CHAPTER 2

LITERATURE REVIEW

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This chapter has two sections namely overview of the manufacturing sector and empirical studies of the labour productivity.

2.1 Overview

2.1.1 Overall Development of the Manufacturing Sector.

It is no doubt that the manufacturing sector is the fastest growing sector in the economy throughout the years. In 1961, manufacturing contributed only 8.5 percent of the total GDP. In contrast, in 1980, its contribution had increased to 20.5 percent. This indirectly signifies the structural transformation which has taken place within these period from agriculture-based to industrial-based. In terms of the number of establishments and employment provision in this sector for the period of 1960s to 1980s, the total number of manufacturing establishments are more than doubled while the total number of employees has increased six-fold from 61,597 to 377,718 workers. Based on the evidence,[6] the substantial growth in the manufacturing sector in the past was due to the increase in domestic demand and import-substitution that contribute about 90 percent to the industrial development. In 1974 -78, manufactured

[6] Hoofman, 1980

exports have contributed about 20 percent to economic growth and additional import-substitution contributed 12-13 percent for the same period of time.[7]

On the other hand, the rapid growth in the Malaysian manufacturing within those years has contributed to significant employment opportunities. The two leading contributors to the employment creation were the wood processing and electrical machinery industries, each providing 25,000-28,000 jobs during the decade of 1963-1973. Next, are the food products and textiles, each contributing about 21,000 jobs. The total of these four sub-sectors were responsible for almost half of the total jobs created in the entire manufacturing sector during 1963-1973. Other sub-sectors which involved in generating employment were manufactured fabricated metal products, attire for men, woman and children (excluding footwear), rubber products, machinery (electrical and transport) and plastic product.[8]

In 1986, the manufacturing sector signified a negative annual rate of growth in the gross value of output and the value of fixed assets result from the recession which occurred in the year before. Consequently, in 1986, the shift in policy direction towards liberalizing the economy by changing the scope of the licensing procedures under the Industrial Co-o- ordination Act (ICA) that was implemented in 1975 to promote industrialization and to enforce the goals of the New Economic Policy (NEP) provided new impetus for the growth of the manufacturing sector. Besides, the

[7] Chee, 1984b)
[8] Chee, 1984; pg. 4

Investment Incentive Act (IIA), 1968 had been replaced by the Promotion of Investment Act (PIA), 1986 in order to broadened the range of incentives given for the development of this sector. Therefore, the deregulation of foreign direct investment (FDI) which allows for 100 percent foreign ownership of capital exporting more than 80 percent of their products contributed to the growth in employment, wages and salaries and the value of fixed assets from 1987.

At that time, the unemployment rate is 8.2 percent which had been reflected by higher annual rate of growth in labour than capital and this situation had continued until 1990. The unemployment rate fall to 5.1 percent in 1990 with increasing demand for labour due to the rapid growth in the manufacturing sector. The lower rate of growth of labour relative to capital continued until the financial crisis occurred in 1997. During that year, the annual rate of growth in employment has turned negative with the slowdown in this sector. Consequently, the manufacturing sector contracted by 13.4 percent in 1998 due to the economic crisis that occurred in that year.[9] Though the economy recovered rapidly in 1999, the total number of persons employed in the sector which was 1,358,176 was still smaller than the total in 1997 which was 1,411,447.

The increasing rate in the value of fixed assets from 1990 until 1996 was result from the increasing automation of firms due to the growing shortage of labour and

[9] Malaysia, 2001:236

increasing global competitive pressures.[10] Subsequently, investment in the manufacturing sector continued to rise due to the increase in the number of manufacturing establishments from 6,092 in 1989 to 8,306 in 1993 and up to 20,204 in 1996. However, although the rate continued to increase to 23,029 in 1997, the economic crisis in 1998 and the first three quarters of 1999 also lead to the exit of several firms as the number of manufacturing establishment drop to 21,891 in 1999. Thus, the annual rate of growth of fixed assets in 1997 was slightly less than half that of the peak in 1991. Finally, the following sub-section discusses the category of workers in this sector and its productivity.

