A Macro Assessment of China Effects on Malaysian Exports and Trade Balances

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ABSTRACT

This paper focuses on the impact of China's export expansion on Malaysian monthly trading with to her 12 major trading partners over the liberalization era. Structural break(s) found mostly coincides with the Asia financial crisis and China's accession into WTO and, regime shifts are evident in the long run relationship among the variables being studied. While the income effects are more apparent, real exchanges are rather insignificant and incorrectly signed for Malaysian bilateral trading. An attempt to correct current account imbalances by currency devaluation would thereby inappropriate. In addition, estimation of the trade balance models is more superior that complementary China effects are better captured for Malaysia trading with the advanced markets such as Australia, German, Japan, UK and the US. Such finding may partly due to the increase in global product fragmentation.

Keywords: Malaysian exports, China effect, cointegration, VAR, structural break

JEL Categories: F31, C22, C51

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1. INTRODUCTION

The economic boom in Malaysia from the early 1990s until the onset of the 1997 Asian financial crisis was underpinned by rapid export growth to developed markets, mainly the US, Japan and the EU core members. The export-lead policy has been quite successful and it has remained as growth impetus for Malaysia GDP in the recent decades. However, the rising of People Republic of China (PRC) as the world factory has raised a concern whether the export oriented growth policy will be sustainable. PRC has consistently achieved double-digit growth rates over the last two decades. Likewise, PRC's export has targeted on developed markets especially the US and the EU, which is also among the main export destinations of Malaysia. Moreover, the export structure of PRC is quite similar with Malaysia as the base export of both countries is on labor-intensive manufacturing products. The accession of PRC into WTO in 2001 has further enhanced the magnitude of export flow from PRC to the developed markets. Since then PRC has become the largest final assembly base before consumer goods are exported to the developed nations. Most of the parts and components are shipped from Southeast Asia (ASEAN) and most likely will shrink the direct exports of Southeast countries, including Malaysia, to the developed nations. No doubt as a close neighbor of PRC, Malaysia export performance is under pressure.

Table 1 provides some general statistics to support such argument. With the upward trending of export value over GDP, one can tell that both PRC and Malaysia were getting more reliance on exports. But unlike PRC that has experienced marvelous growth of exports after the 1990s; Malaysian exports grow at slower pace since mid-1990s. The figures decelerated in some of the years after the 1997 Asian financial crisis and during the 2008 Subprime crisis. In recent world export ranking, PRC has been topped globally, while Malaysia is staying stagnant at the 20th position. Looking at Table 2, both PRC and Malaysia share similar destination of export flows, with slightly different in the trade-partner ranking due to their dependency on the neighboring world level entrepots, i.e. Hong Kong and Singapore. Both countries also export relatively more to their neighboring countries, i.e. China to South Korea and Russia, while Malaysia to her ASEAN counterparts; but generally both countries export to the same developed markets, i.e. the US, Japan and the Western EU nations.

Insert [Table 1, Table 2] about here

Following the economy liberalization and recent trade expansion of China, the "PRC competitive threat" hypothesis has gained increasing attention among scholars. A few studies that focus on non-neighboring countries, namely the Latin American and Caribbean markets, have reported some significant PRC crowding-out effects (see for example, Quintin, 2004; Lall et al., 2005; Jenkins at al., 2006). Others, on the other hand, would suggest that PRC export expansion has a complementary effect for its neighbors. Frenald et al. (1999), for instance, reported that PRC export expansion as a result of Renmimbi devaluation in 1994 did not poses any crowding-out effect on NIEs (Korea, Singapore and Taiwan) and ASEAN-4 (Indonesia, Malaysia, Philippine, Thailand). Instead, PRC's real export growth was positively correlated with real export growth of those countries. Eichenggreen et al. (2007) employed panel regression of 13 Asian countries (including Malaysia) with their 180 importing countries under an augmented gravity model also reported a positive effect of PRC export expansion. On top of that, they did find some extent of crowding-out effect when disaggregated data were used, mainly for less developed Asian economies and in consumer goods market which is considered as low-technology export; but not in markets for capital goods, which is considered as high-technology export. Using a gravity approach, Greenaway et al. (2008) then documented empirical evidence that PRC export over 1997-2003 displaced total export of high income East Asia countries to third country, but for middle income East Asia countries, including Malaysia, PRC export expansion was actually complementary.

Clearly, at present stage, the literature has not been conclusive about the "PRC competitive threat" and further exploration is to be taken. This study takes a different approach to investigate the issue pertaining to Malaysian bilateral trading with her 12 major partners. First, we assess the impacts of PRC export expansion via two models: the Malaysian export model and the Malaysian trade balance model, by having China export as forcing variable. In other words, we examine if the China effect homogeneous across countries or varies by the export intensity and trade balances (export-import ratios). Such combined analysis is not yet to be occupied in the existing literature. [1]

Second, we use higher frequency monthly data (January 1990-June 2010) which allows us to capture the dynamic of bilateral trade flows and hence a more

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[1] Most studies on Malaysia case employed the trade balance framework and none has assessed the China threat hypothesis. Yusoff (2007) found that the Malaysian trade balances are bounded by the real exchange rate, domestic and world incomes at aggregate level, and a delayed J-curve was supported. But in Yusoff (2009), Malaysia's bilateral trade balances are found to be responsive to the changes of the US and Singapore bilateral exchange rate but not the Japan case, and the J-curve only appeared for Malaysia-US. Bahmani-Oskooee and Harvey (2010) then studied the Malaysia's trade balances against 14 trading partners during 1973Q1-2001Q3, but without assessing the China effect and did not cover the recent period of both dot com crisis and Subprime crisis, which have significant impacts on the demand for Malaysian exports. They reported inconclusive support of income effects and real exchange rate impacts on Malaysia trade balances. Moreover, out of 14 bilateral cases, the J-curve was only found for Malaysia versus Germany. Chan and Hooy (2012), on the other hand, directly examine the long run dynamics of exchange rate and bilateral export-import flows between China and Malaysia. Their finding reveals that the Marshall-Lerner condition holds in the long run but the export-import demands do not adhere to the J-curve pattern. Although the expansionary effect is of greater evidence for Malaysia due to real exchange shocks but inconclusive for China, they found some evidence that the China-Malaysia bilateral trading is along the sustainable path.

efficient estimation can be obtained. As the literature is mostly relying on annual or quarterly data, the estimation of China's potential crowding-out effect could be relatively less efficient or not accurately captured. Our analysis generally shows insufficient evidence of China's crowding-out effect on Malaysian export and bilateral trading. Instead, there are some empirical evidences that PRC's export expansion gives a complementary effect on Malaysia's trade with her major partners, by and large, due to the increase in global production networks of ASEAN5 with PRC over the last decade.

