

The nexus between cross-border migration and international trade: Evidence from Tanzania

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Abstract

This paper attempted to unlock the conundrum of migration-trade relationship in Tanzania, using the country's migrant stock (diaspora) in the parts of the world. It also aimed to investigate how this effect, if at all exist, differs between developing and developed countries. The augmented gravity model of trade has been employed to investigate the relationships between the variables. With cross-sectional data of 2013 that incorporated Tanzanian diaspora in different economies, the paper revealed that both Tanzania exports and trade volume are positively affected by the migrant stock in the countries of destination; and that the effect is highly pronounced in developed than developing nations. However, as the gravity model captures large number of variables, the paper disclosed interesting findings on the contribution of some variables to the Tanzania's trade volume and exports.

Keywords: Cross-border migration, International trade, Tanzania

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1.0 Introduction

Few decades after the formation of World Trade Organization (WTO) in 1995, the globe has witnessed remarkable trend of economic liberalization. Countries have intensified the global links in order to exploit the world economic potentials through trade, investments and capital mobility. Statistics indicates that between 1985 and 2007, real world trade grew on average twice as fast as global Gross Domestic Product (GDP) (IMF-World Economic Outlook, 2016). Surprising, while such moves are anticipated to jointly operate with international movement of labour, efforts in all parts of the world, whether officially or unofficially, have been exerted to restrict immigrants.

Recently, for instance, European Union (EU) has proposed EU-Turkey Action Plan for the sake of responding to the massive immigrants, while it is highly asserted that the United Kingdom (UK) withdrawal from the EU was essentially the response towards with labor migration across the region (EU-Turkey Joint Action Plan Fact Sheet, 2015; Tilford, 2016; Wadsworth et al, 2017). Despite such global efforts of thwarting migration, data show that the proportion of international migrants in the world population was up by 3.3 per cent in 2015 compared to 2.8 per cent in 2000 and 3.2 per cent in 2013 (IOM Global Migration Trends Report, 2015). Further information show that, as in 2015 the South-South migration exceeded South-North migration by two percentage points (ibid), and that migrant stock from South countries constitute about 72 per cent in the world, corroborating the role of developing countries to the subject.

An increasing wave of South-South migration is mostly however attributed by forced migration, particularly as a consequence of home insecurity. For instance, literature indicate that almost all immigrants in Africa are from the neighbouring countries (Shaw, 2007). In Tanzania in particular, the data reveals that an average annual rate of change in the number of international migrants is between negative 4 to 2 per cent (UN International Migration Report, 2015) implying that the country is actually net receiver in the pattern of migration

Generally, an increasing wave of migration around the globe has attracted quite level of interests from both policy makers and researchers. While some countries opt for the less liberal policy in migration, researchers also have well been looking for the possible ways to analyze the key issues behind it. Literature however have dwelled much on the rationale and impact of migration on labour market such as wages and employment (see Grogger and Hanson, 2010; Siokorelis, 2011; Bartoli *et al*, 2012; Chassamboulli and Palivos, 2013; Borjas, 2013; Ramirez et al, 2013; Jajri and Ismail, 2014; Ruysen and Rayp, 2014), while little has been done on the migration-trade nexus. The few studies (Min, 1990; Gould, 1994; Girma and Yu, 2002; Genc *et al*, 2013; Law et al, 2013) that contemplated on the relationship between migration and trade which were conducted in the U.S., UK and New Zealand indicated the existence of positive link between the two.

The attentions of these large body of research, however, were centered on the trade effect of immigrants in the particular country of interest. That is, the cases have been made in a way that the datasets were composed of immigrants originating from different countries in a particular economy. Less, if at all exist, has been attempted to examine how does the given country edge in trade following the exodus of her citizens abroad; that is emigrants originating from the same country into different economies. This paper has therefore attempted to unlock the conundrum of migration-trade relationship in Tanzania, using the country's emigrant stock (diaspora) in the parts of the world. The paper also had been

intended to investigate how this effect, if at all exist, differs between developing and developed countries.

