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TRADE DYNAMICS WITH KEY TRADING PARTNERS: IMPLICATIONS FOR THE MALAYSIAN LABOUR MARKET

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ABSTRACT:

This study examines the differential impact of bilateral trade flows with key trading partners of Malaysia on the domestic labour market, by investigating imports based on country of origin and trade structure based on the extent of intra-industry trade. The impact of import sources and trade structure is found to be significant on employment, but limited in the case of wages. There is strong evidence of a positive association between imports from Japan and intra-industry trade with Japan on skills, vis-à-vis the other two trading partners. Generally, the impact of trade of Malaysia seems rather paradoxical to the typology of labour demand if one considers the nature of bilateral flows with the key trading partners.

* The study forms part of the author's ongoing research for the Doctoral dissertation at the University of Malaya.

1. INTRODUCTION

This study investigates if Malaysian trade in manufactures with her major trading partners impacts differentially on the derived demand for labour. Since trade flows and trade patterns vary with different trading partners, it is envisaged that trade invokes different responses in the labour market. The study will thus examine the role-played by trade with Malaysia's key trading partners, which is the ASEAN (Association of Southeast Asian Nations), United States of America and Japan, in altering employment and wages in manufacturing.

This paper is designed in the following manner. Section 2 explains the data employed for the study. Section 3 analyzes the bilateral trade flows and the evolution of trade patterns between Malaysia-ASEAN, Malaysia-US and Malaysia-Japan. Section 4, the core section, is devoted to an empirical study based on panel and cross-industry data for trade, employment and wages. Finally, Section 5 concludes.

2. DATA

The data on exports (X) and imports (M) are derived from the *Malaysia: External Trade Statistics* publications. The data is compiled for industries at the 3-digit Standard International Trade Classification (SITC) level for the period 1983 to 2000 for 19 major industrial groups while detailed trade data at the 9-digit SITC is compiled for the start and end-years of the sample. Exports are valued f.o.b. while imports c.i.f. Both exports and imports are in ringgit Malaysia at current prices. Total manufacturing imports and exports is deflated with the import price and export price index (1980 =100) for the entire economy respectively.

The data set on import volumes are derived for three trading areas: original ASEAN partners (Singapore, Thailand, Philippines and Indonesia, hereafter referred to as the MASEAN), United States of America (MUS) and Japan (MJAPAN). Imports with the numerous other countries are captured as trade with the rest of the world (MROW). Imports as pointed out by Lovely and Richardson (1998) may take the following form: (a) finished goods that displace domestic production directly; (b) outsourcing, defined as the import of components or assembly by firms who previously may have produced these inputs internally. For this study, changes in import volume of trade are conceived as shocks to the demand for labour.

Though employment and wages may be affected by both exports and imports, only the latter is disaggregated into trade by origin. This is because the effects of an increase in exports to low-wage (high-wage) countries are supposed to have both a negative (positive) aspect of the fall out of increased competition in export destinations and the positive (negative) effect of increasing (decreasing) production. Both effects do not manifest into a clear-cut relationship.

Based on aggregate trade flows, the Grubel-Lloyd (GL, 1975) index is employed to measure the extent of trade overlap in manufacturing industries over the period 1983 to 2000. The GL index is also calculated to identify the characteristics of bilateral trade flows with the countries considered. The GL indices, calculated for aggregate trade flows with the above trading countries, is defined as:

$$GL_{ij} = 1-[|X_{ij}-M_{ij}| / (X_{ij} +M_{ij})] *100$$

where

i and j represent the industry and country respectively.

The *nature* of IIT for Malaysian manufactures cannot be calculated at the 3-digit SITC level of aggregation as the quantity measure varies with different products. Thus trade flows with the three trading areas are examined at the 9-digit SITC level of aggregation only for the sample years 1983 and 2000. First, the GL index is calculated at the 9-digit to uncover the traded products that are IIT in nature. In what follows, the GL coefficients of more than 50 per cent is treated as a cut-off point to represent IIT products. Second, since products differ in quality even at the most detailed level of disaggregation, it is assumed that differences in prices (unit values) at the 9-digit level reflect quality differences. Unit values are thus calculated for the IIT products with each trading partner for the two sample years to distinguish that which is vertical (VIIT) and horizontal (HIIT).

Products whose unit values are close are considered to be differentiated horizontally. The criterion adopted is that if the export and import unit values differ by more than 15 per cent, products are considered to be differentiated vertically (see Greenaway *et.al* 1995). Thus HIIT is defined as the simultaneous exports and imports of a 9-digit SITC product where the unit value of exports (UV^X) relative to the unit value of imports (UV^M) is within a range of ± 15 per cent (limited differences in unit values), $0.85 \leq (UV^X/UV^M) \leq 1.15$. VIIT therefore refers to the relative unit value of exports and imports outside this range (large differences in unit values), $(UV^X/UV^M) < 0.85$ or $(UV^X/UV^M) > 1.15$. Within the IIT products that are

vertical in nature, high quality (HQVIIT) and low quality products (LQVIIT) are further differentiated.

Labour data (employment and wages) is drawn from manufacturing surveys (based on the Malaysia Industrial Classification, MIC) conducted annually by the Department of Statistics (DOS) Malaysia. The study will only consider full-time paid employees (N), which excludes working proprietors and active business partners, unpaid family workers and part-time paid employees. Similarly, only the wages and salaries of full-time employees are considered for the study. The wage variable refers to the average yearly earnings per full-time employee in each industry. All wage variables are deflated by the Malaysian consumer price index (at constant 1980 prices).

The definition of skills used for the study is solely based on occupational groupings governed by the availability of data from the manufacturing surveys. Skilled workers refer to the number of employees in the managerial, professional, technical and supervisory categories. Unskilled workers comprise production/operative workers. The real average wages for skilled and unskilled workers are constructed based on their average yearly earnings, as in the case of total average wages.

