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DOES TRADE WITH LABOUR SENDING COUNTRIES REDUCE DEMAND FOR MIGRANT WORKERS: A LESSON FROM MALAYSIA

Fariastuti Djafar

Faculty of Economics and Business, Universiti Malaysia Sarawak, Malaysia

Mohd Khairul Hisyam Hassan

Faculty of Economics and Business, Universiti Malaysia Sarawak, Malaysia

ABSTRACT

This paper has three objectives. The first objective is to examine the long-run relationships among exports, imports, income and demand for migrant workers. This is followed by a causality test between these variables as the second objective. Finally, the third objective is to examine the extent to which exports, imports and income affect the demand for migrant workers. The study utilizes time series data and a Vector Auto Regressive (VAR) framework while examining two models, namely, Malaysia and Malaysia-Indonesia (Malindo). The findings show that all variables in the models are cointegrated. Generally, there is no short-run causality between variables in the models. In the long-run, causality runs from exports, imports and income to demand for migrant workers for the Malaysia model. There is bi-directional causality in the long-run between exports and imports, respectively, and demand for migrant workers in the Malindo model. Exports and demand for migrant workers in the Malaysia model, and exports and imports, respectively, and demand for migrant workers from Indonesia in the Malindo model are substitutes. Moreover, the income per capita for Malaysia has a non-significant negative effect on the demand for total migrant workers and a significant positive effect on the demand for migrant workers from Indonesia. The study suggests that trade can be a necessary instrument, but not a sufficient instrument for reducing the demand for migrant workers.

Keywords: Export, Import, Income, Malaysia, Indonesia, Migrant workers**.**

JEL classification: P45, P44, J61

INTRODUCTION

Malaysia faces a dilemma concerning migrant workers. On the one hand, Malaysia needs migrant workers due to the lack of labour supply, especially those who are willing to work in the 3D (Dirty,

Difficult and Dangerous) jobs. On the other hand, Malaysia faces problems with a high supply of foreigners who want to work in this country, which makes them both easy victims of human trafficking or facilitates their involvement in crime related activities. Malaysia has many unregistered migrant workers. For instance, as of May 2012, around 628,000 illegal migrant workers had registered with the authority under the 6P (registration, legalization, amnesty, supervision, enforcement, and deportation) policy (Malaysian, 2012). The policy does not seem to be able to stop the inflow of migrant workers, as shown by the frequent news items on the television about illegal migrant workers. What else can Malaysia do to reduce the inflow of migrant workers other than strengthening the immigration policy? Trade between Malaysia and the home countries of the migrants may not have been considered as an instrument to reduce the migrant worker inflow. Meanwhile some countries prefer to do outsourcing since free trade is more easily implemented than free labour (Poot and Strutt, 2010).

Based on the review of empirical findings, Gaston (2013) conclude that studies on the relationship between trade and migration concentrate on the influence of immigration on trade (Bowen and Pedussel-Wu, 2004; 2012; Schiff, 2006; Hijzen and Wright, 2010; Poot and Strutt, 2010) (Foad, 2009). Only a few studies have tested the effect of trade on migration (Aldaba, 2000; Bruder, 2004; Akkoyunlu, 2009). The previous studies tend to concentrate on developed countries as the destination countries of migrant workers, such as Germany (Bruder, 2004; Akkoyunlu, 2009), Organization for Economic Co-operation and Development (OECD) countries (Bowen and Pedussel-Wu (2004; 2012) and the United Kingdom (UK) (Hijzen and Wright, 2010). The findings are mixed in which the trade and migration relationship is either substitute or complementary. Moreover, it is not clear whether trade causes migration, migration causes trade or both since the researchers tend to assume a one-way relationship either from trade to migration or from migration to trade. In addition, many studies did not disaggregate trade into exports and imports (Bruder, 2004; Akkoyunlu, 2009), which creates difficulties in terms of effective policy-making decisions.

