

Impact of Trade Restrictions in European and Sub-Saharan Regions

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Abstract

This article investigates the impact of trade restrictions in European and sub-Saharan regions. The study employed annual time series for the period from 1980 to 2019. Based on augmented Philip curve framework, it was found that for the European Union, the trade-off is 4.31 per cent, while it is 2.66 per cent for the sub-Saharan African region. This suggests that the negative effect of globalisation due to trade restrictions is more in developed regions than in developing regions of the world. The implication of the finding is that whether in developed or developing countries, a trade-off exists between globalisation and restricted trade. This has significant bilateral and multilateral trade policy relevance.

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Keywords

Trade restrictions, trade barrier, tariff, trade openness, trade-off, European region, sub-Saharan region

Introduction

Globalisation is generally perceived as the interdependence of countries around the world fostered through cross-border trade in goods, services and technology. Ishita (2008) asserts that globalisation connects the world market. Akram et al. (2011) further note that globalisation benefits local and national economies by creating more efficient markets, increasing competition and creating wealth. Since the creation of the World Trade Organization (WTO), globalisation has contributed to reduction in poverty levels, largely in Asia, within a short space of time (Jackson, 2003). For other developed countries, benefits of globalisation include greater access to developing markets, increased economies of scale and scope, productivity growth, job creation and access to raw materials (natural resources). In developing countries, evidence shows that improved access to technology and capital/financial flows has helped raise productivity, the standard of living and lifted people out of extreme forms of poverty. Some other specific benefits of globalisation as outlined variously by Down (2007), Di Giovanni and Levchenko (2009), and Mireku et al. (2017) are an increase in the flow of foreign direct investment, technology innovation and economies of scale. As succulently put by Marius-Razyan and Surugiu (2015), globalisation cannot be ignored due to the opportunities offered by foreign markets.

Proponents of globalisation, who drove the massive trade and investment liberalisation that began with General Agreements on Trade and Tariff (GATT) and deepened under WTO, observe that it would lead to a reduction in a disparity between the rich and poor countries in key indices of economic well-being. This was expected to arise through a combination of efficiency gains, faster capital accumulation and higher productivity across the board (Oramah & Dzene, 2019). The efficiency gains were expected to increase trade, which would foster specialisation, enhance competitiveness, bring uniformity in prices and create greater capital mobility. It was also envisaged that globalisation would allow savings to be pooled and enable a more efficient international allocation

of capital across boundaries and sectors. Going by this, developing countries were to benefit more as capital would move from the low-return, capital-rich developed economies to high-return, capital-scarce developing economies and transfer of technology and management skills based on relative returns (Gul, 2003; Lang & Tavares, 2018; Lee & Vivarelli, 2006). Birdsall (2002), Samimi and Jenatabadi (2014) assert that globalisation is fundamentally asymmetric for poor countries, due to the asymmetric nature of the markets and structure of the economy.

The increase of international trade over the years has been greatly attributed to globalisation. In recent years, however, there has been new perceptions about globalisation as a no-win situation, therefore, challenging the perceived motivation inherent in freer trade as a win-win situation for every country. The argument is that globalisation increases cost and causes inflation and marketplace shortages, slowing down economic growth rates and jeopardising diplomatic relations and cultural exchange. This has culminated to the notion that globalisation may have been beneficial to most countries, but not for others. The view is that it is the developed countries that get the short straw. Usually, in the presence of globalisation, countries that export will react to tariff imposition by resorting to manipulation of currency, though retaliation by currency devaluation among trading nations could make a valueless trade war. As stipulated by Huang (2018) and Chen (2019), trade policies, including trade restriction, tariff and outright ban, have attendant gains and pains.