In our study, the concern of structural break(s) is also taken into account. This is particularly important as our sample period covers a number of economics shocks and policy changes that may affect the structure of global trading (e.g. Asian financial crisis, China's access to WTO and the Subprime crisis). Literature in recent years has also reached consensus that the disregard of structural changes leads to inefficient estimation and therefore lower testing power of univariate unit root tests (see Perron, 1989; Lee and Strazicich, 2004; among others). Likewise, lack of careful investigation of potential structural breaks may also lead to misspecification of the long-run properties of a dynamical multivariate system and inadequate estimation and testing procedures, e.g. cointegration tests (Gregory *et al*., 1996; Gregory and Hansen, 1996; Esso, 2010). Thereby, the Lagrange Multiplier (LM) unit root break test proposed by Lee and Strazicich (2004) and the Gregory and Hansen (1996)'s cointegration test with break (GH) are utilized in our analyses. The LM unit root test tends to estimate the endogenous (unknown) break point correctly and is free of size distortions and spurious rejections in the presence of a unit root with break (Acaravci and Ozturk, 2010). Meanwhile, the advantage of GH test lies on the ability to treat the issue of endogenous break and cointegration altogether (Esso, 2010). The test procedure offers three models corresponding to three assumptions concerning the nature of shift in the cointegrating vector: the level shift model (C), the level shift with trend model (C/T), and the regime shift model (C/S).

The rest of paper is organized as follows: in section 2, data and methodology are discussed; section 3 reports our empirical results and finally in section 4 we conclude.

2. DATA AND METHODOLOGY

2.1 Data

Our study primarily focuses on the Malaysian top-15 trading partners. Since China has been chosen as forcing variable, Malaysia-China export is excluded from the dependent variable list. Malaysia-Hong Kong export is also dropped due to Hong Kong's unique status as an entrepot for China. Malaysia-UAE is then excluded because the series is incomplete. Thus, in total, 12 trading partners are covered in this study, which are Australia, Germany, India, Indonesia, Japan, South Korea, Netherland, the Philippines, Singapore, Thailand, United Kingdom and United States. Monthly data spanning from January 1990 to June 2010 are utilized in our analysis with the exception of Australia (quarterly data). Data used in this study include Malaysian exports to her top-12 trading markets, Chinese exports to the same destinations, industrial production indexes of the twelve trading partners, and bilateral real exchange rates that compiled from bilateral nominal exchange rate and consumer price index. All data are extracted from DataStream and IMF Direction of Trade Statistics (DOTS), and transformed into logarithmic scale prior to the analysis. Due to data unavailability, the analysis period varies for some countries. The two EU countries, i.e. Germany and Netherlands start from January 1999, India starts from April 1994, Korea starts from January 1991 and the Philippines start from January 1996.

2.2 Empirical Model

A simple demand function of Malaysian export is given as follow:

$$MALEX_i = f\left(Y_i^*, RER_i\right) \quad (1)$$

$$MALTB_i = f\left(Y_i, Y_i^*, RER_i\right) \quad (2)$$

Equation (1) states that Malaysian export to a foreign country i, ($MALEX_i$) is dependent on the income level of the trading partner Y_i^* (e.g. China) and the relative real prices of the two currencies, i.e. the real exchange rate, RER_i. Whereas equation (2) highlights the conventional theory that Malaysian trade balances ($MALTB_i$) will be affected by both the domestic and foreign incomes as well as real exchange rates. The formula below is employed to compute the real exchange rate (RER) between Ringgit Malaysia and a foreign currency:

$$RER_i = \frac{RM}{ER_i} x \frac{CPI_i}{CPI_M}$$

where RM is Ringgit Malaysia, ER_i is the currency of foreign country i, CPI_i and CPI_M are the consumer price index of country i and Malaysia, respectively. To address the PRC effect on Malaysian export demand, we consider the augmented version of model (1) and (2), which given by the following specifications:

$$\ln MALEX_{i,t} = \alpha + \beta_1 \ln IP^*_{i,t} + \beta_2 \ln RER_{i,t} + \beta_3 \ln CHNEX_{i,t} + \varepsilon_t \quad (3)$$

$$\ln MALTB_{i,t} = \gamma + \delta_1 \ln IP_{i,t} + \delta_2 \ln IP^*_{i,t} + \delta_3 \ln RER_{i,t} + \delta_4 \ln CHNEX_{i,t} + \mu_t \quad (4)$$

where $lnMALEX_i$ and $lnMALTB_i$ are the natural logarithmic of Malaysian exports to foreign country i and trade balance with country i respectively. The trade balance is usually defined as the bilateral export-import ratio. $\ln RER_i$ is the natural logarithmic of real exchange rate between Ringgit Malaysia and the currency of country i, $lnIP_i$ and $lnIP_i^*$ are the respective natural logarithmic of domestic and foreign industrial production as proxy for the domestic (Malaysia) and foreign income of trading partner, and ε_t as error term. For model (3), we expect $\beta_1 > 0$ and $\beta_2 > 0$ since an increase in foreign income would lead to an increase demand for Malaysian exports, whereas real Malaysian ringgit depreciation (*RER* positive) is also expected to increase Malaysian exports. For model (4), similar justification is applied. When Malaysian income rises, domestic imports will increase and hence trade balance deteriorates. If Malaysian ringgit depreciates, trade balance will improve due to cheaper but better-demanded exports and declined imports which are more expensive. Such situation will occur only if Marshall-Lerner condition is met. So, we expect $\delta_1 < 0$, $\delta_2 > 0$, $\delta_3 > 0$.

Unlike the existing literature, our study incorporates an additional factor, $lnCHNEX_i$ (China's export to the same destination market) to capture the potential long run crowding-out effect of China export expansion. If the Chinese exports exhibit substituting effect on Malaysian exports to the same destination, β_3 or δ_4 will report a negative sign. This implies that the more Chinese goods are exported, the lesser the demand for Malaysian exports in the similar markets. Otherwise, β_3 or δ_4

will display a positive sign to imply complementary effect. The above setting allows us to establish and examine the China crowding-out hypothesis.