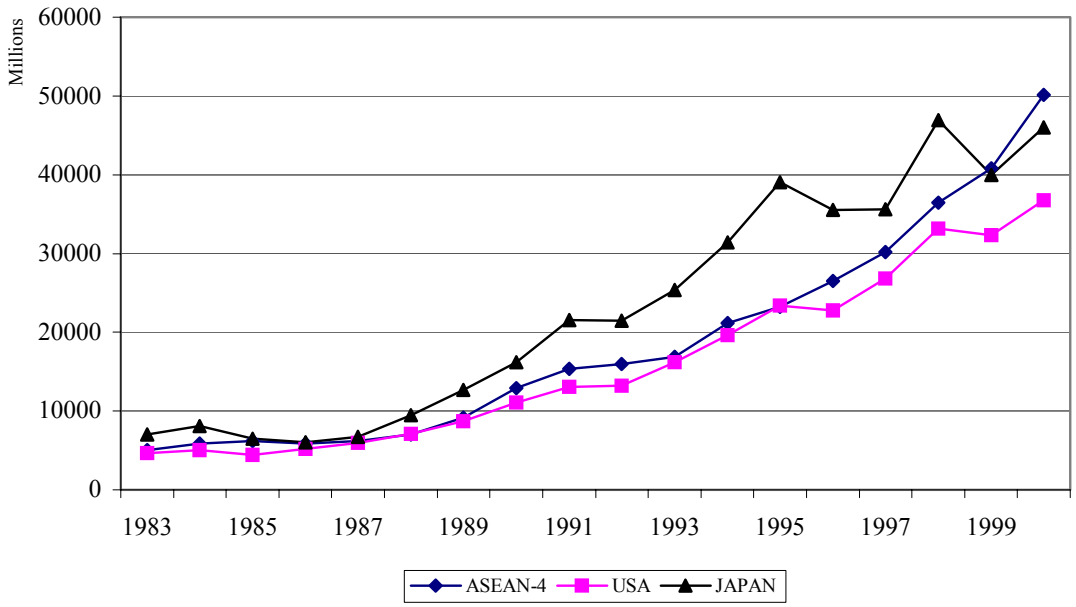
Integrating trade, labour market and industrial statistics, the empirical analysis involves a panel data set of 19 major industrial groups, spanning the period 1983 to 2000. For the cross-section analysis of 1983 and 2000, a concordance table is established linking trade (based on SITC) and labour (based on 5-digit MIC) data in Malaysia at a disaggregated level. The final number of sub-industries obtained for the cross-section analysis is 67 and 71 observations for 1983 and 2000 respectively.

3. TRADE PATTERNS BY MAJOR TRADING PARTNERS

The importance of Malaysia's key trading partners is presented in Figure 1. Imports from the ASEAN, US and Japan have been steadily rising with time. The average annual growth rate of real imports from ASEAN between 1983 and 2000 is 15 per cent, and 13 per cent each for imports from the US and Japan. In addition to the rise in growth rates, all three countries are of equal importance in terms of their share of imports in total Malaysian imports. In 1983, Japan accounted for 22 per cent of total manufacturing imports followed by ASEAN and the US, with import shares of 16 and 15 per cent respectively. In 2000, ASEAN increased its share to 22 per cent, followed by Japan (21 per cent) and the US (16

per cent). The three trading partners thus represent a fairly balanced group with almost similar growth rates in imports and shares in total imports.

Figure 1: Imports from Major Trading Partners

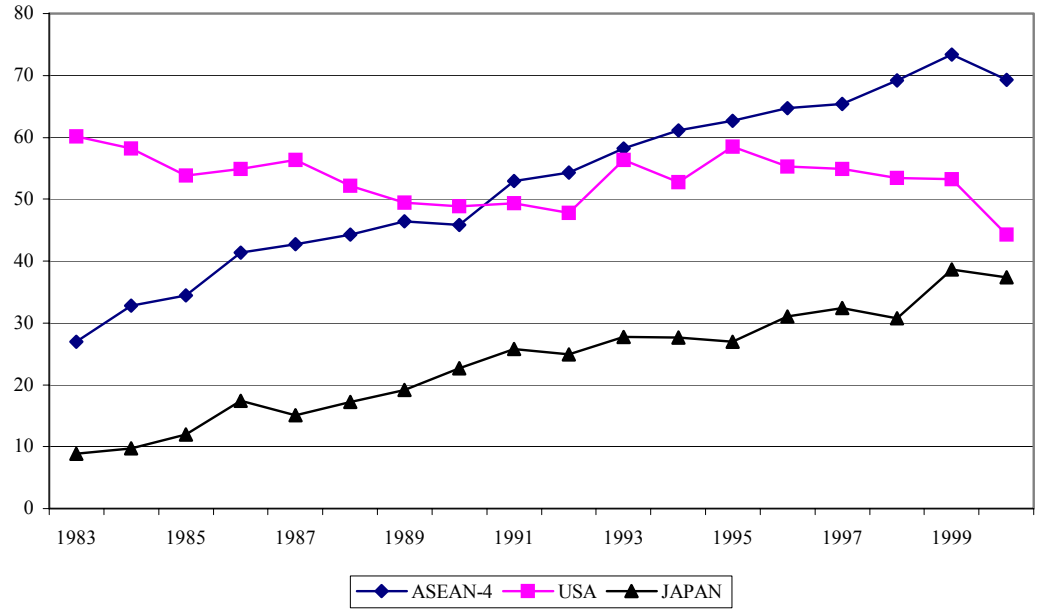


Source: Calculated from *Malaysia: External Trade Statistics*, various issues.

Note: Import values are measured in real terms.

