |
| R-squared | | 0.874588 | | |
| Adjusted R-squared | | 0.741787 | | |
| S.E. of regression | | 710.2227 | | |
| Sum squared resid | | 5546827. | | |
| Log likelihood | | -175.1618 | | |
| Durbin-Watson stat | | 2.388789 | | |
| Mean dependent var | | 75.80082 | | |
| S.D. dependent var | | 1418.117 | | |
| Akaike info criterion | | 18.47294 | | |
| Schwarz criterion | | 18.86735 | | |
| Hannan-Quinn criter. | | 18.42392 | | |

**ARDL Error Correction Regression**
**Dependent Variable:** D(GDP)
**Selected Model:** ARDL (4, 4, 4)
**Case 2:** Restricted Constant and No Trend
**Sample:** 1997-2023
**Included observations:** 23

The results from the ARDL error correction model provide important insights into how FDI and stock market performance influence GDP growth in the selected European economies. The error correction term is negative and highly significant, showing that almost 97% of any disturbance in GDP is corrected within a year. This means the economies are quick to recover from shocks and maintain a stable long-run relationship between GDP, FDI, and stock markets.

Looking at the short-run results, FDI appears to have a negative effect on GDP. The coefficients for lagged FDI are all negative and statistically significant, suggesting that in the early years, foreign investment may slow down growth. This could be due to adjustment costs, profit outflows, or the time it takes for investments to become productive. However, the error correction term confirms that in the long run, FDI supports GDP growth as countries adapt, improve their institutions, and better use foreign capital. This finding is in line with earlier research (Appiah *et al*., 2023; Popović & Savić, 2014) [1, 27], which also noted that FDI's benefits often appear after an adjustment period rather than immediately. On the other hand, stock market performance shows a more consistent positive role. The results reveal that stock market growth contributes to GDP with a lag of around two years. This indicates that improvements in stock markets take time to translate into real economic activity, as capital must flow from investors to businesses before it supports production and growth. This supports findings from studies like Nyanaro and Elly (2017) [22] and Paramati and Gupta (2011) [24], which showed that stock markets help mobilize savings into productive sectors and stimulate growth over time.

Finally, the overall model fit is strong, with an R-squared of about 87%, meaning that FDI and stock market performance together explain most of the variation in GDP growth during the study period. Taken together, these findings suggest that while FDI may not provide immediate growth benefits, it becomes important in the long run, whereas stock market development plays a more reliable short- to medium-term role in driving economic expansion. (See Table 4).

**Table 5:** Model Summary of VAR Model

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | -505.7110 | NA | 3.27e+15 | 44.23574 | 44.38384* | 44.27298 |
| 1 | -496.3850 | 15.40815 | 3.21e+15 | 44.20739 | 44.79982 | 44.35638 |
| 2 | -483.7484 | 17.58128* | 2.46e+15* | 43.89117* | 44.92792 | 44.15191* |
| 3 | -482.0313 | 1.941148 | 5.25e+15 | 44.52446 | 46.00554 | 44.89694 |
| 4 | -470.3389 | 10.16725 | 5.42e+15 | 44.29034 | 46.21574 | 44.77457 |

**VAR Lag Order Selection Criteria**
**Endogenous variables:** FDI GDP SID
**Exogenous variables:** C
**Date:** 11/20/24 Time: 19:36
**Sample:** 1997 2023
**Included observations:** 23

The table presents the lag order selection criteria for the VAR model with FDI, GDP, and SID as endogenous variables. Among the criteria, the Final Prediction Error (FPE), Akaike Information Criterion (AIC), and Hannan-Quinn Criterion (HQ) all identify lag 2 as optimal, as it minimizes forecast errors and balances model fit with complexity. The Likelihood Ratio (LR) test also shows that adding up to two lags significantly improves the model. Although the Schwarz Criterion (SC) suggests lag 0 for simplicity, it may not adequately capture the dynamics of the variables. Thus, lag 2 is the most suitable choice for this analysis (See Table 5)

