

SIRI KERTAS KERJA

WORKING PAPER SERIES

FEA Working Paper No. 2009-26

**SOCIO-ECONOMIC EFFECTS OF FOREIGN WORKERS ON THE
HOST ECONOMY: THE CASE OF THE MALAYSIAN
MANUFACTURING SECTOR**

Evelyn S. Devadason



**Fakulti Ekonomi dan Pentadbiran
Universiti Malaya**

<http://www.fep.um.edu.my/>



**Faculty of Economics and Administration
University of Malaya
50603 Kuala Lumpur
MALAYSIA**

FEA Working Paper No. 2009-26

**SOCIO-ECONOMIC EFFECTS OF FOREIGN WORKERS ON THE HOST
ECONOMY: THE CASE OF THE MALAYSIAN MANUFACTURING SECTOR**

Evelyn S. Devadason

June 2009

All Working Papers are preliminary materials circulated to promote discussion and comment. References in publications to Working Papers should be cleared with the author(s) to protect the tentative nature of these papers.

SOCIO-ECONOMIC EFFECTS OF FOREIGN WORKERS ON THE HOST ECONOMY: THE CASE OF THE MALAYSIAN MANUFACTURING SECTOR

Evelyn S. Devadason, PhD

Associate Professor

Department of Economics

Faculty of Economics & Administration

University of Malaya

50603 Kuala Lumpur

Malaysia

Tel: (603) 79673726

Fax: (603) 79567252

Email: evelyns@um.edu.my

SOCIO-ECONOMIC EFFECTS OF FOREIGN WORKERS ON THE HOST ECONOMY: THE CASE OF THE MALAYSIAN MANUFACTURING SECTOR

-Abstract-

The large presence of foreign workers in manufacturing has sparked a continuous debate between certain quarters that deem foreign workers as detrimental to the economy and those that find this fear baseless given that the foreign workers complement the local workforce. Given the recent ban by the Malaysian government on the hiring of new foreign workers in factories, it is timely to address the interactive effects of foreign workers with the domestic labour market to provide a better understanding of their role in the Malaysian manufacturing sector. This paper therefore has a two-pronged objective. First, it estimates the impact of foreign workers on relative labour demand and subsequently expounds on the complementary nature of foreign workers with domestic labour. Second, it complements the empirical discussion with social issues on foreign workers

Key Words: *unskilled foreign workers, labour demand, social ills*

1. INTRODUCTION

Malaysia records a total of 1.8 million registered (documented or regular) foreign workers as of year-end 2005 (Central Bank of Malaysia, 2006), a sharp rise from 532,000 workers in 1993 (Abella, 2005). However, illegal (undocumented or irregular) migrants constitute an important part of the migration stream. Illegal workers represent about 40 per cent of the total number of foreign workers. Currently, foreign workers constitute approximately 17 per cent of the Malaysian workforce, (Central Bank of Malaysia, 2006), thereby maintaining her position as the largest importer of labour in Asia (Gurowitz, 1999; Amarjit, 2007).

It is interesting to analyze foreign workers in the Malaysian context due to its historical predominance. Malaysia's role as a labour importing country (Prasai, 1993; Kanapathy, 2006) became more dominant even by the 1970s (Amarjit, 2004) upon her emergence as a "labour scarce" economy. The entry of foreign workers in the 1970s and early 1980s were mainly in plantations (the sector that first hosted migrant workers), as the rural-urban migration drift had "dried up" the agricultural sector. Subsequently, the onset of the mid-1980s recession precipitated a backlash against foreign workers of competing for scarce jobs in the domestic market. However, this notion was soon dispelled when the recession eased and new jobs become available in the construction and the informal manufacturing

sectors. The influx of foreign labour was even greater in the late 1980s with widespread labour and skill shortages¹, drawing the unskilled foreigners into the formal manufacturing and services sectors. Again, the Asian financial crisis in the late 1990s led to a temporary movement to expel unskilled and undocumented foreign workers. Thereafter, foreign labour inflows were encouraged to arrest the decline in foreign direct investment (Tan, 2007).

To date, foreign workers are noted in all the major sectors of the economy. Of the total number of foreign workers in Malaysia, about one third of them are employed in manufacturing (Shamsulbahriah, 2003; Kanapathy, 2004). The reliance on foreign labour until the present day is blamed on the tight labour market conditions and growing dualism [reluctance of domestic workers to perform dirty, demeaning and dangerous (3-D) jobs] in Malaysia. The government promoted the inflow of foreign workers as a short-term response from painful process of adjustments (alleviating labour shortages and lowering labour costs), since neighbouring countries provided opportunities for the importation of low-waged workers. In fact, the temporary shortfall in labour experienced in manufacturing in March 2005 due to some delays in the return of legal foreign workers from Indonesia, led to the hiring of new workers from a number of different countries such as Vietnam, Pakistan, India, Nepal and Myanmar (Central Bank of Malaysia, 2006). However, the current situation once again seems to reverse the preference towards foreign workers, as that witnessed in the mid-1980s recession and the late 1990s Asian financial crisis. With the global financial crisis, there is a freeze in the importation of foreign workers in manufacturing given the number of company closures and ensuing job layoffs.

The historical reliance, changes in the process of hiring (dilemma of arresting and increasing the inflows) foreign workers and the diversification of import sources of labour reflect their critical need in manufacturing. Managing foreign workers, particularly the ability of the domestic labour market to integrate them, is now at the heart of the policy

debate. In this context, it is relevant to assess the socio-economic interactive effects of foreign workers with the domestic labour market to provide a better understanding of their assumed role in the Malaysian manufacturing sector. The study specifically seeks to address the following key questions: Do foreign workers adversely influence relative labour demand? Can foreign workers be blamed in entirety for social insecurities?

The paper is structured in the following manner. The second section highlights the key characteristics of foreign labour, in terms of types and magnitude, to serve as a basis of understanding their role in the labour market. The third section presents the arguments and evidence pertaining to the economic implications of foreign labour to the domestic market. This section also extends the discussion on social issues related to foreign workers. The final section concludes.

2. TRENDS AND CHARACTERISTICS

Foreign workers in Malaysia comprise both expatriates and contract workers. The former consists of skilled technocrats, professional and managerial workers while the latter refers to semi-skilled and unskilled workers. In manufacturing, five expatriate posts are automatically allowed for new investments with paid-up capital of US\$2 million and above, and one key post if the paid-up capital is RM500,000. The employment of expatriates was further encouraged by the government after the launching of the Multimedia Super Corridor (MSC) under the Seventh Malaysia Plan. Industries established within the MSC, launched in 1996, are permitted to recruit an unlimited number of expatriates.

There are two pertinent issues on foreign workers. First, the inflow of foreign workers in Malaysia centers on contract labour migrants (based on work permits²). At present, contract labour migrants account for more than 90 per cent of foreign labour (Kanapathy, 2004). They are imported for a short duration, with prohibition of settlement/

citizenship (see Abella, 2005; Amarjit, 2007; Amarjit and Metcalfe, 2007; Leigh, 2007), to address the labour market imbalances in specific sectors. Further, the temporary nature of migrant workers bars their mobility³, confining them to certain occupations and certain sectors. However, in 2005, the government allowed for foreign workers whose contracts have expired to change employers within the same economic sector as long as their work permits were still valid. The contract-based work is a crucial factor that needs to be taken into account when considering the interactive effects with the Malaysian job market since it limits the scope for the full recognition of migrants' rights and their socio-economic integration.

Second, Malaysia receives mainly unskilled workers. It was reported that there were only about 61,300 skilled foreigners in 1990. The figure further dwindled to 16,173 skilled foreign workers in 1999 (Battistella, undated). Thus the question on job displacement and wage segmentation owing to high foreign workers' presence needs to be examined in the context of the unskilled sections. Moreover, there would be costs and challenges to manage unskilled foreign workers (see also Leigh, 2007).

In manufacturing, foreign workers are employed mainly as production operators (Kassim, 2001). This category of workers accounted for 68 per cent of the labour shortage in 1996 (Shamsulbahriah Ku, 1998). It was in 1992 that unskilled foreign workers were formally permitted to work in the manufacturing sector, and they were recruited mainly in the low-wage garment sector. By the mid 1990s, Malaysia had become a major net importer of labour, with manufacturing accounting for the largest share of foreign workers. The manufacturing sector alone employed 32 per cent of the total number of foreign workers in 2005 (Central Bank of Malaysia, 2006), a rapid rise from a mere 6 per cent in 1993 (Kassim, 2001). Kassim (2001) therefore acknowledged a move towards greater utilization of foreign labour in manufacturing.