2.3 Unit root tests

Following the standard practice for time series analysis; we begin our empirical evaluation by examining the stationary properties of all variables concerned. Many of the existing studies used the Augmented Dickey-Fuller (ADF) or Phillips-Perron (PP) unit root test to ascertain the order of integration of the series. A problem with these tests is neither allows for the possibility of a structural break. Perron (1989) showed that the power to reject a unit root decreases when the stationary alternative is true and a structural break is ignored. In other words, the failure to allow for potential break leads to a bias that reduces the ability to reject a false unit root null hypothesis. We employ the Lagrange Multiplier (LM) unit root test with one structural break proposed by Lee and Strazicich (2004). LM unit root test with one structural break has the major advantage that it is unaffected by the existence of a structural break under the null (see Lee and Strazicich, 2001). The LM unit root test can be explained using the following data generating process:

$$y_t = \delta' Z_t + e_t,\; e_t = \beta e_{t-1} + \varepsilon_t \tag{5}$$

where Z_t consists of exogenous variables and ε_t is an error term with classical properties. Model A which is also known as the "crash" model, allows for a one-time change in the intercept under the alternative hypothesis. Model A can be described by $Z_t = [1, t, D_t]'$, where $D_t = 1$ for $t \geq T_B + 1$, and zero otherwise; T_B is the date of the structural break, and $\delta' = (\delta_1, \delta_2, \delta_3)$. The LM unit root test statistic is obtained from the following regression:

$$\Delta y_t = \delta' \Delta Z_t + \phi \bar{S}_{t-1} + \mu_t \qquad (6)$$

where $\bar{S}_t = y_t - \hat{\psi}_x - Z_t \hat{\delta}_t$, $t = 2,...,T$; $\hat{\delta}$ are coefficients in the regression of Δy_t on ΔZ_t; $\hat{\psi}_x$ is given by $y_t - Z_t \delta$; and y_1 and Z_1 represent the first observations of y_t and Z_t respectively. The LM test statistic, $\tilde{\tau}$ is given by t-statistic for testing the unit root null hypothesis that $\phi = 0$. The location of the structural break (T_B) is determined by selecting all possible break points for the minimum t-statistic as follows:

$$inf\ \tilde{\tau}(\bar{\lambda}_i) = \underset{\lambda}{inf}\ \tilde{\tau}(\lambda),\ \text{where } \lambda = T_B/T. \qquad (7)$$

The search is carried out over the trimming region (0.1T, 0.9T), where T is sample size. To select the lag length, we used the general to specific procedure proposed by Hall (1994). We set the maximum number of lags equal to 12 and used the 10% asymptotic normal value of 1.645 to ascertain the statistical significance of the last first-differenced lagged term. After deciding the optimal lag length for each breakpoint, we determine the break where the endogenous LM t-test statistic is at a minimum. Critical values for the LM unit root test with one structural break are tabulated in Lee and Strazicich (2004).

2.4 Cointegration test

Once the order of integration of each variable is ascertained, we test for cointegration for the long-run relationship between Malaysian exports to country i with the respective independent variables as stated in equation (3) and (4). Gregory and

Hansen (1996) proposed three models for testing cointegration where the existence of a structural break in the cointegrating vector is allowed.

Model C: $, t = 1, \ldots, n$ (8)

Model C/T: $, t = 1, \ldots, n$ (9)

Model C/S: $, t = 1, \ldots, n$ (10)

Model C contains a level shift, Model C/T contains level shift and trend, and Model C/S allows for regime shift. Then, $D_t^{\tau} = 0$ for $t < \tau$ and $D_t^{\tau} = 1$ for $t \geq \tau$. X_t can be referring to the matrix of all related dependent variables and β' is the vector of estimated coefficients. Here, β' denotes the cointegrating slope coefficients before the regime shift and γ' denotes the change in the slope coefficients. In order to test for cointegration between dependent and independent variables with structural change, i.e. the stationarity of u_t in Equations (8) – (10), Gregory and Hansen (1996) proposed a suite of tests. These statistics are the commonly used ADF statistics and extensions of the Z_α and Z_t test statistics proposed by Phillips (1987), which defined as:

$$ADF^* = \inf_{\tau \in T} ADF \quad \tau \qquad (11)$$

$$Z_\alpha^* = \inf_{\tau \in T} Z_\alpha \quad \tau \qquad (12)$$

$$Z_t^* = \inf_{\tau \in T} Z_t \quad \tau \qquad (13)$$

As the break point, τ, is unknown a priori, the model is estimated recursively allowing the break point to vary between (0.1T, 0.9T), where T is the sample size. The null hypothesis of no cointegration is examined using the three statistics with interest in the smallest values for the three statistics across all break points required to reject the null. As robustness test, we also perform the Johansen-Juselius (1990) cointegration test based on the following vector autoregressive (VAR) specifications:

(14)

and

(15)

3. EMPIRICAL RESULTS AND DISCUSSION

3.1 Unit Root and Breaks

The LM unit root test with break generally supports that all variables in each of the countries are integrated of order one at the 5 per cent level or better except the Malaysian export to Australia.[2] Basically not all the series has structural break and the significant break for different variables of a country is also differ. We do not intend to examine the detail of the break points for all the series but some discussion on the break points of export series is relevant to our research focus.

We note that the location of the significant breaks for Malaysian export series took place mainly around the period of 1997 Asian financial crisis, while the Chinese export series have many breaks surrounding 1992/93. For Malaysia, the break for export to her two largest ASEAN members, i.e. Singapore and Thailand was happened after the implementation of capital control and Ringgit pegging in

[2] We find that For Malaysian export, the break in the intercept is statistically significant at the 5 per cent level or better in eight out of the twelve countries. For Chinese export, the break in the intercept is statistically significant at the 5 per cent level or better in seven out of the twelve countries. Australia, Indonesia and Netherland are the three that do not have any significant break in the intercept for both exports from Malaysia and China. Details of the unit root tests are available upon request.

September 1998. The break for South Korea, the Philippines and India was happened before the outbreak of the crisis in July 1997 while the break for Germany occurred in November 2005, exactly the month when Malaysia ended her Ringgit pegging regime. For Japan, the break was in 2008, the transition period which China came close to replace Japan as Malaysia's third largest export destination since the last two decades.[3]

Malaysian export to US has a break as early as in 1992. This break was happened when Malaysia's electronic and electrical (E&E) export, which accounted for nearly 40% of her total manufactured export, had been shifted to Singapore in 1992. The export share of electronic and components to US for example, which accounted for nearly 50% of Malaysian E&E export since the mid-1980, has dropped to 30% in 1992. On the other hand, many of the breaks in 1992 and 1993 that have been detected for China's export were mainly due to its major economic transformation which started in 1992. The break for Chinese export to the Philippines was happened in 1997 due by large to the devaluation of Peso in July.

3.2 Long run Estimates

Given that all variables are $I(1)$ for each of the countries we proceed to test for cointegration with a structural break in the cointegration vector using the Gregory and Hansen (1996) test. The results are presented in Table 3a and Table 3b respectively. In general, we find cointegration relationship for export model and trade balance model between variables studied in each of the 12 countries. Even though the null

[3] In fact, based on the monthly export data from IMF DOTS, in 2008, China export value was higher than Japan from April to September, except June. After March 2009, Malaysia export to China has surpassed those to Japan and the US and since August 2009 the value has come close to Singapore which has been the largest destination of Malaysian export since the drop in Malaysian export to the US in October 2007.

hypothesis of no cointegration is not able to be rejected with the ADF* statistic for all three export models in India, Singapore and UK (see Table 3a), both Z_t and Z_α statistics show strong evidence of significant at 1 per cent level for all three models in all countries. Hence, we conclude that there exists long-run relationship between Malaysia's export and real exchange rate, economic growth and China's export in all twelve countries. If we refer to Table 3b for trade balance models, similar justification is applied to the Malaysia-UK case. For other 11 trade balance cases, hypothesis of no cointegration is highly rejected and long run relationships among the variables are confirmed.

