# Do Foreign Multinationals Pay High Wages in Malaysian Manufacturing? 

Eric D. Ramstetter<br>ICSEAD<br>and<br>Graduate School of Economics, Kyushu University<br>Working Paper Series Vol. 2012-05<br>March 2012

The views expressed in this publication are those of the author(s) and do not necessarily reflect those of the Institute.

No part of this book may be used reproduced in any manner whatsoever without written permission except in the case of brief quotations embodied in articles and reviews. For information, please write to the Centre.

# Do Foreign Multinationals Pay High Wages in Malaysian Manufacturing? 

Eric D. Ramstetter<br>International Centre for the Study of East Asian Development and Graduate School of Economics, Kyushu University ramst@icsead.or.jp

March 2012


#### Abstract

Using industrial census data for 2000, and smaller sets of survey data for 2001-2004, this paper examines the extent of wage differentials between medium-large ( 20 or more workers) foreign multinational enterprises (MNEs) and local plants in Malaysia's manufacturing industries. Descriptive statistics suggest that MNEs tend to pay higher wages than local plants and that they tend to hire higher quality labor, in addition to being more capital intensive and larger than local plants. In large, combined samples of 17 manufacturing industries (excluding a few smaller, statistically unusual industries), estimates of earnings equations suggest that highly statistically significant wage differentials averaging 6-9 percent persisted after accounting for differences in labor quality, capital intensity, size, as well as the effects of industry affiliation and plant location on the constants estimated. When all slopes are allowed to vary among 17 industries (by estimating separate equations for each industry), results varied among industries, subperiods, and estimation method. Significant differentials were more common in 2000-2002 than in 2002-2004, and were observed more often in pooled estimates than in random effects estimates. Estimates yielded consistently significant and positive differentials for all periods and estimation methods in six industries: food and beverages, chemicals, rubber, general machinery, electrical machinery, and furniture. Wage differentials declined between 2000-2002 and 2002-2004 in five of these industries (all but food and beverages).


Keywords: Multinational corporations, Southeast Asia, manufacturing, wage determination JEL categories: F23, J31, L60, O53

## Acknowledgement:

This paper is one output of the research project "Real Activities of Foreign Multinationals in East Asia’s Developing Economies: Measurement, Trends, and Implications", which was funded by the International Centre for the Study of East Asian Development (ICSEAD) in fiscal 2011 (ending March 2012). I thank ICSEAD for financial support and ICSEAD staff for logistic assistance. The author is also grateful for comments received on an earlier version presented at the Singapore Economic Review Conference 4-6 August 2011. Responsibility for all opinions expressed and any remaining errors or omissions is the author's alone.

## 1. Introduction

There is now substantial evidence that foreign multinational enterprises (MNEs) tend pay wages that exceed those of corresponding local firms or plants. There is also evidence that positive MNE-local wage differentials persist even after controlling for other differences in between foreign MNEs and local firms or plants (e.g., factor intensity, size, industry affiliation and location) thought to affect the wage differentials. However, most previous studies of MNE-local wage differentials have been unable to account for the influence of corresponding labor quality differentials in MNEs and local firms or plants. Lipsey and Sjöholm's (2004a) study of Indonesian plants in 1996, which finds that MNE-local differentials persisted even after accounting for the educational level of the workforce, is the major exception. Moreover, aside from limited evidence in studies by Lim (1977) and Lee and Nagaraj $(1995)$, and the descriptive statistics presented in Ramstetter $(1995,1999)$ and Ramstetter and Haji Ahmad (2009), there is very little evidence regarding MNE-local wage differentials for the important case of Malaysia. ${ }^{1}$ Data constraints have been an important reason for these gaps in the literature. Fortunately, data from Malaysia's manufacturing census for 2000 and related surveys for 2001-2004 now allow for examination of MNE-local wage differentials after accounting for two important aspects of labor quality, educational background and occupation. The purpose of this paper is thus to begin filling gaps in this literature by analyzing such details.

