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**LABOUR MARKET CHANGES  
AND TRANSFORMATION IN THE  
MALAYSIAN MANUFACTURING,  
1981-2000**

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## LABOUR MARKET CHANGES AND TRANSFORMATION IN THE MALAYSIAN MANUFACTURING, 1981-2000\*

### ABSTRACT:

Previous studies on the Malaysian labour market identified a loss in skill intensity. This study reveals that skill levels based on occupational structure in manufacturing have in fact been rising in the 1990s, contrary to the findings of the 1980s. The reverse in skill intensity in the 1990s signifies that adjustments in the labour market have not been confined merely to employment and wages but to some form of skill upgrading. Interestingly, there is evidence that the changes in skill intensity were mainly through employment, rather than wages. By qualifying skills further, significant growth is observed for semi-skilled workers vis-à-vis high skilled workers, transforming Malaysia into a “moderate skilled economy,” as stated by Rasiah (2002). This can be considered unique to the Malaysian case as opposed to the faster growth in high skills observed in developed countries.

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## 1. INTRODUCTION

The Malaysian labour market has undergone important transformations. Kanapathy's (2002) firm level analysis identifies a supply-side problem of skill and labour shortages in the Malaysian market. This shortage is supposedly compounded in recent years with the increase in demand for skilled workers due to the changing comparative advantage that has forced firms to upgrade their skill structure. Growing trade links and the ensuing competition and the development of new products is expected to have important ramifications on employment, wages and skills. The argument is that integration into the global economy forces the manufacturing sector to move up the value chain.

As such, this would prompt changes in employment and wage levels, particularly those with higher level of skills. Labour market changes, *via* changes in employment, wages and skills, are thus examined for the time period 1981 to 2000. This paper seeks to answer the following questions:

- (a) Are adjustments in the manufacturing labour market in the past been mainly through employment changes, wage changes or both?
- (b) Is there evidence of skill upgrading in manufacturing?

The organization of this paper is as follows. Section 2 describes the changes in wages and employment while section 3 describes the skill structure and analyzes the changes in skill mix in manufacturing. The final section summarizes the main trends and draws some inferences from the changes observed over time.

## 2. EMPLOYMENT AND WAGES IN MANUFACTURING

### 2.1 Data and Definition

Labour data (employment and wages) is drawn from industrial surveys conducted by the Department of Statistics (DOS) Malaysia. For the period 1981 to 2000, these surveys were canvassed annually, except for reference years 1998 and 2000. The annual surveys cover large establishments. For the same period, censuses were conducted for reference years 1981, 1988, 1993 and 2000. Neither survey nor census was conducted for the year 1998.

To allow for consistency in the time-series analyses, data is sourced mainly from surveys instead of censuses (except for years 1981 and 2000 whereby only census data is available) since the former is conducted annually. The aggregated labour data from the manufacturing surveys and censuses are published in the *Annual Survey of Manufacturing Industries*, whilst the unpublished disaggregated data of employment and wages by occupation are sourced directly from the DOS.

There are three issues that are worth mentioning regarding labour data sources. First, the sampling method of surveys is confined only to establishments above a specific employment cut-off that varies from industry to industry while censuses cover all manufacturing establishments. The sample coverage of surveys is approximately 30 to 40 per cent of total active registered manufacturing establishments. Though the smaller establishments that are not covered in surveys are many in number, but their contribution to total gross output remains insignificant<sup>1</sup>. The fact that the many small establishments have

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<sup>1</sup> For example, the 8306 large establishments as reported in the 1993 survey contributed 95 per cent of total manufacturing output while the remaining 15156 smaller establishments as reported in the census only produced 5 per cent of the total output.

very little meaning in the Malaysian manufacturing sector would make the problem of the exclusion of the former trivial.

Second, the classification of manufacturing industries under major Division 3 of the *Malaysia Industrial Classification* (MIC), 1972 (updated 1979) changed in the year 2000 to Category D of the *Malaysia Standard Industrial Classification* (MSIC) 2000. The MSIC is generally an update of the MIC. It conforms closely to the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 3, published by the United Nations. The MSIC is more comprehensive since it covers 188 industries, while the MIC only includes 134 industries. Under the MIC, 26 industry groups have been selected. The industries selected from the MSIC comprise Divisions 15 to 36 of Category D in the MSIC 2000. Division 37 (Recycling), which involves the transformation of unusable waste and scrap into usable waste and scrap by means of industrial process, is excluded in the time series analyses since recycling is a new addition in the recent classification.

The study will only consider full-time paid employees, which 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, traveling, 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.