Figure 1 shows the inflows foreign workers⁴ in total manufacturing over the period 1983 to 2005. Based on the skill types, it is obvious that foreign workers mainly occupied unskilled positions (see also Athukorala, 2006) in manufacturing. The proportion of unskilled foreigners to total foreign labour in manufacturing had grown from 71 per cent to 97 per cent between 1983 and 2005. The inflows of unskilled foreign workers in particular started to grow rapidly since 1992 and by 1996, they accounted for 13 per cent of total labour in manufacturing. This increase was attributed to the rapid increase in demand for workers due to the high growth in this sector, the reluctance of locals to work for the same type of jobs due to either the remuneration, poor working conditions or the nature of the job or the employers preference for foreign workers as well as the relatively ineffectiveness of the government policy in restraining inflows of foreign labour (Tham and Liew, 2002). However, the increasing trend of foreign workers reverted after 1997. It is learnt that the brunt of the adjustment in the labour market in the aftermath of the crisis was borne by foreign workers (see also Horton and Mazumdar, 2001). Since 2000, the inflow of foreign labour regained strength and reached 22 per cent of total employment in 2005.

More importantly, unskilled foreigners comprised 30 per cent (an increase from 1 per cent in 1983) of the unskilled workforce in 2005 while skilled foreigners made up only 3 per cent (an increase from 2 per cent in 1983) of the skilled workforce manufacturing (Table 1). Foreign presence in general, though important in manufacturing, is concentrated in some industries. For example, foreign workers are highly present in the lower paid sectors and in the cleaning and packaging sections in factories. Table 1 shows that foreign labour is highest in wood products (18 per cent), followed by electrical and electronics (15 per cent) and furniture and fixtures (11 per cent) in 2005. Conversely a low presence of foreign labour of below 1 per cent is identified for leather products, beverages and tobacco, scientific and measuring equipment and petroleum industries. Similarly, unskilled foreigners are also

unevenly distributed across industries. In 1983, the unskilled share of foreigners was highest in wood products (63 per cent), followed by food (12 per cent). Though wood products still command the highest share of unskilled foreign workers, the electrical and electronics, textiles and furniture industries have also become major employers of unskilled foreigners. The distribution of unskilled foreigners appears to be highly concentrated in export-oriented industries.

The magnitude (level) and industrial concentration suggest their varying importance for labour demand across manufacturing industries. More importantly, the 'quality effect' (skill composition) of foreign workers is a cause of concern for relative labour demand, particularly skill- and wage inequality.

3. LABOUR MARKET EFFECTS

3.1 Economic Concerns

The two major economic concerns of the presence of foreign labour in the host country relate to their impact on employment and wages. In terms of employment, if foreign migrants comprise mainly unskilled workers, it is likely that foreign workers have substitution effects on the domestic unskilled. In Malaysia, Pillai (1995) emphasizes that migrant workers have been substitutes for domestic workers in labour intensive industries. There are also arguments that their presence augments the domestic supply of unskilled labour and raises unemployment (or reduces employment) amongst native workers (Winter-Ebmer and Zweimuller, 1995; Dustmann *et al.*, 2003; Feridun, 2004; Borjas *et al.*, 2006). The inflows, if remain unchecked, eventually hinder local skill upgrading in the long run. However, the results on the negative employment effects of migrant workers are found to vary across age groups, skill groups, and ethnic groups.

Despite that, there are inconsistencies in the evidence because some studies still find weak and negligible (or modest) effects of immigrants on employment (Grossman, 1982; Withers and Pope, 1985; Card, 1990; Winegarden and Khor, 1991; Hunt 1992; Friedberg and Hunt, 1995; Shan *et al.*, 1999) or even positive employment effects (Gross, 1997, 2004; Konya, 2000; Islam, 2007). Simon (1999) in fact theoretically argues (based on his ‘queue theory’ which examines the extent of additional labour market “congestion” caused by additional competitors for jobs) that the effect upon natives’ unemployment is much less than common belief has it, and native unemployment may even be lessened rather than increased due to immigrants.

In wage terms, the greater utilization of cheap foreign labour is deemed to have suppressed the upward pressure of real wages of the unskilled category. Therefore there are concerns that migrant workers dampen unskilled wage growth (Mehmet, 1988; Pillai, 1995) and increase wage inequality, in spite of evidence of labour market segmentation⁵. Some studies have found significant negative impact on migrant workers on native wages (see also Borjas *et al.*, 1997; Borjas, 2005; Friedberg, 2001; Epstein and Hillman, 2003; Aydemir and Borjas, 2006; Orrenius and Zavodny, 2003) by investigating the matter at the local and national levels, across occupational/ skill groups and ethnic groups. In contrast, there are other studies that find the wage effects of migrant workers to be either negligible or even positive (Bauer, 1997; Laryea, 1998; Fuest and Thum, 2001; Gross, 2002; Kemnitz, 2005; Dustmann *et al.*, 2005; Card, 2005; Ottaviano and Peri, 2006).

The above evidence indicates that the presence of foreign workers on the domestic labour market, particularly on employment and wages, may not necessarily be harmful. There is even a possibility that foreign workers may not necessarily compete with locals but instead complement the domestic workforce. Similarly, there are also instances that immigration may enhance the welfare of domestic workers through an increase in jobs

(employment creation), efficiency wages (above market competitive rates due to trade unions; see also Fuest and Thum, 2001) and higher tax-financed income transfers (Epstein and Hillman, 2003).

Given that the unskilled segments of foreign labour are predominant in the Malaysian manufacturing and that their presence is unevenly distributed across various industries, the study puts to the test the effects of unskilled foreign workers on relative (instead of absolute) labour demand. The critical questions on the effects of foreign labour on relative labour demand take two dimensions, relative employment and relative wage effects as follow respectively: (a) Do foreign unskilled workers augment the domestic unskilled labour supply and therefore hinder skill upgrading? (b) Do foreign unskilled workers depress the average unskilled wages and thereby widen wage inequality?

3.2 Model Specification

To address the impact of foreign workers on the labour market, the analysis is conducted based on derived econometric specifications of relative employment and relative wages from a standard translog cost function (see also Machin *et al.*, 1996; Hansson, 2000; Anderton *et al.*, 2001; and Pavcnik, 2003). The variable cost function in translog form that assumes capital to be a fixed factor of production is as follows:

$$\ln C_i = \alpha_0 + \alpha_q \ln Q_i + \frac{1}{2} \alpha_{qq} \ln(Q_i)^2 + \beta_k \ln K_i + \frac{1}{2} \beta_{kk} \ln(K_i)^2 + \sum_j \gamma_j \ln W_{ij} + \frac{1}{2} \sum_j \sum_k \gamma_{jk} \ln W_{ij} \ln W_{ik} + \sum_j \delta_{Qj} \ln Q_i \ln W_{ij} + \sum_j \delta_{qj} K_j \ln K_i \ln W_{ij} + \sum_j \delta_{Kj} \ln K_i \ln W_{ij} + \rho \ln Q_i \ln K_i + \lambda_T T_i + \frac{1}{2} \lambda_{TT} (T_i)^2 + \lambda_{QT} T_i \ln Q_i + \lambda_{KT} T_i \ln K_i + \sum_j \phi_{iwj} T_i \ln W_{ij}$$

where

- C_i = variable costs in industry i
- Q_i = output in industry i
- K_i = capital stock in industry i
- W_{ij} = price of variable factor j
- T_i = technology in industry i

Cost minimization of the above generates the following linear equations for the factor share (L):

$$L_{ij} = \alpha_j + \delta_{Qj} \ln Q_i + \delta_{Kj} \ln K_i + \sum_k \gamma_{jk} \ln W_{ik} + \varphi_{iwj} T_i \quad (1)$$

Differencing the above generates:

$$dL_{ij} = \varphi_{iwj} dT_i + \delta_{Qj} d \ln Q_i + \delta_{Kj} d \ln K_i + \sum_k \gamma_{jk} d \ln W_{ik} \quad (2)$$

Assuming homogeneity of degree one in prices imposes:

$$\sum_k \gamma_{ik} = \sum_j \gamma_{jk} = \sum_j \delta_{iK} = \sum_j \delta_{Qj} = 0 \quad (3)$$

this generates

$$dL_{ij} = \varphi_{iwj} dT_i + \delta_{Qj} d \ln Q_i + \delta_{Kj} d \ln K_i + \gamma d \ln (W_j / W_k) \quad (4)$$

with two variable factors j and k.

Machin *et al.* (1996) and Anderton *et al.* (2001) define the two variable factors of production as skilled (S) and unskilled (US). Most studies have defined relative employment (and relative wage) as the proportion of skilled employees (and skilled wage) to total employment (total wage). However, Machin *et al.* (1996) do acknowledge that the theoretical foundation for estimating factor share regressions of this form is weak. Thus this study will adopt the more conventional factor demand equation of estimating “relative” employment (and “relative” wage) as the proportion of skilled employees to unskilled employees (and skilled wage to unskilled wage).