Insert [Table 3a, Table 3b] about here

There are a range of break points across the test statistics for export models. In general the break in Australia, Japan, and the EU countries occurs in 2001/02 coincides with China's accession into WTO. Only for Singapore the break was happened during the Asian financial crisis. Indonesia and Thailand have a break in 1993/94. The break for Korea was in 2006 while for the Philippines it was in 1999. The break date of the US was in the mid of 1996 and India showed a divert break across models. As for the trade balance models, break dates happen mostly during the 1997/98 Asia crisis and the 2001dot com bubble. The break date of 2008 Subprime crisis was detected only for the Malaysia-Philippines case.

The unreported results of Johansen cointegration test also show at least one cointegrating equation is found in all countries infers that there exists long-run relationship between the variables. Hence, we are confident to examine the long-run relationship between Malaysian export and Chinese export. The normalization results from cointegration test with lnMALEX as the dependent variable or in other words the long-run elasticities of Malaysian exports with respect to other variables are reported in Table 4a. We find that China's export positively affects the export of Malaysia to five of her major trading partners including India, Indonesia, Japan, the Philippines, and the UK. China's export posits a significant negative impact only on Malaysian export to Singapore. Yet, Australia, Germany, Korea, Netherland, Thailand and the US do not show any significant impact due to Chinese exports. Except for Singapore and India, the significant coefficients of China effect (CHNEX) are generally less elastic, ranging from 0.1716 to 0.8553.

If we refer back to Table 2, the sum of total exports to these nations (excluding Japan) are less than 9% of Malaysian total exports over 2000-2010, which mainly consist of refined petroleum, palm oil, iron & steel products. These long run positive effects may be offset by the negative effects on exports to Singapore (15% of Malaysian exports, 2000-2010), which are mainly electrical and electronic products. But since Singapore is an entreport that provide best springboard for Malaysian exporters to venture abroad, it is still early to conclude if Malaysian export could suffer from China's treat in the high-tech and low-tech manufacturing exports as highlighted by Haltmaier et al. (2007). At the same time, it is worth noting that the long run results have not provided sufficient support to Walmsley and Hertel (2000) who claimed that China's competitors in the labor-intensive apparel industry would experience significant losses in real income, partly due to declining terms of trade.

Insert [Table 4a] about here

On the other hand, the impact of real exchange rates and demand side effect owing to income changes (proxy by industrial production) has been rather mixed. Exports are responding negatively to the depreciation of the US, Singapore and the Philippines real exchange rates (RER negative = ringgit appreciates) but responding positively against the depreciation of real Indian Rupee, Indonesian Rupiah and Korean Won (RER positive = ringgit depreciates). Such mixed result has been reported by Baharumshah (2001), Bahmani-Oskooee and Wang (2006) and Ahmad and Yang (2007), who found limited support of positive long-run effect of foreign exchange on trade.

As for the income effects (demand side) in long run, Malaysia exports are mostly affected by production growth (as proxy of income) in the trading partner except for the Philippines, Korea and UK. Demand for Malaysian export rises when production expands at Australia, Germany, Netherland, Singapore, Thailand and the US. Otherwise, exports respond negatively to production growth at India, Indonesia and Japan. The effect varies among trading partners may be due to the production and export diversification. Together, nations that show positive income effects have accounted for about half of the total Malaysian exports during 2000-2010 and, most of the Malaysian exports to these developed nations (except Thailand) comprise of medium- and high-tech manufacturing exports. Such finding is in line with Eichengreen *et al.* (2004, 2007) that Chinese export growth is likely to have negative consequences for relatively less technologically advanced consumer goods-exporting Asian countries, but positive consequences for exporters of more sophisticated capital goods. As for the Japan case, two states of affairs are of concern. First, the Japanese economic downturn in 1990s and sluggish recovery in the 2000s; second, duty-free goods constituted 86% of Japan's imports from Malaysia (including duty-free treatment under the Generalized System of Preferences (GSP)) and 67% of Malaysia's imports from Japan during 1990s-2000s (see Japan-Malaysia Economic Partnership, 2003). Together, both scenarios fail to provide positive momentum on Japanese income-demand for Malaysian exports. However, to verify the details of such inconsistent effects among the trading partners, we have to estimate thoroughly at micro-level, which at present stage is beyond the scope of present paper.

Unlike the export models, the long run estimates of trade balance models are more consistent and straightforward (see Table 4b). Nine out of twelve cases, the domestic income coefficients have been significant with expected negative sign. Malaysian incomes are reported insignificant only for the India, Indonesia and Netherland cases. As for the foreign income variables, all coefficients are positive of which only three cases are insignificant (Germany, India and Netherland). Such finding is consistent with those predicted by economic theory where income and purchasing power have been the main determining factor of exports and imports. So, as far as domestic and foreign incomes are concerned, the Malaysian bilateral trading with major partners are demand-driven. But when we assess the real exchange rate effect on trade balance, the inconsistency remains. Half of the coefficients are reported significant with only five carry the expected negative sign. Such result does not allow the Malaysian authority to count on devaluation as tool of current account correction. On the other hand, Table 4b also shows that the China's exports have exhibited complementary effects to Malaysian trading in the long-run, mainly for advanced export destinations such as Australia, Germany, Japan, UK and the US.

Substituting effects are only reported for the Malaysia-Singapore and Malaysia-Korea cases.

Insert [Table 4b] about here

3.3 Short run Estimates and Adjustments

One needs to be careful when interpreting the consistency of long- and short-run results of China effect. For export models, only India and UK reported positive and significant Chinese effect in both long-run and short-run, the coefficients of the rest are different (see Table 5a). Occurrence of such inconsistency is possibly owing to the various market and policy responses in short-run due to the series of global and regional economic shocks during 1990-2000s, which include the 1997/98 Asia financial crisis, 2001 IT bubble, 2008 subprime crisis, as well as global food and crude oil shocks, etc. But overall, the short run dynamics are fairly consistent with long run estimates that the crowding out effect is light. Only two trading partners have reported competing role (negative effect) while six others have reported significant complementary role (positive effect) of Chinese exports (see Table 5a). In addition, the coefficients of DCHEX range from 0.0733 to -0.4022, suggesting a much possible scenario that China effect could be over-projected in the literature. As for the trade balance model reported in Table 5b, Australia and Japan have shown complementary China effects in the short run, Indonesia has shown substituting effect while the rest are insignificant. Until this point, it seems like complementary China effect has been favoring the Malaysian trading in the advanced markets rather than her ASEAN neighboring nations.

