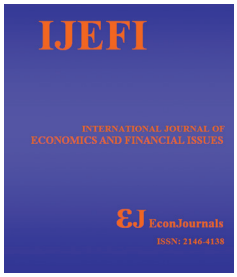

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Free Trade Agreements and Inequality: The Prospect for the UK Post-Brexit

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ABSTRACT

This paper examines the potential effects of Brexit on income inequality in the United Kingdom (UK) and utilizes empirical methods to predict these effects. The study focuses on the impact of trade and Foreign Direct Investment (FDI) on income inequality, using macroeconomic data from 1971 to 2019. By employing cointegration techniques and an Error Correction Model on annual time series data, the analysis reveals that higher levels of trade have historically reduced income inequality in the UK over the long term. Consequently, changes in trade resulting from Brexit are expected to have a negative influence on the distribution of income and wealth in the UK. On the other hand, the study finds that higher FDI has only had a short-term negative effect on income distribution in the UK.

Keywords: Brexit, Inequality, Trade, Foreign Direct Investment, Free Trade Agreements
JEL Classifications: F53, F40, F20, D63

1. INTRODUCTION

Trade between two or more countries is expected to increase when those countries enter into a Free Trade Agreement (FTA) and decrease when that FTA ends. This is primarily due to lower trade costs and the potential for increased business establishment. Furthermore, trade may also be generated through the diversion of imports from previously lower-cost suppliers (Baier and Bergstrand, 2009). Consequently, entering a new FTA or leaving an existing one can significantly impact trade, as well as FDI inflows and outflows. This is anticipated to occur in the United Kingdom (UK) following its separation from the European Union (EU), commonly known as Brexit.[1]

Following its formal withdrawal from the EU, the UK will no longer benefit from existing trade agreements with this important market. The cost of Brexit will be significant on trade, as the UK will face new and higher tariffs, new border controls and regulations, and the loss of opportunities to benefit from future EU integration toward lower trade barriers. In 2019, the UK's exports to the EU reached £294 billion, accounting for 43% of all UK exports and making the EU its largest trading partner (Ward, 2020). Additionally, the UK's exports as a percentage of GDP were 31.6% in 2019, meaning that exports to the EU constituted approximately 13.5% of the country's GDP (World Bank Group, 2020).[2] Another crucial aspect of leaving the EU is the impact on FDI inflows to the UK, as the country currently receives the

1 Brexit is an abbreviation for "British exit," which refers to the June 23, 2016, referendum whereby British citizens voted to leave the European Union. The formal withdrawal agreement went into effect on January 31, 2020, followed by a transition period lasting until December 31, 2020.

2 World Bank Group. (2020). World Bank national accounts data, and Organization for Economic Co-operation and Development (OECD) National Accounts data. [Data set]. https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS

highest FDI inflows among all EU countries and is second only to the United States globally.[3]

An intriguing comparison can be made between the gross trade output and value-added trade between the UK and EU economies. According to (Ward, 2020), exports from the UK to the EU accounted for 54% of all exports in 2006, declining to 43% in 2019. Likewise, imports from the EU to the UK decreased from 58% in 2003 to 52% in 2019. This decline suggests that the value-added trade balance will have a detrimental impact on the UK economy. Value-added trade reflects the value contributed by industries in a country when producing goods and services. The reduction in exporting and importing with the EU negatively affects employee compensation, consumption of fixed capital, net operating surplus, and mixed-income. This, in turn, contributes to income inequality resulting from the Brexit arrangement.

An important aspect that attracts FDI to the UK is its role as a trade and investment gateway to the EU. However, after Brexit, it is anticipated that FDI inflows will significantly decrease, which can have detrimental effects on the economy. Campos and Timini (2019) suggest that Brexit may lead to substantial negative impacts on trade and migration flows between the EU and the UK. Research conducted by Bloom et al. (2013) and Haskel et al. (2007) indicates that FDI inflows have the potential to generate spillover effects by enhancing productivity in the receiving country, thereby contributing to economic improvement. Consequently, the changes in trade and FDI resulting from Brexit are expected to influence income distribution within the UK. It is important to note that alterations in a country's trade openness can have a significant impact on inequality within the nation (Zhang and Zhang, 2003).[4] Furthermore, concerns regarding economic insecurity and increased inequality can potentially account for the rise of populism, not only in the UK but also across Europe (Inglehart and Norris, 2016). These factors underscore the potential consequences of Brexit on various economic and social dimensions.