Further, the estimating equations relative employment and relative wages are examined with the inclusion of additional variables, shares of foreign labour (FW/N) and foreign direct investment (FDI/CI). The foreign migrant component is also captured as the share of unskilled foreign labour in total employment (FW_{US}/N). The justification for the inclusion of unskilled foreign labour is based on two aspects: First, the share of unskilled migrants in numbers is much larger than the inflow of skilled migrants; Second, there is prior evidence that unskilled migrants are paid differently than their comparable local workers (or

wage discrimination; see Azizah, 1985; Osman *et al.*, 1998; Ruppert, 1999; Abdul-Aziz, 2001; Wickramasekara, 2002; Jhunjhunwala, 2004; Liow, 2004). Similarly, the inclusion of the share of foreign direct investment in total capital investment (FDI/CI) is also justified on two accounts: First, the demand for labour in manufacturing sector has been accomplished through foreign capital (Manning, 2000) (besides foreign labour). Second, there is a high concentration of foreign workers in export-oriented industries that are FDI dependent (Hyoji, 2007).

The relative employment and relative wage equations estimated in the dynamic panel analyses are as follows respectively:

$$\Delta \ln(S/US)_{it} = \Omega_i + \Sigma \varphi_{0j} \Delta \ln(S/U)_{i,t-j} + \Sigma \varphi_{1j} \Delta \ln(SW/USW)_{i,t-j} + \Sigma \varphi_{2j} \Delta \ln(VA)_{i,t-j} + \Sigma \varphi_{3j} \Delta K_{i,t-j} + \Sigma \varphi_{4j} \Delta (FDI/CI)_{i,t-j} + \Sigma \varphi_{5j} \Delta (FW/N)_{i,t-j} + \varepsilon_{it} \quad (5a)$$

$$\Delta \ln(S/US)_{it} = \Omega_i + \Sigma \varphi_{0j} \Delta \ln(S/U)_{i,t-j} + \Sigma \varphi_{1j} \Delta \ln(SW/USW)_{i,t-j} + \Sigma \varphi_{2j} \Delta \ln(VA)_{i,t-j} + \Sigma \varphi_{3j} \Delta K_{i,t-j} + \Sigma \varphi_{4j} \Delta (FDI/CI)_{i,t-j} + \Sigma \varphi_{5j} \Delta (FW_{US}/N)_{i,t-j} + \varepsilon_{it} \quad (5b)$$

and

$$\Delta \ln(SW/USW)_{it} = \Omega_i + \Sigma \varphi_{0j} \Delta \ln(SW/USW)_{i,t-j} + \Sigma \varphi_{1j} \Delta \ln(S/US)_{i,t-j} + \Sigma \varphi_{2j} \Delta \ln(VA)_{i,t-j} + \Sigma \varphi_{3j} \Delta K_{i,t-j} + \Sigma \varphi_{4j} \Delta (FDI/CI)_{i,t-j} + \Sigma \varphi_{5j} \Delta (FW/N)_{i,t-j} + \eta_{it} \quad (6a)$$

$$\Delta \ln(SW/USW)_{it} = \Omega_i + \Sigma \varphi_{0j} \Delta \ln(SW/USW)_{i,t-j} + \Sigma \varphi_{1j} \Delta \ln(S/US)_{i,t-j} + \Sigma \varphi_{2j} \Delta \ln(VA)_{i,t-j} + \Sigma \varphi_{3j} \Delta K_{i,t-j} + \Sigma \varphi_{4j} \Delta (FDI/CI)_{i,t-j} + \Sigma \varphi_{5j} \Delta (FW_{US}/N)_{i,t-j} + \eta_{it} \quad (6b)$$

where

i = industry ($i = 1, 2, \dots, 19$ for manufacturing; See Appendix 1)

t = time (1983 to 2005)

Ω = constant

S/US = ratio of skilled employees to unskilled employees

SW/USW = ratio of real average skilled wages to real average unskilled wages

VA = real output

K = capital intensity

FW_{US}/N = share of unskilled foreign workers in total employment

FDI/CI = share of foreign direct investment in total capital investment

ε and η represent error terms that pick up random measurement errors in relative employment and relative wages respectively and the effects of labour demand shocks on relative employment and relative wages, which are not picked up by the included independent variables. All the variables in the above specifications are in logarithmic values, except for

the following variables which are in percentages: K , FDI/CI , FW/N and FW_{US}/N (see Appendix 2 for the definition of variables and data sources).

The empirical analysis involves a balanced panel data set of 19 major industrial groups extending over 23 years from 1983 to 2005 (latest labour data available at the time of study), constructed by integrating labour market and industrial statistics (see Appendix 1 for concordance table). The dynamic relationships, characterized by the presence of a lagged dependent variable among the regressors in equations (5) and (6), are considered to examine the path of inequality as the labour market moves between old and new equilibria. This is due to the existence of adjustment costs of changing employment and wages.

3.2 Results: Substitute or Complement?

The unit root panel test on the levels and first differences are investigated using the Im, Pesaran and Shin (IPS, 2003) test. The IPS is chosen since it allows for a higher degree of heterogeneity in cross-section dynamics and also has a higher power than the Levin and Lin (LL) test. Table 2 presents the results of the panel unit root test in levels and first differences. The results confirm that the null of a unit root cannot be rejected for all variables in levels. The panel unit root tests are thus further investigated for the variables in first differences. All the variables are found to be of $I(1)$ process, which is stationary in first differences.

Since, ordinary least squares (OLS) estimates are biased and inconsistent if the lagged variable is correlated with the error term, equations (5) and (6) are therefore estimated by using the generalized method of moments (GMM) estimators proposed by Arellano and Bond (1991). The GMM estimator uses the lagged values of the variables in levels as instruments to remove the correlation between the regressors and the error term. The results of the dynamic relative employment and relative wage equations in manufacturing are presented in Tables 3 and 4 respectively. All variables are first differenced to eliminate individual effects.

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 specifications (6a) and (6b), since Arellano and Bond (1991) recommend the one-step results instead of the two-step standard errors for inference on coefficients. The latter is supposedly biased downwards for small samples in several studies. Nevertheless, all the specifications in Tables 3 and 4 do not display second order autocorrelation. This is important since the consistency of the GMM estimator hinges upon the assumption that $E(v_{it}, v_{it-2}) = 0$, where the v_{it} are the first differences of serially uncorrelated errors (see Arellano and Bond, 1991).

The focus of the discussion is on the coefficient estimates of the unskilled foreign labour share in Tables 3 and 4. The share of unskilled foreign workers in total employment does not significantly influence relative employment (equations 5a and 5b). However, the lagged term for the coefficient estimates of unskilled labour shares in equation (6b) is significant (albeit weak). The results imply that the contemporaneous inflows of unskilled foreign workers do not have a significant bearing on skill upgrading or even wage inequality in Malaysian manufacturing. Nevertheless, the negative effect of unskilled foreigners on wage inequality raises concern on their long-term impact. There is a possibility that foreign workers depress the average wages for the unskilled, thereby widening wage inequality.

In itself, it should be mentioned here that the above results cannot indicate whether foreign workers displace domestic workers. However, the controversy on foreign labour minimizing or even “displacing” local jobs is continuously propounded by trade unionists. The unionists claim that there are no real shortages in manufacturing. They assert that businesses and enterprises prefer foreigners to local citizens for the following reasons. First, foreigners may be easily exploited, as they do not normally seek recourse to law and justice given their temporary status. Second, they are believed to be diligent, docile and willing to work overtime including public holidays and weekends. Third, foreigners are ready to accept

lower pay than that offered to local workers, are prepared to risk their lives and work in deplorable conditions.

Thus, the unionists and some quarters argue that there is no “inflexible” need for foreign workers. In short, the inflows of foreign workers are basically demand-driven since it remains a cost-effective alternative. Employers are merely resorting to contract labour to thrive on profits on the back of cheap, easily exploited and vulnerable migrant labour. In this context, foreign labour inflows are considered to *indirectly* minimize employment opportunities under the guise of labour shortages. Is it true then to state that “outsourcing” of unskilled foreigners on a contract basis is a threat to employing local citizens on a permanent basis? To date, there is no hard evidence to date to validate these claims and justify the extent of the indirect effects of foreign workers on the labour market.

There are however three key issues following from the 1997 financial crisis that clearly reveal the non-competing (complementary) effects of migrants. First, the fact that the government treats foreign workers as an itinerant labour force (disposable workers) indicates that their role in the Malaysian labour market is specific to filling the gaps in the manpower needs. A clear testimony to this is when foreign workers bore the brunt of the financial crisis. Almost 14 per cent (1,598 foreign workers retrenched) of the workers retrenched from the manufacturing sector in the first quarter of 1998 were foreigners (Abubakar, 2002). Not surprising is that the recession had reduced the intensity of migrant labour usage since the Malaysian government follows a policy of job priority for locals (Dairiam, 2006).