The paper begins with a short literature review and a description of methodologies used to examine the question of whether MNEs pay higher or lower wages than their local counterparts (Section 2) before examining the data used and some descriptive statistics (Section 3). Results of estimating Mincer-type equations, which reveal the extent of wage

[^0]differentials after accounting for differences in labor force quality and other related plant characteristics, are then analyzed (Section 4). Finally some conclusions and suggestions for future research are offered. (Section 5).

## 2. Literature Review and Methodology

Lipsey and Sjöholm's (2004a) study of manufacturing plants in Indonesia in 1996 is perhaps the most sophisticated study of MNE-local wage differentials and their relationship to labor quality available for host, developing economies. ${ }^{2}$ They estimate Mincer-type equations for white- and blue-collar workers by industry and account for the influence of worker educational background in some detail, as well as other plant-level characteristics related to wages (size, energy per worker, inputs per worker). They found that that MNEs paid higher wages than local plants and that statistically significant wage differentials persisted after accounting for the educational background of the plant's work force and the other plant-level characteristics. Ramstetter and Phan (2007) also found that positive wage differentials between MNEs and local, private firms persisted after accounting for firm's size, factor intensity, shares of technical workers, and shares of females in the firm's workforce. In contrast, results from Lee and Nagaraj's (1995) sample of workers in the Klang Valley of Malaysia in 1991 suggest that foreign ownership of a plant had no significant effects on wages of either male or female workers, after the influences several measures of labor quality (education, experience, occupation, training) and numerous other worker- and plant-level variables) were accounted for. ${ }^{3}$

[^1]Other studies of Malaysia (Lim 1977), Thailand (Matsuoka-Movshuk and Movshuk 2006, Ramstetter 2004), and Venezuela and Mexico (Aitken et al 1996) have found that MNE-local wage differentials tended to persist after accounting for similar plant- or firm-level characteristics, but were unable to account for the influences of labor force quality. Conversely, Ismail and Haji Mat Zin (2003) and similar studies of workers in other economies usually reveal significant returns to human capital, when measured by worker education, training, and experience, for example. There is thus substantial previous evidence that both plant ownership and worker quality have important influences on worker earnings. It is clear that relatively well educated, experienced, and well-trained workers generally expect relatively high returns to their work efforts. Firms or plants hiring high-quality workers usually expect relatively high productivity from them and offer commensurate compensation.

However, reasons for MNE-local differentials are perhaps less clear and worthy of closer consideration. The literature emphasizes that MNEs are often relatively technology- or skill intensive compared to non-MNEs (Caves 2007; Dunning 1993; Markusen 2002). If MNE workforces are correspondingly technology- or skill intensive, then MNEs may pay higher wages because simply because they demand relatively high-quality labor. In addition, MNEs are often hypothesized to have important firm-specific assets in relatively large amounts compared to non-MNEs. ${ }^{4}$ These firm-specific assets are generally intangible, and technologyor skill-related assets are an important component of this asset set. However, both the technology- or skill-related assets and other firm-specific assets are thought to be related to marketing and management, for example, and are not necessarily related to worker quality. In other words, the MNE's possession of firm-specific assets has the potential to make workers

[^2]more productive in MNEs than in non-MNEs, even if the quality of labor employed is identical in the two types of firms. In such cases, MNEs may find it profitable to pay relatively high wages to compensate for their relatively high productivity, especially when the ability to utilize firm-specific assets is related to workers' firm-specific experience or motivation, for example.