2.1.2 *Profile of labour productivity i* *facturing sector.*

1) Category of workers in the ma ector

In the case of Malaysia, there oups of workers who obtained the highest average annual rate of growth 91-95 and 1996-2000. Firstly, the managerial and professional worke gistered 11.9 and 7.1 percent respectively. Secondly, the technical and supervisory group of workers who carried 10.0 percent and 8.0 percent respectively. Finally, the semi-skilled workers who registered 11.4 and 5.4 percent respectively.[11]

Besides, the proportion of managerial and professional group and the technical and supervisory group of workers have increased tremendously from 12.4

[10] Rasiah and Anuar, 1995
[11] refer appendix, Table 2

percent in 1990 to 15.2 percent by the year 2000. However, the proportion of clerical and general workers and the unskilled workers have declined at the same time. The number of skilled workers declined from 26.4 percent in 1990 to 26 percent in 1995 before slightly increased to 26.5 percent in 2000. The declining rate in 1990-95 signifies the shortage of skilled workers as evidenced in Lee (1998). The subsequent increasing rate reflects the easing in this shortage in the second half of the 1990s as the labour market changing from excess demand toward excess supply in light with the financial and economic crisis of 1997/98.[12]

2) Labour productivity in the manufacturing sector

Within 1985 up to 1990s, both nominal and real labour productivity has increase steadily, excluded 1990 itself. The fall in 1990 was because of the larger rate of growth in employment (21%) as compared with the rate of growth in value added (19%) in the manufacturing sector.[13]

From the perspective of the inter- sectoral level, between 1991-96, annual increase in nominal productivity were found in the 8 out of 16 sub-sectors.[14] Besides, there is variation in the productivity of labour over time and across countries. For instance, petroleum products registered the highest productivity of labour within the period and its productivity level grew more than two-fold from RM105.18 value

[12] refer appendix, Table 2
[13] refer appendix, Table 3
[14] refer appendix, Table 4

added per worker in 1991 to RM224.91 value added per worker in 1996. On the other hand, the textile and clothing sub-sector carried the lowest labour productivity level at RM16.71 in 1991 and this has increased from 1.7 times to RM28.13 value added per worker by 1996.

On the whole, the annual rate of growth of real productivity for the overall manufacturing sector was found to be smaller than the annual rate of growth in real wages and salaries for the manufacturing sector before the financial crisis in 1997.[15] Moreover, the real value added per Ringgit labour cost will decline which lead to the reduction in the competitiveness of the labour utilized in the manufacturing sector. However, the 1997 crisis changed this trend as the rate of growth of real productivity exceeded the rate of real wages and salaries for 1997 and 1999 because of the contraction of the manufacturing sector and the consequent fall in demand for labour at that time. In short, overall employment in the manufacturing sector has declined from 1997-99 though there was some recovery in the third quarter of 1999.

[15] refer appendix, Table 5

2.2 Empirical Studies

2.2.1 Empirical studies in Malaysia

In the case of developing country like Malaysia, the labour productivity and incidence of poverty have negative relationship.[16] Thus, a separate study which had been done by **Anuar** (1987) and **Tamin** (1991) tested the relationship between labour productivity and incidence of poverty in agriculture. The variables used are labour productivity in agriculture and the incidence of poverty in the whole economy, agriculture and the paddy sector. The results indicated how the increase in labour productivity, which was measured by the contribution to sectoral GDP divided by the labour force employed in agriculture, had positive contribution in reducing the incidence of poverty for the last two decades. The changes in labour productivity were due to several factors and policies. While the former study concerned with technological changes in terms of high yielding seeds, chemical fertilizer, water and insecticides with improved practices, the latter study concerned with institutional changes like rural development-oriented infrastructure, which includes producer's subsidies.

However, the findings failed to signify the relatively higher concentration of poverty in the paddy sector, agriculture sector and the economy as a whole. The measurement of labour productivity used also failed to signify the contribution of

[16] Ataul Huq (Pramanik), Malaysia's Economic Success, Pelanduk Publications (M) Sdn. Bhd., page 50.

land-augmenting and yield-augmenting technologies. Instead, the study reflected positive contribution of the demographic factor, which was man-land ratio to the declining in the agricultural population.