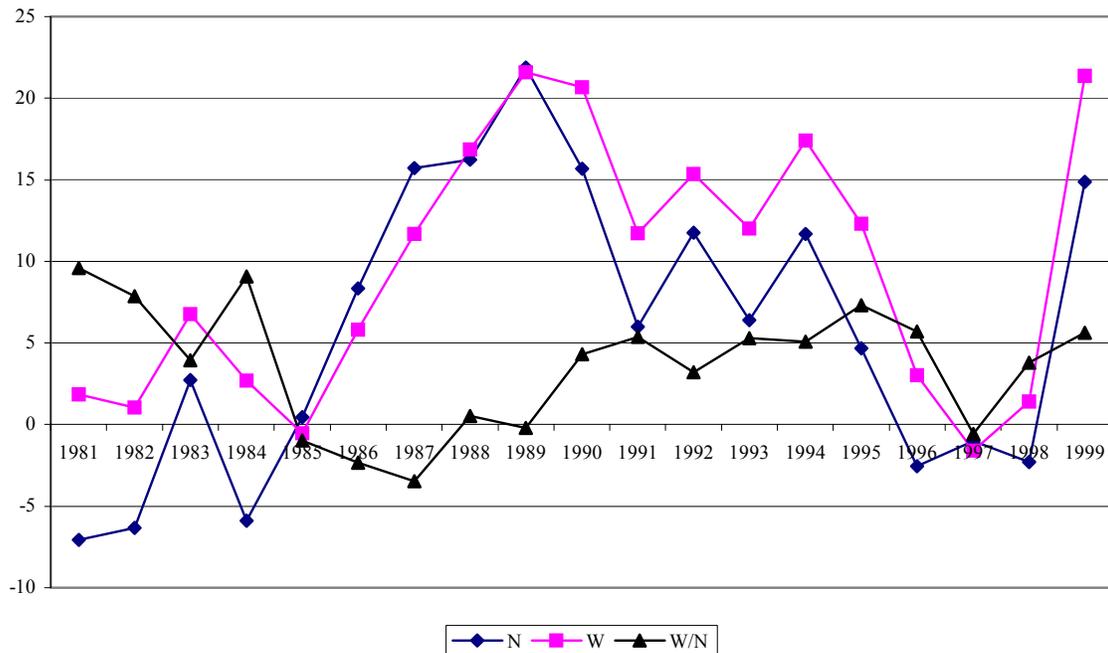
Full-time paid employees refer to paid workers who work for at least 6 hours a day and at least 20 days a month. Full-time employees represent 98-99 per cent of the total number of persons engaged in the manufacturing sector and almost 100 per cent of total wages and salaries (excluding about 0.2 per cent paid to part-time workers) paid by manufacturing. Similarly only annual salaries and wages of full-time paid employees are taken into account. Salaries and wages paid refer to cash payments, including bonuses, commissions, over-time wages, cost of living allowances. The employees' contribution to the Employees Provident Fund (EPF) and social security schemes (such as SOCSO) or to other provident or superannuating funds is included but the employer's contribution is excluded. Salaries and wages are deflated by the consumer price index at 1980 constant price. The wage measures used for the study are the real annual full-time wages divided by the number of full-time employees.

The final issue on labour data pertains to the surveys of 1981, 1982 and 1984 surveys, which do not give a breakdown of full-time and part-time paid employees. As such, the full-time paid employee includes part-time workers for these years. Since the share of part-time workers in total number persons engaged in manufacturing are almost negligible, this should not pose a problem.

## **2.2 Employment and Wage Trends**

Figure 1 presents the annual growth rates of employment, wage and salaries and wage per employee in manufacturing over the last two decades. Growth in employment is discussed together with wage growth in the following paragraphs to draw parallels in the movement of the latter with the former.

**Figure 1: Growth Rates of Employment, Wage and Wage per Employee for Full-Time Paid Employees in Manufacturing, 1981-2000**



Note: N – Full-time paid employees  
W – Real wages of full-time paid employees  
W/N – Real wage per employee  
Wages are deflated with the CPI (1980=100).

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

Between 1981 and 2000, real wages of full-time paid employees had increased by 440 per cent, surpassing the growth of the full-time paid employees (at 177 per cent). At a glance, it is obvious from Figure 1 that wage growth has been persistently higher than employment growth in the 1990s. This is not the case prior to the 1990s since employment had surpassed wage growth immediately after the 1985 recession. Therefore the growth of real wage per employee between 1991 and 2000 was higher at 49 per cent, compared to a 25 per cent growth between 1981 and 1990. This suggests substantial wage adjustments in the 1990s compared to a decade earlier.

The reason for the greater wage adjustments in the latter decade may be explained by the major developments within the labour market. Three phases or episodes in terms of overall employment and wage changes can be identified: slow growth up to the mid-1980s; rapid growth between 1986 and 1997; and stagnation after 1997. The phases are closely identified with the two recessions that rocked the sector, a deep one in the mid 1980s and another not so deep in the late 1990s.