Even though the benefits of globalisation seem remarkable, some have argued that they have been disproportionately skewed towards rich/industrialised/developed economies, creating greater inequalities and leading to potential conflicts both nationally and internationally. At the onset of the Industrial Revolution, almost all developed countries were looking for new markets for their industrial goods as a way of expanding their industrial base and creating jobs for their citizenry. In addition to the robust export subsidy programmes through national export credit schemes, industrialised countries successfully broke the developing countries' trade barriers, employing instruments such as the Bretton Woods Institutions (BWI) and GATT. This underscored the push back on globalisation among developing economies during the 1980s and 1990s. Stiglitz (2002) contends that the discontent among developing countries were driven by concerns regarding the need to protect infant industries from 'unfair' competition in the form of imports from developed economies; the need for industrial growth and development; and the creation and protection of jobs. Tariffs or quantitative restrictions protect domestic industries and workers from foreign competition by raising the

prices of imported goods. In this respect, some argue that import restrictions should be conceived as a tax on domestic consumers. A similar analysis can be applied to export subsidies. Subsidising exports can cause a depressing effect on productive programmes designed to stimulate international competitions. Import restrictions and export subsidies have also been criticised on the ground that they tend to discourage the protected firms and industries from making the needed changes necessary to challenge foreign competition.

It is generally agreed that trade barriers are detrimental and decrease overall economic efficiency. This can be explained by the theory of comparative advantage. Theoretically, free trade involves the removal of all barriers, except perhaps those considered necessary for health or national security. In practice, however, even those countries promoting free trade heavily subsidise certain industries, such as agriculture and steel. Trade barriers are often criticised for the effect they have on the developing world. Since rich-country players set trade policies, goods, such as agricultural products that developing countries are best at producing, face high barriers (IMF, 2016). Trade barriers, such as taxes on food imports or subsidies for farmers in developed economies, lead to overproduction and dumping on world markets, thus lowering prices and hurting poor-country farmers. Tariffs also tend to be anti-poor, with low rates for raw commodities and high rates for labour-intensive processed goods. The Commitment to Development Index measures the effect that rich country trade policies have on the developing world. Another negative aspect of trade barrier is that it limits choice of products, a situation that forces consumers to pay higher prices and accept inferior products.

In general, for a given level of protection, quota-like restrictions carry a greater potential for reducing welfare than do tariffs. Tariffs, quotas and non-tariff barriers lead too few of the economy's resources being used to produce tradable goods. An export subsidy can also be used to give an advantage to a domestic producer over a foreign producer. Export subsidies tend to have a particularly strong negative effect because, in addition to distorting resource allocation, they reduce the economy's terms of trade. In contrast to tariffs, export subsidies lead to an over-allocation of the economy's resources to the production of tradable goods. Although UNCTAD (2017) suggests that the increasing integration of financial markets between countries leads to more consistent and seamless trading practices, IMF (2016) earlier points out that capital flows tend to favour the capital owners more than any other group. With increased international trade and global capital flows, critics argue that income disparities between the rich and poor are exacerbated,

and industrialised nations grow in power at the expense of undercapitalised countries. In essence, a country that imposes levies on foreign goods and services aims to protect domestic companies from foreign competition. The domestic companies can then sell more products at home. This increases domestic employment and income. However, in reality, these objectives cannot be achieved by isolating the domestic economy (Savrul & Incekara, 2015).

Although several studies such as York (2018), Savrul and Incekara (2015), Sharma (2013), and Ma and Lu (2011) have examined the effect of globalisation and restricted trade and different aspects of trade-off., there is a lack of studies on the impact of trade restrictions. Taking global economic integration into consideration, the objective of this study is to examine the impact of trade restriction in European and sub-Saharan African (SSA) regions. Finding suggests that the negative effect of globalisation due to trade restrictions is more in developed regions than in developing regions of the world. The implication of the finding is that whether in developed or developing countries, a trade-off exists between globalisation and restricted trade. This has significant bilateral and multilateral trade policy relevance.

The rest of the article is structured as follows: The second section reviews the literature. The third section discusses the methodology, while the fourth section illustrates the results and discussions. The fifth section concludes the article with policy suggestions.

Literature Review

Since nations are no longer self-sufficient in the global economy, they are included in trade at different levels to sell what they produce to obtain what they are in need. The countries usually produce more efficiently in some economic sectors than its trade partners. As supported by conventional economic theory, eventually, trade promotes economic efficiency, and it can be concluded that the globalisation of production contributes to the globalisation of trade (Bhagwati, 1964; IMF, 2016). However, a combination of tariffs, quotas and subsidies can serve as economic and sometimes political barriers and impose significant restriction to trade (Caliendo et al., 2017).