Another study using the same variables that had been done by **Zulkifly** (1985) failed to signify the availability of idle land and the migration of youths from rural to urban sector to be in favour of land-augmenting method of production in agriculture. Based on the studies above, it reflected that the increase in labour productivity was solely due to land productivity using yield-increasing method adopted by NAP for agricultural in general.[17]

A study of labour productivity in manufacturing done by **Sahar** (2001) had highlighted the importance of productivity and efficiency in creating value added particularly in the manufacturing sector. In his paper, he made a comparison of selected manufacturing sectors in three Asian countries, which were Malaysia, Singapore and Indonesia using labour coefficients as productivity indicators. Since labour productivity is related to efficiency and technological usage, this approach indirectly showed the country's competitive advantage as compared to other countries. He found that out of these three Asean countries, Singapore had the lowest labour coefficients in most of the manufacturing sectors, signifying that it had the highest labour productivity of all the countries.

[17] Abu Bakar et al, 1986: 111-120

Mansor Jusoh and **Chew Yuet Fah** (1998) examined the relationship between wage, price and labour productivity in Malaysia between 1970-1994. By using the cointegration approach, the paper confirmed the existence of a long run relationship between those variables. The study used a dynamic short-term ECM model. The model used was the integration equation, which had been estimated using Granger and Engle two-step procedure. Two major findings were found. First, wage increased proportionately with price in the long run. But in the short run, there was tendency for wage increase to exceed price. Second, taken into account the effect of price changes, wage increased at a rate proportionate to the long run labour productivity. The long run wage elasticity with respect to labour productivity was 0.76 and it was not statistically different from unity. There was an increase in short-term wage in the short run. The existence of disequilibrium was temporary and it had been completely adjusted in less than four years. The findings of the study were used to evaluate the National Labour Council proposed wage reform. They concluded that reform was unnecessary as the hardship involved in implementing the reform signified that there was not much difference in the relationship between wage and productivity with the existing wage setting mechanism.

A study which had been done by **Ida** (2001) analyzed the trend of productivity and related indicators like value added per employee, capital intensity and growth of employees in the manufacturing sector for the period of 1981 to 1998. Besides, the study tended to identify the determinants of labour productivity as

measured by real value added per employee for the manufacturing sector in Malaysia. Cross-section data at three digit level in the manufacturing sector for the year of 1995 and 1996 was used along with pooled data (cross- sectional and time series) for both years. Two regressions method had been used in this study. The Ordinary Least Squares (OLS) was used for each year of 1995 and 1996. The Generalised Least Squares (GLS) was used for the pooled data. It was found from the OLS regression result for the period of 1995 that the significant factors contributing to the labour productivity were the quality of labour, economies of scale, TFP growth and market growth. For 1996, the significant factors were capital intensity, quality of labour, foreign equity and concentration of industry. Results from GLS regression indicated that the significant factors were quality of labour, foreign equity, concentration of industry, TFP growth and market growth. From these findings, the improvement of the quality of labour in order to boost up productivity is needed.

Subsequently, a study on the relationship between productivity and wages had been done by **Sugumar** (2001). The objective of the study was to ensure that the increase in wages did not create cost-push inflation and lead to the reduction in the real income of the worker. If the labour productivity and wages increase by an equal rate, it will lead to higher wage rate, higher level of output and undisturbed price level. In order to achieve such objective, few tests had been done. Those were Stationary test, Cointegration test, Error Correction Model, Diagnostic Checking and Granger Causality Test. Moreover, the study used ADF and PP unit root test to test

for the nonstationary of the data. Based on the findings, it was shown that the data were stationary at first difference and they were cointegrated. The model was also suitable to be used for hypothesis testing and forecasting. The empirical evidence from the study showed that there were two ways relationship between productivity and wages and one way relationship from wages to productivity. The wage increases that reflect productivity gains will ensure that there is no undue pressure on prices and erosion of real income which can enhance firms' and nations' competitiveness.

Finally, a paper on the labour productivity which looked at its determinants in the case of Malaysian manufacturing had been done.[18] The paper analyzed the labour utilized in the manufacturing sector and the productivity of labour in the sector. Then, the paper looked at the primary factors that contribute to the productivity of labour and their policy implications. The study had used pooled data between 1991-1996 in order to test for the relative contribution of domestic versus external factors. Based on the empirical results, it was found that the three most significant variables that had contributed positively to the productivity of labour in Malaysian manufacturing were market concentration, foreign presence and the quality of labour. Thus, policies that favor foreign direct investment and the quality of labour will improve the productivity performance of the manufacturing sector.