2.0 Literature review

2.1 Theoretical review

Human migration is deemed to excel the trade performance between the countries involved both in imports and exports due to the two fundamental mechanisms: immigrant preference effects and transaction cost effects (Gould, 1994; Genc *et al*, 2013; Law *et al*, 2013). The first mechanism suggests that immigrants normally bring with them special preferences of home-made products thus fostering the imports to the host countries. On the other hand, the latter reveals that trade activities embody substantial transaction costs which are normally reduced by immigrants, mostly via weakening of communication barriers and enhanced mutual trusts between traders (*ibid*). The second mechanism therefore envisages that both exports and imports tend to be heightened by human migration due to such decrease in costs of trade transactions. It is the same second mechanism that employs the notion of under-institutionalization of formal trade contracting in developing countries to denote that migration between developed and developing countries offer more in trade than that involving merely the developed countries. These two theoretical mechanisms of migration-trade nexus are therefore becoming important channel towards this study's empirical investigation.

2.2 Empirical review

The pragmatic investigations undertaken from various countries on the role of migration to the performance of international trade have abided with at least either of the causal linkage mechanisms depicted earlier. For instance, using descriptive statistics and cross sectional data collected from a sample of 500 Los Angeles centered Korean interviewees, Min (1990) analyzed among other things, Koreans' ethnic attachment in the US based city. The study revealed that exports from Korea to U.S. positively started to escalate in 1970s following the influx of Korean to the latter country. Gould (1994) on the other hand used gravity equation as modified by Bergstrand (1985) to examine the mechanism through which immigrants enhance trade in the US and Canada. From the paper, it was exposed that information carried by immigrants in the U.S. and Canada play an important role in determining bilateral trade, both in exports and imports. Likewise Law *et al* (2013) applied longitudinal cross-country dataset in gravity model to assess whether migration does stimulate trade in New Zealand. As a result, it was unearthed that trade in New Zealand is clearly boosted by migration, and that the effect is highly pronounced in merchandised imports than exports. The prominent study in the UK by Girma and Yu (2002) that aimed to distinguish the trade contribution of migrants arriving from commonwealth countries vis-à-vis non-commonwealth nations using gravity equation, disclosed that non-commonwealth countries' migration has positive impact to the UK trade than its counterpart from commonwealth nations. More on the same course were embodied in the studies by Artal-Tur *et al* (2012), Egger *et al* (2012) and Felbermayr and Toubal (2012).

However, though most of the existing literatures indicate the presence of positive relationship between migration and trade, there are still exceptions that may impede such causal link, hence steer to the necessity of carrying out further researches particularly on areas with little or no sufficient knowledge. Among the exceptions of the causal link between migration and trade could be sighted from Blanes *et al* (2011) work. The research sought to evaluate the

reaction of Spanish labour market following the employment shocks across the region. With the use of set of equations derived from the regional labour market, it was pinpointed that the presence of similar social and political institutions between the source and destination countries such as the labour movement within the European Union (EU) might hardly play a role to the reduction of transaction costs consequently leading to the insignificant contribution on trade. Therefore given that much has been done in areas apart from Africa, and the fact that all literature, at least from the author’s knowledge, have paid attention to migrants originating from different countries into a particular economy, there is a need to investigate this nexus into different context (coverage and technique of composing the dataset). This paper therefore has attempted to examine the same nexus but using African country (Tanzania) and the data composition of Tanzanian diaspora (one country) in different economies.

3.0 Model estimation and data

3.1 Model estimation

In order to evaluate whether there is a significant difference in trade performance between countries with higher bond of migration relationship versus those with weaker migration tie, the popular gravity model of trade was used. Considering “export” as the exports of country “i” which is Tanzania to country “j” (or “*trdv*” as Tanzania’s trade volume), the model can be written as:

$$\log trdv_{ij} = \beta_0 + \beta_y \log(Y_{ij}) + \beta_3 \ln D_{ij} \dots \dots \dots (1)$$

