Do Migration, Trade, and FDI Reduce Poverty? Lessons Learned from The European Union

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Abstract

The COVID-19 pandemic has disrupted the process of economic integration by restricting the movement of goods, capital, and labour (migration) across borders, accompanied by an increase in poverty rates. Therefore, it is crucial to anticipate what might occur in the post-pandemic era. Will migration, trade, and foreign direct investment (FDI) be effective in alleviating poverty? This paper draws insights from the European Union (EU), the world's largest common market, to address this question. It assesses the impact of migration, trade, and FDI on poverty using data from the EU-28 countries spanning the period of 2009-2018, which was prior to the pandemic. The findings suggest that the promotion of free trade, unrestricted capital flow, and unrestricted migration may not necessarily lead to poverty reduction.

Keywords: Economic Integration, Trade, FDI, Migration, Poverty

INTRODUCTION

The concept of a common or single market, characterized by free trade, free flow of capital, and unrestricted migration, has been regarded as a way to enhance well-being across neighbouring regions or countries (Borraz, Rossi, & Ferres, 2012). However, the COVID-19 pandemic has disrupted the process of economic integration, impacting both ASEAN and European Union (EU) economic integration efforts, as it has constrained the cross-border movement of goods, capital, and labour (Sforza and Steininger, 2020; Shrestha et al., 2020). Consequently, significant efforts have been dedicated to addressing the limitations on cross-border movement within ASEAN and the EU (Papageorgiou & Melo, 2020).

Moreover, in spite of the challenges posed by the COVID-19 pandemic, ASEAN has remained steadfast in its commitment to advancing economic integration, as indicated in the ASEAN report from 2021. Conversely, the pandemic has been accompanied by rising poverty rates due to economic contractions and job losses resulting from lockdown measures, as highlighted by Kharas and Dooley in 2021. Consequently, it becomes imperative to anticipate the potential outcomes when the process of economic integration regains momentum. Will migration, trade, and foreign direct investment (FDI) play a role in reducing poverty, a crucial component of the Sustainable Development Goals (SDGs)?

In light of this, this study seeks to offer empirical insights by drawing lessons from the European Union (EU), the world's largest common market, which has also integrated poverty alleviation and social issues into its goals since its inception. Like the EU, one of ASEAN's objectives is to diminish poverty within its member nations. This underscores the significance of examining the impact of economic integration on poverty within the ASEAN context.

The key question revolves around whether the common market, recognized as an economic integration that facilitates free trade, the free flow of capital (foreign direct investment or FDI), and the unrestricted migration, has the potential to lead to a reduction in poverty levels. This research endeavour aims to offer a practical response to this question. The study draws upon data from the European Union (EU), which stands as the world's largest common market and has identified poverty alleviation and the reduction of social exclusion as integral economic objectives (Caminada and Goudswaard, 2009; Pęciak and Tusińska, 2015), despite social policy not initially being a primary focus during the EU's inception (Atkinson, 2002).

The most recent objectives for poverty reduction can be traced back to the Europe 2020 framework, established in 2010, with the aim of diminishing poverty or social exclusion by 20 million individuals or limiting the number of people at risk of poverty or social exclusion to a maximum of 98 million by 2020 (Eurostat, 2020). Nevertheless, as of 2018, approximately 109 million people were still deemed to be at risk of poverty or social exclusion (Eurostat, 2020), which signifies that they fell short of the target by 11 million individuals.

Despite the need to examine whether the three pillars of common market – namely trade, FDI, and migration – can reduce poverty, Texeira and Loureiro (2019) was the only study which examined the impact of FDI on people at risk of poverty, though limited in Portugal, one of the EU member countries. Other studies on the impact of trade or FDI in the EU, such as Moudatsou and Kyrkilis (2011), Asteriou, Dimelis, and Moudatsou (2013), Herzer and Nunnenkamp (2013), Angelopoulou and Liargovas (2014), Mihaylova (2015), and Mann (2015) concentrated on economic growth or inequality, not poverty.

Previous studies found mixed results on the impact of trade, FDI, and migration, on poverty, but none has put the three pillars together as the independent variables. Several studies found that the three pillars of the common market, separately, may reduce poverty (Lokshin, Bontch-Osmolovski, and Glinskaya, 2010; Fajgelbaum and Khandelwal, 2016; and Texeira and Loureiro, 2019). On the other hand, other studies stated that the three pillars of the common market, separately, may increase poverty (Raphael and Smolensky, 2008; Huang, Teng, and Tsai, 2010). Furthermore, there are studies that have discovered that when examined individually, the three components of the common market do not have any influence on poverty (Tsai and Huang, 2007; Ogunniyi and Igberi, 2014).

Moreover, prior research was conducted in nations that were not engaged in economic integration at the common market level. Furthermore, these studies did not simultaneously investigate the combined influence of the three common market pillars. Hence, this paper addresses these research deficiencies and represents the first study to examine the consequences of the three common market pillars—namely, trade, FDI, and migration—on poverty within the EU-28 countries spanning the period from 2009 to 2018. The anticipated outcome of this study is to offer insights into the simultaneous impact of trade, FDI, and migration on poverty.

This paper has several innovations. First, it uses the three pillars of the common market, namely migration, trade, and FDI, at the same time in one model as independent variables[1]. Second, it utilises the percentage of people at risk of poverty or social exclusion in each country as a proxy for poverty as defined by the EU. Third, it breaks down each common market pillar into the form of "inflows" and "outflows" of each country. Trade is indicated by exports and imports; FDI, by outward FDI and inward FDI; and migration by emigration and immigration[2]. Fourth, it benefits from time-series migration data sets, which were collected annually, not as a result of interpolation or extrapolation.