This article contributes to the limited studies on the effect of trade on international migration using a developing country (Malaysia) as a case study and to the debate on the trade and immigration relationship. The contribution also involves tracing the causality direction between trade and immigration and the use of data on exports and imports separately. This paper has three objectives. The first objective is to examine the long-run relationship among trade, income and demand for migrant workers. This is followed by examining causality between the variables in the second objective and the extent to which trade and income affect demand for migrant workers in the third objective. The paper is presented as follows. The next two sections present an overview of trade and migrant workers in Malaysia and the literature review, respectively. The fourth section explains the data and methodology while the fifth section describes the empirical results. The last section presents the conclusions and recommendations.

OVERVIEW OF TRADE AND MIGRANT WORKERS IN MALAYSIA

From the 1980s to 2011, Malaysia has had impressive economic growth at an average annual rate of more than 4 per cent. Lower growth rates were recorded in 1985 (-0.8 per cent), 1986 (1 per cent), 1998 (-7 per cent), 2001 (0 per cent) and 2009 (-1.5 per cent) mainly due to economic crises. The Malaysian Government has a target of becoming a developed country with a per capita income of US $15,000 by 2020 or around 43 per cent higher than the per capita income in 2012 (US $10,500) (International Monetary Fund, 2012).

The impressive growth rate is attributed to a tremendous increase in trade (exports and imports) value from Ringgit Malaysia (RM) 239 billion in 1993 to RM 1,169 billion in 2011 (Asian Development Bank, 2012). By 2011, Malaysian exports were dominated by manufactured products (68 per cent) followed by oil and gas (12 per cent) and palm oil (9 per cent), while the imports were dominated by intermediate goods (67 per cent) and capital goods (14 per cent) (Economic Planning Unit, 2012). Malaysia's main trading partners for exports and imports from year to year are basically the same, namely, China, Singapore, the USA and Japan, which are not labour sending countries to Malaysia. By 2012 Indonesia, which is the main labour sending country to Malaysia (Table 1), appeared to be the fourth largest country for Malaysian exports and the seventh largest country for Malaysian imports (Asian Development Bank, 2012). The share of Indonesian workers to the total migrant workers in Malaysia in 2012 dominates all sectors (more than 50 per cent) except manufacturing and services.

Table-1. Migrant Workers by Country and Sector, 2012

Country	Maid	Construction	Manufacturing	Services	Plantation	Agriculture	Total (%)
Indonesia	69.88	70.16	20.08	16.73	84.54	53.46	47.53
Nepal	0.05	2.41	41.58	22.39	1.47	8.74	19.41
Bangladesh	0.03	11.92	12.22	7.70	4.14	5.46	8.43
Myanmar	0.06	5.82	15.74	9.47	0.75	3.60	8.21
Others	29.98	9.69	10.38	43.70	9.11	28.74	16.41
Total (%)	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total (absolute)	142,744	228,560	609,589	140,340	319,858	144,778	1,585,869

Source: Department of Immigration, Malaysia, 2012

The availability of jobs for migrant workers is one of the main pull factors for the high supply of migrant workers to Malaysia. More and more local people work in high- and medium-paid jobs and leave the low-paid jobs for migrant workers. This is indirectly reflected in the overall employment structure in Malaysia, which shows a declining share of total employment in agriculture and manufacturing compensated by the increasing share of employment in the other sectors from

around 60 per cent in 2000 to almost 70 per cent in 2010. At the same time, the share of migrant workers in plantations (agriculture) and manufacturing has increased and is higher than the share of total employment in these two sectors (Table 2). Between 2000 and 2005 more than two thirds of the total migrant workers in Malaysia were mainly employed by traditional labour intensive export oriented industries, such as wood products, rubber goods, textiles, garments and miscellaneous manufacturing, and the electronics and electrical (E & E) industry (Athukorola and Devadason, 2011).