Import flows alone reveal little about the specialization of trade in the bilateral trade flow context. Thus, it is useful to identify the patterns of IIT as presented in Figure 2. It is obvious that though the share of Malaysian-ASEAN trade flows in total trade in manufactures has not changed much over the years; IIT has grown remarkably from 27 per cent of total trade to 69 per cent between 1983 and 2000. IIT with ASEAN only surpassed the 50 per cent benchmark in 1991, indicating the predominance of inter-industry trade in the 1980s. The increase in IIT in the recent past may be attributed to the increasing reliance on intra-regional production networks where parts, components and other intermediate goods are produced across the ASEAN region and brought together in one location for final assembly. This type of imports is basically known as outsourcing, which results in high trade activity within the same industry.

Figure 2: GL Indices by Country, 1983-2000



Source: Calculated from *Malaysia: External Trade Statistics*, various years.

Note: IIT indices calculated based on 3-digit level of SITC aggregation.

IIT with the US has declined instead by 27 per cent from a high 60 per cent in 1983 to 44 per cent in 2000. Nevertheless for the entire period of 1983-1999, trade with the US has basically been that of IIT. Conversely, one way (inter-industry) trade characterizes trade with Japan for the entire period of study and by 2000; only 33 per cent of total trade with Japan is IIT.

A further breakdown of IIT into its vertical (VIIT) and horizontal (HIIT) components is considered imperative after noting the substantial change in trade specialization, particularly with ASEAN, and to a large extent the US.

The results in Table 1 suggest that IIT is a significant phenomenon in the Malaysian-ASEAN context compared to trade with the US and Japan since IIT represents approximately 25 per cent of the total number of products traded in 1983 and 2000. Within the IIT range, VIIT dominates HIIT in the Malaysian-ASEAN trade.

Table 1: Nature of IIT with Major Trading Partners

	1983					2000				
		% of total IIT		% of total VIIT			% of total IIT		% of total VIIT	
Country	IIT*	VIIT	HIIT	HQVIIT	LQVIIT	IIT*	VIIT	HIIT	HQVIIT	LQVIIT
ASEAN	24.62	63.02	36.98	51.84	50.09	25.00	85.95	14.05	47.39	52.61
US	4.13	47.66	52.34	59.02	40.98	9.91	92.21	7.79	35.92	64.08
JAPAN	2.12	61.64	38.36	57.78	42.22	7.60	89.89	10.11	35.21	64.79

Source: Calculated from *Malaysia: External Trade Statistics*, various years.

Note: *Represents the percentage of products that are of IIT (GL > 50%). IIT indices are calculated at the 9-digit SITC.

The dominance of vertical trade over horizontal trade shifts the focus to quality differentiation. Table 1 shows that slightly more than half of Malaysian VIIT with ASEAN takes the form of HQVIIT, particularly in 1983. This means that the export unit value is generally higher than the import unit value, implying that Malaysia exports costlier varieties of a product to ASEAN of which it imports cheaper varieties from. However in 2000, a slight deterioration in the quality of products traded between Malaysia and ASEAN is noted. Approximately 53 per cent of trade in vertically differentiated products was that of low quality, implying a higher quality of imports. One probable explanation could be that Malaysia; too a certain extent does face some competition with the other ASEAN member countries since their export structures are considerably similar.

Though IIT is not found to be that important for Malaysia-US and more so for Malaysia-Japan trade, it is important to compare the nature of IIT with these countries with that of ASEAN. VIIT is found to be much more important as by 2000, more than 90 per cent of IIT products is vertically differentiated. However it should be pointed out that IIT does not dominate trade flows with the US and also for Japan. From Table 1 it is shown that IIT products only make up 10 per cent and 8 per cent of the total number of products traded with the US and Japan in 2000 respectively. More importantly is that trade with the US and Japan takes the form of HQVIIT in 1983. However in 2000, LQVIIT dominates IIT flows with the US and Japan, implying a shift towards high quality imports from both countries.

The trade flows and trade structure by trading partners point to some noteworthy differences. The significant differences in the structure and nature of trade flows as pointed out should to a certain extent be reflected on employment and wages.

4. EVIDENCE ON IMPACT OF TRADE WITH DIFFERENT TRADING PARTNERS

4.1 Estimating Equations

The empirical analysis to uncover trade flow links with labour is rooted in a partial equilibrium framework. The analysis is conducted within the framework of a fairly simple profit-maximizing model of firm behaviour (based upon Greenaway *et al*., 1999). The influence of foreign competition *via* the changes in trade on the demand for labour and wages is investigated directly by including trade terms (exports and imports) in the employment and wage equations. Labour demand is assumed to depend on a technology indicator, which in turn is assumed to depend on the volume of trade. The rationale for these terms is that an increase in the openness of the industry may induce either "efficiency" effects in the case of labour demand or discipline effects in the case of wages.

Greenaway *et.al* (1999) consider the dynamics of the employment equation. The dynamic relationships, characterized by the presence of a lagged dependent variable among the regressors, are considered to examine the path of employment, (and wages) as the labour market moves between old and new equilibria in response to trade. This is due to the existence of adjustment costs of changing employment (net changes), and thus wages. The dynamic specification for wages also allows for the possibility of sticky adjustment through time. Generally, the important aspect related to dynamics concerns the interpretation of the long run and short run effects.

The employment and wage equations are differenced to transform out the industry specific fixed effects, and dynamic equations estimated are as shown below respectively:

$$\Delta \ln N_{it} = -\mu_0 - \Sigma\mu_{1j}\,\Delta \ln M_{i,t-j} - \Sigma\mu_{2}j\,\Delta \ln X_{i,t-j} + \Sigma\varphi_{0j}\,\Delta \ln N_{i,t-j} + \Sigma\varphi_{1j}\,\Delta \ln W/N_{i,t-j} + \Sigma\varphi_{2j}\,\Delta \ln VA_{i,t-j} + \Delta\varepsilon_{it}$$

$$\Delta \ln w_{it} = -\mu_0 - \Sigma\mu_{1j}\,\Delta \ln M_{i,t-j} - \Sigma\mu_{2}j\,\Delta \ln X_{i,t-j} + \Sigma\varphi_{0j}\,\Delta \ln N_{i,t-j} + \Sigma\varphi_{1j}\,\Delta \ln W/N_{i,t-j} + \Sigma\varphi_{2j}\,\Delta \ln VA_{i,t-j} + \Delta\acute{\eta}_{it}$$

where

N_{it} = total employment in industry i in time t

M_{it} = real imports in industry i in time t

X_{it} = real exports in industry i in time t

W/N_{it} = average real wage per employee in industry i in time t

VA_{it} = real value added in industry i in time t

ε and ή represent error terms that pick up random measurement errors in employment and wages respectively and the effects of labour demand shocks on employment and wages, which are not picked up by the included independent variables.