The next section focuses on a literature review, elaborating existing theoretical and empirical studies on the impact of trade liberalization, FDI, and migration on poverty. The third section discusses data and empirical methods. The fourth section examines and interprets the empirical results. The paper is closed in the fifth section.

LITERATURE REVIEW

Poverty

Until today, basic needs approach has been the most well-known approach to poverty. It works by setting a poverty line, under which people are said to be poor. It then uses the head-count index, dividing the number of poor by the number of populations. The poverty line is referred to the minimum nutritional requirement. In particular, it calculates calorie requirement per day per person, adjusted by age and gender. This calorie requirement is then converted to the food budget. The food budget is then added with some non-food items to set the poverty line (Atkinson, 2019).

However, the poor are people with a lot of both monetary and non-monetary capability deprivation. Meeting nutritional requirements alone is a limited standard for ensuring a decent life. The minimum threshold may be higher as the income rises. Therefore, The European Union measures the poor as people at risk of poverty or social exclusion.

People at risk of poverty are those with disposable income (after social transfer) below the threshold of risk of poverty. The European Union defined the threshold as 60% of the median-income (adjusted for household size and composition) in the country. It is a revision of 50.0% used earlier (Atkinson, 2019).

The scope of risk of poverty was then broadened to include social exclusion in the Europe 2020 framework. The EU targeted to reduce people at risk of poverty or those who are socially excluded, where people may be only under one category or both. As discussed in Pęciak and Tusińska (2015), this indicator does not only measure

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[1] Several previous studies found that those three pillars may be correlated with each other. Kugler and Rapoport (2011) found that migration – particularly the migration of skilled workers – has a positive effect on trade and FDI. Egger, Ehrlich, and Nelson (2012) found a positive relationship between migration and trade. Bui, Nguyen, and Pham (2019) found that foreign investment in Vietnam increased immigration. Meanwhile, Anwar and Nguyen (2011) found that FDI in Vietnam led to a significant increase in exports and imports. However, the multicollinearity test has been carried out in this paper by checking the correlation matrix and Variance Inflation Factors (VIF) for each model. The results show that there is no multicollinearity problem in all models used in this study.

[2] Several previous studies also broke down the FDI or trade to see their impact on poverty. For example, Castilho, Menéndez, and Sztulman (2012) analyzed the impact of exports and imports separately on poverty in Brazil; Tsai and Huang (2007), Huang, Teng, and Tsai (2010), and Herzer and Nunnenkamp (2013) analyzed the impact of inward and outward FDI separately on poverty in Taiwan, East Asia, and Latin America, and on income inequality in Europe.

poverty from the income or monetary aspect, but also considers social exclusion aspects that may affect a person's quality of life and social cohesion in general. Gohou and Soumaré (2012) stated that this poverty indicator can represent a comprehensive measure of welfare because it considers all aspects of individual and household life that are needed for a decent standard of living.

The broadened concept of "risk of poverty or social exclusion" consists of people at risk of poverty discussed earlier, people who are severely materially deprived, and/or people who live in a household with low work intensity. People are included in this broadened indicator if they are in at least one of those three categories. Material deprivation refers to difficulty in having adequate financial resources or cannot afford to pay at least 4 of 9 items: rent and/or utility; adequately warming up the home; unexpected expenses; consumption of meat, fish, or protein equivalent at least once in two days; a week holiday from home; car; washing machine; color TV; and telephone. People living in a household with low work intensity is measured only for people aged 0-59, who live in a household where the adults (aged 18-59) worked at most 20% of their capacity in the preceding year.

The European Union has several funding programs to reduce the number of people at risk poverty and/or social excluded, such as the European Social Fund (ESF) and the Fund for European Aid to the Most Deprived (FEAD) (European Commission, 2021). The ESF is the main financial instrument of the European Union to support the implementation of labor and social policy reforms in line with The Europe 2020 strategy. The ESF makes an important contribution to employment, social, educational and skills policies in the EU, including structural reforms in these areas. Meanwhile, FEAD supports the actions of the EU countries to provide food and/or basic material assistance to those who are seriously in need. FEAD will assist the most deprived people by meeting their most basic needs, which are prerequisites for them to be able to find employment or attend training courses such as those supported by the ESF.

Trade Liberalization

Trade liberalization reduces or eliminates any trade barriers between countries. Based on the theory of comparative advantage, trade liberalization is expected to benefit all countries involved, even if the country does not have any comparative advantage in any commodity (Salvatore, 2012). Furthermore, Heckscher-Ohlin-Samuelson showed that trade liberalization in poor countries will increase the demand for unskilled labor (which is usually relatively abundant in poor countries) and may reduce poverty (Castilho, Menendez, and Sztulman, 2012). Therefore, Castilho, Menendez, and Sztulman (2012) concluded that trade liberalization reduces wage inequality and reduce poverty. Empirically, McCaig (2011) found that wage growth for unskilled workers was faster in the provinces most affected by United States (U.S.) tariff cuts. The bilateral trade agreement between the U.S. and Vietnam in 2001 led to an immediate reduction of U.S. tariffs on almost all imports from Vietnam, and these U.S. tariff cuts led to greater reductions in poverty through the increase of wages in Vietnam.