The early 1980s is reflected by a slow growth in manufacturing employment due to a tightening labour market and the world recession. Employment grew at an annual average rate of negative 3.3 per cent per annum during the period 1981 to 1985, while wages grew at 2.5 per cent per annum. As such, growth of wage per employee stood at a high of 6.1 per cent per annum in the first half of the 1980s. Part of the reason for the slowdown in manufacturing employment in the 1980s was the rise in unit labour costs, which made

exporting labour intensive products less profitable (Athukorala and Manning, 1999). The upward drift in wages was not arrested despite the major shift towards lower cost female labour in manufacturing in the 1980s.

The vulnerability of the manufacturing sector to world recession was not surprising since the Malaysian industry had become increasingly reliant on export demand, reversing the earlier emphasis on import substitution. The rise in wages during the down turn however suggests that there was considerable inflexibility in wage adjustments to labour demand. However, wage growth slowed sharply in 1986, at the end of the recession and the beginning of the recovery. The growth of wage per employee in 1986 was negative 1 per cent and thereafter fell to 3.5 per cent in 1988.

As the country came out of the recession in 1987, employment creation in manufacturing began to rise rapidly, at 20.7 per cent per annum for the period 1987 to 1990 (which was a great employment expansion period) with progressive increases in the demand for labour, explained by rapid growth in output. Output grew rapidly in 1986 due to the introduction of the Promotion of Investment Act (PIA) 1986, which enlisted a broader range of incentives for the manufacturing sector. In addition, foreign direct investment (FDI) was deregulated to allow for 100 per cent foreign ownership of capital for industries exporting more than 80 per cent of their products. Consequently wages too grew rapidly from 1987 onwards as demand for labour outstripped supply.

The tightness of the labour market in Malaysia appears to be best captured in wage movements, as the wage growth continuously surpassed that of employment from 1990. The trend in employment growth declined steadily after the rapid expansion in 1989 until the advent of the financial crisis when initial tight monetary policies created a credit crunch in the manufacturing sector (Liew and Tham, 2002). Employment grew at an annual average rate of 11.2 per cent per annum from 1990 to 1996. The annual rate of growth in employment turned negative in 1997. Manufacturing output had contracted in the same year, resulting in lower employment absorption. The period between 1997 and 1999 may be classified as the most drastic changes in employment of manufacturing. Official estimates indicate a loss of about 81,000 jobs (full-time paid employees) between 1996 and 1999. It is clear that employment in this sector is highly pro-cyclical.

Though the economy recovered rapidly in 2000, employment growth was still below the pre-financial crisis level. The crisis saw the exit of some firms as the number of manufacturing establishments fell from about 23000 in 1997 to 20000 in 2000. However wages had rebounded strongly from the financial crisis, with real wages regaining its pre-crisis level in 2000 (Athukorala, 2002).

It appears that wages do not fall as much as employment during the economic downturns, suggesting some form of downward inflexibility in wages. Indeed it appears that reduced employment has been the main social conduit of the adverse impact of the financial crisis, implying that the burden of adjustment fell heavily on employment relative to wages. Thus, the challenge to policy makers is to minimize unemployment by encouraging a more flexible labour market and wage response to demand growth.

### 3. CHANGES IN OCCUPATIONAL COMPOSITION AND SKILL STRUCTURE

#### 3.1 Data

The data on employment by occupation is classified based on a national level of aggregation by the Department of Statistics (DOS), Malaysia. Occupations are categorized into seven groups defined by job functions, and not by educational qualifications. The functional status of each group is explained in Appendix 1.

The groups are: Managerial and professional; Managerial and non-professional; Technical and supervisory; Clerical and related occupations; General workers; Other directly employed workers (skilled, semi-skilled and unskilled); and Workers employed through labour contractors (skilled, semi-skilled and unskilled). Categories six and seven are basically production workers. Based on DOS classification, production workers are divided into two groups: workers who are hired directly by employers and those who are hired through labour agents or contractors. According to DOS, workers in the latter are casual or seasonal workers who are not hired on a monthly basis. Production workers for both groups are further disaggregated into skilled, semi-skilled and unskilled workers. DOS's guidelines on the classification of workers defines skilled workers as workers who have received formal training for their specific job (either in service training or other types of training, e.g. formal training in an institution) while unskilled are those who have not received formal training for the jobs they are performing. Semi-skilled workers are those who are not classified as skilled or unskilled. The interpretation as to what constitutes formal training is left to the discretion of the establishment surveyed.