Second, despite the retrenchments and the increase in unemployment rate, labour shortages still prevailed by the end of 1998. It was reported that approximately 40,000 jobs were then available in manufacturing (Abubakar, 2002). The shortages were mainly in the category of ‘production and related workers, transport equipment operators and labourers’ (Shamsulbahriah, 2003). This highlights the structural nature of the demand for foreign

workers. Even in a period of high unemployment, the locals did not take up the jobs vacated by migrants, as anticipated by the government.

Third, following the critical shortage, the government then had to re-deploy the retrenched migrants into the manufacturing (ESCAP, 2002). The retrenchments and subsequent deportations of foreign workers following any economic downturn in the Malaysian case are most often short-lived. In August 1999, the government extended foreign permits for an additional year following pressures from low-wage industries (Athukorala, 2006). Similarly in October 2004, undocumented foreign workers who were deported under a four-month amnesty programme were thereafter allowed to return on official permits (Morris-Suzuki, 2007).

The confounding evidence on the shortages that prevail (job vacancies) even with unemployment during the financial crises and the evidence of the policy turn-around on hiring foreign workers are a joint testimony to the critical need for foreign manpower in manufacturing. If labour shortages create serious work disruption, repatriating migrants would only cause higher number of job losses to the local after their departure (Wickramasekera, 2002). The intention to stabilize migrant inflow will eventually backfire if the affected sectors of the economy are forced to retrench local workers (even the skilled) due to the shutting down of some operations.

It appears that there are complementary effects between foreigners and locals not because of a discrepancy in skills between the former and latter but because the existing workforce (particularly the unskilled) is not availing themselves to work. The above line of argument implies that the problems related to foreign workers are not mainly that of unskilled labour augmentation or labour displacement but rather wage depression (based on the empirical analysis). The lack of foreign labour management has led to complacency in the

labour market with continued and unchecked reliance on foreign labour solely for cost advantage purposes.

3.3 Social Stability: Neglected Responsibility?

Pillai (1995) contends that the loose policy (as expounded in the previous section) pertaining to foreign workers has also disturbed social stability (see also Azizah 1998; Liow, 2004), with profound implications for the society at large. A recurrent theme in the mass media is that unskilled foreign workers cause the spread of diseases, conflicts and crimes, thereby encroaching on public safety and security. Whilst this is true to a large extent, it also raises concern about the ability of the labour market to integrate migrant workers. The following discussion will uncover some of the social issues related to foreign workers and identify the potential root causes of those problems.

The deplorable accommodation (Kassim, 1986; 1998) provided by employers coupled with the meager earnings of foreigners exposes them to communicable diseases and limits their access to public health. Following from ill-working conditions, communicable diseases spread rampantly amongst these workers. The infected workers do not seek treatment as some employers do not provide healthcare benefits or alternatively because they are just ill-equipped with knowledge on public health. In some cases, the diseases are brought from their home countries due to lack of screening by local authorities. Further to the above, diseases spread as some foreigners resort to illegal activities to compensate for their low earnings. Some female foreign workers engage in prostitution, thereby exposing themselves to being infected with the Acquired Immune Deficiency Syndrome (AIDS). Other notable criminal activities by foreigners in general include theft and burglary (Kassim, 2005).

However, foreign workers are found to still commit less crime than the locals (Hugo, 2005; Sidhu, 2005; Kanapathy, 2006; Hyoji, 2007). The percentage of foreigners'

involvement in total crimes was about 2 per cent in 2002, with a ratio of 3.8 crimes per 1000 foreigners as opposed to 5.3 crimes per 1000 Malaysians (Hyoji, 2007). Hugo (2005) therefore asserts that blaming foreign workers for the high crime rates and the spread of diseases is simply a reflection of a high degree of stigmatization and stereotyping of migrants.

The discussion on public safety and security from the above imply causality from poor working terms and conditions (in terms of housing, wages and other benefits such as overtime work and healthcare; for example severance of work contract in the form of late payment of wages or deduction from wages higher than in agreement, see Raharto, 2007) to social ills (diseases and crime). The perceived diseases and crime are hazards that result from the exploitation of foreign workers by employers who do not accord fair treatment. Foreign workers in turn also lend themselves willing to accept limitations of their rights and exclusion from social protection. Some believe that the indirect effect of this is that employers therefore prefer foreign workers whilst local unskilled workers get left behind.

The responsibility of social stability thus rests with employers (as much as the enforcement and other interested parties such as the recruitment agencies) and failure to recognize this leads to the fallacy of blaming social ills entirely on foreign workers *per se*. In the context of social stability, the rights of foreign workers are central to the argument. So long as foreigners contribute to domestic activities, their human rights should be preserved to ensure overall positive interactions with the domestic market. Until recently, foreign workers have been at the mercy of unscrupulous private recruitment agencies that have provided deceitful information, imposed expensive charges and forged false contracts for non-existing jobs (ILO, 1999; Gurowitz, 2000; Wickramasekara, 2006; Amarjit, 2007; Hyoji, 2007). This lends some of them to become illegal (undocumented) workers, who subsequently fall prey to

sexual exploitation, abuse and trafficking (Wong and Saat, 2002). Again the causality here appears to run from abusive practices in human rights and poor governance to crime.

The social ills connected to foreign workers as expounded above are directly linked to the indifference towards human rights (*via* proper working conditions, adequate wages and benefits, transparency and proper enforcement of regulations) as a whole. To quote the United Nations Committee on migrant workers:

“Where migration is seen only in economic terms, migrants may come to be regarded as commodities, rather than as individuals entitled to the full employment of their human rights.”

(cited from Wickramasekara, 2006)

There is therefore a critical need to adopt a conscious stance to address the irregularities in the system to ensure positive social interactive effects of foreign workers with the domestic labour market.

4. CONCLUDING REMARKS

The study examines the socio-economic interactive effects of foreign workers with the domestic labour market in manufacturing. The economic influence of foreign workers is examined from the perspective of labour demand, both in employment and wage terms. The social ills linked to foreigners are examined from the perspectives of communicable diseases, and criminal activities whilst the issue of social stability is linked to the abuse of human rights.

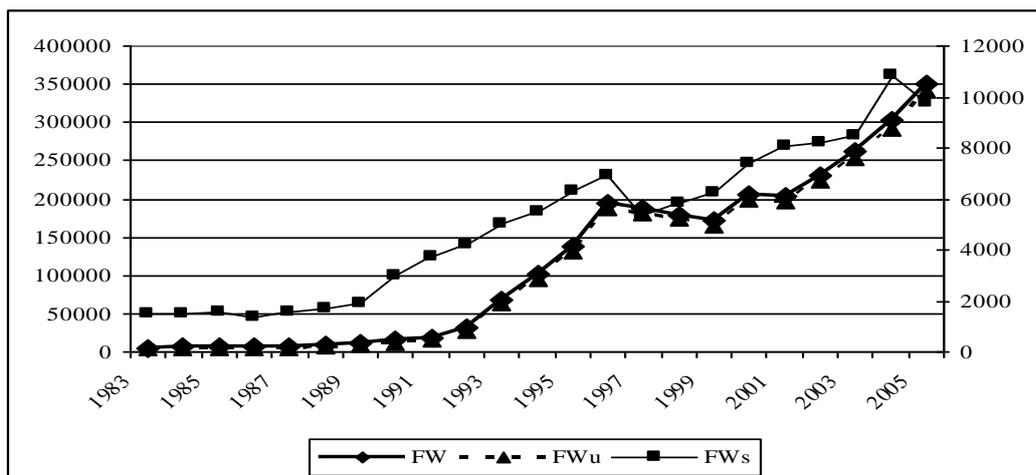
Foreign unskilled workers do not appear to bear significant negative impacts on relative employment, counterintuitive to economic expectations and claims made by certain quarters. However, there is evidence of negative long-run effects of unskilled foreign workers on relative wages. The issue is one of wage discrimination with unskilled foreign workers being paid less than their local counterparts. From the social perspective, the arguments imply that foreign workers are susceptible to diseases and resort to crime because

of the poor working terms and conditions. Following which, social stability requires that foreign workers are accorded fair treatment and malpractices and abuses be dealt with. The issue is ultimately one of basic human rights, which is a shared responsibility of recruitment agencies, prospective employers, law enforcement authorities (immigration and police).

The existing socio-economic interactions of foreign workers with the domestic labour market do not reveal negative consequences. Instead the unfair treatment accorded to unskilled foreign workers despite their complementary nature with domestic labour demand only reflects prejudices towards them. To ensure positive interactions with the domestic labour market, the abuse of human rights first needs to be addressed.

Notwithstanding the contribution of unskilled foreign labour to industrial growth, Malaysia now needs to reduce their intensity in the manufacturing sector in line with national development goals to upgrade the sector. The policy lesson for Malaysia is that the government has for long emphasized foreign capital to achieve industrial growth, without an initial focus to strengthen the weak human resource base. This left the management of unskilled labour inflows unchecked (because of rising labour costs) and not handled within the central long-term objectives of the country.