[18] Chei Sang & Siew Yean (2002)

On the whole, although the above study analyzed the labour productivity of the manufacturing sector in Malaysia which is similar to this paper, nevertheless, the findings differed. In this paper, the two significant variables which contributed to the labour productivity are the real wages and unit labour cost. Therefore, the issue of maintaining the competitiveness of the real wage and unit labour cost of the labour is the gist of this paper.

2.2.2 *Empirical studies in other countries*

A study had been done by **Findeis** (1995) concerning the dairy farming in State which was labour intensive. The increase in the minimum wage enacted in 1996 would make it harder for the dairy operations to afford farm labour. It was found that an increase in the cost of labour in the non-traditional milk-producing areas would definitely affect the farm's profitability levels. For these farm's, reducing the amount of hired labour as well as implementing production methods capable of increasing labour productivity is a reliable strategy.

On the other hand, based on the study done by **Oliveira** (1991), the farm labour accounted for about 10 percent of all farm production expenses on dairy farm and it was found that rising labour costs on farms without labour saving technologies could be substantial.

F.Corvers (1996) analyzed the effects of human capital on the level and growth of labour productivity in manufacturing sectors in seven Member States of the European Union. The paper stated that the manufacturing sectors could be divided into three: low-skill, medium-skill and high-skill sectors. He found that both intermediate and high-skilled labour had a positive impact on the sectoral labour productivity level, though the effect is significant only for high-skilled labour. Besides, it was found that there was under investment of human capital in some of the manufacturing sectors. In order to improve their competitive position, these sectors need to raise the employment shares of intermediate and high-skilled labour. The intermediate-skilled labour had a significant positive effect on the growth in sectoral labour productivity.

Using the latest cointegration techniques, a study done by **Lianos** and **Fountas** (1997) tested a long-run equilibrium among real wages and the average productivity of labour as implied by profit maximization in the manufacturing sector in Greece. They found evidence for a profit-maximizing equilibrium and adjustment for this long-run equilibrium using nominal wages and labour productivity. They also provided an estimate of the elasticity of substitution of 0.23, which had also been used by other studies using other approaches.[19]

[19] International Review of Applied Economics, Vol.11, No. 3, 1997

Jong and **Soete** (1999) did a study on the comparative levels of the development in labour productivity of manufacturing in Belgium and Netherlands for the period 1921-1990. It was found that the institutional environment was one of the important parameters in signifying the differences in labour productivity and wage levels between the two countries. Furthermore, the development of the sectoral structures of manufacturing in both countries after the Second World War could be explained by the differences in the degree of cross industry variation in wage levels. Thus, they concluded that the differences in the patterns of change within the manufacturing sector lead to the specific phases of divergence and convergence in labour productivity of the two countries.

On the other hand, **Timothy C. Sargent** and **Edgard R. Rodriguez** (2001) did a study on the two measures of productivity which are labour productivity and total factor productivity to determine which is the best to be used. They concluded that which is the best between the two measures depend on the time frame given. TFP is more useful in the long run assuming that one is confident about the underlying growth process and the quality of capital stock data. In contrast, labour productivity is more useful in the short run when there is doubt about the growth process or when the capital stock data are unreliable.

Another paper by **S. Mahendra Dev** (1988) analyzed the incidence of rural poverty and the interrelations between labour productivity and rural poverty over four

selected time points in India. The analysis signifies that yield was the major source of growth in labour productivity. The main findings is that poverty reducing impact of labour productivity has increased in the post-new technology period when compared with the pre-technology period.

Consequently, **Doug Hostland**(1996) examined the relationship of real wages, labour productivity and employment in Canada. The results supported the neoclassical view of long-run equilibrium relationship between the real producer wage rate and average labour productivity. There were large and persistent deviations between the real producer wage rate and average labour productivity but they were not found to be permanent. Besides, they did not correspond very closely with broad movements in unemployment and employment rates. However, there was a stable short-term relationship between growth rates of the real producer wage and average labour productivity and changes in the employment rate. Regression findings signified that the changes in employment rate were predominantly determined by real output growth. Growth in the real producer wage grew in excess of average labour productivity had low impact on the employment rate except during late 80s and early 90s. Their estimates signified that about 155,000 net job losses during 1988-92 due to excessive real wage growth. Further analysis revealed that about two-thirds of the net job losses had been regained over the past three years as the result of growth in the real producer wage lagged behind that in average labour productivity.