Workers in host economies are usually relatively familiar with management practices in local firms and may therefore be relatively reluctant to work for MNEs. This may lead them to demand a premium for working in the relatively unfamiliar MNE environment. In developing economies such as Malaysia (or Indonesia and Thailand), there are often limited supplies of the skilled workers that MNEs often seek to hire. As a result, labor turnover is often extremely high, especially for middle- or top-level managers and technical personnel. In such cases, MNEs may pay relatively high wages as a means of reducing turnover and related training and/or adaptation costs. ${ }^{5}$

In addition to differences in labor quality, it is also important to recognize that MNE-local wage differentials can result from other differences in plant-level characteristics that might affect labor productivity and/or wages. For example, much of the literature reviewed above suggests that firms or plants which are relatively large, capital-intensive, and/or R\&D intensive often pay relatively high wages and have relatively high labor productivity. In addition, location and industry affiliation are found to have important influences on the extent of wage differentials among firms or plants. Female workers are also found to earn less than men in many economies, and Malaysia is no exception. ${ }^{6}$ Thus, this paper will follow the previous literature summarized above and estimate earnings equations that account for the

[^3]influences of worker quality and sex, plant size, factor intensity, location, and industry affiliation, as well as ownership (MNE vs. local owners). Particular attention will be paid to labor quality which can be measured in two ways with the Malaysian data. The industry dimension will also be carefully considered by the use of industry dummies in samples of all plants and by estimating separate equations for alternative industries (thereby allowing both intercepts and slopes to vary across industries. Although the time dimension in this sample is rather short, year dummies and separate estimation by subperiod will also be used to capture year-specific fluctuations, which were quite pronounced for some years in the sample.

## 3. Data and Descriptive Statistics

This study employs the micro data underlying Malaysia's census of manufacturing plant activity in 2000 (Department of Statistics 2002) and smaller surveys of stratified samples for 2001-2004 (Department of Statistics various years). If samples are limited to plants with viable basic data (i.e., positive values of paid workers, output, worker compensation, and fixed assets), there were 18,799 plants in the 2000 census, but samples were $30-37$ percent smaller in 2001-2004. ${ }^{7}$ However, most of the difference between the census and survey samples results from the census' inclusion of very small plants with limited manufacturing activity. For example, if samples are limited to medium-large plants with 20 or more employees and viable basic data, the census contained only 8,540 plants and the surveys 7,406 to 7,581 plants. ${ }^{8}$ Three types of ownership are identified, majority-local, 50-50 joint ventures, and majority-foreign. MNEs are thus defined rather narrowly as plants with foreign ownership shares of 50 percent or more. ${ }^{9}$ These MNEs are predominantly medium-large

[^4]plants and medium-large plants differ from small, predominantly local plants in important ways. Thus, it is more meaningful to limit analyses of wage differentials to medium-large plants than to include all plants in the analysis. In addition to making sample size more consistent over time and allowing more meaningful MNE-local comparisons, this focus has the important advantage of removing most outliers from the samples. ${ }^{10}$ In addition to excluding small plants, the analysis also excludes seven industries which had very few MNEs (and/or local plants) or were outliers in important respects. ${ }^{11}$

Calculations from the data underlying Table 1 clarify that medium-large plants in the 18 selected industries employed the vast majority of the paid workers in surveyed plants, 96-97 percent for MNEs and 84-87 percent for local plants. ${ }^{12}$ There was a large decline in the number of paid workers in 2001, but it probably resulted as much or more from the sharp decline in real manufacturing growth in that year, rather than from differences between the census and survey samples. ${ }^{13}$ The manufacturing recession in 2001 was related to the dot.com crash in the United States and its effects on electronics-related industries, which are large and dominated by foreign MNEs in Malaysia and several other Southeast Asian economies. Medium-large plants in four electronics-related machinery industries (hereafter referred to as electronics) lost 101,881 paid workers in 2001, accounting for 56 percent of the total $(182,009)$ decline recorded by plants with viable data. Radio, tv, and communication machinery was the largest of the electronics industries, with medium-large plants in this

[^5]industry losing about 80,000 workers in 2001. Medium-large MNEs in electronics accounted for over half of all MNE employment in 2000-2004, but the 2001 decline was relatively slow in MNEs, whose share of paid workers in electronics rose from 70 to 77 percent in 2001, before declining some. All of these figures illustrate the importance of electronics and the 2001 recession for Malaysian manufacturing and the MNEs operating there.