Table-2. Total Employment and Employment of Migrant Workers by Sector, Malaysia, 2000, 2005 and 2010

Sector/Sub Sector	Total Employment* (%)			Employment of Migrant Workers** (%)		
	2000	2005	2010	2000	2005	2010
Agriculture	16.74	14.63	14.21			
Plantation				24.00	26.02	27.38
Manufacturing	23.45	19.8	16.74	37.11	32.03	37.01
Mining	0.3	0.36	0.48			
Others	59.5	65.21	68.56			
Maid				22.03	17.64	13.59
Construction				8.99	15.52	12.93
Service				7.70	8.80	9.09
Total (%)	100	100	100	100	100	100
Total (absolute)	9.26 million	10.04 million	11.77 million	732,588	1,815,238	1,817,871

Source: *Asian Development Bank, 2012

** Department of Immigration, Malaysia, 2012

LITERATURE REVIEW

The relationship between trade and migration is generally explained by the traditional trade theory proposed by Heckscher and Ohlin in the early 1900s (Carbaugh, 2007). The theory views trade and migration as substitutes, based on the assumption that both countries doing trade have a different comparative advantage. The countries having an abundant labour supply as a comparative advantage may choose to either export labour intensive products or send labour to work overseas. On the other hand, countries that experience a shortage in the labour supply should import labour intensive products or labour itself and export products that use a large amount of abundantly available inputs. Free trade will reduce the demand for the same product produced by the labour shortage countries due to the resulting high price of the product. This process occurs continuously up to the level of factor-price equalization, which will reduce the income gap between the home and the host countries of migrants, and, subsequently, will discourage emigration (Carbaugh, 2007).

However, trade and demand for migrant workers are not necessarily substitutes (Markusen, 1983; Poot and Strutt, 2010; Gaston, 2013). This is due to similar endowment between countries doing trade and assumption violations on the traditional trade theory (Markusen, 1983). The protection level may also create the different patterns of the relationship between trade and migration inasmuch as low tariffs create complementarity relationships while high tariffs create relationships of substitution (Schiff, 2006).

To date, explanation on complementarity or substitutability relationships between trade and migration is mainly based on the studies of the effect of immigration on trade though the conclusion is rather different from the traditional trade theory (Gaston, 2013). In the case of the immigrant workers and exports relationship, Gould (1994) proposed the immigrant-preference hypothesis while Wagner *et al.* (2002) proposed the information-hypothesis. The immigrant-preference hypothesis states that immigrants prefer home country products, which will increase the host country imports of that product (Gould, 1994). Meanwhile the information-hypothesis mentions that the immigrant knowledge of their home country will reduce the trade barriers which will increase the host country exports of that product (Wagner *et al.*, 2002). Parsons (2005) concluded that the immigrant-preference hypothesis will dominate if immigration has more effect on imports than exports in the host country. Otherwise the immigrant-link hypothesis will dominate.

The effect of immigration on trade may also be due to other factors such as skills of labour migrants (Hijzen and Wright, 2010), job in traded and non-traded sectors and the economic condition of the home and host countries (Foad, 2009). The relationships between skilled immigrants and trade are complementary while the relationships between unskilled immigrants and trade are substitutional (Hijzen and Wright, 2010). Based on panel data for OECD countries, Bowen and Pedussel-Wu (2004) confirmed that an increasing number of migrants working in the non-traded sector will increase trade. This positive effect of migration on trade may reduce if the immigrant workers are able to integrate into the domestic labour market or able to work in the traded goods sector because they have the required skills. Meanwhile the economic condition of the home and host countries may create a non-linear relationship between trade and migration (Foad, 2009). The migration from poor countries to rich countries has more effect on trade in the rich countries than migration from rich to rich countries. The effect of migration on trade will only appear if migration from poor countries has reached the threshold level while high migration between rich countries may reduce exports that serve immigrant preferences (Foad, 2009). Empirical studies on the effect of trade on migration have been conducted either in the host country or home country or both and the findings of the studies are mixed. In Germany, trade, measured by a proportion of total trade to Gross Domestic Product (GDP), reduces immigrant workers significantly due to the declining wage gap between Germany and her trading partner countries (Bruder, 2004). In Switzerland, increasing imports will increase immigrant workers and vice versa

because of the increasing profit of the capital owner due to the low wage of immigrant workers (Kohli, 1999). A study by Aldaba (2000) in the Philippines reported that rapid export growth significantly reduces emigration in the medium- and long-run and increases emigration during the transition export period. In the long-run, emigration from Turkey to Germany will increase due to the increasing trade intensity measured by the share of trade with Germany to the total trade of Turkey and the income gap between these countries. However, increasing trade measured by the share of manufacturing exports to Germany to total exports to Germany will increase emigration to Germany in the short-run and reduce the emigration in the long-run (Akkoyunlu, 2009).