The occupational classification however has changed in the year 2000. Under the recent classification, the managerial and professional and managerial and non-professional groups have been merged and there is no breakdown of skill levels for production workers (both direct and contractual). The data on occupations for this study are therefore adjusted based on the latest revision in the occupational classification in Malaysia, which conforms more to international standards.

Data related to employment and wages by occupation are also not devoid of problems. First, there is no breakdown of data on full-time paid employees and wages by occupation for the years 1981, 1982 and 1984. Therefore the period of analyses for skill aspects of labour will begin at 1983. The 1983 and 1985 averages of employment and wages by occupation are taken as estimates for the year 1984. Thus the data for 1984 has to be interpreted with reservation.

#### 3.2 Definition of Skills

It is observed in the literature that the definition of unskilled/skilled labour has taken various dimensions, based on occupational groupings, educational attainment and labour market experience. The common definitions used are to group workers as production/non-production or blue-collar/white collar workers to represent unskilled/skilled workers. Some researchers select certain occupations to represent skilled workers, such as engineers (Milanovic, 2000). However certain researchers have used qualification groupings, such as defining workers with neither a vocational qualification nor a higher degree to represent unskilled and skilled as *vice versa* (Steiner and Mohr 1998).

The definition of skills used for the study is solely based on occupational groupings based on the availability of data. For the year 2000, the definition of skills comprises both

occupational groupings and educational attainment as the latter is reported only in the 2000 census. Irrespective of the definitions used, the fundamentals in analyzing skilled and unskilled workers are based on the relative employment shares and relative earnings, as the changing skill mix can be represented by both employment changes and/or changing wage dispersion.

Based on the above occupational categories, various definitions of skills are constructed, as defined in Table 1. The classification of occupations based on different skills is useful to examine the relative employment and wage changes over time.

**Table 1: Skill Classification of Occupations**

| Skill Category | Occupations                                     |
|----------------|---|
| High Skill     | Managerial & Professional                       |
| Semi Skill     | Technical & Supervisory                         |
| Low Skill      | Clerical & Related Occupations; General Workers |
| Unskilled      | Production/Operative Workers                    |

Source: See Appendix 1 for definition of each occupational category.

Three definitions of skill intensities are defined for the study as follows. High skill intensity captures the proportion of high skills (managerial and professional) to total full-time paid employees. Semi skill intensity includes only the proportion of semi skills (technical and supervisory) to total full-time paid employees. The general skill intensity measure defines skill more comprehensively since it includes technical and supervisory workers besides categories of professional, non-professional. The commonly used measure is the general skill intensity. Skill intensities are defined both in terms of employment and wages.

### **3.3 Changes in Skill Structure and Inequality in Manufacturing**

The World Bank (1995) had observed that the skill composition of the manufacturing labour force in Malaysia had been deteriorating over the period 1985 to 1991. Taking the percentage of managerial, technical and supervisory and skilled workers from the production workers category to all workers as a measure of skill intensity, the World Bank study shows that skill intensity of the workforce fell from 0.43 in 1985 to 0.34 in 1991. Lee's (1998) subsequent study also shows a decline of skill intensity among direct workers in Malaysian manufacturing from 0.44 per cent in 1985 to 0.38 in 1993.

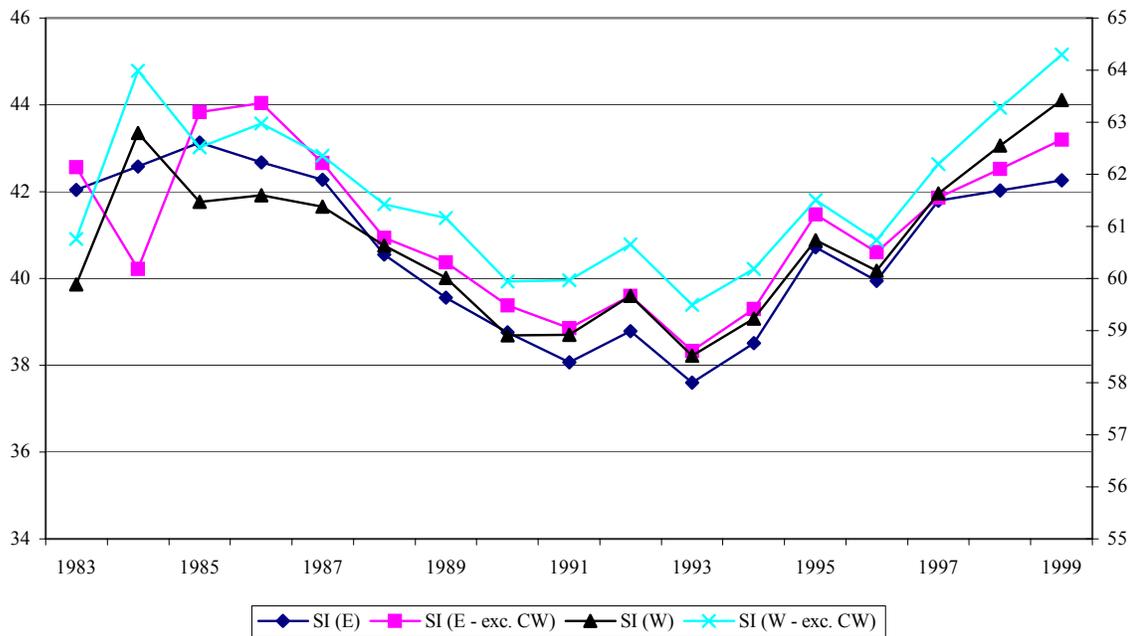
The World Bank study attributed the loss in skill intensity in the late 1980s to be the outcome of a supply constraint, that is the inadequate supply of skilled workers. Therefore the study identified the problem of reversing the decline in skill intensity, as more jobs become more skill intensive over time. However Edwards (1996) and Rasiah (2002) caution that the high skill intensity in 1985 as compared to 1990 may have been due to the economic