In contrast, when tariffs fall, the tariff revenues will decrease. Martuscelli and Gasiorek (2019) argued that many developing countries still rely on tariff as one of the main sources of government's revenue. Thus, the decline in government's revenue may jeopardize the country's public services and programs to alleviate poverty.

The positive impact of trade liberalization on poverty reduction can also work through changes in the prices of consumed goods. Lower tariffs due to economic integration tend to lower the prices of goods (Martuscelli and Gasiorek, 2019) and thus will have an impact on household income, expenditure, and welfare (Borraz, Rossi, and Ferres, 2012). This argument is also found in Huang, Teng, and Tsai (2010), Fajgelbaum and Khandelwal (2016), and Koffi, Gahé, and Ping (2018). The poor tends to benefit from trade liberalization because the poor are more likely to spend more of their income on traded goods (Fajgelbaum and Khandelwal, 2016). However, Martuscelli and Gasiorek (2019) indicated that the impact of changes in tariff and non-tariff barriers on poverty also depends on the existing production structure and consumption habits of the poor. For example, if trade for the agricultural sector is liberalized and this sector is an important part of the consumption of low-income households, then trade liberalization will increase the real incomes of low-income consumers and reduce poverty.

However, the impact of trade through price changes due to changes in tariffs may not have the same impact for different countries. Borraz, Rossi, and Ferres (2012) found that MERCOSUR trade integration resulted in a large reduction of poverty rates in Uruguay due to the fall in consumer goods prices after the tariff reduction, but it did not yield a clear positive effect in Paraguay because certain groups of people such as the rural poor in Paraguay might not get that benefit.

In addition, the impact of trade liberalization on poverty can also be seen through the increased labor force participation. Trade liberalization which reduces or removes barriers may increase exports which is also likely to increase labor force participation. Rodríguez-Castelán, Vazquez, and Winkler (2020) found that exports have no significant effect on poverty – which measured by poverty headcount ratio – and the average household income as a whole, but it has a significant effect on increasing the income of the population in the bottom two deciles in urban areas with the effect for the lowest decile is greater than the second bottom decile.

However, Castilho, Menéndez, and Sztulman (2012) found that an increase in exports (measured by exports as percentage of output) due to trade liberalization will reduce poverty and inequality quite significantly. This may be due to Brazil's trade performance which has recorded a trade surplus since 2002 and sharp export growth in recent years.

Migration

Migration may affect poverty through remittances sent to their countries of origin. The remittances can increase the consumption level and can be used for investments such as housing and schools for their families in the country of origin. Therefore, both international migrants and remittance flows have a significant impact on poverty reduction in developing countries (Adams and Page, 2005; Lokshin, Bontch-Osmolovski, and Glinskaya, 2010).

On the other hand, as elaborated in Möllers and Meyer (2014), the impact of emigration on poverty through remittance flow will depend on the use of remittances in the country of origin and on who migrates and who receives the remittances. If remittances are used to increase consumption, particularly spending for food and clothing more, and less for investment purposes, it may hinder the impact of remittances on development and poverty reduction in the long term. Meanwhile, if people who migrate already have a better level of welfare (not belonging to low-

income groups since the first place), and migrate only to increase their income, then the effect of migration or remittances sent by migrants on poverty, will be lower. Furthermore, for the empirical results, Möllers and Meyer (2014) found remittances sent can lift their families out of poverty, but remittances have no impact on very poor families. This is explained by the fact that migrants and remittances are found more often in wealthier and better educated households. Thus, the poorest groups appear to be the ones who benefit the least from migration.

In addition, the impact of migration on poverty can also be analyzed through its effect on per capita income and poverty level in the destination country of migration. Ortega and Peri (2014) found that openness to immigration will increase per capita income in the long run after controlling for factors that can affect per capita income. The effect of migration on per capita income works through increased total factor productivity stemming from increased skill diversity and higher innovation.

On the other hand, Raphael and Smolensky (2008) found that the only contribution of immigration to the poverty rate in the United States is through the effect of the composition of new immigrants on the poverty rate. New immigrants from Latin America and Asia tend to experience high initial poverty rates which certainly increases the overall poverty rate. However, this effect is small and only temporary, as wage increase and selective out-migration (some immigrants who cannot survive in the destination country may return to their home countries or migrate to other countries) cause immigrant poverty to decline rapidly over time in the US.

Foreign Direct Investment

FDI can affect poverty directly – by affecting employment, output, and human capital – or indirectly, through economic growth and distribution effects (Tsai and Huang, 2007; Magombeyi and Odhiambo, 2017). Foreign enterprises that come to a country will create more jobs and cause structural changes through technology, science, and innovation brought to that country. In this case, inward FDI may lead to poverty reduction as found in Shamim, Azeem, and Naqvi (2014), Uttama (2015), and Bui, Nguyen, and Pham, (2019). However, the impact of FDI on several welfare indicators may not be large because foreign investment is generally not located in areas where there are more poor households (Bui, Nguyen, and Pham, 2019).

On the other hand, according to Herzer and Nunnenkamp (2013), the impact of FDI on poverty may also work through the distribution effect described in the North-South model by Feenstra and Hanson (1997). The countries in the "North" (richer and lack of cheap labour) usually move their production to the "South" (poorer and abundance of cheap labor). However, this model argued that the "low-skilled labour" in the North may be actually "high-skilled labour" in the South due to the income inequality between those countries. Therefore, FDI from the North may not reduce poverty in the South.