While previous research has extensively examined the connections between FTAs, FDI, economic growth, and inequality in EU countries, this paper focuses on investigating the specific relationship, if any, between the presence of an FTA with the EU and income inequality within the UK. The study utilizes cointegration techniques and an ECM with annual time series data to analyze whether the UK's departure from the EU will impact income inequality in both the short run and the long run. The paper aims to understand how changes in trade and FDI resulting from Brexit can alter the structure of the job market and income distribution, ultimately influencing income inequality in the UK. By exploring these dynamics, the study seeks to provide insights into the potential effects of Brexit on income inequality within the country.

The hypothesis of this paper posits that Brexit will have a negative impact on FTAs agreements with the UK, leading to reductions in both trade and FDI. However, quantifying the extent of this impact is beyond the scope of this study due to the significant uncertainty surrounding the nature of Brexit and the various potential outcomes and channels of influence, both within the EU and with other countries. The subsequent sections of the paper are structured as follows: Section II provides a review of existing literature by surveying previous papers that cover related topics. Section III outlines the variables used in the analysis, identifies their sources, and provides a description of each variable. Section IV presents the empirical analysis, explaining the model utilized and discussing the obtained results. Finally, Section V offers the conclusion of the study.

2. LITERATURE REVIEW

To comprehend the situation in the UK, it is crucial to highlight the significance of EU membership in providing unrestricted access to the EU market for both trade and FDI. Conversely, leaving the EU involves the termination of existing trade and FDI agreements. The direct impact of Brexit on trade and FDI is relatively easier to envision; however, it becomes more challenging to determine how changes in trade and FDI will specifically influence inequality.

2.1. Trade and Inequality

Indeed, studies on inequality have varied in their focus and findings, reflecting the diverse research interests of scholars. When examining the relationship between trade and inequality, Zhang and Zhang (2003) explored the impact of trade and FDI inflows on inequality in China. Their study, using data from Chinese regions between 1978 and 1998, found that the gains from economic growth were not distributed evenly across regions, leading to increased inequality. They concluded that globalization played a significant role in driving inequality in China. On the other hand, Jaumotte et al. (2013) conducted research on the impact of trade and financial globalization on income inequality using data from 51 countries spanning the period from 1981 to 2003. Their findings indicated that FDI and financial globalization were associated with increased inequality, while trade globalization was linked to reduced inequality. They also identified technological change as the main driver of increased inequality across the countries studied.

Lee and Kim (2016) conducted a study to examine the relationship between trade facilitated by FTAs and income inequality within countries, as measured by the Gini index. Analyzing data from 109 countries, they found that overall trade openness did not appear to have a significant impact on income inequality. However, they discovered a strong correlation between notifications of FTAs to the World Trade Organization (WTO) and income inequality. The results varied depending on whether the FTA notifications were related to goods or services. While goods trade was associated with a reduction in inequality, higher service-related FTA notifications were linked to increased inequality. In the study conducted by Mon and Kakinaka (2020), panel data for 125 countries,

3 House of Commons (2013), World Input-Output Database (WIOD), Office for National Statistics (ONS), and the World Bank.

4 Throughout this paper, it is important to clarify that the term "inequality" specifically refers to economic inequality, encompassing the distribution of income and wealth. The focus is on examining the effects of Brexit on economic inequality, and the paper does not address other forms of inequality, such as social or political inequality. While Brexit may have broader societal implications, the scope of this paper is limited to the analysis of economic inequality resulting from the UK's separation from the EU.

including both developing and developed countries, from 1980 to 2015, was utilized to investigate the relationships between income inequality and bilateral and plurilateral Regional Trade Agreements (RTAs). The findings of their study indicated that, particularly in developing countries, bilateral RTAs could serve as effective policy tools for reducing income inequality. However, the results regarding plurilateral RTAs were inconclusive. Regarding developed countries, the evidence did not provide a clear indication of whether either type of RTA had an impact on income inequality. These findings shed light on the potential effectiveness of bilateral RTAs in addressing income inequality in developing countries while highlighting the need for further research to better understand the relationship between RTAs and income inequality in developed countries.