crisis in 1985, which resulted in retrenchments of mostly unskilled workers. Therefore the loss of skill intensity when comparing the years 1985 and 1991 may be over exaggerated.

To compare the skill intensity in the 1990s with the findings of World Bank (1995) and Lee (1998), the same definition of skill intensity is applied and calculated for the remaining years in the 1990s in terms of employment and also wages. Figure 2 presents the skill intensity in manufacturing for the period 1983 to 1999.

For the entire period, skill intensity in terms of wages is significantly higher than that of employment in the 1990s. This follows that skilled wages form a higher proportion of total wages and salaries than skilled employment in total employment. In addition, it is observed from Figure 2 that with contract workers, skill intensity is generally lower than when they are excluded. This is because the proportion of skilled workers (and wages) is higher among directly employed workers than contract workers.

**Figure 2: Skill Intensity in Manufacturing**



Note: SI (E) – Skill intensity measured in employment terms

SI (W) – Skill intensity measured in wage terms

Exc. CW – Excluding contract workers

1. The skill intensity is only measured from 1983 to 1999 because in the year 2000, the classification of occupational groups have changed.
2. Skill intensity in terms of employment is on the left axis while skill intensity in terms of wages is on the right axis.

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

Skill intensity measured by employment and wages has followed a same trend throughout the period. In terms of employment, skill intensity increased marginally by 0.5 per cent from 1983 to 1999, but increased by 6 per cent in terms of wages. The moderate increase in skill intensities for the overall period is due to the decline in the 1980s as

observed by World Bank (1995) and Lee (1998), followed by a reverse in trend in the 1990s. In contrast to the scenario in the 1980s, the pattern of demand for skills had obviously changed by the 1990s as depicted in Figure 2.

Comparing the years 1991 and 1999, skill intensity has risen both in terms of employment and wages. In fact the rise is more prominent effective 1993 and in 1997, skill intensity had reached its pre-1985 level. Between 1983 and 1992, the growth rates of skill intensity were negative 7.7 per cent and negative 7 per cent for employment with the inclusion and exclusion of contract workers respectively. In terms of wages, skill intensity had declined marginally by 0.4 and 0.2 per cent with and without contract workers respectively. In the subsequent period of 1993 and 1999, skill intensity had risen by 12 per cent and 8 per cent in terms of employment and wages. This implies that adjustments in skills during the downturn and upturn were mainly through employment than wages.

The reverse in the decline of the 1980s suggests that there has been increasing demand for skilled labour in the late 1990s, which was met by a considerable emphasis on improving the human resource base in the 1990s. The late 1990s marks a shift in manufacturing towards automated production, requiring knowledge-based multi-skilled workforce. The increase in skill intensity is therefore basically demand-driven. Demand for workers indicate a shift towards occupations requiring higher educational attainment and professional training, particularly in the professional and technical as well as the administrative and managerial categories. Other reasons cited for the increased demand for highly skilled, trained and multi-skilled workers, are increased competitiveness (with labour productivity outwitting wage increases) and the use of modern and high technology production methods and processes. (Eighth Malaysia Plan, 2001-2005).