This North-South model is in line with the empirical results found by Huang, Teng, and Tsai (2010) where inward FDI reduces the income of people in the lowest quintile because the production activities of foreign companies may require high-skilled workers and neglect low-skilled workers, who are mostly poor (Martuscelli and Gasiorek, 2019). In addition, Herzer and Nunnenkamp (2013) found that an increase in inward FDI can also be associated with an increase in income inequality in Spain as found in the North-South model, though they found the opposite effect for

Europe as a whole. The results for Spain tend to be different from the results they found for other countries because Spain is the poorest country among the sample countries.

However, the impact of inward FDI on poverty may also vary, depending on the level of welfare of the host country (Gohou and Soumaré, 2012), as well as the measurement of poverty and the period of time used for the research (Magombeyi and Odhiambo, 2018). Gohou and Soumaré (2012) found that there was a positive relationship between FDI and poverty reduction in Central and East Africa, but it had no significant effect in North and South Africa. Hence, they concluded that FDI will have a greater impact on poverty reduction in poor countries than in rich countries. Meanwhile, Magombeyi and Odhiambo (2018) found a positive impact of FDI on poverty reduction in South Africa in the long term, but a negative impact in the short term – when the poverty is measured by infant mortality. However, if poverty reduction is proxied by household consumption expenditure and life expectancy, they did not find a significant impact of FDI on poverty reduction in South Africa either in the short term or in the long term.

Meanwhile, Tsai and Huang (2007) and Ogunniyi and Igberi (2014) found that inward FDI does not have a significant impact on poverty. FDI may not have an impact on poverty due to lack of human resource development, underdevelopment of institutions, or crowding-out of domestic investment due to the emergence of foreign investment (Ogunniyi and Igberi, 2014), or it may be due to export-oriented and labor-intensive inward FDI – which may create more job – only operate for a relatively short term (Tsai and Huang, 2007).

Furthermore, the impact of FDI on poverty can also be viewed from its impact on the country of origin of the FDI. The impact of FDI on poverty in the country of origin – or more precisely the impact of outward FDI on poverty – tends to be less direct than the impact of inward FDI. One of the impacts of outward FDI on poverty can be seen through the reduction in domestic employment and wages due to the massive investment abroad and thus it may result in more poverty as found by Huang, Teng, and Tsai (2010). However, for the case of Taiwan, Tsai and Huang (2007) found no case of outward FDI that has a statistically significant impact on the average income on the poor though they still argued that there might be a mild detrimental effect of FDI on the poor.

In contrast, Herzer and Nunnenkamp (2013) who examined the impact of outward FDI on income inequality in Europe found that outward FDI would reduce inequality in the long run. This is because outward FDI by European countries is strongly concentrated in similarly advanced host countries (Herzer and Nunnenkamp, 2013). However, FDI will increase domestic skill intensity when the host country is poorer than the origin country, but this positive effect will decrease as the welfare of the host country increases (Head and Ries, 2002).

METHOD

Data

This paper uses panel data consisting of cross-sectional data from the EU-28 countries and annual time series data from 2009 to 2018[3], obtained from Eurostat and

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[3] All variables in the contemporaneous model use data for the 2009-2018 period. However, there are adjustments for the period of the data used for the independent variables in the 1-year lag and 5-year lag models. In the 1-year

the World Bank. Poverty is defined as risk of poverty or social exclusion, cited from Eurostat (Eurostat, 2020). The data on trade is also from Eurostat. Exports and imports are measured as the percentage of each value of exports and imports of goods and services to GDP at the current price with trading partners of all countries in the world (Eurostat, 2020). The migration data is also from Eurostat. Emigrants (out-migration) is defined as persons who left a country for a long term in a given year (Eurostat, 2020), while immigrant (in-migration) is defined as persons who enter a country for a long term in a given year (Eurostat, 2020). Both immigration and emigration are measured as the percentage of immigrants to the number of total population in the country of destination. Both population data and migration data are collected annually, not interpolated or extrapolated. The data on FDI is cited from the World Bank (The World Bank, 2020). Inward FDI refers to new investment inflows minus disinvestments in the country of destination, while FDI outflow refers to capital going out to other countries in the world. This paper uses percentage of each inward and outward FDI to GDP in the host country and GDP in the country of origin, respectively.

To reduce the possibility of bias due to endogeneity problems caused by omitted variables, this study uses several control variables that have also been used in several previous studies, namely real Gross Domestic Product (GDP) per capita (Teixeira and Loureiro, 2019), inflation rate (Uttama, 2015; Gohou and Soumaré, 2012; Ogunniyi and Igberi, 2014), unemployment rate (Ogunniyi and Igberi, 2014), and government spending (Tsai and Huang, 2007; Huang, Teng, and Tsai, 2010; Gohou and Soumaré, 2012). The control variables have also been shown to affect poverty based on previous research (Ghura, Leite, and Tsangarides, 2002; Dafermos and Papatheodorou, 2013; Tudorache, 2019)[4]. All data for these control variables are cited from Eurostat[5].

Empirical Method

This paper focuses on the possible effect of the three pillars of the common market, namely trade, FDI, and migration – on poverty. This study does not analyze the possibility of simultaneous, two-way, relations between the three pillars of the common market on one hand and the level of poverty on the other. As this paper will only analyze a one-way relation, it uses lagged independent variables to avoid the possibility of reverse causality between poverty and the three pillars of the common market. Therefore, this paper analyzes the impact of the three common market pillars in three different periods of time, namely contemporaneous analysis, short-term analysis (defined by 1-year time-lag), and long-term analysis (defined by 5-year time-lag).