Figure-1: Foreign Workers in Manufacturing, by Skill Types



- Note: 1. Latest data available at the time of study is 2005.
 2. Total foreign workers (FW) and unskilled foreign workers (FW_{US}) are on the left axis and skilled foreign workers (FW_S) are on the right axis.
 3. There is no breakdown of foreign labour by skill types prior to 1983.

Source: Calculated from unpublished data from the Department of Statistics, Malaysia.

Table 1: Distribution and Share of Foreign Workers in Manufacturing, by Major Industry Group (in percent)

Industry	Distribution/ Concentration						Employment Share		
	1983			2005			2005		
	FW	FW _S	FW _{US}	FW	FW _S	FW _{US}	FW/N	FW _S /S	FW _{US} /US
Food	11.02	8.33	11.98	6.34	4.56	6.39	1.38	0.14	1.94
Beverages & Tobacco	0.98	0.95	0.99	0.13	0.63	0.12	0.03	0.02	0.04
Textiles and Textile Products	5.93	20.85	0.58	8.79	3.87	8.93	1.91	0.12	2.71
Leather & Leather Products	0	0	0	0.41	0.12	0.42	0.09	0	0.13
Wood & Wood Products	48.05	6.43	62.96	17.98	9.18	18.24	3.92	0.29	5.54
Furniture & Fixtures	3.63	0.54	4.73	10.74	4.48	10.92	2.34	0.14	3.32
Paper, Printing & Publishing	0.7	1.76	0.32	2.95	2.52	2.96	0.64	0.08	0.9
Chemicals & Chemical Products	2.84	10.36	0.15	1.55	5.42	1.43	0.34	0.17	0.44
Petroleum Refineries/Products	0.18	0.54	0.05	0.04	0.71	0.02	0.01	0.02	0.01
Rubber Products	3	6.09	1.89	6.3	3.96	6.36	1.37	0.12	1.93
Plastic Products	1.61	2.91	1.14	8.89	8.79	8.89	1.93	0.28	2.7
Non-Metallic Mineral Products	0.16	0.61	0	2.1	1.87	2.11	0.46	0.06	0.64
Basic Metal Products	2.68	4.4	2.06	2.16	5.37	2.07	0.47	0.17	0.63
Fabricated Metal Products	5.63	3.86	6.26	5.55	7.99	5.48	1.21	0.25	1.66
Machinery Manufacturing	1.59	1.9	1.48	6.61	8.17	6.56	1.44	0.26	1.99
Electrical & Electronic Products	4.21	15.03	0.34	15.49	23.97	15.25	3.37	0.76	4.63
Transport Equipment	5.77	8.73	4.71	2.29	4.74	2.22	0.5	0.15	0.67
Scientific & Measuring Equipment	0.71	2.71	0	0.51	2.09	0.46	0.11	0.07	0.14
Miscellaneous	1.32	3.99	0.36	1.19	1.56	1.17	0.26	0.05	0.36
TOTAL	100	100	100	100	100	100	21.77	3.15	30.37

Note: 1. Latest data available at the time of study is 2005.

2. FW – foreign workers; FW_S – skilled foreign workers; FW_{US} – unskilled foreign workers.

3. N – full-time paid employees; S – skilled employees; US – unskilled employees.

Source: Calculated from unpublished data from the Department of Statistics, Malaysia.

Table 2: IPS Unit Root Panel Test

Variables	Levels		Variables	First Difference	
	t-bar	W(t-bar)		t-bar	W(t-bar)
ln(S/US)	-1.723 (4)	-1.563	dln(S/US)	-4.098	-12.138
ln(S/N)	-1.702 (1)	-1.188	dln(S/N)	-3.373	-8.735
ln(SW/USW)	-1.805 (1)	-1.366	dln(SW/USW)	-3.509	-9.371
lnVA	-0.876 (1)	2.999	dlnVA	-2.571	-4.967
K	-1.504 (3)	-0.319	dK	-3.383	-8.782
FDI/CI	-1.699 (5)	-1.476	dFDI/CI	-5.273	-17.658
FW/N	-1.418 (5)	-0.283	dFW/N	-2.661	-5.389
FW _{US} /N	-1.667 (6)	-1.561	dFW _{US} /N	-3.771	-10.605

Note: 1. The above tests assume a constant but without trend.
2. The number of lags is indicated in the parenthesis for levels.
3. One lag is assumed for all cases in first difference.

Table 3: GMM Estimates of Relative Employment Equations

Independent Variables	(5a)		Independent Variables	(5b)	
	Coefficient	Robust standard error		Coefficient	Robust standard error
constant	0.811	0.623	constant	0.834	0.656
$\ln(S/U)_{t-1}$	-0.572***	0.034	$\ln(S/U)_{t-1}$	-0.571***	0.034
$\ln(S/U)_{t-2}$	-0.609***	0.078	$\ln(S/US)_{t-2}$	-0.608***	0.077
$\ln(SW/USW)_t$	-0.214	0.147	$\ln(SW/USW)_t$	-0.212	0.146
$\ln(SW/USW)_{t-1}$	-0.036	0.026	$\ln(SW/USW)_{t-1}$	-0.038	0.026
$\ln VA_t$	3.454	3.188	$\ln VA_t$	4.257	3.088
$\ln(VA)_{t-1}$	6.885	5.615	$\ln(VA)_{t-1}$	6.830	5.336
$\ln(VA)_{t-2}$	3.815	5.223	$\ln(VA)_{t-2}$	3.528	4.939
dK_t	0.983*	0.518	dK_t	0.983*	0.520
dK_{t-1}	0.529*	0.303	dK_{t-1}	0.527*	0.306
dK_{t-2}	0.981	0.605	dK_{t-2}	0.978	0.604
$d(FDI/CI)_t$	-0.121	0.113	$d(FDI/CI)_t$	-0.121	0.112
$d(FDI/CI)_{t-1}$	-0.118	0.100	$d(FDI/CI)_{t-1}$	-0.120	0.100
$d(FW/N)_t$	0.015	0.261	$d(FW_{US}/N)_t$	-0.113	0.124
$d(FW/N)_{t-1}$	-0.009	0.212	$d(FW_{US}/N)_{t-1}$	-0.002	0.111
AR1	0.179		AR1	0.179	
AR2	0.255		AR2	0.258	
Sargan test	1.000		Sargan test	1.000	
Wald test	0.000		Wald test	0.000	
No. of observations	361		No. of observations	361	

- Note: 1. GMM results are one-step estimates with heteroskedasticity-consistent standard errors.
2. AR1 and AR2 are tests for first order and second order serial correlation, P-values are reported.
3. Sargan is a test of the overidentifying restrictions for the GMM estimators, the P-values reported refer to the two-step GMM estimators.
4. 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, P-values are reported.
5. ***significant at 1% , **significant at 5% and *significant at 10%.

Table 4: GMM Estimates of Relative Wage Equations

Independent Variables	(6a)		Independent Variables	(6b)	
	Coefficient	Robust standard error		Coefficient	Robust standard error
constant	-0.283	1.018	constant	-0.454	1.040
$d\ln(SW/USW)_{t-1}$	-0.166***	0.054	$d\ln(SW/USW)_{t-1}$	-0.163***	0.053
$d\ln(SW/USW)_{t-2}$	-0.099	0.095	$d\ln(SW/USW)_{t-2}$	-0.095	0.091
$d\ln(S/US)_t$	-0.471***	0.048	$d\ln(S/US)_t$	-0.472***	0.052
$d\ln(S/US)_{t-1}$	-0.019	0.044	$d\ln(S/US)_{t-1}$	-0.019	0.044
$d\ln VA_t$	-13.878*	7.385	$d\ln VA_t$	-12.063	8.743
$d\ln(VA)_{t-1}$	3.511	4.183	$d\ln(VA)_{t-1}$	3.917	4.215
$d\ln(VA)_{t-2}$	-8.248	13.140	$d\ln(VA)_{t-2}$	-6.082	12.143
dK_t	0.926***	0.265	dK_t	0.904***	0.271
dK_{t-1}	-0.041	0.165	dK_{t-1}	-0.066	0.162
dK_{t-2}	-0.139	0.213	dK_{t-2}	-0.147	0.216
$d(FDI/CI)_t$	-0.118	0.147	$d(FDI/CI)_t$	-0.122	0.147
$d(FDI/CI)_{t-1}$	-0.062	0.120	$d(FDI/CI)_{t-1}$	-0.063	0.121
$d(FW/N)_t$	0.799	0.805	$d(FW_{US}/N)_t$	0.311	0.347
$d(FW/N)_{t-1}$	0.310	0.255	$d(FW_{US}/N)_{t-1}$	0.268*	0.158
AR1	0.004		AR1	0.004	
AR2	0.855		AR2	0.887	
Sargan test	1.000		Sargan test	1.000	
Wald test	0.000		Wald test	0.000	
No. of observations	361		No. of observations	361	

- Note: 1. GMM results are one-step estimates with heteroskedasticity-consistent standard errors.
2. AR1 and AR2 are tests for first order and second order serial correlation, P-values are reported.
3. Sargan is a test of the overidentifying restrictions for the GMM estimators, the P-values reported refer to the two-step GMM estimators.
4. 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, P-values are reported.
5. ***significant at 1% , **significant at 5% and *significant at 10%.