Trade restriction policies like an increase in tariff affect foreign prices, which reduces total trade. However, for most countries, decision to export has been influenced by the desire to open up their export base

both before globalization and after globalization. Mukherjee (2008) contends that the trend is towards free trade all over the world, driven primarily by international trade, which is an outcome of competitive liberalisation. In this regard, globalisation is adjudged as important in the enhancement of cross-border trades by reducing or removing international trade barriers. Sriram and Bilgin (2002) investigated foreign trade flows between Turkey-Blacksea Economic Cooperation (BSEC) Region and Turkey-European Union (T-EU) with data covering the period from 1991 to 2001. Although fluctuations occur, in general, Turkey's imports and exports towards BSEC experienced a rising trend, while the volume of trade with the EU was more constant. Similarly, Karagöz and Karagöz (2009) studied how the gravitational factors affect bilateral trade in BSEC region for 16 years, applying a panel gravity model. The study finds that economic size and population of the importer countries have a positive impact on trade volume, while the distance between them had a negative impact on trade volume.

Ishita (2008) argued that the process of globalisation that started after World War II has accelerated considerably since the mid-1980s. Consequent upon this, economies have been encouraged to open up more, and they have committed to staying open to international trade and investment. This was made possible by the crucial contribution of the GATT-WTO round of negotiations. Thus, greater openness and interdependence between national economies have provided wonderful opportunities for developing economies, but with several challenges. The study by Akram et al. (2011) provides empirical evidence on the impact of globalisation on the world and conclude that while the USA was dominant in world export before the globalisation process, Germany, Japan, South Korea and China have seriously challenged the position of the USA in the following period.

Studies that examined the gains and pains of globalisation in developing countries contend that globalisation is indeed a necessary evil to the Third World countries, and that it can neither be rejected nor fully applied to its domestic policy. Sharma (2013) tries to determine the factors associated with this controversy and explain the economic impacts of globalisation in the Third World countries. In all, it was concluded that when considered from the economic point of view, the negative impacts should be minimised through such means as improved export. On the basis that globalisation has liberalised trade, Savrul and Incekara (2015) investigate the balance of trade in the member countries of the BSEC Region, using panel data analysis and the results show that globalisation has a significant impact on international trade and a positive

effect on the liberalisation of trade. Khandelwal et al. (2013) argue that distortions among other factors that affect trade policy impose welfare costs of trade restrictions in addition to those inherent in standard trade models.

Methodology

Essentially, analysis on trade-off between globalisation and restricted trade anchors on the augmented Philips curve framework developed by Friedman and Phelps (1970). The framework is basically used to explain the relationship between unanticipated inflation and the output gap. For its empirical validation, the expectations-augmented Philips curve theory has been employed by several studies including Edeme et al. (2018), Kinful (2007), Çetinkaya and Yavuz (2002), and Cuñado and de Gracia (2000) to examine trade-off between macroeconomic variables.

In this study, globalisation gap is perceived as the difference between the expected and actual level of globalisation. Going by this, an increase (decrease) in globalisation gap leads to reduction in globalisation (away from the potential level) and verse versa. Trade wars (tariff wars) are assumed to increase restricted trade and, therefore, reduce globalisation. Flowing from this, for the purpose of this study, unanticipated tariff, $\text{Tariff}_t^* = \text{Tariff}_t - \text{Tariff}_t^e$, is specified as a function of globalisation gap – reduction in globalisation ($\text{Glob}_t - \text{Glob}_t^*$) represented as:

$$\text{Tariff}_t - \text{Tariff}_t^e = \beta(\text{Glob}_t - \text{Glob}_t^*) \quad (1)$$

where

$\text{Tariff}_t^* = \text{Tariff}_t - \text{Tariff}_t^e =$ unanticipated tariff rates;

$\text{Tariff}_t =$ actual tariff rate;

$\text{Tariff}_t^e =$ tariff expectation;