Moreover, each of the three pillars consists of "into" and "out from" each country form. Trade consists of exports and imports; migration consists of emigration and immigration; and FDI consists of inward and outward FDI. By splitting these

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lag model, the independent variables in this paper uses data from 2008 to 2017 to analyze their impact on poverty in 2009-2018 period. In the 5-years lag model, due to the missing data for several countries, this paper uses data only from 2008 to 2013 to analyze their impacts on poverty in 2013-2018 period.

[4] Economic growth was found to increase the income of the poor (Ghura, Leite, and Tsangarides, 2002) and reduce poverty (Dafermos and Papatheodorou, 2013). Low inflation rate was found to increase the incomes of the poor (Ghura, Leite, and Tsangarides, 2002). Meanwhile, the unemployment rate was found to increase people at risk of poverty (Tudorache, 2019). As for government spending, previous studies used government spending specifically in the form of social transfers (Dafermos and Papatheodorou, 2013; Tudorache, 2019).

[5] All control variables, except real GDP per capita, are measured in percent or decimal units. The data for real GDP per capita was collected in euros, and then it was converted to thousand euros units. As the data on per capita GDP is skewed, this paper uses the *natural logarithm* of the per capita GDP.

variables, this paper can test whether different proxies of the same variables will have different impact on poverty.

The equations used in this paper are as follows.

$$POVERTY_{it} = \alpha_0 + \beta_1 TRADE_{it-n} + \beta_2 FDI_{it-n} + \beta_3 MIGRATION_{it-n} + \beta_4 Z_{it-n} + \varepsilon_{it-n}$$

with

$POVERTY_{it}$ = poverty rate of country i, on year t (%)

$TRADE_{it}$ = trade of country i, on year t, broken down into exports and imports (%)

FDI_{it} = FDI of country i, on year t, broken down into inward and outward FDI (%)

$MIGRATION_{it}$ = migration ratio of country i, on year t, broken down into emigration and immigration (%)

Z_{it} = control variable, consisting of real GDP per capita, inflation rate, unemployment rate, and total general government spending.

α_0 = intercept

$\beta_1, \beta_2, \beta_3, \beta_4$ = coefficient of explanatory variables

ε = error

n = time lag, consist of 0, 1, and 5-year time lag.

The estimation process uses Pooled Ordinary Least Square (POLS), Fixed Effect Model (FE), or Random Effect Model (RE). One of the important features in the data panel specification is unobserved heterogeneity. Unobserved heterogeneity is interpreted as certain features of individuals that do not change over time (time-constant) but may affect the independent variable. Unobserved heterogeneity can be a source of bias if it is not addressed properly. Therefore, this paper examines whether there is unobserved heterogeneity or not through the variance using the Lagrange Multiplier Breusch Pagan Test (hereinafter referred to as the LM Test). The null hypothesis of the LM test is that unobserved heterogeneity can be ignored. Thus, if the LM test rejects the null hypothesis, it means that the heterogeneity cannot be ignored and the results of OLS estimation will be biased. The next step is to fix the heterogeneity by selecting between the FE and RE models.

RE model is assuming zero correlation between the unobserved effect and independent variables, while FE model is allowing for arbitrary dependence between the unobserved heterogeneity and the independent variables (Wooldridge, 2010). This paper uses the Hausman test to examine whether the correlation exists, with no correlation as the null hypothesis. Consequently, if the null hypothesis is rejected, the FE model will be selected, but if the null hypothesis is not rejected, then the RE and FE models will provide unbiased estimator but the ones from RE model is more efficient and thus it will be selected. The model selected from the Hausman test is estimated using robust standard error to ensure that the model is free from heteroscedasticity problems which may cause the estimation results to be biased.

RESULT AND DISCUSSION

Testing unobserved heterogeneity

The first step to do is to estimate the research model using OLS, pooling the cross-section and time series data, both by including all control variables and

excluding control variables. Next, the LM test was carried out to check whether there was unobserved heterogeneity. The LM test results for all models reject null hypothesis which means that unobserved heterogeneity in all equations cannot be ignored, and therefore the estimation of the OLS will be biased.

The next step is to evaluate whether the unobserved heterogeneity is correlated with the independent variable or not with the Hausman test. The Hausman test results reject the null hypothesis in all models which means there is correlation between the unobserved heterogeneity and the independent variable when all the control variables are included. Therefore, the FE model, with robust standard error, is used to analyze the impact of these three common market pillars on poverty in all models: contemporaneous, short-term, and long-term.

Results from the contemporaneous model

Table 1 shows that exports and imports have a positive coefficient and have a statistically significant impact on poverty only in equations that using immigration. In other words, exports and imports raise poverty in the EU-28 only when controlled by immigration (in-migration), regardless of the presence of outward or inward FDI. On the other hand, controlled by emigration (out-migration), exports and imports do not have any significant impact on poverty. Immigration also has a positive coefficient, but emigration does not have any impact on poverty. Furthermore, either outward or inward FDI does not affect poverty in all equations.

Among the control variables, the unemployment rate and real GDP per capita have significant effect on poverty in the EU-28 countries[6]. The coefficient of unemployment rate is positive, while the coefficient of real per capita GDP is negative. It means that an increase in unemployment rate will raise poverty, but an increase in real per capita GDP will decrease poverty.