Where, Y_{ij} stands for the economic mass of two countries i and ‘j’, which actually could be proxed as the world’s fraction of the product of two countries GDPs; and D_{ij} representing the distance between Tanzania and the trading partners. The model however can be augmented by including more other factors, including the most important “migration stocks (*migr*)” between the two countries. The augmented model, containing X_i which include those factors plus both D_i and Y_i can be expressed as:

$$\log trdv_{ij} = \beta_0 + X_{ij} \beta \dots \dots \dots (2)$$

Other variables worthy to be incorporated in the gravity model, in X_i , include: common borders (Contiguous), common language (ComLan), colonial ties (Comcol), membership of the similar trade blocs (Combloc) as well as location of the trade partners, that is whether landlocked or island. In this regard, the specified augmented gravity model looks as follows:

$$\begin{aligned} \log trdv_{ij} = & \beta_0 + \beta_1 \log Y_{ij} + \beta_2 \log D_{ij} + \beta_3 \log Migr_{ij} + \beta_4 \text{Contiguous}_{ij} + \beta_5 \text{Comcol}_{ij} \\ & + \beta_6 \text{Combloc}_{ij} + \beta_7 \text{Landlock}_j + \beta_8 \text{Island}_j + \beta_9 \text{Comlan}_{ij} \\ & + \epsilon_{ij} \dots \dots \dots (3) \end{aligned}$$

According to Gould (1994), migration within developed countries does have modest effect on trade unlike that involving developing and developed. In this regard, it is likewise important to test whether this is true in Tanzania perspective. The X_i in equation (2) variable will be set to incorporate dummy variable that take developed (Dd) and developing (Dg) trade partners

4.0 Empirical results

Since the effect of both unit root and autocorrelation are only practical in the panel as well as time series data, the use of cross-sectional data in this research article heightened the focus on multicollinearity and heteroskedasticity. The former tends to inflate the variances of regression estimates; consequently leading to the type II error. It is also liable in affecting the signs of the coefficients; both of which being the key findings in this investigation. In examining the presence of multicollinearity, pair-wise correlation analyses involving all independent variables were performed. The results showed strong correlation coefficients between *contiguous* and *combloc* (0.770675), *contiguous* and *lgdista* (-0.748578) as well as *lgdista* and *combloc* (-0.789171).

Again the results of simple OLS regression analyses between the pairs indicated that the coefficients of the variables were statistically significant confirming that they were indeed correlating. As suggested by Asteriou and Hall (2007), the best way to address the effect of multicollinearity is to drop one of the correlated variables. In this case, dropping *logdistance* from the model would result into R^2 falling to 0.702035 from 0.767694, as opposed to 0.764318 and 0.765572 realized from dropping *combloc* and *contiguous* respectively. Moreover, to avoid much changing figures and signs of the coefficients resulting from dropping *contiguous*, *combloc* was eventually withdrawn from the model. Unlike multicollinearity, heteroskedasticity does not affect the signs of coefficient estimates, it rather disturbs the standard errors by underestimating them, consequently leading to the possibility of committing type I error. For its examination, Breusch-Pagan-Godfrey test was used, of which Lagrange Multiplier (LM) value of 12.39564 and its P-value of 0.2594 were realized, signifying that the variability of variances is constant across the dataset. Having addressed such OLS assumptions, the two models were then analyzed, with the results shown in table 3 below:

Table 3: Model 1 and 2 results

Variables	Model 1	Model 2
	<i>Dep: Log(trade volume)</i>	<i>Dep: Log(Exports)</i>
	Coefficients[Std.Error]	Coefficients[Std.Error]
Constant	15.14570 [4.76997]***	15.14570 [4.76997]***
Log(GDP)	1.010471 [0.18750]***	1.010471 [0.18750]***
Log(Mig)	0.313527 [0.13053]**	0.313527 [0.13054]**
Log(Dist)	-2.27868 [0.61985]***	-2.27868 [0.61985]***
Contig	0.470533 [1.31248]	0.470533 [1.31248]
Com_col	1.029634 [0.67730]	1.029634 [0.67730]
Com_lan	-2.44677 [2.14948]	-2.446772 [2.14948]
Island	-0.70861 [0.74599]	-0.708616 [0.74599]
Landloc	-0.75538 [0.67380]	-0.755385 [0.67380]
Devstat	1.406779 [0.56000]**	1.406779 [0.56000]**