Although the large role of electronics MNEs is conspicuous, foreign MNEs also play relative large roles in several of other industries examined in this study. ${ }^{14}$ For example, they accounted for 30 percent or more of the paid workers in textiles, apparel, chemicals, rubber, plastics (2003-2004 only), general machinery. Conversely, foreign MNE shares were relatively small (under 20 percent) in food and beverages, wood, paper (excluding 2001), motor vehicles, and furniture (excluding 2000). MNE shares were intermediate in the nonmetallic mineral products, basic metals, and fabricated metals and averaged about 40 percent in selected manufacturing industries. In general, foreign MNEs play a much more important role in Malaysian manufacturing than in most other Asian economies. ${ }^{15}$

MNEs generally paid higher wages, defined as total compensation per worker including all payments in kind, social insurance payments, and other items, than local plants (Table 2). ${ }^{16}$

However, there was a large variation in MNE wage levels and MNE-local wage differentials among industries. MNE wages were highest in chemicals in all years and increased from about RM36,000 in 2000-2001 to RM45,000 in 2004. MNEs also paid relatively high wages

[^6]in general machinery, non-metallic minerals, food and beverages, and basic metals. At the other end of the scale, MNE wages were lowest in apparel, wood, and furniture, ranging from about RM14,000 to RM18,500. Among local plants, rankings were often similar. For example, wages were relatively high (ranks of 1-5 in all years) in chemicals, general machinery, and basic metals, and relatively low (ranks of 16-18) in apparel, wood, and furniture. However, there were some notable differences with local plants paying relatively high wages (ranks in the top 5) in office and computing machinery (all years) and in precision machinery (20002003), while these two industries were lower ranked among MNEs.

Negative differentials were observed in office and computing machinery (all years except 2003), precision machinery (2001-2003), and radio, tv, and communication machinery (2004), but wage differentials were also positive and large in the latter industry in 2001-2002 (20-26 percent, Table 2). In other words, MNE-local wage differentials were positive in 16-17 of the 18 industries in all years. Moreover, wage differentials exceeded 10 percent in the vast majority (14-16) of sample industries and 20 percent in a majority (10-13). At the industry level, there was a weak trend toward lower differentials with the mean of the 18 industries falling from 29 to 23 percent and differentials declining in 10 of the 18 industries. Differentials were always relatively large in food and beverages (70-93 percent), non-metallic mineral products (57-68 percent), chemicals (40-50 percent), and general machinery (41-55 percent). In addition to the two industries mentioned above, wage differentials were also relatively small in electrical machinery, wood (4-18 percent). The large variation of MNElocal wage differentials among industries and across years is conspicuous and of keen interest in this study.

Not surprisingly, similarly large variation across industries is observed in several measures of labor quality, measured either in terms of worker occupation or educational achievement,
though variation over time is less pronounced. ${ }^{17}$ Both measures are available by sex of worker, allowing one to account for the fact that females may be paid less than similarly qualified males as indicated by previous research. The first measure of labor quality is the share of workers in occupations that tend to be highly paid, defined as management (including proprietors), professionals, and technicians, relative to all paid workers (Table 3). ${ }^{18}$ Most of the workers in these occupations are male (in both MNEs and non-MNEs), though the extent of male domination of these occupations is smaller in MNEs than in local plants. Consistent with the notion that wages are closely related to labor quality, the industry distribution of shares of highly paid workers tends to correlate with the industry distribution of wages. For example, in MNEs, the combined share of males and females in these occupations varied from 9-13 percent in apparel, wood, and furniture to 23-30 percent in general machinery, basic metals, and food and beverages, and 33-34 percent in chemicals. MNE-local differentials for shares of highly paid workers were generally positive (ratios in excess of 1 in 13-17 of the 18 industries for male workers and 16-17 for females in Table 3). However, these differentials were generally smaller than corresponding wage differentials, exceeding 10 percent (ratios of 1.1 or more) in 8-13 industries for males and 14-17 industries for females, and exceeding 20 percent in only 3-9 industries for males and 10-12 industries for females.