Table 1. Impact of the Three Pillars of the Common Market on Poverty in the EU-28: Contemporaneous Model

variable	poverty (1)	poverty (2)	poverty (3)	poverty (4)	poverty (5)	poverty (6)	poverty (7)	poverty (8)
exports	0.032 (0.021)		0.033 (0.020)		0.052*** (0.016)		0.052*** (0.015)	
imports		0.032 (0.022)		0.033 (0.022)		0.061*** (0.016)		0.061*** (0.016)
inward FDI	-0.003 (0.006)	-0.003 (0.006)			0.002 (0.004)	0.002 (0.004)		
outward FDI			0.000 (0.004)	0.000 (0.004)			0.003 (0.003)	0.003 (0.003)
emigration	0.433 (0.906)	0.486 (0.899)	-0.185 (0.875)	0.500 (0.923)				
immigration					1.356*** (0.367)	1.532*** (0.427)	1.365*** (0.359)	1.539*** (0.416)
unemployment rate	0.273 (0.137)	0.294*** (0.136)	0.272 (0.138)	0.294*** (0.137)	0.253*** (0.095)	0.284*** (0.091)	0.250*** (0.095)	0.281*** (0.091)
Real GDP per capita	-16.296*** (4.924)	-15.464*** (4.959)	-16.279*** (4.958)	-15.398*** (5.015)	-20.501*** (4.649)	-19.708*** (4.594)	-20.555*** (4.633)	-19.773*** (4.591)

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[6] For the government spending, it was found to have a significant effect on poverty only when using immigration and imports as the proxies of migration and trade at the same time. Thus, it can be concluded that the government spending tends to have no significant effect on poverty in the EU-28.

variable	poverty (1)	poverty (2)	poverty (3)	poverty (4)	poverty (5)	poverty (6)	poverty (7)	poverty (8)
inflation rate	0.053 (0.062)	0.045 (0.064)	0.052 (0.062)	0.044 (0.063)	0.047 (0.060)	0.031 (0.063)	0.047 (0.060)	0.031 (0.062)
government spending	-0.118 (0.058)	-0.124*** (0.057)	-0.117 (0.058)	-0.123*** (0.057)	-0.096 (0.061)	-0.102 (0.059)	-0.096 (0.061)	-0.102 (0.059)
constant	186.595*** (50.781)	178.501*** (51.281)	186.252*** (51.156)	177.687*** (51.857)	225.311*** (47.665)	216.877*** (47.257)	225.871*** (47.566)	217.560*** (47.252)
Total observation	275	275	275	275	275	275	275	275
R-squared	0.542	0.542	0.541	0.542	0.571	0.576	0.571	0.577
lag	-		-	-	-	-	-	-

*** $p\text{-value}<0.050$. Source: calculated by the authors

Results from the one-year lag model

Unlike in the contemporaneous model, Table 2 indicates that either exports or imports in one-year earlier does not have any significant impact on poverty at the current time in all equations. Similar to the contemporaneous model, immigration is positively correlated with poverty, while emigration and both inward and outward FDI have no significant impact on poverty. Therefore, immigration is the only pillar in one year earlier having a significant impact on poverty at the current time; an increase in immigration raises poverty.

Table 2. Impact of the Three Pillars of the Common Market on Poverty in the EU-28: 1-year lag Model

variable	poverty (1)	poverty (2)	poverty (3)	poverty (4)	poverty (5)	poverty (6)	poverty (7)	poverty (8)
exports	0.022 (0.031)		0.023 (0.032)		0.035 (0.028)		0.035 (0.028)	
imports		0.029 (0.030)		0.030 (0.031)		0.047 (0.024)		0.046 (0.024)
inward FDI	-0.003 (0.008)	-0.003 (0.009)			0.001 (0.006)	0.002 (0.006)		
outward FDI			-0.002 (0.006)	-0.003 (0.008)			0.001 (0.006)	0.001 (0.007)
emigration	0.509 (0.894)	0.550 (0.907)	0.531 (0.926)	0.575 (0.943)				
immigration					1.117*** (0.364)	1.242*** (0.402)	1.108*** (0.365)	1.224*** (0.395)
unemployment rate	0.186 (0.125)	0.196 (0.115)	0.183 (0.126)	0.194 (0.115)	0.188 (0.099)	0.208*** (0.086)	0.189 (0.099)	0.209*** (0.086)
Real GDP per capita	-16.829*** (4.211)	-16.506*** (4.225)	-16.923*** (4.189)	-16.583*** (4.183)	-19.727*** (4.306)	-19.415*** (4.072)	-19.681*** (4.322)	-19.358*** (4.086)
inflation rate	0.265*** (0.067)	0.254*** (0.068)	0.266*** (0.067)	0.255*** (0.068)	0.270*** (0.070)	0.252*** (0.072)	0.270*** (0.070)	0.252*** (0.072)
government spending	0.016 (0.038)	0.015*** (0.036)	0.016*** (0.038)	0.015 (0.036)	0.032*** (0.041)	0.032 (0.039)	0.032 (0.041)	0.032 (0.039)
constant	186.646*** (42.294)	183.025*** (42.682)	187.489*** (42.029)	183.690*** (42.278)	213.097*** (42.857)	209.149*** (40.988)	212.700*** (43.009)	208.672*** (41.127)
Total observation	273	273	273	273	273	273	273	273
R-squared	0.562	0.564	0.562	0.564	0.500	0.583	0.578	0.499

variable	poverty (1)	poverty (2)	poverty (3)	poverty (4)	poverty (5)	poverty (6)	poverty (7)	poverty (8)
lag	1	1	1	1	1	1	1	1