Since the differencing induces a bias in the coefficient on the lagged dependent variable because of the correlation between it and the unobserved fixed effects in the residual, an instrumental variable approach is adopted. The method used is the generalized method of moments (GMM) technique of Arellano and Bond (1991), which uses lags of the endogenous variables dated t-2 and earlier as instruments since external instruments are difficult to find. The GMM estimator is adequate in this case because of the large number of observations.

Greenaway *et.al* (1999) disaggregate import data in the above equations based on region of origin to examine the differential impact on labour demand. It is conceived theoretically that an increase in imports from a skilled abundant country will substitute skilled intensive activities domestically. This will thus be viewed as a negative shock to the demand for skilled labour. Given an upward sloping supply of labour to the industry, this shock should result in reduced premium of skilled workers. Increased imports from a skilled abundant country thus imply a shift toward less skilled intensive activities, resulting in higher premium for less skilled workers. Lovely and Richardson (1998) further examine the impact of trading partners by incorporating the pattern of trade specialization (GL index to measure IIT).

The above arguments may fit the description of Malaysia-Japan one-way trade, but the picture seems less clear for trade with the US and ASEAN for two reasons. First, even though the US (as in the case of Japan) is relatively more skilled endowed than Malaysia, the Malaysia-US trade flows involve IIT, a typology of trade that is not accounted for in traditional trade theory. At the other extreme Malaysia-ASEAN trade flows, which are also predominantly IIT, also do not fit snugly in the theoretical arguments since only Indonesia, Thailand and Philippines (with the exception of Singapore) are lower income countries. Second, within the IIT range of bilateral flows with ASEAN and the US, there is also the question of product differentiation based on quality. Most of the products traded with

ASEAN comprise a combination of both high and low quality products (approximately 50:50 based on 1983 and 2000 data in Table 1) while trade flows with the US indicate a shift towards low quality products.

Thus IIT becomes an important factor for labour market analysis. If the positive relationship between the quality of products and skill of workers necessary for their production holds, lower quality goods should be associated with low skilled workers, and *vice versa* for high quality goods. Based on the differences in the nature of trade for Malaysia-ASEAN and with the other two countries, one would expect a differential impact on different category of workers resulting from both trade flows.

It is expected at the very least that Malaysia-ASEAN and Malaysia-Japan would have opposite implications for the domestic labour market as the structure of trade flows are completely different. Malaysia-US trade flows may also provide a very good case to compare with Malaysia-ASEAN trade flows if the nature of IIT (product quality) is taken into account.

4.2 Panel Estimates

Table 2 presents the GMM estimates of the dynamic employment equations. The results of the one-step model are reported though the null hypothesis of no first-order correlation in the difference residuals is rejected for all specifications, since Arellano and Bond (1991) recommend the one-step results instead of the two-step standard errors for inference on coefficients. The one step results are found to be free of second order autocorrelation for all specifications.

As expected, employment responds negatively to wages and positive to output in all specifications in Table 2. With regards to trade, the contemporaneous effects of exports on employment are positive and significant only for the unskilled labour specification (column (3)) and negative (though insignificant) for aggregate employment and skilled employment (column (2)). This is not surprising since Malaysian exports are found to embody lower skills than imports (Bashir, 2000). The discussion below will focus on the coefficient estimates of imports by country of origin.

Table 2: Employment Equations for Malaysian Manufacturing, by Trading Partner

Independent	(1)		(2)		(3)	
Variable	coefficient	Std. Err.	coefficient	Std. Err.	coefficient	Std. Err.
cons	0.002	0.002	0.002	0.002	neg.	0.003
N(t-1)	-0.002	0.084	-0.114	0.124	-0.295**	0.169
N(t-2)	-0.074	0.078	-0.152*	0.053	-0.225*	0.053
(W/N)t	-1.034*	0.184	-1.017*	0.137	-0.134**	0.072
(W/N)t-1	-0.277*	0.136	-0.145	0.140	-0.152**	0.084
(W/N)t-2	-0.348*	0.088	-0.254*	0.122	-0.171	0.115
VAt	0.115	0.079	0.078	0.084	0.226**	0.120
(VA)t-1	0.044	0.036	0.060	0.040	0.082*	0.032
(VA)t-2	0.041	0.043	0.043	0.045	0.051	0.057
Xt	-0.028	0.027	-0.067	0.050	0.086**	0.046
Xt-1	-0.084*	0.021	-0.047	0.031	-0.005	0.053
Xt-2	0.020	0.033	0.054	0.033	0.028	0.055
MASEANt	0.055*	0.021	0.057*	0.019	0.116*	0.036
(MASEAN)t-1	0.024	0.029	0.058**	0.031	0.073**	0.038
(MASEAN)t-2	0.013	0.020	0.054*	0.026	0.047**	0.029
MUSt	0.040*	0.018	0.046*	0.018	0.033*	0.015
(MUS)t-1	0.046*	0.022	0.038	0.027	0.024	0.035
(MUS)t-2	-0.010	0.019	-0.006	0.024	-0.031	0.021
MJAPANt	0.058*	0.010	0.051	0.033	0.099*	0.038
(MJAPAN)t-1	0.071*	0.025	0.087*	0.024	0.058*	0.021
(MJAPAN)t-2	0.028	0.027	0.079*	0.039	-0.033	0.032
MROWt	0.059*	0.021	0.042	0.028	0.137*	0.043
(MROW)t-1	0.065*	0.026	0.057**	0.031	0.131*	0.051
(MROW)t-2	0.006	0.016	0.034	0.024	0.058	0.038
2nd order serial correlation	-0.97		-0.91		-1.07	
Wald test	1734.68 (18)		981.21 (18)		619.78 (18)	
No. of obs.	266		266		266	

Note: 1. The dependent variable is employment for specification (1), while specifications (2) and (3) refer to skilled employment and unskilled employment respectively.