A paper by **Martin Godfrey** (2002) analyzed the falling real wages and labour productivity in most sectors in Kuwait. It was found that the falling trend was due to the Kuwait's policy of changing the composition of its foreign work force, changing from sending countries with high and fluctuating wages to countries offer low wages at low increasing rate as well as to unaccompanied mature workers whom easy to be insulated from the national labour market. Finally, the declined in real wages and labour productivity were also due to the process of labour-intensification of production technologies and by malpractices in the recruitment system.

Tosunoglu Cemal (1998) did a paper entitled " Labour productivity improvement in construction and analysis factors affecting labour productivity in TRNC ". The test was done using questionnaires to be distributed to 5 construction firms, taking samples of 5 employees for each trade. Five main factors that affected labour productivity had been identified. Those were the wages received by employees, late payment of wages, not having social rights, organizational defects and no precautions of health.

Meanwhile, **Ann Hodgkinson** (2002) from University of Wollongong did a study on the impact of different HRM regimes on labour productivity. The study used AWIRS 95 and IRWIRS 96-7 data to test whether workplaces which used 'soft' versus ' hard' Human Resource Management (HRM) policies and practices undergone significant differences in labour productivity improvements. On the whole,

the results supported the proposition that management attitudes, policies and practices that aim to develop workforce skills, commitment and motivation were positively related with the improvements in labour productivity. It was also found that very few 'hard' practices other than performance pay had the same effect. EEO/AA and maternity leave policies were strongly correlated with improved productivity.

Another study on labour productivity which had been prepared by **Francis Teal** (1998) looked at the performance of the Ghanaian Manufacturing Sector for the period of 1991-1995.The paper analyzed the impact of the removal of high levels of protection plus the substantial real devaluations to the environment of the Ghanaian manufacturing firms in the 1990s. The changes in output, composition and productivity within the period have been examined. The evidence of the survey for the growth of the sector was found to be consistent with the data from sales tax returns. The rate of job creation in Ghana was also high in the manufacturing sector. The rate was the highest in medium sized firms; small firms have not grown more rapidly than larger firms. There had been no underlying growth in technical efficiency and output growth was commensurate with the growth in labour and capital inputs. Labour productivity varied largely by firm size due to primarily differences in physical, not human capital endowments.

Consequently, **Christina A. Ristuccia** and **Solomos Solomou** (2002) evaluated the link between the diffusion of electricity and the increase in labour

productivity growth in the manufacturing sector during the inter-war period. A comparative analysis of the USA, Britain, Germany and Japan signified that the trend acceleration in labour productivity was common to all these countries except Germany and was correlated with electricity diffusion. Germany's labour productivity growth was sustained in 1925-1938. The USA saw an earlier acceleration due to the diffusion of electricity-based general-purpose technologies in production was much faster than in other countries examined.

Dirk Pilat (1996) provided estimates of labour productivity levels in OECD manufacturing for 9 countries and 36 industrial sectors. He also provided some evidence on cross-country productivity differences in the service sector. This paper used industry-specific conversion factors to calculate productivity levels which was based on available industry-of-origin studies and material from the expenditure approach to international comparisons. It was found that the variation in cross-country productivity levels were quite large in the OECD area which implied that there might be scope for further productivity catch-up in many countries and many sectors.

A study on labour productivity which had been done by **Peter S. Spiro** (1997) looked at the issue of labour productivity growth in the manufacturing sector which had been lower in Canada than in almost any other industrialized countries since the beginning of 1980s. Pooled time–series cross-section regressions were carried out

with data from 12 industrialized countries to analyze the factors responsible for productivity growth differentials. It was found that the main reason for Canada's low productivity growth was low real wage growth. This was due to the combination of rapid labour force growth and weak aggregate demand growth that lead to persistently high unemployment rates. Low real wages had made it profitable to use more labour intensive technologies and produce output in labour intensive sectors that had been abandoned by industrialized countries with higher wage rates. Causality in Canadian data runs from real wages to productivity that implied chronic excess supply. The effect of the exchange rate on manufacturing productivity had also been analyzed. The view that an overvalued exchange rate helps stimulate productivity growth has been rejected.