If males and females are combined, shares of highly educated workers (those with some kind of tertiary education) in all workers (paid and unpaid) were also higher in MNEs than in local plants in 14 -of the 18 industries in 2000 and 16 in 2001-2002, but only 12 in 2003-2004 (Table 4a). Relatively large differentials (20 percent [ratios of 1.2] or more) were observed in most of these industries (10-12), but there was again wide variation across industries (from as low as 0.46 for males in precision machinery in 2001-2002 to as high as 2.70 for females in

[^7]food and beverages. There was similarly large variation in shares highly educated workers in MNE employment, from a combined (for males and females) 4-5 percent in apparel and 6-9 percent in wood, furniture, and textiles to 18-23 percent in non-metallic mineral products and office and computing machinery, and 26-33 percent in chemicals and general machinery and for example. Shares of males with higher education also exceeded shares of females by a wide margin, but differences in the higher education background of male and female workers were similar among MNEs and local plants (as indicated by similar MNE-local differentials in males and females), especially in 2003-2004.

Shares of moderately educated workers (those completing secondary education but not progressing to tertiary education) in MNEs (Table 4b) also varied greatly across industries and sometimes across years, but the ranges were more similar for males and females (3.5-34 percent and 6.3-36 percent, respectively). Combined, moderately educated males and females made up an average of just over one-third of MNEs' paid workers, with relatively high shares (47 percent or more in most years) observed in radio, tv \& communication machinery, precision machinery, and motor vehicles and relatively low shares ( 22 percent or less in all years) in apparel, wood, and furniture. If males and females are combined, MNE-local differentials exceeded 10 percent in 13-14 of the 18 industries in 2001-2004, but only 9 in 2000. Similar differentials were observed for 15 industries for females in 2001-2004, but only 8-11 industries for males.

In short, these industry-level compilations suggest MNEs both paid higher wages and tended to hire more high-paid and moderately or highly educated workers than local plants during this period. Previous compilations also suggest that MNEs tend to be larger and more capital intensive than local plants during this period (Ramstetter and Haji Ahmad 2009). These differences can all explain at least part of the observed wage differentials between

MNEs and local plants. It is thus of interest to examine whether wage differentials persist after accounting for these other, related differences between MNEs and local plants.

## 4. Results of Estimating Earnings Equations

The influences of plant-level capital intensity, size, and worker quality on plant-level wage differentials can be investigating by adding a dummy variable for MNE plants to a typical earnings equation like the following:
(1) $L C E_{i t}=a 0+a 1\left(L K E_{i t}\right)+a 2\left(L O_{i t}\right)+a 3\left(S M H_{i t}\right)+a 4\left(\right.$ SFH $\left._{i t}\right)+a 5\left(S M L_{i t}\right)$
$+a 6\left(S M 3_{i t}\right)+a 7\left(S F 3_{i t}\right)+a 8\left(S M 2_{i t}\right)+a 9\left(S F 2_{i t}\right)+a 10\left(S M 1_{i t}\right)+a 11\left(D F_{i t}\right)$
$+a 12(D I)+a 13(D R)+a 14(D Y)$
where
$D F_{i t}=$ dummy variable identifying MNE plant i in year t ( $=1$ if MNE, 0 otherwise)
$\boldsymbol{D I}=$ a set of 43 3-digit industry dummy variables ${ }^{19}$
$\boldsymbol{D} \boldsymbol{R}=$ a set of 14 regional (state/federal territory) dummy variables ${ }^{20}$
$\boldsymbol{D R}=$ a set of 4 year dummies for 2001-2004 (2000 is the reference year)
$L C E_{i t}=\log$ of compensation per employee in plant i, year $t$ (RM, 2000 prices)
$L K E_{i t}=\log$ of fixed assets per employee in plant i , year t (RM, 2000 prices)
$L O_{i t}=$ plant size, measured as the log of output in plant i, year t (RM, 2000 prices)
$S F 2_{i j}=$ share of moderately educated females in paid workers in plant i , year t (percent)
$S F 3_{i j}=$ share of highly educated females in paid workers in plant $i$, year $t$ (percent)
$S F H_{i j}=$ share of females in highly paid occupations in paid workers in plant $i$, year $t$ (percent)
$S M 1_{i j}=$ share of moderately educated males in paid workers in plant i , year t (percent)
$S M 2_{i j}=$ share of moderately educated males in paid workers in plant i , year t (percent)
$S M 3_{i j}=$ share of highly educated males in paid workers in plant $i$, year $t$ (percent)
$S M H_{i j}=$ share of males in highly paid occupations in paid workers in plant i , year t (percent)
$S M H_{i j}=$ share of males in lowly paid occupations in paid workers in plant i , year t (percent)
As in Table 2, the dependent variable is defined to include all compensation to employees including all bonuses, payments in kind, social insurance payments, and other compensation. Reflecting previous discussion, signs of the coefficients on capital intensity (a1) and size (a2) are generally expected to be positive because capital intensive and larger plants are generally expected to have more productive and better paid workers than smaller, more labor intensive ones. If worker quality was measured in only one of the two dimensions (occupation or