2. The robust standard errors are reported.

3. The Wald test is a test of the joint significance of the independent variables asymptotically distributed as a chi-square under the null of no relationship. The figure in parenthesis represents the number of coefficients estimated (excluding time dummies).

* significant at 5% and ** significant at 10%

Based on column (1) of Table 2, it can be inferred that Malaysia's commercial relations with ASEAN, the US and Japan do not appear to cause job losses in the presence of increasing imports. The current variable of imports from all three trading partners is positive and significant at 5 per cent level. The long run impact of imports also exerts a positive impact on employment but is found to be larger numerically (see Table 3) than the corresponding short run impact. Imports from Japan render the largest long run estimates than imports from ASEAN and the US.

Table 3: Long Run Parameters of the GMM Estimates for Employment Functions

Import Variable	(1)	(2)	(3)
(MASEAN)t	0.086	0.133	0.155
(MUS)t	0.071	0.062	0.017
(MJAPAN)t	0.146	0.171	0.082
(MROW)t	0.121	0.105	0.214

Source: Calculated from Table 2.

The overall positive but small impact on demand for labour resulting from imports from ASEAN (and too a large extent the US) may well be a result of any loss at a certain quality level offset by a gain in another quality level within the same industry due to the high level of IIT. Thus the alteration to overall employment is not as significant as trade with other countries.

Since trade flows with Malaysia's trading partners also differs in terms of quality, the employment equations are further disaggregated into skilled and unskilled. Columns (2) and (3) in Table 2 present the panel estimates for skilled employment and unskilled employment respectively.

Imports from ASEAN have a contemporaneous positive and significant effect on skilled and unskilled labour. The deductive reasoning for the above impact can be made if one reverts to the type of IIT characterizing Malaysia's relations with ASEAN, as discussed in Section 3. The relatively high short run and long run impact of imports with ASEAN is as expected since trade flows with the former involves an almost equal mix of both high and low valued imports relative to exports (based on Table 1).

However, when trade with the US and Japan is considered, the findings do not accord so well with theory. The significant positive effect of contemporaneous imports from US on skilled labour in particular is quite unexpected. As for imports from Japan, only unskilled workers gain significantly. Though skilled workers are not displaced from imports from Japan, they do not gain significantly. Before drawing any conclusions, it would be useful to further investigate the differential impact of trading partners in the long run.

Based on Table 3, the long run coefficient estimate of MJAPAN in the skilled employment function is found to be the largest. It has been pointed out that trade with Japan is typically that of inter-industry trade and even within the limited range of IIT products, imports are relatively that which is of higher value than the corresponding exports. Therefore, one would expect imports from Japan to displace skilled labour, if not in the short run at least in the long run. A possible explanation for the large positive association could be that within the lower quality ladder of products traded with Japan, Malaysia utilizes skilled workers as the skills in Malaysia is not equivalent to the skills in the latter countries.

Generally, the results on employment functions do not point to a distributional conflict expected from the differential nature of trade flows with the key trading partners of Malaysia. The evidence instead indicates that both skilled and unskilled workers gained in the short and long run, irrespective of the import sources. However, the long run impact on employment functions (as reported in Table 3) produces some striking differences based on the magnitude of the impact. Aggregate employment and skilled employment gains are found to be largest for imports from Japan, whilst unskilled labour gains most from ASEAN imports.

The major trading partners have affected employment and thus may have an impact on wages. Table 4 presents the GMM estimates of the one-step model of the dynamic wage equations. Equations (1) and (2) in Table 4 are found to be free of second order serial correlation. However in the presence of significant second order serial correlation for the average unskilled wages per employee function (equation (3)), the lag length is increased from 2 to 3.

As reported in Table 4, employment growth impacts negatively on wage growth whilst the latter is positively associated with output growth. The signs on the coefficient estimates of exports for the wage functions follow the results obtained for employment functions. However, current exports are found to be significantly associated only with total average wages. Conversely, the effect of imports on wages is mixed.