Meanwhile, **B. Van Ark, R. Inklaar** and **R. McGuckin** (2003) from University of Groningen had done a study on cross- country and cross- industry differences in labour productivity performance and their relation with ICT (Information and Communication Technology). The coverage was for 52 industries in 16 OECD countries. Based on the analysis, it was found that ICT diffusion in Europe had similar industry pattern to those observed in U.S but at slower pace. The main difference between Europe and U.S are in the intensive ICT-using services, with U.S productivity growth signified a strong acceleration during the second half of the decade whereas growth stalled in the EU. Besides, the U.S showed rapid productivity expansion in retail and wholesale trade and securities that lead to myth of the overall

U.S –EU gap in productivity growth since 1995. In the ICT- producing sector, computers and communication equipment showed strong productivity growth and acceleration in all countries but the larger differences across countries was for ICT-producing services like telecom services.

J. Sleifer (2003) presented a paper that dealt with the comparison of the East and West German industrial labour productivity in 1954. The estimates of the study which was based on the quantity approach showed that the East German industrial labour productivity in 1954 was from 61.6 to 64.7 percent of the West German level. In the case of the manufacturing sector, the relative labour productivity amounted from 58 to 60 percent of the West German level. East German relative labour productivity based on value added was higher than sales value. Shift share analysis signified that the productivity gap was primarily located in the branch "metal, machinery, transports". This branch suffered a lot from the reparations to the Soviet Union.

Subsequently, **Mulder , Montout** and **Lopes** (2002) did a paper entitled "Brazil and Mexico's Manufacturing Performance In International Perspective,1970-1999." The paper dealt with the labour productivity performances of Brazil and Mexico in international perspective in manufacturing by comparing them with United States which was one of the international productivity leaders during the period 1970-1999. Brazil and Mexico were compared separately with the USA in 1985 and 1988

using the International Comparisons of Output and Productivity (ICOP) method. Using ICOP, detailed sectoral-specific conversion factors (unit value ratios, UVRs) were estimated to express value added per person engaged in common currency. This study showed that labour productivity in Brazil was 43 percent of the US level in 1985 and that in Mexico 27 percent of the US in 1988. The extrapolation to the 1970-1999 period signaled that the productivity gaps of the Latin countries with the USA widened particularly in 1980s. In 1990s, Brazil had been able to stabilize the productivity differential, whereas Mexico continued to loose ground relative to USA.

Another study of labour productivity had been done **by Melachroinos** and **Spence** (2001) explored the sources of rising manufacturing output and labour productivity across thirteen European Union states between 1978 and 1994. Despite the severe deindustrialization trends of the past two decades, manufacturing output continued to expand and also contributed to overall economic growth. Several findings could be found in this study. Firstly, the geographical distribution of the sector across Europe for the entire period was characterized by considerable stability. This study confirmed that the slow but steady integration process had not led to the wholesale migration of manufacturing activity from one member state to another. Secondly, total factor productivity increased responsible for most of the recorded output and labour productivity gained. Thirdly, there was significant spatial variation in the performance of individual industrial bases. It seemed that smaller countries' growth rates appeared to surpass those of larger states and the European South

showed higher growth rates than the North. Finally, there was no clear signs of convergence. Geographical inequalities remained while the technology gap between the advanced and lagging economies remained wide. Those findings reflected the role of EU regional and the challenges they faced in the 21st century.

Another attempt on the study of labour productivity had been highlighted by **Bland** and **Will** (2001) in the paper entitled "Resource movements and labour productivity, an Australian illustration; 1994-95 to 1997-98." The paper highlighted the results of an exploratory analysis of industry change which focused on the adjustment process of Australian firms and the impact of those adjustment on firm and industry labour productivity. The study was based on the data for 1994-95 to 1997-98 for non- representative sample of about 4400 Australian firms. Firms entry, merger, acquisition and incorporation activity affected the data on firm and industry productivity. The resource movements that accompanied some of these events affected the changes in labour productivity. Results showed that for the firms in the sample, labour productivity differed between firms within the same industry. Average labour productivity in an industry increased through a combination of improvements by incumbent firms and the exit of firms. Besides, the incumbent firms were the most important source of productivity gain over the three years covered by the sample. Labour productivity increased in half of incumbent firms; firms that exited, on average, had relatively low labour productivity and new firms exhibited relatively low labour productivity on average, depicted that they took a while to become established

and showed strong labour productivity improvement. However, the data used in this study were insufficient to conclude the impacts of resource movements on productivity improvements, especially at the economy- wide level. On the whole, this analysis signified the importance of the industry dynamics in getting better understanding of the nature of the industry adjustment.