Further discussions on policy implications are indeed crucial, especially considering the negative impact that FTAs can have on the UK economy and income inequality. However, it is important to recognize that these policy implications also extend to the EU. Zimmermann (2019) examines this issue through three theoretical lenses. The first lens focuses on the likely changes in the material power and interests of the EU as a result of Brexit. The second lens considers the institutional consequences of Brexit for the formulation of EU foreign trade policy. Lastly, the third lens addresses potential changes in external perceptions of the EU as a trade power. Based on these lenses, the study implies several findings. It suggests that while Brexit may lead to adjustments in the material power and interests of the EU, the impact on EU foreign trade policies will be relatively limited. The institutional configuration of EU trade policymaking may experience some changes, but the core strategic outlook, negotiating behavior, and overall weight of the EU as a trading power are not expected to shift significantly towards a more protectionist stance. Contrary to some superficial assessments, Zimmermann's analysis suggests that the impact of Brexit on the EU's foreign trade policies will be modest. The study indicates that the EU's position as a trading power will only undergo slight adjustments. Therefore, the implications of Brexit on the EU's trade policies may not be as dramatic as initially perceived. These findings underscore the need for nuanced considerations when evaluating the effects of Brexit on EU foreign trade policy, highlighting that significant changes may be limited in scope.

According to Furusawa et al. (2020), technological advancements and globalization play a significant role in job polarization and the expansion of income inequality. They argue that middle-skilled workers often face job displacement as routine tasks are increasingly automated, and the outsourcing of routine tasks to low-wage countries reduces the demand for middle-skilled workers in high-wage developed countries. This outsourcing process is a crucial component of globalization. However, the study suggests that international trade in goods, which is a fundamental aspect of globalization, can independently contribute to job polarization and income inequality among a specific group of workers. Furusawa et al. (2020) establish their study on a two-country trade model, focusing on symmetric firms. Their findings suggest that international trade benefits firms that produce the highest-quality goods, leading to increased income for knowledge workers. On the other hand, for firms that have limited exports or serve only domestic markets, trade reduces their market share, potentially resulting in decreased income. Consequently, income inequality widens among knowledge workers who earn higher incomes compared to production workers. International trade can increase real wages for top-income earners while decreasing wages for the middle-income class. However, those in the low-income class who work as production workers may experience increased real wages due to reduced prices resulting from a greater variety of products available in the market.

Younes and Ameur (2023) examine the effects of trade openness on economic growth and regional inequalities from 1990 to 2018. Using panel data econometrics, the analysis reveals that regional infrastructure and human capital differences positively affect inequalities. Trade openness further worsens these inequalities by concentrating economic activities and FDI in certain regions, benefiting some areas at the expense of others. Finally, Montebello et al. (2023) investigate the relationship between trade unions and rising income inequality in advanced economies. The study examines 26 European countries from 2005 to 2018, modeling income inequality as a function of trade union density, its squared value, and various control variables, including other labor market institutions. The findings reveal a statistically significant and persistent inverted U-shaped relationship between union density and income inequality. In other words, the finding suggests an optimal level of union density minimizes income inequality, and deviations from this level in either direction can lead to greater inequality.