Appendix 1: Concordance Table between Industrial Classifications

Industry	Industrial Classification*	
	MIC 1972	MSIC 2000
(1) - Food Manufacturing	311-312	151-154
(2) - Beverages and Tobacco	313-314	155 & 160
(3) - Textiles and Textile Products	321-322	171-173, 181
(4) - Leather and Leather Products	323-324	191
(5) - Wood and Wood Products	331	201-202
(7) - Paper, Printing and Publishing	341-342	210, 221-223
(8) - Chemicals and Chemical Products	351-352	233 & 241-242
(9) - Petroleum Refineries/Products	353-354	232
(10) - Rubber Products	355	251
(11) - Plastic Products	356	252
(12) - Non-Metallic Mineral Products	369	269
(13) - Basic Metal Products	371-372	271-273
(14) - Fabricated Metal Products	381	281, 289, 291
(15) - Machinery Manufacturing	382	292, 300
(16) - Electrical and Electronic Products	383	293, 311-315, 319, 321-323
(17) - Transport Equipment	384	341-343, 351-353, 359
(18) - Scientific and Measuring Equipment	385	331-333
(19) – Miscellaneous	390	369

Note: * The industry and labour data are based on the MIC (Malaysia Industrial Classification) 1972 for the period 1983-1999 and MSIC (Malaysia Standard Industrial Classification) 2000 for the period 2000-2005.

Source: Department of Statistics, Malaysia (2000). "Correspondence Table Between MIC 1972 (U) and MSIC 2000," *Malaysia Standard Industrial Classification*, pp.AP-2 – AP-8.

Appendix 2: Data Definition and Source

Variable	Definition	Source
FDI/CI	Share of foreign direct investment (FDI) in total capital investment (CPI) (%): where Capital investment, for both existing and new projects - Comprises equity, loans and retained earnings for existing projects and equity, loans and other sources for new projects.	MIDA
FW/N	Share of foreign workers (FW) in total full-time paid employees (N) (%): where Full-time paid employees (N) – Defined as paid workers who work for at least 6 hours a day and at least 20 days a month. Excludes working proprietors and active business partners, unpaid family workers and part-time paid employees. Persons working away from the establishment whose pay and services are under the control of the establishment such as sales representatives, engineering representatives, traveling maintenance and repair personnel are included. Also included among the employees are salaried managers and working directors of incorporated enterprises, except when paid solely for their attendance at Board of Directors' meeting.	DOS
FW _{US} /N	Share of unskilled foreign workers (FW _{US}) in total full-time paid employees (N).	DOS
K	Capital, derived as the share of real fixed assets (FA) in total output (Q) (%): where Fixed assets, net of depreciation (FA) - Covers all goods, new or used, that have a normal economic life of more than one year – land, buildings, machinery and equipment including transport equipment, computers, etc. (deflated by GDP deflator, 1980=100). Gross output at ex-factory value (Q) - Includes income from industrial services rendered to others, value of goods sold in the same condition as purchased, receipts from electricity sold to other, closing stocks of goods in process less opening stocks of goods in process, capital expenditure on own construction and all other outputs, including receipts of non-industrial services (deflated by GDP deflator, 1980=100).	ASM
S/US	Relative employment, defined as the ratio of skilled employees (S) to unskilled employees (US): where Skilled employees (S) - Refer to managerial, professional, non-professional, technical and supervisory workers. Unskilled employees (US) - Refer to production/ operative workers directly employed and workers employed through labour contractors.	DOS
S/N	Ratio of skilled employees (S) to total full-time paid employees (N).	DOS
SW/USW	Relative wages, defined as the ratio of skilled wages (SW) to unskilled wages (USW): where Salaries and wages (W) – Refer to cash payments, including bonuses, commissions, over-time wages and cost of living allowances. The employees' contribution to the Employees Provident Fund (EPF) and social security schemes or to other provident or superannuating funds is included but the employers' contribution is excluded. Skilled wages (SW) – Refers to the average yearly earnings (salaries and wages) of skilled employees (deflated by consumer price index, 1980=100). Unskilled wages (USW) - Refers to the average yearly earnings (salaries and wages) of unskilled employees (deflated by consumer price index, 1980=100).	DOS
VA	Value-added, derived as the difference between gross value of output (Q) and cost of input (C) (deflated by GDP deflator, 1980=100).	ASM

- Source:
1. Unpublished data, Department of Statistics (DOS), Malaysia.
 2. DOS, *Annual Survey of Manufacturing Industries (ASM)*, various issues.
 3. Unpublished data, Malaysian Industrial Development Authority (MIDA), Malaysia.

References

Abubakar, S.Y. (2002), *Migrant Labour in Malaysia: Impact and Implications of the Asian Financial Crisis*, EADN Regional Project on the Social Impact of the Asian Financial Crisis, <http://www.eadn.org/Migrant%20Labour%20in%20Malaysia%20Impact%20and%20Implications%20of%20the.pdf>, [Accessed, 24.6.2008]

Amarjit, K. (2004), *Mobility, Labour Mobilization and Border Controls: Indonesian Labour Migration to Malaysia since 1900*, paper presented at the 15th Biennial Conference of the Asian Studies Association of Australia (ASAA), Canberra, Australia, June 29 – July 2, <http://coombs.anu.edu.au/SpecialProj/ASAA/biennial-conference/2004/Kaur-A-ASAA2004.pdf>, [Accessed 3.11.2008]

Amarjit, K. (2007), “Migration Matters in the Asia-Pacific Region: Immigration Frameworks, Knowledge Workers and National Policies”, *International Journal on Multicultural Societies*, Vol.9, No.2, pp.135-157.

Amarjit, K. and Metcalfe, I. (2007), “Thematic Introduction: Migration Challenges in the Asia Pacific in the Twenty First Century”, *International Journal on Multicultural Societies*, Vol.9, No.2, pp.131-134.

Arellano, M. and Bond, S. (1991), “Some Tests of Specification for Panel Data: Monte Carlo Evidence and An Application to Employment Equations”, *Review of Economic Studies*, Vol.58, No.2, pp.277-297.

Ariff, M., Piei, M.H., Wong, D. and Abubakar, S.Y. (1998), *Responding to the Economic Crisis in Malaysia – A Pro-Human Development Perspective*, paper prepared for the United Nations Development Programme, Regional Bureau for the Asia and the Pacific (UNDP/RBAP).

Athukorala, P.C. (2006), “International Labour Migration in East Asia: Trends, Patterns and Policy issues”, *Asian Pacific Economic Literature*, Vol.20, No.5, pp.18-39.

Aydemir, A. and Borjas, J.G. (2006), “A Comparative Analysis of the Labor Market Impact of International Migration: Canada, Mexico and the United States”, *NBER Working Paper No.12327*. Cambridge: National Bureau of Economic Research.

Battistella, G. (2002), “Unauthorised Migrants as Global Workers in ASEAN Region”, *Southeast Asian Studies*, Vol.40, No.3, pp.350-371.

Battistella, G. (2003), International Migration in Asia, *Migration Patterns and Policies in the Asian and Pacific Region*, Asian Population Studies Series No.160, United Nations Economic and Social Commission for Asia and the Pacific: New York, pp.1-33, <http://www.unescap.org/esid/psis/population/popseries/apss160/apss160chap1.pdf>, [Accessed 4.3.2009]

Bauer, T. (1997), “Do Immigrants Reduce Natives’ Wages? Evidence from Germany”, *Working Paper No.97-05*. Germany: University of Munich.

Borjas, J.G., Freeman, B.R. and Katz, F.L. (1997), "How Much Do Immigration and Trade Affect Labor Market Outcomes", *Brookings Papers on Economic Activity No.1*. Washington D.C.: Brookings Institution Press.

Borjas, J.G. (2005), "Native Internal Migration and the Labor Market Impact of Immigration", *Journal of Human Resources*, Vol.41, No.2, pp.221-258.

Card, D. (1990), "The Impact of the Mariel Boatlift on the Miami Labor Market", *Industrial and Labor Relations Review*, Vol.43, No.2, pp.245-257.

Card (2005), "Is the New Immigration Really So Bad?" *Economic Journal*, Vol.115, No.507, pp.300-323.

Central Bank of Malaysia, *Annual Report*, various years.