[^8]education), one would also expect the signs on the worker group shares in the equation ( $a 3$ to a10) to be positive because the omitted groups (females with lower paying occupations and low education) are likely to be lowest paid of the four occupation and six educational groups.

However, both quality dimensions and the sex dimension all affect average compensation significantly in many samples and interactions of these three dimensions are sometimes complex, making the coefficients on this variable indeterminate a priori. For example, in results for all manufacturing combined (Table 5), coefficients were positive and highly significant (at the 1 percent level or better) for both males and females with higher education, and larger for males in all samples. Coefficients for males with secondary education and lower education were also positive and highly significant in all estimates, and larger than for females with tertiary education or secondary education, though coefficients for females with secondary education were only significant at the conventional (5 percent) level in 2002-2004. Taken by themselves, these results all suggest that relatively educated workers earn more than relatively uneducated ones, but that male-female differences in pay overwhelm educationrelated differences.

However, the picture is more complicated when one realizes that coefficients on workers in high-paying occupations are positive for females but significantly negative for males, and that the coefficient on males in low-paying occupations is also negative. In other words, highly or moderately educated females, or females in high paying occupations earned more than the control groups (females with low education or low paying occupations). Likewise, highly or moderately educated males were highly compensated but this was offset by an occupational penalty for males that was largest for those in low paying occupations. ${ }^{21}$

[^9]The equation also includes sets of year, region, and industry dummies to account for yearspecific, region-specific, and industry specific influences on the constant which are not captured by the plant-level variables. Year specific dummies use the first year in each sample as the base and all estimates are also performed in samples for 2000-2002 and 2002-2004, in addition to 2000-2004, to investigate whether slope coefficients changed over time. In addition, compensation per employee, output, and capital stocks are converted to real values using the consumer price index. ${ }^{22}$ Region dummies are usually defined at the state level, but the lack of observations makes it necessary to combine some states when performing industry-level estimates. In such cases, states with similar population densities nearby locations are combined, to the extent possible. Because the descriptive data and previous research for Indonesia and Thailand suggest large variation in MNE-local wage differentials among industries, estimates are performed individually for 17 industries and compared to results for all manufacturing. Because there are few observations and similar firms often operate in both industries, office and computing machinery and precision machinery are combined for this purpose; the other 16 industries are defined at the 2 - or 3-digit level as in Tables 1-4b. Industry dummies are also defined at the three digit level and excluded from estimates for the three industries defined at the 3-digit level (rubber, plastics, and furniture).