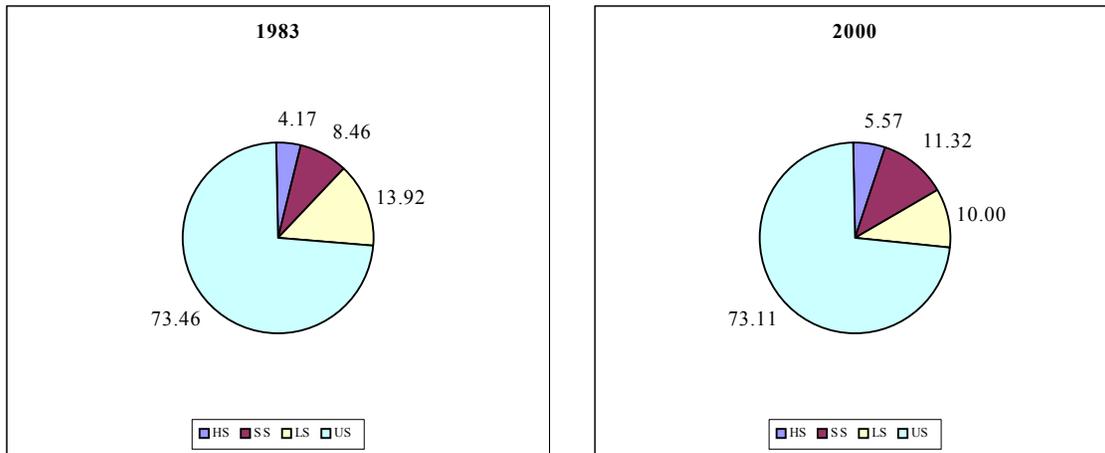
It is obvious that the trend in skill intensity in the 1990s does not merely reflect supply factors alone, which may have been predominant in early 1990s with the shortage of skilled labour, but also demand factors as discussed above (as iterated by Lee, 1998). The problem of skill scarcity, which is supposedly evident for the professional and technical group and labour scarcity prevalent amongst production workers (see Kanapathy, 2002) reflects a combination of both demand and supply factors. The skill shortages that prevailed in the 1980s extends to the early 1990s while the subsequent increase in the second half of the 1990s indicates the easing in this shortage as the labour market moves from excess demand to excess supply with the emergence of the financial and economic crisis of 1997/98 (Liew and Tham, 2002).

The skill intensity as measured in Figure 2 and other previous studies captures skilled workers in the production category. However the common measurement of skills used in most studies is confined only to the professional, managerial and technical levels. In this context, upskilling within manufacturing is further examined by redefining the measurement of skills to include only the above-mentioned occupations and to further categorize them into high skills and semi-skills.

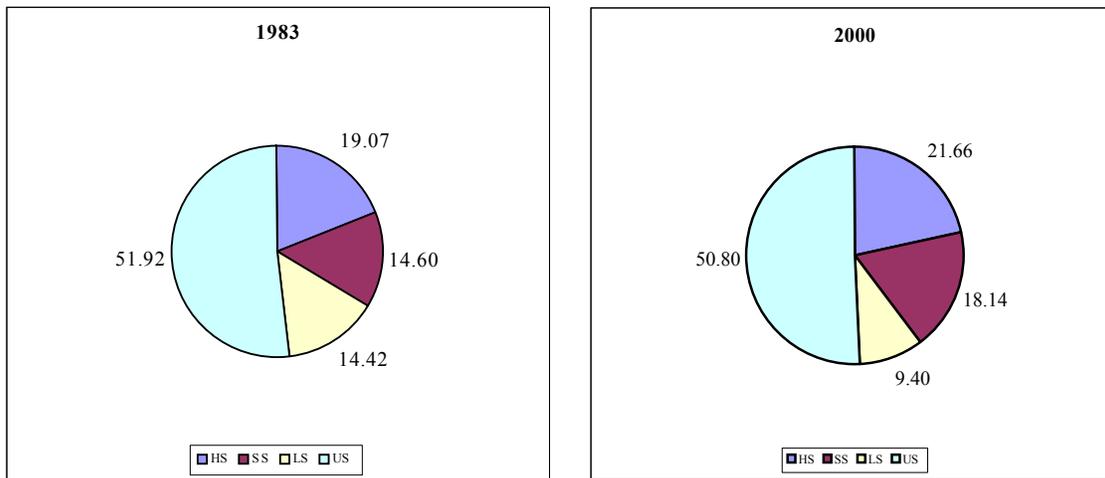
The reasons for examining the high skill and semi skills separately are justified based on Figure 3. Figure 3 presents the employment and average wage shares for different skills levels for 1983 and 2000. Unskilled workers form the largest group in employment and wage shares of manufacturing. Though the shares of unskilled workers have reduced marginally between 1983 and 2000, the high employment shares in particular suggest that there has been a polarization of demand for unskilled workers. This is not surprising since Robbins (1996) also claims that the surge in labour demand, particularly the employment of unskilled labour, was associated with the opening of the economy to trade.