2.2. FDI and Inequality

Hemmer et al. (2005) conducted a study that revisited previous research on the effects of FDI on income inequality within and among countries. They found that earlier studies yielded mixed results, while more recent work did not demonstrate significant effects of FDI on inequality. Based on their analysis, the authors concluded that the overall impact of FDI on income distribution was not significant, although this may vary across individual countries and specific FDI investments. In contrast, Choi (2006) discovered a positive association between FDI intensity (inward, outward, and stock) and inequality. Using Gini coefficient data for 119 countries from 1993 to 2002, the study revealed that as the stock of FDI to GDP increased, income inequality, as measured by the Gini coefficient, also rose. Furthermore, outward FDI, as opposed to inward FDI, was found to exacerbate inequality. Additionally, wealthier and larger countries tended to exhibit less equal income distribution on average.

Chintrakarn et al. (2012) made a valuable contribution to the literature by examining the impact of inward FDI on income inequality in developed host countries, specifically focusing on U.S. state-level panel data from 1977 to 2001. Their study aimed to explore how inward FDI influences income inequality. The authors' findings indicated that, in the long run, FDI had a significant and robust effect in reducing income inequality across the United States as a whole. However, the relationship between FDI and income inequality varied among individual states, demonstrating significant heterogeneity. Interestingly, 21 out of the

48 states studied showed a positive association between FDI and income inequality, indicating that FDI did not consistently reduce inequality across all regions. It is important to note that various factors, such as the stage of economic development, government policies, and the specific characteristics of the investments, may contribute to the differing effects of FDI in different locations. These factors likely explain the observed heterogeneity in the relationship between FDI and income inequality across the states studied.

Couto and Center (2018) conducted a study that examined the relationship between both inward and outward FDI and income inequality in a sample of eight European countries at different stages of economic development. The study specifically focused on assessing the long-term impacts of FDI on income inequality. The findings of the study indicated that, on average, both inward and outward FDI had negative effects on income inequality. This suggests that FDI contributed to a reduction in income inequality, leading to a more equal income distribution. However, the impact of FDI on inequality varied across different income groups and country types. The study found that middle-income countries experienced the most significant inequality caused by FDI, indicating that FDI had a less favorable impact on income distribution in these countries. In contrast, the impact on income inequality was less pronounced in higher-income countries. Interestingly, the study did not find a consistent relationship between FDI and income inequality in low-income countries.

Nguyen (2023) examines the impact of FDI and digitalization on income inequality in 30 developed and 35 developing countries from 2002 to 2019, using internet usage and fixed broadband subscriptions as proxies for digitalization. Employing the system's general method of moments estimators, the findings reveal that FDI increases income inequality in developed countries but decreases it in developing countries. At the same time, digitalization reduces income inequality in both groups. Additionally, the interaction between FDI and digitalization narrows income inequality in developed countries but widens it in developing countries. Finally, Wang et al. (2023), investigate the distributional effect of FDI inflows on income inequality using a Schumpeterian economic growth model with Pareto income distribution. The model suggests that while FDI inflows promote economic growth and thus increase income inequality, they also reduce it through creative destruction. The overall impact is not predetermined. Using GLS on data from 126 countries, the study finds that FDI inflows reduce income inequality in emerging markets but increase it in developed countries.

3. DATA DESCRIPTION

In our analysis of the effect of Brexit on inequality in the UK, we utilized time series data spanning from 1971 to 2019. The data was collected from reputable sources such as the World Development Indicators (WDI), Organization for Economic Co-operation and Development (OECD) database, and the Institute for Fiscal Studies (IFS). By considering a 48-year period, we aimed to capture various stages of economic growth, significant events, and the varying levels of trade and FDI that could impact inequality. It was a deliberate decision to exclude the time period during and after the COVID-19 pandemic, as well as the period coinciding with the Russian-Ukrainian war (2020 to 2022). By doing so, we aimed to avoid potential disruptions and distortions caused by these extraordinary events, focusing solely on the impact of Brexit on inequality within the selected timeframe. This careful selection of the time period allows us to examine the relationship between Brexit and inequality in a more comprehensive manner, considering long-term trends and avoiding any confounding effects that may arise from recent disruptive events.