Dustmann, C., Fabbri, F., Preston, I. and Wadsworth, J. (2003), *The local Labour Market Effects of Immigration in the UK*, Home Office Online Report 05/03, Home Office: United Kingdom, <http://repec.org/res2003/Dustmann.pdf>, [Accessed 25.1.2009]

Dustmann, C., Fabbri, F. and Preston, I. (2005), "The Impact of Immigration on the British Labour Market", *Economic Journal*, Vol.115, No.507, pp.324-341.

Edwards, C. (1999), "Skilled and Unskilled Foreign Labour in Malaysian Development – A Strategic Shift?", (in: Jomo, K.S. and Felker, G. Eds., *Technology, Competitiveness and the State*), London: Routledge, pp.235-266.

Epstein, S.G. and Hillman, L.A. (2003), "Unemployed Immigrants and Voter Sentiment in the Welfare State", *Journal of Public Economics*, Vol.87, Nos.7-8, pp.1641-1655.

ESCAP (2002), *International Migration: An Emerging Opportunity for the Socio-Economic Development of the ESCAP Region*, Social Policy Paper No.6. Economic and Social Commission for Asia and the Pacific (ESCAP): Thailand, <http://www.unescap.org/esid/psis/publications/spps/06/2165.pdf>, [Accessed 5.2.2009]

Feridun, M. (2004), "Does Immigration Have an Impact on Economic Development and Unemployment? Empirical Evidence from Finland (1981-2001)", *International Journal of Applied Econometrics and Quantitative Studies*, Vol.1, No.3, pp.39-60.

Friedberg, M.R. (2001), "The Impact of Mass Migration on the Israeli Labor Market", *Quarterly Journal of Economics*, Vol.116, No.4, pp.1373-1408.

Friedberg, M.R. and Hunt, J. (1995), "The Impact of Immigrants on Host Country Wages, Employment and Growth", *Journal of Economic Perspectives*, Vol.9, No.2, pp.23-44.

Fuest, C. and Thum, M. (2001), "Immigration and Skill Formation in Unionized Labour Markets", *European Journal of Political Economy*, Vol.17, No.3, pp.557-573.

Gross, D.M. (2002), "Three Million Foreigners, Three Million Unemployed? Immigration Flows and the Labour Market in France", *Applied Economics*, Vol.34, No.16, pp.1969-1983.

Gross, D.M. (2004), "Impact of Immigrant Workers on a Regional Labour Market", *Applied Economics Letters*, Vol.11, No.7, pp.405-408.

Grossman, B.J. (1982), "The Substitutability of Natives and Immigrants in Production", *Review of Economics and Statistics*, Vol.64, No.4, pp.596-603.

Gurowitz, A.I. (1999), *Mobilizing International Norms: Domestic Actors, Immigrants and the State (Germany, Japan, Canada, Malaysia)*, unpublished PhD thesis, Cornell University: United States.

Heyzer, N. and Wee, V. (1994). Domestic workers in transient overseas employment: Who benefits, who profits, in Noeleen Heyzer, Geertje Lycklama a Nijeholt and Nedra Weerakoon (eds.), *The Trade in Domestic Workers: Causes, Mechanisms and Consequences of International Migration*, Asian and Pacific Development Centre (APDC): Kuala Lumpur, pp.31-101.

Hugo, G. (2005), *Migration in the Asia-Pacific Region*, National Centre for Social Application of GIS: University of Adelaide: Australia, <http://www.gcim.org/mm/File/Regional%20Study%202.pdf>, [Accessed 14.4.2009]

Huguet, J.W. (2005), *Recent Trends in International Labour Migration*, in *International Migration and Development*, pp.117-136, http://www.unescap.org/ESID/psis/population/popseries/apss158/part1_5.pdf, [Accessed 14.4.2009]

Hunt, J. (1992), "The Impact of the 1962 Repatriates from Algeria on the French Labor Market", *Industrial and Labor Relations Review*, Vol.45, No.3, pp.556-573.

Im, K-S., Pesaran, M.H. and Shin, Y. (2003), "Testing for Unit Roots in Heterogeneous Panels", *Journal of Econometrics*, Vol.115, pp.53-74.

Islam, A. (2007), "Immigration Unemployment Relationship: The Evidence from Canada", *Australian Economic Papers*, Vol.46, No.1. pp.52-66.

Jones, S. (1996), "Hope and tragedy for migrants in Malaysia", *Asia Pacific Magazine*, Vol.1, pp.23-27.

Kanapathy, V. (2004), *International Migration and Labour Market Developments in Asia: Economic Recovery, the Labour Market and Migrant Workers in Malaysia*, paper presented at the 2004 Workshop on International Migration and Labour Markets in Asia, Japan, February 5-6, http://www.jil.go.jp/foreign/event_r/event/documents/2004sopemi/2004sopemi_e_countryreport6.pdf, [Accessed 16.1.2009]

Kassim, A. (2001), "Recent Trends in International Migration in Malaysia", paper presented at the First Population Forum in the New Millenium, University of Malaya, Kuala Lumpur, July 11.

- Konya, L. (2000), "Bivariate Causality Between Immigration and Long-Term Unemployment in Australia, 1981-1988", *Working Paper No.180/00*. Australia: Victoria University of Technology.
- Kemnitz, A. (2005), "Discrimination and Resistance to Low-Skilled Immigration", *Labour*, Vol.19, No.2, pp.177-190.
- Laryea, S. (1998), "The Impact of Foreign-Born Labor on Canadian Wages: A Panel Analysis", *Working Paper No.98-06*. Canada: Research on Immigration and Integration in the Metropolis (RIIM), Vancouver Center.
- Leigh, M. (2007), "The Contested Basis of Nationhood: Key Issues When Analyzing Labour Flows in Southeast Asia", *International Journal on Multicultural Societies*, Vol.9, No.2, pp.174-184.
- Mehmet, O. (1986), *Development in Malaysia: Poverty, Wealth and Trusteeship*, London: Croom Helm.
- Morris-Suzuki, T. (2007), "Cross-Border Migration and East Asian Regional Integration", *International Journal on Multicultural Societies*, Vol.9, No.2, pp.158-173.
- Navaratnam, R.V. (2005), "Labouring over Foreign Labour", *The Star*, May 15.
- Netto, A. (2002), "Malaysia Needs Foreign Workers After All", *Inter Press Service*, August 19.
- Orrenius, P.M. and Zavodny, M. (2003), "Does Immigration Affect Wages? A Look at Occupation-Level Evidence", *Working Paper 2003-2a*. Georgia: Federal Reserve Bank of Atlanta.
- Ottaviano, I.P.G. and Peri, G. (2006), "Rethinking the Effects of Immigration on Wages", *NBER Working Paper No. 12497*. Cambridge: National Bureau of Economic Research.
- Pillai, P. (1995), "Malaysia", *ASEAN Economic Bulletin*, Vol.12, No.2, pp.221-236.
- Raharto, A. (2007), "Indonesian Labour Migration: Issues and Challenges", *International Journal on Multicultural Societies*, Vol.9, No.2, pp.219-235.
- Ruppert, E. (1999), "Managing Foreign Labor in Singapore and Malaysia: Are There Lessons for GCC Countries? *World Bank Working Paper Series No. 2053*. Washington D.C.: World Bank.
- Shamsulbahriah, K.A. (2003), "Malaysia after the Asian crisis: An Overview of Labour Market Issues", (in: Colin Barlow and Francis Loh Kok Wah Eds., *Malaysian Economics and Politics in the New Century*), Cheltenham: Edward Elgar, pp.46-61.
- Shan, J., Morris, A. and Sun, F. (1999), "Immigration and Unemployment: New Evidence from Australia and New Zealand", *International Review of Applied Econometrics*, Vol.13, No.2, pp.253-258.

Simon, J.L. (1999), "Job Displacement: Theory of Immigrants and Native Unemployment", (in: *The Economic Consequences of Immigration*, 2nd Ed.), United States: University of Michigan Press, pp.220-236.

The Star (2005), "Malaysia to Import 100,000 Pakistani Workers", March 18.

UNESCO (2005). *Migration Issues in the Asia Pacific- Issues Paper from Malaysia*, Asia Pacific Migration Research Network (AMPRN).

Wickramasekera, P. (2002), *Asian Labour Migration: Issues and Challenges in An Era of Globalization*, International Migration Paper No. 57, International Labour Organization: Geneva,

<http://www.ilo.org/dyn/infoecon/docs/691/F820745914/migration%20asia%20globalization.pdf>, [Accessed 24.10.2008]

Wickramasekera, P. (2006), *Globalization, International Labour Migration and Rights of Migrant Workers*, International Labour Office: Geneva,

http://www.ilo.org/public/english/protection/migrant/download/pws_new_paper.pdf, [Accessed 8.4.2009]

Winegarden, C. R. and Khor, L. B. (1991), "Undocumented Immigration and Unemployment of US Youth and Minority Workers: Econometric Evidence", *Review of Economics and Statistic*, Vol.73, No.1, pp.105–112.