Insert [Table 5a, Table 5b] about here

Quite surprising, however, the exchange rate effect almost disappears in the short run except for Malaysia-US (export model-Table 5a) and Malaysia-Australia (trade balance model-Table 5b). Such finding is supported by Rose and Yellen (1989) who rejected the exchange rate-trade nexus among US-G7. Then, the income effects are also trivial in short run and only found significant in the US, Singapore, Germany and India with smaller coefficients. In the trade balance model, only Thailand and the US cases have shown significant domestic income, but the coefficients are positive (unexpected) in the short run and negative (expected) in the long run. A possible explanation provided by Yusoff (2007) is that the rise in domestic income is due to the increase in the production of importables and exportables through the utilisation of the imported capital and intermediate goods. The importing of these goods worsens the trade balance in the short run but it helps improve the trade balance in the long run as investment and intermediate goods support the manufacture of domestic exportables and importables.

In addition, ten, out of twelve cases in the export models (Table 5a) have shown negative and significant error correction terms (ECT) except for Germany, and Netherland. Of all, Indonesia and Australia reported higher coefficients of ECT at -0.8548 and -0.6793 respectively. This would imply greater and faster adjustments in the Malaysia-Indonesia and Malaysia-Australia export markets towards long run equilibrium, once being shocked. As for the trade balance models, all major trading partners have reported negative and significant ECT, ranging from -0.0229 to -0.9020. All in all, the results show that the trade balance model is superior to the export model in terms of consistency, short run adjustments and the China effects evidence.

3.4 Further Discussion

Our analysis that based on the export models and trade balance models have so far shows general supports of the complementary China effects, and, in some cases, some substituting effects. Yet, our empirical evidence reveals that the fear for China effect might be over-projected. The complementary effect of PRC exports expansion could be explained by the increase in global production networks or so called product fragmentation in the global export sector. With the accession into WTO in 2001, PRC enterprises are now more specializing and in coordination with her regional counterparts and this has results in raising intra-industry trade in differentiated products in the region. On this ground, Lall and Albaladejo (2004) have conducted a lengthy examination on export flows of PRC and East Asia manufacturing sector in the 1990s and highlights that the new Tigers (mainly Southeast Asia markets, including Malaysia) facing PRC treat in low technology manufacturing exports in third markets, but not in medium and high-technology manufacturing.

In a more recent study, Haltmaier et al. (2007) found that PRC export threat on East Asia countries was more pronounced in the medium technology manufacturing rather than the low technology sector, but their individual result on Malaysia revealed that PRC threat is felt at both extreme of in high-tech and low tech manufacturing exports. This finding seems to suggest that PRC may have moved up the ladder chain from low-technology export to medium technology export as predicted by Lall and Albaladejo (2004), and soon PRC might as well dominate the high-technology export in the near future. Nevertheless, Athukorala (2009), again, pointed out that such worries might be over-projected. Though PRC has experienced rapid increase in high-technology exports over 1992-2006, the focus was on the bulk of labor-intensive high-technology product at the expense of the more high-wage East Asia NIEs, but not on the ASEAN (including Malaysia). The fact is being supported when product fragmentation is accounted (the component trade is netted out).

4. CONCLUSION

This paper addresses the crowding-out effect of People Republic of China (PRC) on Malaysian exports and trade balances over the period of 1990-2010 with monthly trade series. We employ unit root and cointegration tests with break to encounter the problem of structural changes in time series. The corresponding long run elasticities and short-run dynamics of the related variables are being examined. While the income effects are more apparent in most cases, the real exchange rates are rather insignificant and incorrectly signed for Malaysian bilateral trading. Such finding does not favor the practice of ringgit devaluation as tool of current account correction. In addition, estimation of the trade balance model is generally more consistent that the China's exports have exhibited complementary effects in the long-run, mainly for advanced export destinations such as Australia, Germany, Japan, UK and the US.

Our finding that China's export expansion has been complementary for emerging market like Malaysia is consistent with other empirical literature using panel regression via gravity modeling by Frenald et al. (1999), Eichenggreen et al. (2007) and Greenaway et al. (2008). Such positive effect could be due to the increase in global production networks in the export sector over the last decade. As observed by Athukorala (2009), the production fragmentation in East Asia region which pushes PRC's fast export expansion happens at the expenses of the more high-wage East

Asia NIEs, but not on the medium-wage ASEAN countries, including Malaysia. Our result is consistent with the literature looking at the component trade data. Future research might want to look into the various different technology level of the component trade in the East Asia region to gauge a more complete picture of the China effects on Malaysia in specific, and on East Asia and other emerging markets in general.

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Table 1: GDP, Export Performance and Export Structure of PRC and Malaysia, 1990-2010

	Aggregate GDP (in billion USD)		Average GDP Growth (% Growth)		Aggregate Export (in billion USD)		Average Export Growth (%)		Export/GDP (%)		Average World Export Rank	
Year	China	Mal	China	Mal	China	Mal	China	Mal	China	Mal	China	Mal
1990-1995	2886.80	382.52	10.87	9.40	581.89	284.15	143.98	153.32	20.16	74.28	11	20
1996-2000	5109.95	446.13	8.62	4.99	962.01	413.31	98.39	74.55	18.83	92.64	9	20
2001-2005	8608.14	566.43	9.76	4.76	2387.41	554.06	148.17	34.05	27.73	97.82	4	18
2005-2010*	15714.29	758.09	11.40	3.83	6401.56	924.93	168.14	66.94	30.68	122.01	1	19

Source: GDP and GDP growth are obtained from World Bank, available only for 1990-2009 only. Total export value is obtained from IMF for the full sample 1990-2010.

Table 2: Top 15 Export Destination of Malaysia and China, 2000-2010

Malaysia	Percentage	China	Percentage
Aggregate for Top-15	83.02%	Aggregate for Top-15	73.70%
1. US	15.98%	1. US	19.39%
2. Singapore	15.25%	2. Hong Kong	15.12%
3. Japan	10.12%	3. Japan	9.74%
4. China	9.33%	4. South Korea	4.64%
5. Hong Kong	5.00%	5. Germany	4.10%
6. Thailand	4.69%	6. Netherland	3.16%
7. Netherland	3.56%	7. UK	2.52%
8. South Korea	3.50%	8. Singapore	2.26%
9. Australia	3.16%	9. India	1.83%
10. India	2.77%	10. Russia	1.78%
11. Indonesia	2.64%	11. Italy	1.72%
12. Germany	2.31%	12. France	1.64%
13. UK	1.93%	13. Australia	1.54%
14. UAE	1.40%	14. Canada	1.47%
15. Philippine	1.38%	15. Malaysia	1.46%

Source: Authors' calculation from export series obtained from IMF Direction of Trade Statistics (DOTS).
Note: Ranking based on cumulative export value to the destination country over Malaysia total world export value over 2000-2010.