$\text{Glob}_t =$ actual or the present level of globalisation; and

$\text{Glob}_t^* =$ potential globalisation

$\beta =$ slope of unanticipated tariff rate due to a change in the globalisation gap. It measures the rate of increase in tariff as a result of a decrease in actual level (current period) of globalisation. For example, in the 1950s and 1960s, protectionist policy was commonly implemented mostly in developing countries to enable domestic industries to grow at the expense of import. During this era, tariff rates were higher. But progress in globalisation due to increasing free trade agreements is accompanied with partial or full removal of tariff (Anderson & Van

Wincoop, 2004; Tsubuku, 2016). The expected tariff rate is assumed to be adapted from previous tariff rate (adaptive expectation), which for the purpose of this study is restricted to a 1-year period (one period previous tariff rate). Hence, $\text{Tariff}^e = \phi \text{Tariff}_{t-1}$, When substituted into Equation (1), we have:

$$\text{Tariff}_t - \phi \text{Tariff}_{t-1} = \beta (\text{Glob}_t - \text{Glob}_t^*) \quad (2)$$

Adding ϕTariff_{t-1} to both sides of Equation (2) yields:

$$\text{Tariff}_t = \phi \text{Tariff}_{t-1} + \beta (\text{Glob}_t - \text{Glob}_t^*) \quad (3)$$

Equation (3) portrays that actual tariff depends on past tariff (called tariff inertia) and globalisation gap. Any decrease in globalisation (decrease in the interdependence of countries around the world) would lead to trade restrictions (increase in tariff) because β is positive. The magnitude of the tariff increase is measured by the value of β . The larger the value of β , the more trade is restricted. This implies that there is a trade-off between globalisation and restricted trade. However, Equation (3) does not explicitly define the trade-off. The trade-off between globalisation and restricted trade can be derived by globalisation gap in terms of tariff, therefore, rearranging Equation (3) as

$$\beta (\text{Glob}_t - \text{Glob}_t^*) = \text{Tariff}_t - \phi \text{Tariff}_{t-1} \quad (4)$$

Both sides of Equation (4) are divided by β and factorised to get Equation (5) as follows:

$$(\text{Glob}_t - \text{Glob}_t^*) = \frac{(1-\phi)}{\beta} \text{Tariff}_t \quad (5)$$

Equation (5) shows that the globalisation gap depends on the tariff rate. Since the sign of the slope coefficient is positive, $\frac{(1-\phi)}{\beta}$ measures the percentage increase in globalisation gap (percentage decrease in actual globalisation) that is associated with a percentage increase in restricted trade (percentage increase in tariff). The trade-off between globalisation and restricted trade is estimated as:

$$\text{Tradeoff} = \frac{(1-\phi)}{\beta} \quad (6)$$

Following the augmented Philips curve framework, the relationship between globalisation and restricted trade can be represented linearly as:

$$\text{Rtrade}_t = a + \phi \text{Rtrade}_{t-1} + \beta \text{Globgap}_t + e_t \quad (7)$$

where

Rtrade_t = restricted trade, measured by actual size of tariff at time t ;

$Rtrade_{t-1}$ = expected restricted trade (expected size of tariff at time t);
 $Globgap_t$ = globalisation gap – reduction in globalisation, measured as the difference between actual trade openness (OPENTRADE) and potential openness to trade;

φ and β are the coefficients of expected restricted trade and globalisation gap, respectively; and

e_t is a stochastic error term.

The coefficient of trade-off is thus generated as:

$$\text{Trade-off} = \frac{(1-\varphi)}{\beta} \quad (8)$$

The lagged independent variable ($Rtrade_{t-1}$) is expected to correlate with both the error term and the other explanatory variable ($Globgap_t$). Assuming the independent variables significantly explains changes in the dependent variable; then, apart from the endogeneity bias, there will be collinearity as well, which invalidates the usual test statistics. But if the instrument is highly correlated with $Rtrade$ and not $Globgap$, then the lagged dependent variable can be estimated from an auxiliary regression with the instrument as its explanatory variable. Hence, the Instrumental Variables Generalised Method of Moments (IV-GMM) technique was adopted to estimate Equation (7). The potential globalisation ($Glob_t^*$) was estimated by filtering the globalisation (openness to trade) data to make up the trend and cyclical components. The estimated potential globalisation (PG) was used to compute globalisation gap ($Globgap$). One of the most common techniques of data filtering is the Hodrick–Prescott (HP) filter, developed by Hodrick and Prescott (1997). All the series included in the model were assumed to be stationary but not cointegrated. The series was tested for unit root using both the Augmented Dickey–Fuller (ADF) and Philip–Perron (PP) unit root tests, while the Engle–Granger residual technique was used to test cointegration.