**Figure 3: Employment and Wage Shares, by Skill Groups**

(A) Employment Share



(B) Wage Share



Note: HS – high skill; SS – semi skill; LS – low skill; and US – unskilled

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

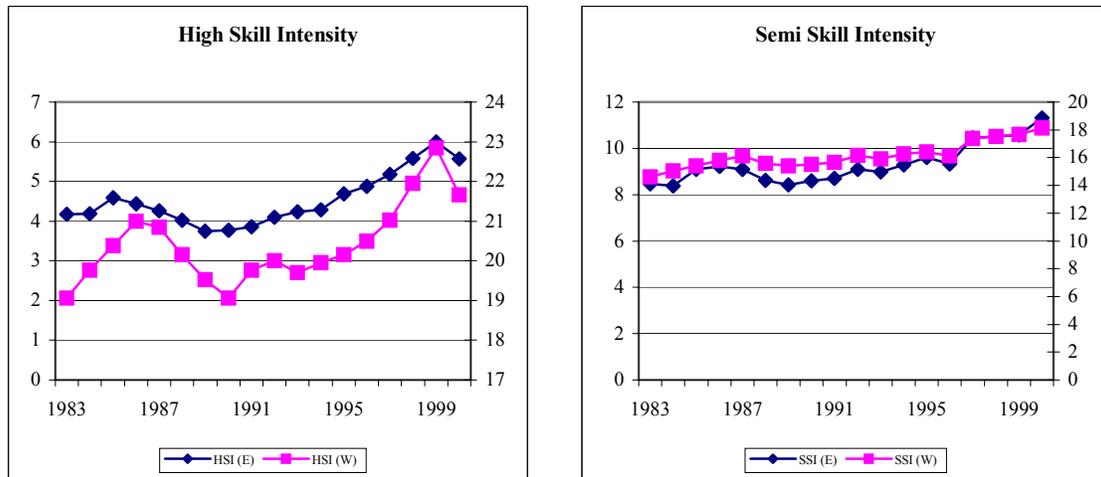
Nevertheless, in contrast to the proportion of low skills and unskilled that have declined with time, the proportion of high skills and semi skills in total employment and total wages has increased between 1983 and 2000. The percentage increase in the share of semi skills in total employment at 33.8 is only marginally higher than the increase in employment share of high skills (at 33.6 per cent). However, the percentage increase in real wages of the former is 24.2 per cent while the latter increased by 13.6 per cent. The large proportionate change in employment share compared to wage share of the semi skill group suggests that the increase has primarily been in terms of employment opportunities, rather than wages.

Despite gaining position to be the second largest group in manufacturing in terms of employment in 2000, the semi-skills group is only the third largest in terms of wages, after

unskilled and high skilled. This is not surprising since high skills, though small in number, comprises highest-paying jobs while the high wage shares of unskilled workers are due to their large numbers in manufacturing.

The changes that have occurred in employment and wages between the different occupational groups reflect an increase for high level of skills in manufacturing, particularly semi skills. Based on Figure 3, the skill intensity is traced for high and semi skills between 1983 and 2000. Figure 4 shows the trend movements between both skill groups.

**Figure 4: Skill Intensity for Manufacturing, by Different Skill Definitions**



- Note: 1. HSI (E) and HSI (W) are high skill intensities in terms of employment and wages respectively.  
 2. SSI (E) and SSI (W) are semi skill intensities in terms of employment and wages respectively.  
 3. Employment is on the left axis and real wages is on the right axis.

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

The share of semi-skilled workers in total employment in manufacturing is more than double the share of high skilled workers. Nevertheless, both skill groups recorded a growth of 34 per cent in skill intensities measured in terms of employment between 1983 and 2000. In contrast the wage share of semi-skills increased by 24 per cent while that of high skills increased by 14 per cent over the same period.

The mid-1980s economic crisis affected had a more pronounced effect on high skill intensity relative to semi-skill intensity while the financial crisis in 1997 rendered a bigger shock to semi skills. Skill intensity measures in terms of wages did not fall as much as employment during the economic downturn, similar to that which is observed for the average wages all employees.

However the rise in skill intensities for both skill groups are clearly more defined in the 1990s. The average annual growth per annum of high skill intensity in the 1990s was higher at 3.8 per cent while semi skill intensity grew at 2.8 per cent per annum. In fact high skill intensity seemed to reverse its negative growth rate of 1.6 per cent per annum prior to 1990, remarkably. In terms of wages, the average annual growth per annum of high skill intensity also more than doubled from 0.4 per cent in the 1980s to 1 per cent in the 1990s. This implies that high skills, though lagging behind semi skills in terms of employment, are gaining importance in the 1990s.