Table 4: Wage Equations for Malaysian Manufacturing, by Trading Partner

Independent	(1)		(2)		(3)	
Variable	coefficient	Std. Err.	coefficient	Std. Err.	coefficient	Std. Err.
cons	0.003*	0.001	0.001*	neg.	0.010	0.009
W/N(t-1)	-0.045	0.052	-0.214*	0.065	-1.264*	0.206
W/N(t-2)	0.009	0.049	-0.223*	0.086	-1.701*	0.400
Nt	-0.231*	0.076	-0.198*	0.058	-0.318*	0.113
Nt-1	0.120*	0.038	-0.016	0.041	-0.457*	0.171
Nt-2	0.100*	0.035	-0.012	0.042	-0.537*	0.241
Nt-3	-	-	-	-	0.721*	0.170
VAt	0.023	0.017	0.024*	0.011	0.049	0.064
(VA)t-1	-0.013	0.013	0.017	0.021	0.080	0.085
(VA)t-2	neg.	0.013	0.019	0.013	0.004	0.061
(VA)t-3	-	-	-	-	0.030	0.091
Xt	-0.039*	0.014	-0.012	0.015	0.037	0.082
Xt-1	-0.013	0.014	0.016	0.013	-0.079**	0.041
Xt-2	0.033*	0.012	0.062	0.02	-0.079	0.070
Xt-3	-	-	-	-	-0.021	0.063
MASEANt	-0.008	0.009	0.001	0.012	0.134*	0.058
(MASEAN)t-1	-0.011	0.012	-0.008	0.014	0.151**	0.078
(MASEAN)t-2	-0.001	0.012	0.01	0.017	0.007	0.076
(MASEAN)t-3	-	-	-	-	-0.008	0.053
MUSt	0.012	0.012	0.002	0.009	0.026	0.033
(MUS)t-1	0.005	0.009	0.009	0.014	0.037	0.03
(MUS)t-2	0.009	0.007	0.025	0.021	0.041	0.046
(MUS)t-3	-	-	-	-	-0.016	0.037
MJAPANt	0.021	0.014	0.020**	0.01	-0.040	0.027
(MJAPAN)t-1	0.029*	0.011	0.036*	0.015	-0.045	0.040
(MJAPAN)t-2	0.009	0.014	0.022**	0.012	-0.007	0.034
(MJAPAN)t-3	-	-	-	-	0.077*	0.039
MROWt	-0.014	0.009	-0.024*	0.009	0.100**	0.060
(MROW)t-1	neg.	0.007	-0.005	0.011	0.145*	0.070
(MROW)t-2	-0.012**	0.007	0.006	0.008	0.083	0.059
(MROW)t-3	-	-	-	-	0.059*	0.029
2nd order serial correlation	-0.96		0.62		0.48	
Wald test	4584.07 (18)		601.82 (18)		1245.37 (18)	
No. of obs.	266		266		266	

Note: 1. The dependent variable is average wage for specification (1), while specifications (2) and (3) refer to skilled wage and unskilled wage respectively.

2. The robust standard errors are reported for specifications (1) and (2).

3. The Wald test is a test of the joint significance of the independent variables asymptotically distributed as a chi-square under the null of no relationship. The figure in parenthesis represents the number of coefficients estimated (excluding time dummies).

* significant at 5% and ** significant at 10%

Based on column (1) of Table 4, all countries do not seem to affect contemporaneous average wages significantly. Imports from ASEAN and the ROW are negatively associated with average wages and *vice versa* for that from the US and Japan. The signs remain the same when the long run impact is considered (see Table 5).

Table 5: Long Run Parameters of the GMM Estimates for Wage Functions

Import Variable	(1)	(2)	(3)
(MASEAN)t	-0.019	0.002	0.072
(MUS)t	0.025	0.025	0.022
(MJAPAN)t	0.057	0.054	-0.004
(MROW)t	-0.025	-0.016	0.098

Source: Calculated from Table 4.

A breakdown of wage functions by skill levels point to skilled wage discipline of MROW, both in the short and long run. Running counter to theoretical arguments again is the positive impact of imports from the US and Japan on skilled wages. In fact the contemporaneous effects of imports from Japan are significant at 10 per cent. Again the magnitude of the estimates in the long run is found to be largest in the case of imports from Japan. The impact of imports from Japan on wages generally follows from the large gains incurred on skilled employment as reported in Table 3.

The impact of imports from Japan is also controversial when unskilled labour is taken into account (column (3) of Table 4). Imports from Japan causes wage discipline for the unskilled in the short (albeit insignificant) and long run.

Unlike that for employment, there is a distributional conflict on average wages of skilled and unskilled. The direction of the impact on the earnings of skilled and unskilled varies with imports from different trading partners.

4.3 Cross Section Estimates

The differential impact of trading partners on labour is further investigated by applying cross-section regressions using a more disaggregated industrial data set. The cross-section analysis aims to look at competing goods (imported goods) not merely based on the

country of origin (as analyzed using panel data in the preceding section) but the structure of trade (product differentiation resulting from IIT). Though inferences were made in the panel analysis on the influence of the nature of trade flows, it may not be accurate to draw parallels with the latter merely based on the 1983 and 2000 data only. The nature of trade flows identified in both years could probably be subject to year specific shocks. In this context, the cross-section analysis for 1983 and 2000 complements the panel analysis.

The cross-section estimation proceeds as follows. First, preliminary checks are performed, particularly to detect the presence of major outliers and testing for heteroskedasticity. As no major problems are found, the simple OLS is applied and the robust standard errors are specified.

Table 6 presents the cross-sectional results for aggregate employment, and the breakdown into skilled and unskilled employment for 1983 and 2000. The focus is on the coefficients of the import variables since the other variables are all found to have the correct signs and have been discussed in the panel results.

Only imports from ASEAN are found to be important for aggregate employment, with significant positive association observed in 1983. Weak positive association is obtained between imports from Japan and employment in 1983. However a breakdown of employment by skills reveal that import sources are relevant.

Imports from ASEAN are positively linked to skilled labour in 1983, but turns negative in 2000. This is rather consistent with the nature of trade flows examined since the 1983 reflect imports of lower value than the corresponding exports while it is *vice-versa* for the 2000. Thus the negative association in 2000 implies that the higher value of imports have displaced skilled workers. The signs for unskilled labour however do not conform to the above as it is positive in 1983 and turns negative in 2000.

The association of imports from the US and the demand for skilled labour run counter to expectations based on the nature of trade flows. The nature of trade flows point to a lower value of imports from the US in 1983 and *vice versa* for 2000. Thus, the expectations are that imports from the US will increase the demand for skilled labour in 1983 and subsequently reduce the demand in 2000. The evidence instead points to a positive impact of imports from the US on skills in 2000. Conversely the impact on unskilled labour is as expected since the lower value of imports in 1983 have reduced unskilled labour demand whilst the higher value of imports have increased the demand for unskilled.