3.1. Dependent Variable

The studies conducted by Lee and Kim (2016), Jaumotte et al. (2013), Choi (2006), and Zhang and Zhang (2003) all employ the Gini coefficient as a measure of inequality. The Gini coefficient, introduced by Corrado Gini in 1912, quantifies wealth or income inequality using the Lorenz Curve, which considers multiple variables. It ranges from 0 to 1 (or 100%), where a value close to zero indicates a more equal distribution of income or wealth among the population, while a value of 1 (or 100) signifies extreme inequality.[5] Interestingly, Zhang and Zhang (2003) deviate from using the standard World Bank Gini index and create their own Gini coefficient. They incorporate labor productivity (GDP/Labor) with the total labor force as weights to develop this novel measure of inequality. In contrast, this paper utilizes the Gini coefficient obtained from the IFS and the OECD. Similar to Jaumotte et al. (2013), this paper employs the logarithm of the Gini coefficient as it allows the restricted variable to behave more like a normally distributed variable. This transformation enhances the suitability of the Gini coefficient for various regression analyses conducted in this study. By utilizing the Gini coefficient as a measure of inequality and employing logarithmic transformation, this paper aligns with previous research methodologies, ensuring comparability and facilitating regression analyses in the investigation of the relationship between various factors and income inequality.

3.2. Independent Variables

In order to explore the correlation between the Gini coefficient and FTAs, this study incorporates three primary variables. The first variable is Trade as a percentage of GDP, which measures the level of openness of a country to trade both before and after the implementation of FTAs. The second variable is FDI inflows as a percentage of GDP, which provides insights into the extent of foreign direct investment in the country. This variable helps capture the impact of FDI on income inequality. The third variable, GDP per capita, is utilized as a proxy for the distribution of wealth among individuals in the country. This variable reflects the average income or wealth level of the population and serves as an indicator of economic well-being.

Furthermore, this study includes control variables that capture other factors that might influence inequality. These variables have been employed in previous research, such as Jaumotte et al. (2013) and Persson and Tabellini (1994), where they demonstrated

5 In 1905, Max Lorenz developed a curve that provides a graphical representation of income inequality or wealth inequality.

a significant impact in the regression analyses. Examples of these control variables include Education Expenditure to GDP, which reflects the investment in education; Population, which accounts for the size of the population; and Unemployment rate, which provides insights into the labor market dynamics. By incorporating these control variables, the study aims to account for other factors that may influence income inequality, ensuring a more comprehensive analysis of the relationship between FTAs and the Gini coefficient.

3.3. Summary Statistics

Before proceeding with the regression analysis, it is important to examine the summary statistics of the variables used in the study (Table 1). For the ratio of FDI to GDP in the UK, the data reveals a considerable range, with a minimum of -0.08% and a maximum of 12.06% over the studied period. This wide variation provides sufficient grounds to explore the potential impact of FDI on inequality. The unemployment rate in the UK exhibits fluctuations throughout the period. It begins at a relatively low level of about 3.2% in 1971, reaches a peak of 11.5% in 1986, then declines to a lower level of 4.6% in 2004. Following the global financial crisis, the unemployment rate increases to 8% in 2011. These dynamics in the unemployment rate capture different stages of the UK's labor market and its potential influence on income inequality. Expenditures on education remain relatively stable during the covered period, ranging from a minimum of 4% to a maximum of 5.7%. This stability allows for a consistent analysis of the relationship between education expenditure and inequality.

It is important to note that the data from the WDI is mostly complete, with no missing observations. However, one challenge encountered relates to the Gini coefficient. Since a single resource covering the entire period was not available, data from both the Institute for IFS and the OECD dataset were used. This approach ensures a more comprehensive examination of inequality over time. Additionally, it is worth mentioning that despite the inclusion of the global financial crisis in the time period, no outliers were identified in the data, and therefore no observations needed to be eliminated. This strengthens the robustness of the analysis conducted. Figures 1-3 depict the movement of the main independent variables throughout the covered period.