Note: ***implies statistically significance at 1%; ** at 5% and * at 10%;

$$R_1^2 = 07643, R_2^2 = 07643$$

The findings show that the world's fraction of the product of two countries GDPs, distance between countries, migration stock and level of development of the trading partners are all significant at different levels. While the first two are significant at 1%, the last two are at 5%. Surprisingly, all the dummy variables which include contiguous, common colonizer, common language and location (island and landlocking) were noted to be insignificant. The rationale

behind the insignificances of the four dummy variables mentioned above takes different forms. For instance despite language and location (both in terms of being an island or landlocked country) being playing an important role in determining transport and transaction costs in international trade, this function however turn to be invalid in Tanzania as the transport costs are virtually near the peak. It is estimated that the costs stand at four to five times compared to the cost in developed countries (Meeuws, 2004). This possibly explains why whether or not being an island or landlocked trade partner does not account to the vindication of the Tanzanian trade flows. Likewise, there is an interesting case on the issue of history of colonization in Tanzania. The country went through a series of colonizers, including Arabs, Germany and British (Boahen, 1985). Apart from Germany, the culture for the other two are definite in diversing parts of the country. Therefore, regarding it as the only British colony, as it has been done by CEPII, might be the real cause of concern for the insignificant outcome. For the contiguity variable, the fact that all countries in the analysis that surround Tanzania embrace analogous export commodities, such as raw tobacco, tea, coffee, raw cotton and cut flowers (see EAC-Trade Report, 2014), it is likely underlying reason as to why sharing borders would not have noteworthy contribution to the flows of trade between them, and therefore yielding insignificant result.

For the case of significant variables, the results show that holding other factors constant, one percent increase in distance between Tanzania and her trading partners reduces both the exports and trade volume of the East African country by 2.27868%. Moreover the same percent increase in the world's fraction of the product of two countries GDPs (Tanzania and its partners), holding all other factors constant, tends to increase the two (exports and trade volume) by 1.010471%. The nature of these two findings largely resembles to the outcomes suggested by other studies (see Lufuke and Kamau, 2015). However, there might be variation in the magnitude of the suggested coefficients due either disparity in estimation techniques or types of data used.

As for the migration, while keeping other factors constant, the findings indicate that the unit percent increase in migration stock, origination from Tanzania, tend to positively affect trade (both exports and volume) by 0.313527%. This implies that Tanzanian emigrants inflict both preference effect and transaction cost effect. The findings conform to the postulation laid down by Gould (1994) and other preceding articles such as Genc et al (2013) and Law et al (2013). However the findings of this article come as a surprise and blow to the country as it has already established some strict procedures of travel abroad, which technically might be translated as the stumbling bloc to temporary emigration. Meanwhile, taking other factors constant the analyses show that migration stock, originating from Tanzania, in the developed countries contributes higher to the trade than those living in the developing counterparts. It has been found out that the contribution, in both exports and volume, varies by 1.406779% in favour of developed nations. Since Tanzania exports largely agricultural commodities, this observation sounds logical by the fact that most of the foods in the developing countries tend to be similar. It is quite different for the developed countries, thus necessitate the migrants to demand the home processed food items. It is the same applies to trade volume which is the function of reduced transaction costs. Developing countries normally have institutional similarities unlike developing and developed, thus making the latter pair to be thriving in higher transaction costs. It is therefore reasonable for the migrant stock in this circumstance to have a substantial share of effect in the transactional costs.

The findings of this article show the potential that Tanzania can trap using her diaspora in the area of trade. As for the most developing nations however, the country lacks consistent mechanism to identify specifically the types of products that are mostly traded. In principle, the presence of such mechanism would have been a clear cut remedy for the born-global firms to heighten their specialization.

5.0 Conclusion

Since the debate of the nexus between migration and trade has concentrated highly to the case of immigrants, this paper opted to turn the attention by examining how emigrants (diaspora) play their role in facilitating the home country trade. It has also evaluated how this effect, if in case exists, differ for the diaspora living in developing versus those in developed nations. With Tanzanian diaspora as the reference, the results shows that both Tanzania exports and trade volume are positively affected by the migrant stock in the countries of destination; and that the effect is highly pronounced in developed than developing nations. These results imply that the home preference effect as well as transaction costs effect do not only apply to immigrants of different countries within a given economy but also to emigrants from similar country living in different economies. The findings of this paper suggest that countries that have cases similar to these findings in Tanzania my strategize to trap the potentials of their citizens abroad. One way that this could be realized is through investing in policies that facilitate the linkage between born-global firms and diasporian societies that can lead to the identification of what and how much should be emphasized in production for exports.

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