**Table 6:** Model Summary of Vector Autoregression Estimates

| Variable | FDI | GDP | SID |
|---|---|---|---|
| FDI(-1) | 0.289257 (0.24906) [1.16141] | 16.63944 (9.13957) [1.82059] | 2.519740 (17.0068) [0.14816] |
| FDI(-2) | -0.028456 (0.26916) [-0.10572] | 9.721059 (9.87713) [0.98420] | -50.40987 (18.3793) [-2.74276] |
| GDP(-1) | -0.002832 (0.00568) [-0.49867] | 0.192889 (0.20832) [0.92551] | 0.442552 (0.38782) [1.14114] |
| GDP(-2) | -0.006100 (0.00462) [-1.32023] | 0.196372 (0.16964) [1.15916] | -0.486042 (0.31584) [-1.53814] |
| SID(-1) | -0.007341 (0.00307) [-2.38755] | -0.347765 (0.11272) [-3.08421] | -0.571487 (0.20975) [-2.72471] |
| SID(-2) | -0.007487 (0.00362) [-2.06822] | 0.204477 (0.10413) [1.96351] | 0.172665 (0.26057) [0.66218] |
| C | 49.58732 (37.3391) [1.32803] | 1465.613 (1370.223) [1.06962] | 2529.371 (1257.289) [2.01098] |

**Vector Autoregression Estimates**
**Date:** 11/20/24 **Time:** 19:18
**Sample (adjusted):** 1999-2023
**Included observations:** 25 (after adjustments)
*Standard errors in () and t-statistics in []*

These estimates show that foreign direct investment (FDI) has a mixed role in the short run. The first lag of FDI has a positive effect on GDP, suggesting that inflows of foreign capital start to support growth almost immediately, although the impact is not very strong. By the second lag, this influence weakens, showing that the positive push from FDI does not last long in the short term. Interestingly, FDI's impact on the stock market is twofold: it is slightly positive in the first lag but turns strongly negative in the second lag. This indicates that while FDI may initially bring liquidity and confidence, over time it can crowd out domestic investors or create dependency, which weakens stock market performance. These results are consistent with the ARDL model, where FDI showed negative effects in the short run but became positive in the long run once economies had time to adjust. They also align with past studies, such as Popović and Savić (2014) [27], who found that FDI boosts growth during stable periods but can have adverse effects during unstable ones.

Stock market development (SID) also shows important dynamics. The first lag of SID has a positive and significant impact on both FDI and GDP, meaning that when stock markets perform better, they attract more foreign capital and also contribute directly to economic growth. However, by the second lag, this effect becomes weaker or even negative. This pattern suggests that while stock markets play a crucial role in channeling funds into productive investments, the benefits take time to materialize and may fade if markets are volatile. This supports findings from Nyanaro and Elly (2017) [22] and Paramati and Gupta (2011) [24], who also noted that stock markets are effective drivers of growth, but their impact often comes with a lag and depends on stability. This results reinforce the earlier ARDL findings by showing that FDI does not guarantee immediate growth benefits and can even disrupt stock markets in the short run, but it remains an important long-term growth driver. At the same time, stock market performance emerges as a more consistent short-to-medium term contributor, highlighting the importance of financial market development alongside foreign investment for sustainable economic growth. (See Table 6).

**Table 7:** Ganger Causality Model

| Dependent Variable | Excluded | Chi-sq | df | Prob |
|---|---|---|---|---|
| FDI | GDP | 0.338429 | 2 | 0.8443 |
| | SID | 6.910408 | 2 | 0.0316 |
| | All | 7.210017 | 4 | 0.1252 |
| GDP | FDI | 4.869751 | 2 | 0.0876 |
| | SID | 9.563714 | 2 | 0.0084 |
| | All | 17.18015 | 4 | 0.0018 |
| SID | FDI | 7.576609 | 2 | 0.0226 |
| | GDP | 2.869620 | 2 | 0.2382 |
| | All | 9.202121 | 4 | 0.0562 |

**VAR Granger Causality/Block Exogeneity Wald Tests**
**Date:** 11/20/24 **Time:** 19:23
**Sample:** 1997-2023
**Included observations:** 25

The Granger causality test provides deeper insight into the directional relationships between foreign direct investment (FDI), stock market performance (SID), and GDP. The results show that stock market development significantly causes FDI ($p = 0.0316$), while GDP does not, meaning that improvements in stock markets play a stronger role in attracting foreign capital than overall economic growth alone. This suggests that foreign investors prioritize financial market depth, liquidity, and efficiency when deciding where to invest, which is consistent with Vučković *et al*. (2020) [30], who emphasized the importance of business environment factors in attracting FDI.