Annual data from 1980–2019 for EU and the SSA regions were extracted from various sources. Data on restricted trade and openness to trade were sourced from World data bank (World Development Indicators), while data on globalisation gap are obtained by first generating the PG using Hodrick–Prescott (HP) Filter Technique (Ravn & Uhlig, 2002), subtracting PO from OPENTRADE. Restriction on trade was measured by the size of the tariff. De facto measures of integration (exports plus imports as a share of GDP) as a basic measure of openness to trade are used to measure globalisation.

Table 1. Augmented Dickey–Fuller and Phillips–Perron Unit Root Tests and Engle–Granger Test for Cointegration

Panel A. Augmented Dickey–Fuller (ADF) unit root test							
European Union			Sub-Saharan Africa				
Variable	ADF-statistic	Lag	~I(d)	Variable	ADF-statistic	Lag	~I(d)
	Level	1st Diff.		Level	1st Diff.		
Rtrade_EU	-1.117	2	I(1)	Rtrade_SSA	-0.918	2	I(1)
Globgap_EU	2.401*	2	I(0)	Globgap_SSA	-0.694	2	I(1)
Panel B. Phillips–Perron (PP) unit root test							
European Union			Sub-Saharan Africa				
Variable	PP-statistic	Lag	~I(d)	Variable	PP-statistic	Lag	~I(d)
	Level	1st Diff.		Level	1st Diff.		
Rtrade_EU	-0.569	2	I(1)	Rtrade_SSA	-1.183	2	I(1)
Globgap_EU	4.911*	2	I(0)	Globgap_SSA	-0.128	2	I(1)
Panel C. Augmented Engle–Granger test for cointegration							
European Union			Sub-Saharan Africa				
Test Statistic	5% Critical Value	Test Statistic	5% Critical Value				
-3.219	-3.497	-1.944	-3.497				

Source: The authors.

Notes: *Denotes significance at 5% and the rejection of the null hypothesis of the presence of unit root. The optimal lag lengths were chosen according to Akaike's final prediction error (FPE) criterion. The estimated unit root models do not include constant. The ADF 5% Critical value at the level and 1st difference are -1.950, while the PP 5% critical value at the level and 1st difference is -1.950.

Empirical Results

Bearing in mind that time series are used for analysis, the baseline estimation conducted is to determine the stationarity of the variables. For this purpose, we employ both the ADF and PP unit root test, while cointegration of the variables was tested using the Engle–Granger cointegration test. The results are reported in Table 1.

In panels A and B of Table 1, for the EU region, *Rtrade_EU* is stationary at level, while *Globgap_EU* is stationary at first difference. On the other hand, for the SSA region, both variables (*Rtrade_SSA* and *Globgap_SSA*) are stationary at first difference. The Engle–Granger cointegration test showed no cointegration for both regions, as indicated by test statistics of -3.219 and -1.944 for EU and SSA, respectively, which are less than the Engle–Granger 5 per cent critical value of -3.497 . Our framework assumes that the variables are stationary but not cointegrated. This condition was satisfied for both EU and SSA as shown in panel C in Table 1 since the variables in the regions, respectively, are not cointegrated at their order of integration. Thus, we estimated the trade-off in the two regions, respectively, using the method as discussed earlier.

The result of the trade-off between globalisation and restricted trade is presented in Table 2. The first column reports the GMM regression result for the EU. In column (2), the coefficients for restricted trade and globalisation are substituted into the trade-off formula—Equation (8) to calculate the trade-off for the EU. Similarly, column (3) shows the GMM regression estimates for SSA, while, in column (4), the restricted trade and globalisation coefficients are substituted into Equation (8) to arrive at the trade-off for SSA.