Winter-Ebmer, R. and Zweimuller, J. (1999), "Do Immigrants Displace Young Native Workers: The Austrian Experience", *Journal of Population Economics*, Vol.12, No.2, pp.327-340.

Withers, G. and Pope, D. (1985), "Immigration and Unemployment", *Economic Record*, Vol.61, No.173, pp.554-563.

Wong, D.T. and Anwar, T.A. (2003), "Migran Gelap: Indonesian Migrants in Malaysia's Irregular Labor Economy", (in: Graziaono Battistella and Maruja, M.B.Asis Eds., *Unauthorized Migration in Southeast Asia*), Philippines: Scalabrini Migration Center, pp.169-228.

NOTES

¹ The labour and skill shortages alone do not explain the reliance on foreign workers. Instead, the maturing of the labour market with a higher participation of women (Heyzer and Wee, 1994) in the workforce coupled with rapid urbanization has increased the demand for foreign workers. In this regard, the inflow of foreign workers is not merely demand-driven due to critical labour and skill shortages but also is an inevitable consequence of an industrializing society.

² Further to the work permit scheme, the inflows of foreign workers are also regulated by the worker levy scheme (Amarjit, 2007).

³ The study by Wong and Anwar (2003) show that job mobility is high in the case of the irregular Indonesian workers in the construction sector.

⁴ It should be noted that the foreign workers reported in the data are legal foreign workers. Given the large number of illegal workers in the country, the reliance on unskilled foreign workers is undoubtedly highly understated.

⁵ In the Malaysian context, there is evidence of foreign workers being paid less for the same job than Malaysian citizens. Ruppert's (1999) findings indicate that there is a 6 per cent gap in labour earnings between foreign workers and their Malaysian counterparts in manufacturing.

FEA Working Paper Series

- 2009-1 Shyamala NAGARAJ, Goh Kim-Leng, Tey Nai-Peng and Rohana Jani, "HUMAN CAPITAL FORMATION AND LABOUR MARKET DYNAMICS: A GENDERED PERSPECTIVE", January 2009.
- 2009-2 Mario Arturo RUIZ ESTRADA, "*The Economic Waves Effect of the U.S. Economy on the World Economy*", January 2009.
- 2009-3 Mario Arturo RUIZ ESTRADA, "*The Application of Prototypes in the Teaching-Learning Process of Multi-Dimensional Physical Spaces*", January 2009.
- 2009-4 Mario Arturo RUIZ ESTRADA, "The Multi-Level Investment Flows Monitoring Model (MIF-Model)", January 2009.
- 2009-5 Mario Arturo RUIZ ESTRADA, "The Mega-Space Distributed Lag Model", January 2009.
- 2009-6 Mario Arturo RUIZ ESTRADA, "*The Visualization of Complex Economic Phenomena from a Multi-dimensional Graphical Perspective: The U.S. Economy (1929-2008) Case Study*", January 2009.
- 2009-7 Mario Arturo RUIZ ESTRADA, "Multi-dimensional Economic Modeling", January 2009.
- 2009-8 Mario Arturo RUIZ ESTRADA, "Multi-Dimensional Games (MD-Games)", January 2009.
- 2009-9 Mario Arturo RUIZ ESTRADA, "The Application of the Mega-Dimensional Cartesian Coordinate System in the Economic Policy Modeling", January 2009.
- 2009-10 Mario Arturo RUIZ ESTRADA, "Alerting or Forecasting Economic Crisis?", January 2009.
- 2009-11 Mario Arturo RUIZ ESTRADA, "Economic Modeling in Real Time", January 2009.
- 2009-12 Mario Arturo RUIZ ESTRADA, "The Food Security Function Surface (FSF-Surface): An Economic Note", January 2009.
- 2009-13 Evelyn S. DEVADASON, "ASEAN-CHINA trade Flows: Moving Forward with China", May 2009.
- 2009-14 Mario Arturo RUIZ ESTRADA, "Multidimensional Differentiation", May 2009.
- 2009-15 Mario Arturo RUIZ ESTRADA, "Measuring the Energy of Economics (\ddot{E}): Theoretical Framework", May 2009.

- 2009-16 Mario Arturo RUIZ ESTRADA, "The Input-Output Multi-Dimensional Analysis: Theoretical Framework", May 2009.
- 2009-17 Mario Arturo RUIZ ESTRADA, "The Idea about Zero and Infinity in the Multi-Dimensional Graphical Modeling", May 2009.
- 2009-18 Mario Arturo RUIZ ESTRADA, "From a Global Financial Crisis to a Global Poverty Crisis", May 2009.
- 2009-19 Mario Arturo RUIZ ESTRADA, "Economic Graphical Modeling from 2-Dimensional Graphs to Multi-Dimensional Graphs", May 2009.
- 2009-20 Mario Arturo RUIZ ESTRADA, "The Measurement of the National Production Function: Theoretical Framework", May 2009.
- 2009-21 Mario Arturo RUIZ ESTRADA, "Is Possible to Plot Matrices into a Multi-Dimensional Coordinate System?", May 2009.
- 2009-22 Mario Arturo RUIZ ESTRADA, "The Application of the National Production Function (NP-Function) in the Analysis of Regional Trade Agreements", May 2009.
- 2009-23 Mario Arturo RUIZ ESTRADA, "How to Evaluate the Creation of an Economic Joint Venture through the Application of the Box Negotiation Diagram", May 2009.
- 2009-24 Mario Arturo RUIZ ESTRADA, "The Study of Economic or Natural Phenomenon Behavior under the Application of Multi-dimensional Real Time Modeling Framework", May 2009.
- 2009-25 Nik Rosnah Wan Abdullah and Daniel Ng Kok Eng, "Health Insurance and Health Services Utilisation: Evidence from the Employer-based Health Insurance in Malaysia", June 2009.
- 2009-26 Evelyn S. DEVADASON, "SOCIO-ECONOMIC EFFECTS OF FOREIGN WORKERS ON THE HOST ECONOMY: THE CASE OF THE MALAYSIAN MANUFACTURING SECTOR", June 2009.
- 2009-27 Mario Arturo RUIZ ESTRADA, "The Global Economic Crisis Smash Effect Simulation: Theoretical Framework", June 2009.
- 2009-28 Mario Arturo RUIZ ESTRADA, "The Macroeconomic Black Holes", June 2009.
- 2009-29 Mario Arturo RUIZ ESTRADA, "The Multi-Dimensional Indifference Maps", June 2009.
- 2009-30 Mario Arturo RUIZ ESTRADA, "The Multi-Dimensional Partial Differentiation", June 2009.

- 2009-31 Mario Arturo RUIZ ESTRADA, "Rethinking an Alternative Graphical Modeling for Economics: An Economic Note", June 2009.
- 2009-32 Mario Arturo RUIZ ESTRADA, "The Multi-Dimensional Stock Inventory and Sales Control Graphical Modeling", June 2009.
- 2009-33 Mario Arturo RUIZ ESTRADA, "The GDP-Manifolds", June 2009.

FEA Working Paper Series

Objective and Scope:

The Faculty of Economics and Administration (FEA) Working Paper Series is published to encourage the dissemination and facilitate discussion of research findings related to economics, development, public policies, administration and statistics. Both empirical and theoretical studies will be considered. The FEA Working Paper Series serves mainly as an outlet for research on Malaysia and other ASEAN countries. However, works on other regions that bear important implications or policy lessons for countries in this region are also acceptable.

Information to Paper Contributors:

- 1) Two copies of the manuscript should be submitted to:
Chairperson
Publications Committee
Faculty of Economics and Administration
University of Malaya
50603 Kuala Lumpur
MALAYSIA
- 2) The manuscript must be typed in double spacing throughout on one side of the paper only, and should preferably not exceed 30 pages of A4 size paper, including tables, diagrams, footnotes and references.
- 3) The first page of the manuscript should contain
 - (i) the title,
 - (ii) the name(s) and institutional affiliation(s) of the author(s), and
 - (iii) the postal and email address of the corresponding author.This cover page will be part of the working paper document.
- 4) The electronic file of the manuscript must be submitted. The file can be a Word, Word Perfect, pdf or post-script document. This will be posted at the Faculty's website (<http://www.fep.um.edu.my/>) for public access.
- 5) Contents of the manuscript shall be the sole responsibility of the authors and publication does not imply the concurrence of the FEA or any of its agents. Manuscripts must be carefully edited for language by the authors. Manuscripts are vetted and edited, if necessary, but not refereed. The author is, in fact, encouraged to submit a concise version for publication in academic journals.
- 6) When published, the copyright of the manuscript remains with the authors. Submission of the manuscript will be taken to imply permission accorded by the authors for FEA to publicize and distribute the manuscript as a FEA Working Paper, in its hardcopy as well as electronic form.