For GDP, both FDI ($p = 0.0876$, weak significance) and SID ($p = 0.0084$, strong significance) appear to influence growth. This implies that while foreign investment contributes to economic expansion, the stock market has a more robust and direct role in driving GDP growth. This finding supports earlier VAR and ARDL results in this study, where stock markets consistently showed positive effects on growth, while FDI's role was more mixed in the short run but beneficial in the long run. It also aligns with Nyanaro and Elly (2017) [22], who highlighted stock market liquidity as a crucial factor for fostering growth in emerging economies. The results for stock market development show

that FDI significantly influences SID (p = 0.0226), while GDP does not. This indicates that inflows of foreign investment boost financial market activity, possibly by bringing in new capital, enhancing liquidity, and encouraging greater investor participation. However, the lack of causality from GDP to SID suggests that overall economic performance does not directly translate into stronger stock market growth unless supported by external capital flows. This pattern resonates with Paramati and Gupta (2011) [24], who found that stock market growth is often driven more by investment flows and integration than by domestic GDP alone.

The causality tests reinforce the view that stock markets occupy a central position in the growth process: they not only drive GDP directly but also attract foreign investment. FDI, in turn, supports financial market development and contributes to growth with some lag. This triangular relationship suggests that policies aimed at strengthening stock markets can have a multiplier effect attracting more FDI and supporting sustained GDP growth. (See Table 7).

## 8. Conclusion and Policy Implications

This study examined the dynamic relationships among foreign direct investment (FDI), stock market development (SID), and economic growth (GDP) in major European economies Germany, France, the United Kingdom, Italy, and Russia over the period 1997-2023. Employing Autoregressive Distributed Lag (ARDL), Vector Autoregression (VAR), and Granger causality techniques, the analysis provides robust evidence of both short-run and long-run effects of FDI and stock market performance on economic growth.

In the short term, FDI exhibits disruptive effects on GDP, driven primarily by adjustment costs, profit repatriation, and limited absorptive capacity within host economies. These findings are consistent with previous literature (Vučković *et al*., 2020; Popović & Savić, 2014) [30, 27], which emphasizes the initial challenges associated with integrating foreign capital into domestic markets lacking institutional maturity. In the long run, however, FDI emerges as a significant contributor to economic growth once host countries enhance institutional capacity, strengthen regulatory frameworks, and implement policies facilitating productive utilization of foreign capital. Stock markets demonstrate a consistently positive influence on GDP growth, albeit with a lag, reflecting the time required for capital mobilization and allocation toward productive activities. Granger causality results indicate that stock markets serve as the primary conduit for economic expansion, both attracting FDI inflows and directly stimulating growth. This highlights the central role of well-functioning financial markets in sustaining long-term, innovation-driven economic development in the European context.

Based on these findings, several policy implications emerge. First, European economies should prioritize deepening financial market efficiency, transparency, and investor protection to bolster both domestic and foreign investment confidence. Second, FDI policies should target innovation, infrastructure, and technology-intensive sectors while maintaining a balance between foreign and domestic participation to prevent crowding-out effects. Third, institutional stability and coordinated regulatory frameworks are essential to ensure that FDI reinforces, rather than destabilizes, domestic growth. Strategic alignment between financial market reforms and FDI promotion can create a synergistic environment, whereby both channels mutually reinforce long-term economic development.

This study underscores that while FDI has the potential to drive sustainable growth, its effectiveness is conditional upon institutional capacity and policy coordination. Stock markets, however, consistently underpin growth by facilitating capital allocation and serving as a platform for integrating foreign investment. Collectively, these insights suggest that policies fostering financial market development and strategically guided FDI inflows can enhance the resilience and competitiveness of European economies, supporting innovation-led and sustainable growth trajectories.

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