The importance of different skill levels within manufacturing can be attributed to domestic and external influences. As Wood (1998) argues, the internationalization of unskilled labour abundant countries such as China, India, Bangladesh, Pakistan and Indonesia in the mid-1980s resulted in the increase of unskilled labour abundant goods in the world market, which then reduced prices and returns to factors involved in the production of such goods. This mooted other countries to search for comparative advantage in the production of goods of semi-skilled labour, and thereby increasing the demand for semi-skilled labour. This could well be the case for Malaysia in the 1980s. However in the recent past, the demand for high skills could well be more important as international competitiveness in products increase, thereby forcing further skill upgrading.

#### **4. CONCLUDING REMARKS**

With respect to patterns in employment, wages and skills in manufacturing, several important issues and stylized facts relating to the recent trends, transformations and adjustments in the labour market prevail.

In broad terms, employment and wages in manufacturing has traditionally been sensitive to business cycle fluctuations. Labour market changes seem to be reflected more through wage adjustments than employment adjustments in the 1990s decade. The average annual growth rates of employment and wages for the period 1981 to 2000 were 5.9 and 9.6 per cent per annum respectively. The 1990s witnessed larger wage adjustments in the form of wage growth of 11.4 per cent per annum compared to 7.5 per cent a decade earlier, due to the tightening of the labour market in the 1990s. Thus wages per employee increased from 2.7 per cent in the 1980s to 4.5 per cent in the 1990s.

Skill levels based on occupational structure in the manufacturing have been rising in the 1990s. There is clear evidence of skill upgrading based on skill intensity measures since 1993. This is contrary to previous findings in the 1980s, which identified a loss in skill intensity. It is interesting to note that after 1993, skilled employment has grown faster than unskilled employment. Conversely, employment of unskilled workers has fallen in absolute terms since 1993.

The reverse in skill intensity in the 1990s also signifies adjustments in the labour market have not been confined merely to employment and wages but also to some form of skill upgrading. Interestingly, there is evidence that the changes in skill intensity were mainly through employment, rather than wages. This implies that unlike the movement in average wages for all employees of manufacturing, wages of skilled workers in particular have been rather sticky downwards compared to employment. This is rather obvious in the 1980s when the decline in the growth of skill intensity measured by employment was more severe than that in wages.

Significant growth has taken place for semi-skilled workers vis-à-vis skilled workers, transforming Malaysia into a “moderate skilled economy,” as stated by Rasiah (2002). This is confirmed by the data that shows higher percentage growth in the employment and wage share of semi skills. This can be considered unique to the Malaysian case as opposed to the faster growth in high skills observed in developed countries. The relatively large employment and wage shares of unskilled workers (production/operative workers), though declining marginally, signify a polarization of demand for workers at extreme ends of skill levels.

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## Appendix 1: Definition of Functional Status of Different Categories of Full-Time Employees

| Employee Group   | Function  |
|--|---|
| <b>Group 1: Managerial &amp; Professional</b>                                      |   |
| Managers   | Those who decide or participate in formulating the policy of the organization and plan, organize and direct the interpretation and execution of policies. Their work involves the responsibility for their organization as a whole or for one or more departments of an organization.   |
| Professionals  | Those who conduct research and apply in a professional capacity scientific knowledge and methods to a variety of technological, economic, social, industrial and government problems. The terms applies generally to a person who is required to hold a professional qualification to practice (e.g. managers, accountants, chemists, engineers and etc.)   |
| <b>Group 2: Technical &amp; Supervisory</b>  |   |
| Technical  | Those who are engaged in technical research and quality work. Included under this category are laboratory technicians, quality control technicians, chief foremen etc., who usually work under the direction and supervision of professionals.  |
| Supervisory  | Those who supervise various activities or a particular kind of activity for example a production activity within an establishment. They control and coordinate the activities of the workers under their charge.  |
| <b>Group 3: Clerical and Related Occupations</b>                                   |   |
|  | Those who compile and maintain records of financial transactions and other information of business activities including handling of cash on behalf of the organization and its customers, records oral or written matters by shorthand writing, typing and other means. Included in this category clerks, typists, stenographers, receptionists, personal secretaries, bookkeepers, storekeepers and sales personnel. |
| <b>Group 4: General Workers</b>  |   |
|  | Those who perform general and miscellaneous functions. Included in this category are drivers, conductors, telephone operators, office boys dispatch riders and security guards.   |
| <b>Group 5: Production/Operative Workers (Directly employed)</b>                   |   |
|  | Includes those who are directly employed by the establishment, and have not been included in the first four categories. Those who are directly engaged in the production or related activities of the establishment, such as persons engaged in fabricating, processing or assembling, warehousemen, packers, persons engaged in truck driving and repair maintenance.  |
| <b>Group 6: Production/Operative Workers (Employed through labour contractors)</b> |   |
|  | Includes production/operative employees employed through labour contractors.  |

Source: Department of Statistics, Malaysia.