4. EMPIRICAL ANALYSIS

The visualization of the dependent variable, the Gini coefficient, is presented in Figure 4. It illustrates the trends in income inequality in the UK over the examined period. The Gini coefficient, a measure of wealth distribution, demonstrates variations in inequality levels. From the visualization, it is evident that the Gini coefficient was at its lowest point, around 24, between 1975 and 1978. This indicates a relatively fair distribution of wealth during that period. On the other hand, the Gini coefficient reached its peak, reaching around 36, between 2007 and 2009. This increase in inequality can be attributed to the impact of the financial crisis, which had a significant effect on lower levels of income in the UK.

Overall, the level of inequality in the UK tends to be slightly higher than the average of other OECD-EU countries. As an example, in 2014, the average Gini coefficient across OECD-EU countries was around 30, while the UK's Gini coefficient was 34 in the same year. This comparison highlights that income inequality in the UK is somewhat above the average level observed in other countries within the OECD-EU group.

4.1. Model

To estimate the impact of FTA on inequality in both the short run and the long run, we employ cointegration techniques and the ECM regression. The linear model used in this analysis takes the form:

$$Gini_t = \alpha Trade_t^{\beta_1} FDI_t^{\beta_2} Income_t^{\beta_3} Education_t^{\beta_4} Population_t^{\beta_5} Unemployment_t^{\beta_6} \quad (1)$$

By taking the logarithm of both sides of Equation (1), we can transform the equation into a logarithmic form:

$$\ln(Gini_t) = \beta_1 \ln(Trade_t) + \beta_2 ln(FDI_t) + \beta_3 \ln(Income_t) + \beta_4 ln(Education_t) + \beta_5 ln(Population_t) + \beta_6 ln(Unemployment_t) + \varepsilon_t \quad (2)$$

In the transformed equation, all variables are now in natural logarithm form, where ln (Gini): The natural logarithm of the Gini coefficient, representing income inequality in the country. ln (Trade): The natural logarithm of the trade-to-GDP ratio, which measures the level of trade openness in the country. ln (FDI): The natural logarithm of the FDI to GDP ratio, which serves as another measure of the country's openness to foreign direct investment. ln (Income): The natural logarithm of GDP per capita, which indicates the level of personal income in the country. ln (Education): The natural logarithm of the expenditure on education to GDP, reflecting the level of investment in education relative to the size of the economy. ln (Population): The natural logarithm of the population of the UK for each year, capturing the size of the population. And ln (Unemployment): The natural logarithm of the unemployment rate for each year, representing

Table 1: Descriptive statistics

Variable	Mean	Standard deviation	Min	Max
Gini	31.49	4.09	24	36
Trade/GDP (%)	52.98	5.3	41.36	64.25
FDI/GDP (%)	3.04	2.78	0.075	12.06
GDP per capital	31,411.28	8,377.62	18,474.25	43,688.44
Population	59,243,998.6	3,332,409.16	55,896,223	66,834,405
Unemployment rate (%)	6.80	2.52	2.6	11.51
Education/GDP (%)	4.65	0.45	4	5.7

Figure 1: Trade (% of GDP)

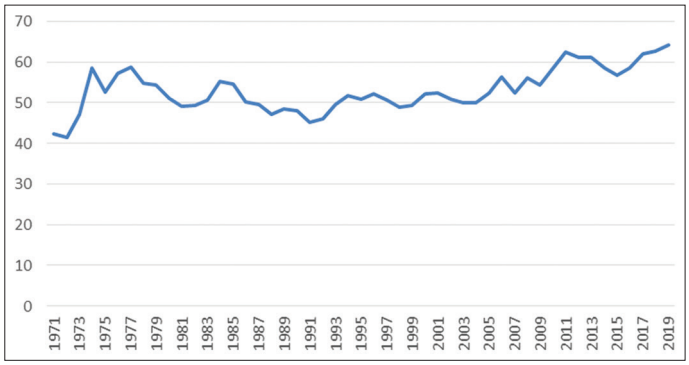


Figure 2: Foreign Direct Investment inflows (% GDP)