Table 6: Cross Sectional Employment Equations, by Trading Partner and Trade Specialization

Independent	1983				2000			
Variable	coefficient	Std. Err.	coefficient	Std. Err.	coefficient	Std. Err.	coefficient	Std. Err.
Dependent Variable: Full-Time Employees								
Cons	-1.963	2.297	-2.217	1.977	6.374*	2.356	5.832*	1.995
W/N	-0.455	0.343	-0.498*	0.248	-1.614*	0.214	-1.592*	0.187
VA	0.771*	0.059	0.752*	0.066	0.873*	0.032	0.877*	0.030
X	-0.028	0.042	0.038	0.038	0.024	0.023	0.029**	0.016
MASEAN	0.106*	0.051			-0.063	0.074		
MUS	-0.057	0.039			0.033	0.030		
MJAPAN	0.058**	0.033			0.030	0.032		
MROW	-0.075	0.088			-0.003	0.038		
GL (ASEAN)			0.003**	0.002			-0.001	0.001
GL (US)			0.007*	0.003			0.001	0.002
GL (JAPAN)			0.006	0.004			0.002	0.001
GL (ROW)			-0.008*	0.004			-0.001	0.001
Adj-Squared	0.819		0.856		0.949		0.947	
Dependent Variable: Skilled Employees								
Cons	-6.300*	1.985	-6.121*	1.634	2.347	2.404	2.053	2.742
W/N	-0.293	0.217	-0.348*	0.151	-1.256*	0.196	-1.287*	0.234
VA	0.819*	0.048	0.805*	0.051	0.859*	0.045	0.890*	0.038
X	-0.047	0.036	0.033	0.032	0.019	0.016	0.020	0.017
MASEAN	0.105*	0.047			-0.081	0.058		
MUS	-0.030	0.035			0.046	0.036		
MJAPAN	0.064*	0.030			0.053*	0.024		
MROW	-0.065	0.058			0.002	0.033		
GL (ASEAN)			0.005*	0.002			neg.	0.002
GL (US)			0.005*	0.002			0.001	0.001
GL (JAPAN)			0.003	0.003			0.003*	0.002
GL (ROW)			-0.006*	0.003			0.001	0.001
Adj-Squared	0.881		0.899		0.954		0.950	
Dependent Variable: Unskilled Employees								
cons	-3.192	2.202	-3.346	2.147	6.354**	3.694	6.377*	3.118
W/N	-0.267	0.298	-0.346	0.224	-1.804*	0.388	-1.834*	0.335
VA	0.736*	0.069	0.716*	0.080	0.934*	0.047	0.913*	0.047
X	-0.029	0.059	0.031	0.055	0.032	0.035	0.033	0.026
MASEAN	0.108	0.065			-0.061	0.112		
MUS	-0.062	0.052			0.063	0.055		
MJAPAN	0.087*	0.041			-0.002	0.050		
MROW	-0.113	0.122			-0.037	0.060		
GL (ASEAN)			0.004	0.003			-0.001	0.003
GL (US)			0.009*	0.004			neg.	0.003
GL (JAPAN)			0.008	0.006			0.001	0.002
GL (ROW)			-0.009**	0.004			-0.002	0.002
Adj-Squared	0.719		0.772		0.875		0.874	

As that for the US, the higher value of imports from Japan in 2000 in also does not result in reduced demand for skills. Imports from Japan appear to consistently benefit skilled labour, consistent with the panel findings. Positive significant gains are also evident for unskilled labour in 1983.

Two preliminary conclusions emerge. First, the quality of imports on skilled labour seems to matter only for bilateral flows with ASEAN. Evidence on the imports from the US and Japan do not accord with the quality of imports identified in the specific years. Second, it can inferred that the lack of support for theory in the case of the US and Japan may well be attributed to the fact that IIT is not the main structure of bilateral flows with these countries.

To gauge if the degree or extent of IIT may matter for labour market, the GL indices calculated for the trade flows with the three key partners are incorporated in the employment specification. As pointed out by Lovely and Richardson (1998), the GL indices cannot be meaningfully included in the same regression with export intensity and import penetration ratios since the respective measures are non-linear transformations of the other. In this study, exports are included in the specification because it represents total exports of the particular industry but import flows from the various trading partners are excluded. The results do not vary with the exclusion of the export variable (not reported here) and thus the results on trade specialization with different trading partners are reported for employment and wage specifications with the inclusion of the export variable.

Table 6 reports the results on the impact of trade specialization with different trading partners on employment and skills. The results reveal that intra-industry trade matters most for employment in 1983. Higher IIT with the US results in significantly higher demand not merely for aggregate labour, but for both skilled and unskilled labour.

Conversely, only skilled workers seemed to have gained significantly from higher IIT flows with ASEAN in 1983. Based on 2000 data alone, IIT with Japan is positive and significantly associated with skilled labour. Generally the results on the GL indices of IIT with different trading partners do not suggest any distributional conflict with employment.

The impact of trade flows and trade specialization on employment functions as investigated in Table 7 are further explored to ascertain the impact on wage functions. Table 8 reports the impact of imports from different trading partners on wages.

Table 8: Cross Sectional Wage Equations, by Trading Partner and Trade Specialization