The result indicates that for the EU, the coefficients of both variables—the lag restricted trade (previous tariff rate or size) and globalisation gap (reduction in globalisation)—are positive. This implies that previous tariff size and reduction in globalisation lead to an increase in trade restrictions in the EU. Specifically, previous trade restrictions (tariff size) lead to a 0.56 per cent increase in trade restrictions, though not statistically significant at the 5 per cent level. Similarly, any increase in globalisation gap leads to a 0.10 per cent increase in trade restrictions. The estimate of the trade-off between globalisation and restricted trade for the EU showed 4.31 per cent, meaning that any increase in trade restrictions (increase in tariff size) leads to loss of globalisation by about 4.31 per cent.

Table 2. Estimated Result on Globalisation and Restricted Trade Trade-off for EU and SSA Regions

Estimates for the European Union				
Rtrade_EU	Coefficients	Standard Errors	Z	p-Value
Rtrade_EU _{t-1}	0.5622	0.3649	1.54	0.123
Globgap_EU	0.1015	0.0136	0.11	0.912
Constant	-0.0904	1.0562	-0.09	0.932
R-squared		0.6705		
Wald $\chi^2(2)$		4.99 (0.0826)		
EU trade – off = $\frac{(1-\varphi)}{\beta} = \frac{(1-0.5622)}{0.1015} = \frac{0.4378}{0.1015} = 4.31$				
Estimates for sub-Saharan Africa				
Rtrade_SSA	Coefficients	Standard Errors	Z	p-Value
Rtrade_SSA _{t-1}	0.0594	0.1995	-0.30	0.766
Globgap_SSA	0.3982	0.6716	0.59	0.553
Constant	-0.4844	1.3496	-0.36	0.720
R-squared		0.5653		
Wald $\chi^2(2)$		0.47 (0.7919)		
SSA region trade – off = $\frac{(1-\varphi)}{\beta} = \frac{(1-(-0.0594))}{0.3982} = \frac{(1+0.0594)}{0.3982} = \frac{1.0594}{0.3982} = 2.66$				

Source: The authors.

For the SSA region, the coefficient of lag restricted trade (previous tariff rate or size) is negative, while the coefficient of globalisation gap (reduction in globalisation) is positive. This means that previous tariff size in the region leads to a reduction in trade restrictions, while the reduction in globalisation leads to an increase in trade restrictions. In specific terms, previous trade restrictions (previous tariff size) lead to a 0.06 per cent reduction in trade restrictions, though not statistically significant at the 5 per cent level. On the converse, increase in globalisation gap (additional reduction in globalisation) leads to a 0.39

per cent increase in trade restrictions. In SSA region, the estimated coefficient for the trade-off between globalisation and restricted trade stands at 2.66. The policy implication is that any increase in trade restrictions (increase in tariff size) will certainly lead to loss (reduction) in globalization by 2.66% in the region.

Conclusion

Taking global economic integration into consideration, this study investigates the effects of the imposition of the tariff. For every tariff increase, a percentage of the trade volume is reduced. This means, there is a trade-off between globalisation and restricted trade. This article presented empirical evidence from the EU and the SSA regions using annual time series for the period from 1980 to 2019. Restriction on trade was measured by the size of the tariff, while de facto measures of integration (export plus import as a share of GDP) as a basic measure of openness to trade are used to measure globalisation. Data on globalisation gap are obtained by first generating the PG, using Hodrick–Prescott (HP) filter technique (Ravn & Uhlig, 2002), subtracting PO from OPENTRADE.

Findings indicate that for the EU, the trade-off is 4.31 per cent, while, for the SSA region, it is 2.66 per cent. The trade-off is higher in the EU region than the SSA region because it is among the world's largest economies and trading zones. This suggests that the negative effect of globalisation due to trade restrictions is more in developed regions. As Birdsall (2002), Samimi and Jenatabadi (2014) allude, globalisation is fundamentally asymmetric for poor countries because their economic structure and markets are asymmetric. Our findings indicate that whether in developed or developing countries, a trade-off exists between globalisation and restricted trade, and the imposition of tariffs and counter-tariffs is capable of shutting down globalisation. This has significant bilateral and multilateral trade policy relevance.

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