*** *p-value*<0.050. Source: calculated by the authors

As for the control variables, similar with the contemporaneous model, real GDP per capita in one-year earlier is found to have a significant negative effect on the percentage of people at risk of poverty or social exclusion in the current year, while the government spending in previous year tends to have no impact on poverty. An increase in real GDP per capita in one year earlier by 1% will decrease the percentage of people at risk of poverty or social exclusion in the current year by 16.51% to 19.72%, depending on the proxies of trade, FDI, and migration used. Different from the results found in Table 1, the inflation rate one year earlier is found to have a significant positive effect on poverty in the current year. An increase in the inflation rate one year earlier by 1% will increase the percentage of people at risk of poverty and social exclusion in the current year by 0.25% to 0.27%, depending on the proxies of trade, FDI, and migration used. Meanwhile, the unemployment rate in one-year earlier is found to significantly affect poverty in the current year only when using immigration and imports as the proxies of migration and trade at the same time. Thus, in line with contemporaneous analysis results, it can be concluded that in the 1-year lag model, real GDP per capita and immigration are the factors that have the greatest impact on poverty in the EU-28 countries.

Results from the five-year lag model

Table 3 shows none of the pillars in five-years earlier has any significant impact on poverty at the current year. Immigration neither has any significant impact. Among the control variables, the unemployment rate in five years earlier affects poverty at the current year negatively only when using imports as the proxy of trade for the magnitudes of 0.44% to 0.46%. Meanwhile, real GDP per capita, government spending, and inflation rate in five years earlier have no significant effect on poverty in the current year. Thus, five years earlier, the unemployment rate is the only factor that affects poverty in the current year.

Table 3. Impact of the Three Pillars of the Common Market on Poverty in the EU-28, 5-year lag Model

variable	poverty (1)	poverty (2)	poverty (3)	poverty (4)	poverty (5)	poverty (6)	poverty (7)	poverty (8)
exports	-0.108		-0.105		-0.108		-0.105	
	(0.059)		(0.059)		(0.060)		(0.059)	
imports		-0.042		-0.038		-0.042		-0.038
		(0.054)		(0.053)		(0.056)		(0.055)
inward FDI	0.005	0.005			0.005	0.005		
	(0.008)	(0.008)			(0.007)	(0.008)		
outward FDI			0.007	0.008			0.008	0.008
			(0.005)	(0.006)			(0.006)	(0.006)
emigration	0.282	0.357	0.245	0.314				
	(0.926)	(1.097)	(0.939)	(1.110)				
immigration					0.171	0.209	0.237	0.290
					(0.902)	(0.889)	(0.885)	(0.841)

variable	poverty (1)	poverty (2)	poverty (3)	poverty (4)	poverty (5)	poverty (6)	poverty (7)	poverty (8)
unemployment rate	-0.277	-0.462***	-0.281	-0.464***	-0.258	-0.438***	-0.263	-0.442***
	(0.169)	(0.142)	(0.168)	(0.141)	(0.166)	(0.137)	(0.167)	(0.138)
Real GDP per capita	-8.510	-16.761	-8.566	-16.779	-8.812	-17.185	-8.996	-17.363
	(10.898)	(9.079)	(10.843)	(9.019)	(11.243)	(9.293)	(11.181)	(9.231)
inflation rate	0.165	0.180	0.160	0.172	0.170	0.186	0.165	0.178
	(0.107)	(0.117)	(0.107)	(0.118)	(0.107)	(0.115)	(0.106)	(0.116)
government spending	0.040	0.061	0.041	0.062	0.039	0.060	0.042	0.063
	(0.081)	(0.077)	(0.081)	(0.077)	(0.080)	(0.076)	(0.080)	(0.076)
constant	114.622	193.109***	115.003	193.097***	117.532	197.204**	119.044	198.598**
	(107.878)	(90.098)	(107.378)	(89.531)	(110.505)	(91.473)	(109.951)	(90.951)
Total observation	162	162	162	162	162	162	162	162
R-squared	0.367	0.322	0.374	0.331	0.366	0.321	0.374	0.330
lag	5	5	5	5	5	5	5	5

*** *p-value*<0.050. Source: calculated by authors

Discussion

As summarised in Table 4, most of the pillars of the common market do not have any significant impact on poverty at the current time. Significant impacts are only found in two equations. First is an equation in the one-year lag model, where immigration one year earlier affects poverty at the current time positively. An increase in immigration one year earlier is likely to raise poverty at the current time. The second is in the contemporaneous model, where exports, imports, and immigration affect poverty. Immigration is also found to positively affect poverty in this model, while both exports and imports have significant positive coefficients only when controlled with immigration, but they do not have any impact when controlled with emigration. Furthermore, neither emigration nor FDI (both inward and outward) have any impact on poverty in all equations.