Table 3a: Gregory-Hansen Cointegration Test for Malaysian Exports with Structural Break

$$\ln MALEX_{i,t} = \alpha + \beta_1 \ln IP^*_{i,t} + \beta_2 \ln RER_{i,t} + \beta_3 \ln CHNEX_{i,t} + \varepsilon_t$$

Export Destination	Model	ADF^*	k	TB	Z^*_t	TB	Z^*_α	TB
Australia	C	-8.6995***	1	95Q1	-9.3154***	01Q4	-85.6076***	01Q4
	C/T	-9.0772***	1	01Q3	-9.1338***	01Q3	-83.2079***	00Q4
	C/S	-9.4947***	1	01Q3	-9.5538***	01Q3	-87.3196**	01Q3
Germany	C	-5.3712	1	01M03	-7.7507***	01M04	-79.8263***	01M04
	C/T	-8.7066***	0	01M01	-8.7102***	01M01	-97.1322***	01M01
	C/S	-5.2836	1	01M03	-7.6766***	01M04	-79.4323**	01M04
India	C	-5.2508	1	96M08	-8.3886***	96M08	-95.9239***	98M01
	C/T	-5.1539	1	96M08	-8.7776***	00M12	-105.8628***	00M12
	C/S	-5.9370	1	02M11	-9.4016***	96M08	-115.5300***	96M08
Indonesia	C	-15.3306***	1	93M06	-15.3620***	93M06	-241.4436***	93M06
	C/T	-14.5691***	1	94M02	-14.5989***	94M02	-228.7284***	94M02
	C/S	-15.9640***	1	94M01	-15.9967***	94M01	-251.3175***	94M01
Japan	C	-6.6042***	1	01M10	-9.9644***	01M07	-133.7110***	01M07
	C/T	-5.4320	1	01M09	-8.0576***	01M09	-97.3705***	01M09
	C/S	-6.8375**	1	02M05	-10.1128***	02M02	-136.9334***	02M02
Korea	C	-6.6018***	1	98M02	-9.4014***	98M01	-124.5105***	98M01
	C/T	-9.9739***	0	05M10	-9.9661***	06M11	-137.0850***	06M11
	C/S	-6.9435***	1	06M08	-9.7242***	06M09	-131.7691***	06M09
Netherland	C	-7.6234***	1	02M01	-7.8691***	02M02	-79.1751***	02M02
	C/T	-7.6936***	1	02M01	-8.0054***	02M04	-80.2651***	02M04
	C/S	-9.0500***	0	02M02	-9.0655***	02M02	-104.3059***	02M02
Philippines	C	-6.6053***	1	99M09	-10.8624***	99M10	-139.0569***	99M10
	C/T	-6.9896***	1	99M09	-11.2436***	99M10	-145.6857***	99M10
	C/S	-6.5938**	1	99M09	-10.8318***	99M10	-138.5970***	99M10
Singapore	C	-4.8041	2	98M02	-8.5638***	97M09	-105.3971***	97M09
	C/T	-5.1099	2	98M02	-8.1316***	97M09	-98.2672***	97M09
	C/S	-5.0339	2	98M01	-10.0971***	98M08	-136.6588***	98M08
Thailand	C	-9.1521***	1	94M04	-9.0300***	93M01	-119.6389***	94M04
	C/T	-9.7516***	1	94M04	-9.6785***	94M04	-134.7503***	94M05
	C/S	-10.3537***	0	99M10	-10.6839***	97M03	-157.0362***	97M03
UK	C	-5.5305	1	00M07	-8.1166***	01M01	-95.4046***	01M01
	C/T	-5.5238	1	00M07	-8.1149***	01M01	-95.4698***	01M03
	C/S	-5.4565	1	01M02	-8.6275***	01M01	-109.5692***	01M01
US	C	-5.7900**	1	06M11	-8.9960***	07M02	-115.8472***	07M02
	C/T	-5.5206	1	94M03	-10.3849***	96M06	-143.7848***	96M06
	C/S	-6.9039**	1	96M07	-10.6585***	96M06	-147.9528***	96M07

Note: TB is the endogenous structural break date detected. (**) (***) denotes statistical significance at the (5)(1)% level.

Table 3b: Gregory-Hansen Cointegration Test for Malaysian Trade Balance with Structural Break

$$\ln MALTB_{i,t} = \gamma + \delta_1 \ln IP_{i,t} + \delta_2 \ln IP^*_{i,t} + \delta_3 \ln RER_{i,t} + \delta_4 \ln CHNEX_{i,t} + \mu_t$$

Export Destination	Model	ADF*	k	TB	Z^*_t	TB	Z^*_α	TB
Australia	C	-6.7879***	1	98Q1	-6.8074***	98Q1	-59.0977*	98Q1
	C/T	-6.7992***	1	98Q1	-6.8185***	98Q1	-59.1665	98Q1
	C/S	-6.9066**	1	98Q1	-6.9355***	98Q1	-61.0612	98Q1
Germany	C	-7.3159***	1	01M02	-7.3428***	01M02	-79.1147***	01M02
	C/T	-7.9323***	1	00M11	-7.9734***	00M11	-89.4992***	00M11
	C/S	7.6190***	1	03M09	-7.6470***	03M09	-82.7644**	03M09
India	C	-5.4358*	2	07M07	-9.0887***	98M01	-110.0264***	98M01
	C/T	-5.3468*	2	05M03	-9.9740***	00M03	-125.3496***	00M03
	C/S	-5.5930	2	07M08	-11.5235***	98M01	-149.6438***	98M01
Indonesia	C	-13.7729***	1	97M11	-13.8010***	97M11	-213.9372***	97M11
	C/T	-13.9187***	1	06M07	-13.9472***	06M07	-216.9057***	06M07
	C/S	-14.0428***	1	06M09	-14.0716***	06M09	-217.2996***	06M09
Japan	C	-5.9366**	2	98M04	-8.2302***	98M01	-99.7886***	98M01
	C/T	-6.3949***	1	96M01	-9.0175***	98M01	-113.7005***	98M01
	C/S	-10.6811***	0	98M03	-11.1785***	97M11	-160.6966***	97M11
Korea	C	6.8900***	1	99M09	-10.1038***	99M09	-138.2137***	99M09
	C/T	-6.9273***	1	94M06	-10.0899***	99M09	-137.9048***	99M09
	C/S	-10.2777***	0	96M04	-10.4329***	03M11	-145.9609***	95M02
Netherland	C	-9.8288***	1	00M12	-9.8567***	00M12	-112.9410***	00M12
	C/T	10.6066***	1	06M03	-10.6455***	06M03	-123.8638***	06M03
	C/S	10.2656***	1	02M02	-10.3033***	02M02	-120.8414***	02M02
Philippines	C	-5.1772	1	08M02	-7.2183***	08M04	-78.6622***	08M04
	C/T	-8.3077***	0	08M02	-8.9995***	08M04	-109.2797***	08M04
	C/S	-9.2069***	0	03M09	-9.2336***	03M09	-118.5298***	03M09
Singapore	C	-6.8410***	2	01M04	-14.2996***	01M08	-225.1693***	01M08
	C/T	-6.7799***	2	01M08	-14.2438***	96M03	-224.3024***	96M03
	C/S	-7.0358***	2	01M09	-14.4494***	93M05	-227.6889***	93M05
Thailand	C	-10.2830***	0	96M02	-10.5565***	96M05	-151.1832***	96M05
	C/T	-10.2253***	0	96M02	-10.4627***	96M05	-149.3784***	96M05
	C/S	-7.7514***	1	96M02	-10.7392***	96M03	-155.4267***	96M03
UK	C	-4.5056	2	93M01	-7.8966***	01M01	-93.4370***	01M01
	C/T	-4.5113	2	93M01	-8.1242***	97M11	-97.1811***	97M11
	C/S	-5.7304	2	93M06	-10.6807***	01M01	-154.2188***	01M01
US	C	-11.0158***	1	96M10	-11.0383***	96M10	-163.0471***	96M10
	C/T	-11.8577***	1	98M06	-11.8820***	98M06	-179.0699***	98M06
	C/S	-12.8058***	1	98M06	-12.8321***	98M06	-196.3106***	98M06