Some studies show that migration and various variables are cointegrated. For instance migration, trade, aid and remittances in Turkey are cointegrated (Akkoyunlu, 2009). Among factor inputs, migration and trade openness measured by total exports and imports as a percentage of total output and growth in GDP in Australia and Canada are also cointegrated (Bodman, 1998).

DATA AND METHODOLOGY

This study used four variables — exports, imports, income and migrant workers. The first two variables (exports and imports) were generated based on unpublished data on the value of exports and imports in RM from the Department of Statistics, the income variable used data on GDP per capita in RM published by the Asian Development Bank (ADB), while the migrant worker variable is based on unpublished data on the number of working visas issued by the Department of Immigration. The quarterly data from 1999 to 2008 were employed. The study was conducted in Malaysia as a host country of migration. The general model in this study is that the demand for migrant workers is a function of exports, imports and income. This general model consists of the Malaysia model (Eq.1) and the Malaysia-Indonesia (Malindo) model (Eq. 2), as follows:

$$MWt = f(EXPt, IMPt, GDPC) \quad \text{(Eq. 1)}$$
$$MWi = f(EXPmi, IMPmi, GDPC) \quad \text{(Eq. 2)}$$

The Malaysia model is the demand for total migrant workers (MWt) as a function of total exports (EXPt), total imports (IMPt) and income per capita of Malaysia (GDPC). In the Malindo model, the demand for migrant workers from Indonesia (MWi) is a function of Malaysia's exports to Indonesia (EXPmi), Malaysia's imports from Indonesia (IMPmi) and income per capita of Malaysia (GDPC). Indonesia is selected in this study because this country is the main labour sending country to Malaysia. The dependent variable in this study is MWt for the Malaysia model and MWi for the Malindo model. Meanwhile the independent variables are EXPt, IMPt and GDPC for the Malaysia model and EXPmi, IMPmi and GDPC for the Malindo model. All variables were transformed into natural logarithmic form.

This study employed a Vector Autoregressive (VAR) framework. The Kwiatkwoski, Phillips, Schmidt and Shin (KPSS) test was carried out to detect the order of integration for each variable in the model in order to avoid spurious results (Kwiatkowski *et al.* (1992). The KPSS test proposed a null hypothesis of mean stationary against the alternative hypothesis of a unit root. Non-stationary variables having the same integration order have the possibility of having a long-run relationship. Cointegration among the variables in the model was examined by employing the Johansen and Juselius cointegration test (Johansen and Juselius, 1990). Meanwhile the Error Correction Term (ECT) and Wald tests were used to test the long-run and the short-run causality between variables, respectively. The optimal lag length was selected based on the Schwarz Information Criterion (SIC).

EMPIRICAL RESULTS

The results of the KPSS unit root test for both the Malaysia and Malindo models are presented in Table 3. The KPSS test shows that all the variables are rejected at level and accepted at first difference either with intercept or with trend and intercept or both. This means that the variables in the models meet the Johansen and Juselius test requirements to proceed.

Table-3. The Results of the KPSS Unit Root Test

Malaysia Model				
Variable	Level		1st Difference	
	Intercept	Trend and Intercept	Intercept	Trend and Intercept
MWt	0.773354*	0.098894	0.054711	0.048802
GDPC	1.011489*	0.182743**	0.229463	0.136065
EXPt	1.006660*	0.177398**	0.447182	0.100927
IMPt	1.010160*	0.100949	0.406898	0.113149
Malindo Model				
Variable	Level		1st Difference	
	Intercept	Trend and Intercept	Intercept	Trend and Intercept
MWi	0.676126**	0.209946**	0.542352**	0.123628
GDPC	1.011489*	0.182743**	0.229463	0.136065
EXPmi	0.785150*	0.112516	0.125703	0.102264
IMPmi	0.727607**	0.163041**	0.10779	0.110125

Notes: Asterisks (*) and (**) denote significant at the 1 and 5 per cent levels, respectively.