Table 4. Impact of the Three Pillars of the Common Market on Poverty Levels in the EU-28: Summary

Variables	Contemporaneous Model, With Control Variables	1-Year Lag Model, With Control Variables	5-Year Lag Model, With Control Variables
exports	*positive when controlled with immigration*	insignificant	insignificant
imports	*positive when controlled with immigration*	insignificant	insignificant
Inward FDI	insignificant	insignificant	insignificant
Outward FDI	insignificant	insignificant	insignificant
emigration	insignificant	insignificant	insignificant
immigration	*positive*	*positive*	insignificant

Source: Summarized by the authors from Tables 1,2, and 3

This finding rejects the results found by Shamim, Azeem, and Naqvi (2014), Uttama (2015), and Bui, Nguyen, and Pham (2019), who found that inward FDI reduced poverty. However, this result is in line with the findings by Tsai and Huang (2007) and Ogunniyi and Igberi (2014). It also confirms the findings by Gohou and Soumaré (2012) who found that FDI had a greater impact on poverty reduction in poor countries than in rich countries However, almost all of the EU-28 countries are categorized in the high-income countries by the World Bank (2021).

The finding of the insignificant impact of outward FDI on poverty rejects Huang, Teng, and Tsai (2010) and Herzer and Nunnenkamp (2013). The finding indicates that there is no detrimental effect of outward FDI on the poor in the European Union. The absence of detrimental effect is perhaps because the outward FDI takes place among equally developed countries, as shown in Herzer and Nunnenkamp (2013).

The finding of the insignificant impact of emigration on poverty rejects Adams and Page (2005) and Lokshin, Bontch-Osmolovski, and Glinskaya (2010) who stated that emigration and remittances have a significant effect on poverty reduction. However, this result is in line with the finding by Möllers and Meyer (2014) who found that remittances had no impact on very poor households because remittances were found in relatively wealthier households. Therefore, the insignificance impact of emigration in the European Union may be because remittances in the European Union are found in wealthier households.

Imports and exports are found to have no significant impact on poverty in all models, except when being controlled with immigration in the contemporaneous analysis. Trade can affect poverty through price reductions due to lower tariff (Fajgelbaum and Khandelwal, 2016; Borraz, Rossi, and Ferres, 2012; Martuscelli and Gasiorek, 2019). Thus, the insignificant impact of imports may indicate that the price of the goods affected by the reduction in tariffs may not be the goods consumed by the poor. Because the impact of changes in tariff and non-tariff barriers on poverty will also depend on the production structure and consumption habits of the poor (Martuscelli and Gasiorek, 2019). For the exports, this result may indicate that exports do not necessarily increase the participation of labor force, especially the one that comes from the population that is at risk of poverty or social exclusion.

Immigration has a significant impact on poverty in the contemporaneous and the 1-year lag model, but it does not show any impact in the 5-year lag model. The positive impact of immigration on poverty in the contemporaneous and the 1-year lag model is in line with Raphael and Smolensky (2008) who found that the flow of immigration to the United States in the 1970-2005 increased poverty in the United States because the immigrants to the country were likely to be poor. In addition, Lelkes and Zólyomi (2011) report that one in ten people who was at risk of poverty had a migrant background. However, this paper does not find significant impact of immigration on poverty in the 5-year lag model. Perhaps, as shown by Raphael and Smolensky (2008) after more than one year, the migrants have adjusted to the local labor market and earn higher wage or that the poor migrants may have returned to their home countries or migrate to other countries.

In short, this paper finds that the three pillars of the common market tend to have no significant effect on poverty. An exception is immigration in contemporaneous and one-year lag models, which has positive coefficients, showing the importance of immigration's role in increasing poverty in the common market. The migrants may initially raise the poverty rate but later (after five years) they

become better off. Furthermore, the presence of immigration in the contemporaneous model results in positive coefficients of exports and imports; with emigration, the coefficients of exports and imports are not significant. Thus, for a given rate of immigration, exports and imports are likely to be accompanied by higher poverty.

CONCLUDING REMARKS

Common or single market – with free trade, free capital flow, and free labour flow – has often been seen as a means to improve welfare among different nearby regions or countries. At the same time, eradicating poverty has been seen as an important development agenda in many countries in the world, including rich countries. This paper attempts to provide an empirical answer to this question, to test whether free trade, free flow of capital (FDI) and flow of labour (migration) reduce poverty. This study uses data from the European Union as it is the largest common market in the world with poverty alleviation or social exclusion as one of its economic targets.

Previous studies were conducted for countries that have not been involved in economic integration at the common market level. They neither studied the three pillars altogether at the same time in one model. Therefore, this paper fills in these research gaps and is the first study that analyzes the impact of the three pillars of the common market, namely trade, FDI, and migration, on poverty in the EU-28 countries during 2009 – 2018.

Empirical results in the paper conclude that reducing or removing trade and migration barriers, and making free flow of capital (FDI), as in the case of the EU common market, may not reduce poverty. Even immigration may raise poverty in the short term though the impact disappears after 5 years. Free trade, for a given level of immigration, may also raise poverty at the current time, though the impact disappears after one year.

Lessons learned from the European Union is that poverty reduction cannot rely on unrestricted migration, free trade, and free flow of capital (FDI) alone. Other policies should be carried out to reduce poverty. Indeed, there are several funding programs to support the reduction of people at risk of poverty and social exclusion, such as the European Social Fund (ESF) and the Fund for European Aid to the Most Deprived (FEAD).

Therefore, caution needs to be exercised in other regions, including ASEAN, which have not implemented a comprehensive common market as in the European Union. Level of per capita income should also be considered before applying policy for free trade, free movement of capital, and unrestricted migration. Furthermore, the European Union uses a broader poverty measure, to include people at risk of poverty and people who are socially excluded.

Conflict of interests
The author declares no conflict of interest

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