Note: TB is the endogenous structural break date detected. (**) (***) denotes statistical significance at the (5)(1)% level.

Table 4a: Long-run Estimates of Malaysian Exports

Export Destination	Independent Variables			
	Constant	IP	RER	CHNEX
Australia	-10.1160*** (-1.8279)	2.8229*** (0.4597)	0.4932 (0.1976)	0.3980 (0.0530)
Germany	-10.6293*** (2.3405)	3.4525*** (0.5923)	0.2446 (0.4522)	-0.0088 (0.1115)
India	15.1610*** (4.6861)	-4.5575*** (1.6016)	1.8385*** (0.6718)	1.3050*** (0.2946)
Indonesia	12.5963** (5.0515)	-2.3549* (1.2686)	1.5311** (0.7553)	0.8553*** (0.1716)
Japan	13.1281*** (3.3701)	-2.1237*** (0.7245)	0.0014 (0.3672)	0.4352*** (0.0489)
Korea	12.7946** (5.8443)	0.1979 (0.9696)	1.8625** (0.8836)	0.3228 (0.3711)
Netherland	-9.3503 (6.1649)	3.1317** (1.4619)	0.5252 (0.5652)	0.0717 (0.1626)
Philippines	4.5421 (7.2524)	-1.3120 (1.5418)	-1.8461*** (0.6896)	0.3153* (0.1854)
Singapore	-5.7792*** (2.0064)	7.3040*** (1.2380)	-7.1718*** (1.6688)	-1.7426*** (0.3879)
Thailand	-8.1743** (3.8572)	3.7228*** (1.1581)	-0.4105 (1.5046)	-0.7299 (0.4556)
UK	7.2839** (2.9245)	-0.6315 (0.6688)	0.0393 (0.1668)	0.1716*** (0.0303)
US	-5.9703*** (2.1000)	3.0312*** (0.6420)	-0.6824** (0.3293)	0.0526 (0.0679)

Notes: (*)(**) (***) denotes statistical significance at the (10)(5)(1)% level respectively. Reported in parentheses are standard errors. IP – Industrial Production, RER – bilateral real exchange rate, CHNEX – Chinese exports to Malaysian Trading Partners.

Table 4b: Long-run Estimates of Malaysian Trade Balance

Export Destination	Independent Variables				
	Constant	IP	IP*	RER	CHNEX
Australia	-4.0460*** (1.5651)	-1.2483*** (0.3078)	1.7687*** (0.3696)	0.1067 (0.1927)	0.2793*** (0.0907)
Germany	0.1413 (1.0925)	-0.5991*** (0.1947)	0.1659 (0.2667)	0.4061*** (0.0985)	0.1908** (0.0778)
India	-12.2228*** (3.7152)	1.0778 (0.7318)	1.1738 (0.7709)	1.2588 (0.9608)	-0.2758 (0.1848)
Indonesia	-3.2234* (1.5012)	0.0062 (0.2235)	0.3302* (0.1833)	0.2468*** (0.0802)	-0.0475 (0.0654)
Japan	-11.6637*** (2.7934)	-4.0287*** (0.5120)	3.7451*** (0.5040)	-0.1690 (0.3470)	1.5831*** (0.2165)
Korea	3.2657** (1.4314)	-2.5386*** (0.3908)	2.9473*** (0.3608)	-0.4223* (0.2198)	-0.3097*** (0.0392)
Netherland	-3.2918* (1.8541)	0.3838 (0.3677)	0.4308 (0.4928)	0.5125*** (0.1183)	0.1871 (0.1163)
Philippines	-28.8298*** (7.4304)	-1.4676* (0.8124)	5.3220*** (0.7663)	1.7701*** (0.3768)	0.8151*** (0.2382)
Singapore	-0.3120 (0.7823)	-0.4754*** (0.1035)	0.5579*** (0.1222)	-0.0552 (0.0809)	-0.0612** (0.0289)
Thailand	0.9948** (0.4721)	-0.5168*** (0.1707)	0.3839** (0.1731)	-0.0803 (0.1424)	-0.0249 (0.0595)
UK	-12.0537*** (1.8715)	-0.7729** (0.3579)	3.0883*** (0.4543)	0.1747 (0.3080)	0.2540** (0.1012)
US	-4.4075*** (1.1308)	-0.7072*** (0.2277)	1.4457*** (0.3868)	0.3000* (0.1765)	0.1108** (0.0554)

Notes: (*)(**) (***) denotes statistical significance at the (10)(5)(1)% level respectively. Reported in parentheses are standard errors. IP – Domestic Industrial Production, IP* - Foreign Industrial Production, RER – bilateral real exchange rate, CHNEX – Chinese exports to Malaysian Trading Partners.