Table-4. The Results of the Johansen-Juselius Cointegration Test

Malaysia Model					
MWt, GDPC, EXPt, IMPt (k = 1, r = 1)					
Null	Alternative	Trace Statistic	95 % critical value	Max-Eigen Statistic	95 % critical value
r = 0	r = 1	56.94042	54.07904**	23.20145	28.58808

r ≤ 1	r = 2	33.73898	35.19275	17.13097	22.29962
r ≥ 2	r = 3	16.608	20.26184	8.380104	15.8921
r ≥ 3	r = 4	8.227901	9.164546	8.227901	9.164546
Malindo Model					
MWi, GDPC, EXPmi, IMPmi (*k* = 1, *r* = 1)					
Null	Alternative	Trace Statistic	95 % critical value	Max-Eigen Statistic	95 % critical value
r = 0	r = 1	56.77955	47.85613**	38.75971	27.58434**
r ≤ 1	r = 2	18.01984	29.79707	11.73663	21.13162
r ≥ 2	r = 3	6.283213	15.49471	5.692358	14.2646
r ≥ 3	r = 4	0.590855	3.841466	0.590855	3.841466

Notes: *k* is the lag length, *r* is the number of co-integrating vectors, and asterisk (**) denotes significant at the 5 per cent level.

The results of the cointegration test are presented in Table 4. Both the Trace and Max-Eigen values of the cointegration test reject the null hypothesis of r=0 at the 5 per cent level meaning that all variables in each model have a long-run relationship. Furthermore, Table 5 presents the result of the Vector Error Correction Model (VECM). The Wald test results show that there is no short-run causality in both models except uni-directional causality running from imports to exports in the Malaysia model. The results of the ECT show that only the MWt equation is significant in the Malaysia model because the coefficient of ECT is negative, less than 1 and significant meaning that exports, imports and income per capita cause demand for total migrant workers in the long-run. Three equations (MWi, EXPmi and IMPmi) are significant in the Malindo model. This indicates that Malaysia's exports to Indonesia, Malaysia's imports from Indonesia and the income per capita of Malaysia cause demand for migrant workers from Indonesia in the long-run. Malaysia's exports to Indonesia and Malaysia's imports from Indonesia, respectively, and the demand for migrant workers from Indonesia have bi-directional causality in the long-run. The results of the normalized equation (Table 6) for the Malaysia model show that exports and income per capita have a negative effect while imports have a positive effect on the demand for total migrant workers. Exports and imports are the only significant variables in determining demand for total migrant workers. In the Malindo model, both exports and imports have a significant negative effect while the income per capita for Malaysia has a significant positive effect on the demand for migrant workers from Indonesia.

Table-5. The Results of the Vector Error Correction Model

Malaysia Model						
Dependent	ΔMWt	ΔGDPC	ΔEXPt	ΔIMPt	ECT	
Variables	p-value				Coefficient	t-ratio
ΔMWt		0.5794	0.5975	0.9536	-0.163952	[-2.33584]*
ΔGDPC	0.5414		0.2988	0.0823	-0.00864	[-0.33742]
ΔEXPt	0.7826	0.7806		0.0001*	0.077753	[3.00914]

ΔIMPt	0.2085	0.4404	0.3272		0.043547	[1.53916]
Malindo Model						
Dependent	ΔMWi	ΔGDPC	ΔEXPmi	ΔIMPmi	ECT	
Variables	p-value				Coefficient	t-ratio
ΔMWi		0.3363	0.8383	0.3163	-0.063686	[-3.54712]*
ΔGDPC	0.4739		0.8678	0.241	0.034003	[3.64333]
ΔEXPmi	0.3932	0.8828		0.9135	-0.039137	[-2.76409]*
ΔIMPmi	0.1219	0.9013	0.9937		-0.103023	[-4.06745]*

Notes: Asterisk (*) denotes significant at the 1 per cent level

Table-6. The Results of Normalized Equation

Malaysia Model					
MWt =	6.056303 -	0.982936 GDPC	- 2.533957 EXPt	+ 3.481258 IMPt	
		[-1.10027]	[-2.97011]*	[2.69401]*	
Malindo Model					
MWi =	142.6038 +	25.51371 GDPC	- 5.675878 EXPmi	- 1.504595 IMPmi	
		[7.19305] *	[-3.89410]*	[-3.19347]*	

Notes: Asterisk (*) denotes significant at the 1 per cent level. The value in parentheses is t statistics.