Independent	1983				2000			
Variable	coefficient	Std. Err.	coefficient	Std. Err.	coefficient	Std. Err.	coefficient	Std. Err.
Dependent Variable: Average Wages per Employee								
Cons	4.480*	1.056	4.549*	1.090	5.112*	0.577	4.918*	0.637
N	-0.431*	0.107	-0.094	0.065	-0.442*	0.053	-0.042*	0.018
VA	0.395*	0.095	0.440*	0.083	0.391	0.052	0.411*	0.056
X	-0.019	0.035	0.022	0.031	0.010	0.016	0.013	0.014
MASEAN	0.007	0.039			-0.044	0.029		
MUS	-0.071**	0.040			0.005	0.014		
MJAPAN	0.002	0.030			0.020	0.016		
MROW	0.096	0.063			0.028	0.025		
GL (ASEAN)			0.001	0.002			neg.	0.001
GL (US)			0.006	0.004			neg.	0.001
GL (JAPAN)			0.001	0.004			0.001	0.001
GL (ROW)			-0.008	0.006			neg.	0.001
Adj-Squared	0.267		0.335		0.759		0.738	
Dependent Variable: Average Wages per Skilled Employee								
Cons	5.038*	1.087	4.657*	1.219	5.985*	0.785	5.980*	0.919
SE	-0.035	0.045	-0.087	0.073	-0.047*	0.020	-0.026	0.018
VA	0.361*	0.079	0.417*	0.097	0.325*	0.065	0.323*	0.071
X	-0.010	0.038	0.022	0.032	0.006	0.012	0.006	0.013
MASEAN	-0.003	0.046			-0.036	0.023		
MUS	-0.063	0.043			0.008	0.016		
MJAPAN	0.009	0.029			0.026*	0.012		
MROW	0.080	0.059			0.014	0.024		
GL (ASEAN)			0.001	0.002			neg.	0.001
GL (US)			0.006	0.004			neg.	0.001
GL (JAPAN)			neg.	0.004			0.002*	0.001
GL (ROW)			-0.007	0.006			neg.	0.001
Adj-Squared	0.165		0.243		0.489		0.486	
Dependent Variable: Average Wages per Unskilled Employee								
Cons	5.143*	1.314	5.455*	1.410	5.479*	0.410	5.435*	0.468
USE	-0.018	0.046	-0.093	0.081	-0.001	0.021	neg.	0.024
VA	0.267*	0.103	0.318*	0.088	0.280*	0.035	0.292*	0.035
X	-0.023	0.046	0.013	0.042	0.010	0.019	0.010	0.017
MASEAN	-0.008	0.051			-0.043	0.036		
MUS	-0.102**	0.054			0.003	0.019		
MJAPAN	-0.007	0.038			0.007	0.020		
MROW	0.148**	0.077			0.035	0.029		
GL (ASEAN)			neg.	0.002			neg.	0.001
GL (US)			0.009	0.006			neg.	0.001
GL (JAPAN)			0.003	0.006			neg.	0.001
GL (ROW)			-0.010	0.009			-0.001	0.001
Adj-Squared	0.147		0.229		0.583		0.570	

The signs of the coefficient estimates of imports from different trading partners with respect to average wages in Table 8 follows closely the signs on the demand for labour. However, the impact of import sources on aggregate wages is not significant in all cases.

By skills, imports from Japan again consistently increases the average wages of skilled labour and is found to be significant in 2000 when the imports were of high value. Since import flows *per se* from different sources are found to have a limited impact on wages, trade specialization with the given countries is examined.

The results reveal that the extent of IIT with the different trading partners has no impact on aggregate wages, and on unskilled wages. Trade specialization appears to have an impact on skilled wages based on the 2000 data. Of interest is the impact of trade specialization with Japan. There is a strong positive association between IIT with Japan and skilled wages.

The cross-sectional evidence thus far points to the fact that Malaysia-Japan bilateral trade flows has had important consequences for skills. Though the IIT levels with Japan are relatively low and imports from Japan have been of higher value in 2000, the results consistently indicate a positive association between import flows and IIT with skilled labour and skilled wages. In this respect, the cross-sectional evidence parallels the findings of the panel estimates on import flows from Japan.

In conclusion, the cross-sectional results of the impact of trade of Malaysia and her major trading partners seems rather paradoxical to the typology of labour utilized if one considers the nature of bilateral trade flows with these countries. To a large extent, only imports of ASEAN on employment and wages seem to accord well with theoretical conjectures.

5. CONCLUSION

Trade flows with the Malaysia's three key trading partners reveal the following features. First, the structure of trade flows with the three trade partners is distinctly different. trade with the US mainly follows a pattern of IIT over the period of study, while inter-industry trade characterizes trade with Japan. Trade with the ASEAN has witnessed a growing importance of IIT in the 1990s. Second, VIIT is a large share of IIT with all three countries. However, VIIT takes the form of a combination of high and low-valued imports in the case of Malaysia-ASEAN trade and a shift towards high-valued imports in the case of Malaysia-US trade and Malaysia-Japan trade.

The two major differences in trade structure of the three key trading partners of Malaysia justify the need to distinguish import sources in order to appropriately capture the effects of imports on the domestic labour market.

The general conclusion drawn from the preceding analysis is that an expansion of imports from Malaysia's three major trading partners has an undeniable influence on the labour market. First, the magnitude of this influence is significant in the case of employment, but limited in the case of wages. Second, the results on employment functions do not point to a distributional conflict expected from imports with the key trading partners of Malaysia, but a distribution conflict is observed in the case of wages.

Trade between Malaysia and her major trading partners (ASEAN and Japan and the US) do not seem to lend support to the widespread fears that these flows might cause serious disruptions to the labour market. On the contrary, trade with these partner countries is found to be beneficial, in the sense of exerting overall positive pressures on labour demand. If the broad trends in trade continue unabated, a rise in imports from these countries will not impose an actual threat to labour demand.

The impact differs in terms of wage premiums. Contemporaneous import flows from ASEAN and the US benefits both skilled and unskilled labour significantly, but imports from Japan and the ROW benefits merely unskilled labour. However in the long run, imports from Japan are found to be most important for employment and skilled labour vis-à-vis imports from the US and ASEAN.

In terms of trade structure, again the evidence points to significant influence on employment relative to wages. Higher IIT with ASEAN and the US benefits skilled labour significantly in 1983 only, whilst IIT with Japan is positively and significantly associated with skilled labour and wages in 2000.

Overall, the analysis did not reveal any distinct relationships between the origin of imports and the structure of trade with different trading partners on aggregate employment (and aggregate wages). However, fairly clear relationships are observed when different skills are considered. Market sourcing of import and the structure of trade matters for skills, particularly when trade with Japan is considered.

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