Table 5a: Error Corrections and Short run Dynamics of Malaysian Exports

Export Destination	Independent Variables								ECT$_{t-1}$
	DMALEX$_{t-1}$	DMALEX$_{t-2}$	DRER$_{t-1}$	DRER$_{t-2}$	DIP$_{t-1}$	DIP$_{t-2}$	DCHEX$_{t-1}$	DCHEX$_{t-2}$	
Australia	-0.1003		-0.3155		0.4613		-0.2448**		-0.6793***
	[-0.8537]		[-0.7089]		[0.7315]		[-2.2405]		[-4.4951]
Germany	-0.4204***		0.2632		0.2373*		0.0579		0.0107
	[-4.5901]		[0.9529]		[1.8380]		[0.7118]		[0.1933]
India	-0.3243***		-1.2223		-1.5025**		0.2246**		-0.3555***
	[-5.0551]		[-1.6422]		[-3.6190]		[2.0894]		[-5.6888]
Indonesia	-0.0408		0.4915		0.1529		-0.4022**		-0.8548***
	[-0.6050]		[0.7167]		[0.2369]		[-2.5815]		[-9.7435]
Japan	-0.4668***		0.2333		0.1413		0.0255		-0.0214*
	[-7.8094]		[1.4562]		[1.5682]		[0.8586]		[-1.8360]
Korea	-0.2278***		0.1726		0.2216		-0.0532		-0.3260***
	[-3.4206]		[0.6363]		[1.0983]		[-0.9625]		[-5.2306]
Netherlands	-0.3709***		0.4997		0.1145		0.1848**		0.0167
	[-4.1552]		[1.4636]		[0.6401]		[2.0361]		[0.3800]
Philippines	-0.4903***		-0.7467		0.1736		0.1035		0.0090*
	[-6.9672]		[-1.0603]		[0.5982]		[1.0872]		[1.9310]
Singapore	-0.3970***	-0.1129*	-0.4601	-0.0256	-0.3581***	-0.1173	0.1402**	-0.0529	-0.0869**
	[-5.2195]	[-1.54915]	[-1.2542]	[-0.0697]	[-3.5451]	[-1.3879]	[3.9201]	[-1.4925]	[-2.4775]
Thailand	-0.3675***		-0.6067		-0.1409		0.1191**		-0.0143*
	[-6.1324]		[-1.67779]		[-0.8220]		[3.3675]		[-1.7167]
UK	-0.4879***		0.1099		0.2428		0.0733*		0.0288*
	[-8.1366]		[0.5457]		[1.6685]		[1.8083]		[1.7207]
US	-0.3912***		-0.8641**		0.8562**		0.1254***		-0.1421***
	[-5.7929]		[-2.4698]		[2.3350]		[3.0942]		[-3.1260]

Notes: (*)(**) (***) denotes statistical significance at the (10)(5)(1)% level respectively. Reported in parentheses are t-statistics. DMAYEX – Changes of Malaysian exports to trading partners, DIP – Changes of Industrial Production, DRER – Changes of Bilateral Real Exchange Rate, DCHNEX – Changes of Chinese exports to Malaysian Trading Partners.

Table 5b: Error Corrections and Short run Dynamics of Malaysian Trade Balance

Export Destination	Independent Variables											ECT$_{t-1}$
	C	DMALTB$_{t-1}$	DMALTB$_{t-2}$	DIP$_{t-1}$	DIP$_{t-2}$	DIP*$_{t-1}$	DIP*$_{t-2}$	DRER$_{t-1}$	DRER$_{t-2}$	DCHEX$_{t-1}$	DCHEX$_{t-2}$	
AUS	0.1000	-0.2873**		-0.3009		0.0950		-0.0882**		0.0243*		-0.2943***
	[1.6538]	[-2.3109]		[-0.4718]		[0.5617]		[-2.4074]		[1.8091]		[-3.1008]
GER	0.0008	-0.3293***		-0.1965		0.3378*		-0.1523		-0.0683		-0.0993***
	[0.0865]	[-5.5822]		[-1.0781]		[2.2839]		[-0.80293]		[-1.48706]		[-4.6024]
INDIA	0.0059	-0.4827***	0.0372	0.2725	-0.2986	0.1331	-2.3052***	-0.1306	1.0421	0.4089	0.0384	-0.1592***
	[0.2293]	[-6.7027]	[0.4218]	[0.4350]	[-0.4375]	[0.1739]	[-3.5832]	[-0.2141]	[0.7315]	[1.5061]	[0.25935]	[-4.3364]
INDO	-0.0025	0.0711		0.4169		-0.0379		-0.0562		-0.1438***		-0.9020***
	[-0.1628]	[1.1093]		[1.3868]		[-0.1788]		[-0.2411]		[-2.7498]		[-10.7440]
JAP	0.0007	-0.4529***		0.1718		-0.5683***		-0.1580		0.1013**		-0.0251*
	[0.0979]	[-7.6900]		[1.1314]		[-5.4327]		[-0.5960]		[2.3109]		[-2.1881]
KOR	-0.0037	-0.2837***		-0.1314		0.0213		0.2165		0.0119		-0.1976***
	[-0.2407]	[-4.4066]		[-0.4017]		[0.0722]		[0.4578]		[0.5087]		[-3.6527]
NET	0.0048	-0.4320***		0.1863		-0.7359*		-0.1729		-0.0233		-0.0229**
	[0.2300]	[-7.4814]		[0.4697]		[-2.1121]		[-0.4718]		[-0.2455]		[-2.5915]
PHI	-0.0085	-0.4045***		-0.1396		-0.2182		0.3680		0.3681		-0.1451***
	[-0.3947]	[-5.3033]		[-0.2983]		[-0.5994]		[0.4015]		[1.2410]		[-2.8010]
SNG	-0.0014	-0.2297**	-0.2069***	0.0004	0.0778	0.0800	-0.0011	-0.0919	0.2468	0.0118	0.0132	-0.5976***
	[-0.2483]	[-2.5779]	[-3.1008]	[0.0030]	[0.6145]	[1.1270]	[-0.0180]	[-0.2390]	[0.6352]	[0.4072]	[0.44943]	[-5.7916]
THA	-0.0021	-0.1817**		0.5229**		0.0231		0.1418		-0.0016		-0.3650***
	[-0.2273]	[-2.7850]		[2.9133]		[0.1473]		[0.4115]		[-0.0479]		[-5.8029]
UK	0.0005	-0.4066***		-0.1968	0.2887	-0.1451	-0.4978***	0.3498	0.0564	-0.0051	0.1030	-0.0741*
	[0.0561]	[-6.0491]		[-0.8122]	[1.1835]	[-0.7147]	[-2.8697]	[0.8182]	[0.1319]	[-0.0853]	[1.75517]	[-2.1441]
US	0.0000	-0.0600		0.4047*		-0.5703		-0.4527		-0.0110		-0.5306***
	[-0.0011]	[-0.9073]		[1.9923]		[-1.1639]		[-1.0068]		[-0.2064]		[-7.6938]

Notes: (*)(**) (***) denotes statistical significance at the (10)(5)(1)% level respectively. Reported in parentheses [ ] are t-statistics. DMAYEX – Changes of Malaysian exports to trading partners, DIP – Changes of Industrial Production, DRER – Changes of Bilateral Real Exchange Rate, DCHNEX – Changes of Chinese exports.