CONCLUSIONS AND RECOMMENDATIONS

This paper has met three objectives. The first objective was to examine the long-run relationship among exports, imports, income and the demand for migrant workers; the evidence shows that the four variables are cointegrated in both the Malaysia and Malindo models. This result is similar to the findings of Akkoyunlu (2009) in Turkey and Germany, and Bodman (1998) in Australia and Canada, although not all variables in these studies are the same. The second objective was to examine causality among the variables in the two models. There is no short-run causality in both models except that imports cause exports in the Malaysia model. In the Malaysia model, exports, imports and income cause demand for total migrant workers in the long-run. Meanwhile, in the Malindo model long-run causality runs from Malaysia's exports to Indonesia, Malaysia's imports from Indonesia and the income per capita of Malaysia to demand for migrant workers from Indonesia. Bi-directional causality in the long-run occurs between Malaysia's exports to Indonesia and Malaysia's imports from Indonesia, respectively, and demand for migrant workers from Indonesia. The third objective was to test the extent to which exports, imports and income per capita affect the demand for migrant workers. The findings show a substitutional relationship between exports and demand for total migrant workers in the Malaysia model and both exports and imports, and demand for migrant workers from Indonesia in the Malindo model. Increasing exports in Malaysia will reduce demand for total migrant workers while increasing Malaysia's exports to Indonesia and Malaysia's imports from Indonesia will reduce demand for migrant workers from Indonesia. Factor-price equalization proposed by the traditional trade theory due to trade between Malaysia and labour sending countries, especially Indonesia, may have occurred. Increasing trade

has increased income in the labour sending countries and has reduced the income gap between the labour sending countries and Malaysia. The supply of migrant workers, especially from Indonesia to Malaysia, subsequently will decline. A similar finding is reported from Germany, which trades with the home countries of the migrants (Bruder, 2004). The declining supply of migrant workers from Indonesia will increase demand for local workers in the job export oriented industries in Malaysia. In contrast, Malaysia's imports and demand for total migrant workers have a complementary relationship. The findings in this study are similar to the findings in Switzerland (Kohli, 1999) due to the preference of the capital owner to employ immigrant workers on a low wage.

Overall, factor-price equalization proposed by traditional trade theory is more able to explain findings in this study appropriately compared to the immigrant-preference hypothesis (Gould, 1994), the information hypothesis (Wagner *et al.*, 2002) and the other mechanisms explaining the effect of immigration on trade. This is because the present study uses trade as an independent variable and immigration as a dependent variable instead of trade as a dependent variable and immigration as an independent variable as they were mostly utilized in previous studies. This study confirms the argument of Gaston (2013) saying that a rather different conclusion from the traditional trade theory can be derived from the studies on the effect of immigration on trade. Does trade with labour sending countries reduce demand for migrant workers? The answer is "yes", because an overall increase in the total for Malaysia's exports will reduce the demand for total migrant workers in Malaysia. Increasing Malaysia's exports to Indonesia and imports from Indonesia will reduce the demand for migrant workers from Indonesia. The Malaysian government may increase trade openness policy by reducing trade and non-trade barriers to control total migrant workers especially migrant workers from Indonesia. Nevertheless, it should be noted that, although trade is a necessary instrument, it is not a sufficient instrument for reducing demand for migrant workers. Increasing the income per capita of Malaysia will increase the domestic consumption, and, subsequently, generate labour demand. Although the income-gap between Malaysia and the labour sending countries, especially Indonesia, may have been declining, the high income inequality in Indonesia and the better wages in Malaysia encourage the inflow of migrant workers from Indonesia to Malaysia. In order to make an effective trade policy in controlling migrant workers, the Malaysian Government may help to reduce income inequality in Indonesia by reallocating industries in those areas of Malaysia that share a border with Indonesia. The spill over effect of development along the Malaysian border is expected to be beneficial for the local people as well as the Indonesians, which in turn may slowdown the inflow of Indonesian workers to Malaysia.

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