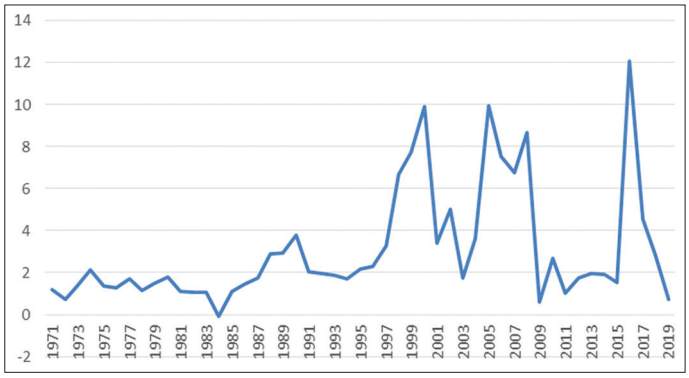
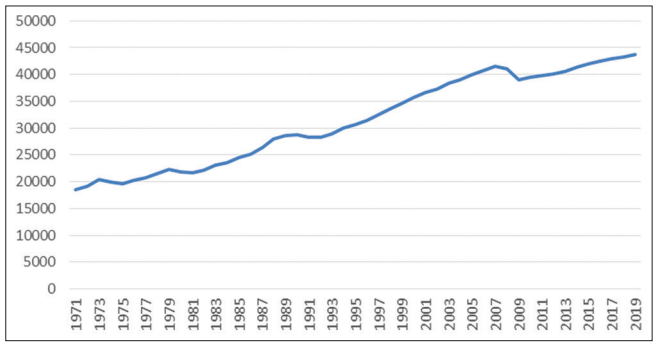


Figure 3: GDP per capita



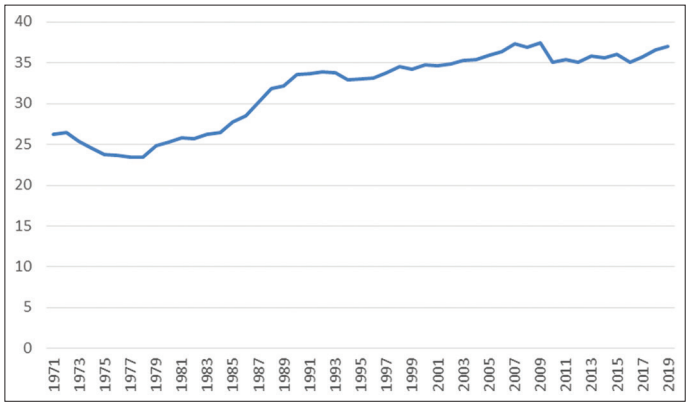
the country's joblessness level. By taking the natural logarithm of these variables, the equation transforms the relationships between the variables into elasticities, allowing for a more meaningful interpretation of the coefficients.

We estimated equation (2) using the ordinary least squares regression (OLS) with robust standard errors to obtain the long-run effect of β1, β2, β3, β4, β5 and β6 respectively. After obtaining the estimates for these coefficients, we calculated the residuals from the OLS regression using the following equation:

$$ECT_t = \ln(Gini_t) - \beta_1 \ln(Trade_t) - \beta_2 ln(FDI_t) - \beta_3 \ln(Income_t) - \beta_4 ln(Education_t) - \beta_5 ln(Population_t) - \beta_6 ln(Unemployment_t)_{+\varepsilon_t} \quad (3)$$

To verify stationarity in the residuals, we employed the Augmented Dickey-Fuller (ADF) unit root test on ECTt in Equation (3). This

Figure 4: Gini coefficient for the UK



procedure is a part of the residual-based Engle-Granger (EG) cointegration test, which aims to determine whether there is a long-term relationship among the variables. The null hypothesis of the EG test is that there is no cointegration between the variables. Once the cointegrating relationship was established, we proceeded to the final step of the analysis, which involved constructing an ECM. The ECM allows us to examine the short-run relationship between the variables and estimate the speed of adjustment toward equilibrium:

$$\Delta ln(Gini_t) = \alpha + \beta_1 \Delta ln(Trade_{t-i}) + \beta_2 \Delta ln(FDI_{t-i}) + \beta_3 \Delta ln(Income_{t-i}) + \beta_4 \Delta ln(Education_{t-i}) + \beta_5 \Delta ln(Population_{t-i}) + \beta_6 \Delta ln(Unemployment_{t-i}) + \beta_7 \Delta ln(Gini_{t-i}) + \beta_8 (ECT_{t-1}) + \varepsilon_t \quad (4)$$

Where Δ is the difference operator, β1, β2, β3, β4, β5 and β6 are the short-run coefficient elasticities, respectively, and ECT refers to the error correction term derived from the long-run cointegration relationship via the Johansen maximum likelihood procedure, in which β8 represents the speed of adjustment toward the long-run equilibrium.

5. RESULTS

Table 2 presents the results of the applied regressions. The findings indicate that the trade-to-GDP ratio has no significant relationship with income inequality in the short run, but has a significant negative relationship with income inequality in the long run. This means that as trade increases, inequality decreases in the UK. Specifically, a 10% increase in the trade-to-GDP ratio is associated with a 4.2% reduction in inequality in the long run. This finding is consistent with the results reported by Jaumotte et al. (2013). The negative relationship between trade and inequality can be explained by the fact that trade promotes competition and lowers production costs, leading to lower prices for goods and services. This, in turn, makes them more affordable for individuals with lower incomes.

On the other hand, the relationship between FDI inflows to GDP and inequality was found to be insignificant in the long run. However, in the short run, there is a small positive impact,

Table 2: Short and long run results of error correction model (Gini is dependent variable)

Variable	Coefficients	
	Short run	Long run
Trade	−0.3815616 (−1.33)	−0.4224899*** (−5.3877924)
FDI	0.0571821*** (3.20)	−0.0017712 (−0.2300725)
Income (GPD-PerCap)	−3.426594*** (−3.70)	0.535748*** (10.370184)
Education	0.7091831 (1.58)	−0.1553464** (−2.5469984)
Population	50.26886* (1.85)	−0.1144783 (−0.4121618)
Unemployment	−0.5773561*** (−4.14)	0.02472565 (1.61166362)
R^2	0.5187	0.94727958
Adjusted R^2	0.4466	0.93974809

t-statistics are in parentheses. *,** and ***denotes statistical significance at 10, 5 and 1% level, respectively.

indicating that higher FDI inflows to the UK can increase inequality in the short term. Specifically, a 10% increase in FDI would lead to a 0.57% increase in inequality in the short run. It is important to note that this impact diminishes over time and does not persist in the long run. This finding is consistent with the results reported by Choi (2006). Table 2 present a comprehensive overview of the remaining results.

6. CONCLUSIONS

The effect of globalization on inequality has been a growing concern in recent research, with evidence indicating that inequality has been on the rise in many countries (Alvaredo et al., 2017; Piketty, 2015). This paper specifically focused on examining the impact of Brexit on inequality in the UK, utilizing data spanning from 1971 to 2019. The findings suggest that leaving the EU will lead to reduced trade and FDI inflows, the reduction in trade would increase inequality but the reduction in FDI would decrease it the country. The UK's departure from the EU means losing a significant opportunity for openness, as it previously served as a gateway to the EU market. The implications of these results are crucial for policymakers in the UK, who should prioritize the establishment of new trade agreements with both EU and non-EU countries, including major economies like China and India, in order to compensate for the potential negative effects of Brexit. This would help mitigate the missed opportunities resulting from the UK's separation from the EU.

The regression results of this study offer valuable insights for future research. For instance, incorporating more frequent data, such as monthly data, could provide more accurate results and allow for a clearer understanding of the impact over different periods. Additionally, including data from other countries could help examine the varying effects of globalization on both developing and developed nations. Future studies could also consider the use of a dummy variable to represent EU membership and Brexit. Furthermore, given the strong impact of education expenditures on inequality, it would be worthwhile to explore how public policies can leverage this effect to address income disparities, particularly considering the finding that higher levels of education contribute to lower levels of inequality in the country. Another significant improvement for future research could involve employing non-linear ARDL regression models, which could capture the possibility of asymmetric effects arising from positive and negative changes in the independent variables on the Gini coefficient.

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