The coefficient on the MNE dummy is the primary concern here. If this coefficient is positive and statistically significant, it indicates that positive MNE-local wage differentials persist even after accounting for the plant level influences of capital intensity, size, worker quality and sex composition as well as year-, region-, and industry-specific influences. If it becomes insignificant, it indicates that meaningful wage differentials do not persist after accounting for these influences. In combined samples of all medium-large plants in these 17

[^10]sample industries, this coefficient was always positive and highly significant, indicating that MNE-local wage differentials among all medium-large plants remained meaningful statistically, even if other influences were accounted for. However, there were important differences in results depending on estimation method and period examined. Pooled estimates (10 percent in 2000-2002 and 7.5 percent in 2002-2004, or an average of 9.1 percent in 20002004) were always larger than random effects’ panel estimates ( 8.7 percent, 5.0 percent, and 6.5 percent, respectively). All estimates indicated that MNE-local wage differentials declined between 2000-2002 and 2002-2004. ${ }^{23}$.

Space constraints prevent the presentation of details for all 17 industries (see Appendix Table 5), but Table 1 presents coefficients on the MNE dummies for each industry. As in Table 2, wage differentials often differ greatly across industries and periods, but it is meaningful that no negative and significant are observed, while positive and significant wage differentials were observed in 11-13 of the 17 industries in 2000-2002 and 6-10 industries in 2002-2004. Here again wage differentials tended to be smaller when the random effects' estimator was used. They also declined between 2000-2002 and 2002-2004 in the six industries where significant differentials were always observed regardless of period or estimation method (food and beverages, textiles, chemicals, rubber, general machinery, radio, tv, and communication machinery). Results for three more (plastics, basic metals, and furniture) also indicate significant differentials in 2000-2002 that declined, but the random effects results suggest differentials declined to the point of being insignificantly different from zero in 2002-2004 at standard levels, though the differential in furniture remained weakly significant at the 10 percent level. The results are thus more or less consistent with the observations from Table 2. MNE-local wage differentials were generally positive and

[^11]declined over time even after the influences of capital intensity, size, worker quality, industry affiliation, location, and year of operation are accounted for. Similarly, wage differentials were statistically significant in most industries in 2000-2002 but only about one-third to just over one half in 2002-2004.

## 5. Conclusions

This paper has investigated the extent of wage differentials between medium-large MNEs and local plants in Malaysia in the early $21^{\text {st }}$ Century. After a brief literature review, it provided descriptive evidence that MNEs generally paid higher wages and had more workers in high-paying occupations or with relatively good educational backgrounds. It also cited earlier evidence that MNEs tended to be more capital intensive and larger than medium-large local plants. In large, combined samples of 17 manufacturing industries (excluding a few smaller, statistically unusual industries), estimates of earnings equations suggest that highly statistically significant wage differentials averaging 6-9 percent persisted after accounting for differences in labor quality, capital intensity, size, and the effects of industry affiliation and plant location on the constants estimated. When all slopes are allowed to vary among 17 industries (by estimating separate equations for each industry), results varied among industries, subperiods, and estimation method. Significant differentials were more common in 2000-2002 than in 2002-2004 and were observed more often in pooled estimates than in random effects estimates. Estimates yielded consistently significant differentials for all periods and estimation methods in six industries: food and beverages, chemicals, rubber, general machinery, electrical machinery, and furniture. Wage differentials declined between 2000-2002 and 2002-2004 in five of these industries (all but food and beverages).

These findings are an important addition to the literature on MNE-local wage differentials in developing economies in Southeast Asia and elsewhere. However, they leave several
important questions unanswered. For example, how do MNE takeovers of local plants (or vice versa) affect wage differentials? Alternatively, does MNE presence affect wage levels in local plants in Malaysia? Although such questions are of keen interest, their answers require use of statistical techniques that are not compatible with the evaluation of average wage differentials as done here and are left for future research. Analysis of the latter question also requires aggregation of industries that the industry-level results from this paper suggest may bias results.

## References:

Aitken, Brian, Ann. Harrison and Robert E. Lipsey (1996) "Wages and Foreign Ownership: A Comparative study of Mexico, Venezuela, and the United States", Journal of International Economics, 40: 345-371.
Caves, Richard E. (2007), Multinational Enterprise and Economic Analysis, $3^{\text {rd }}$ edition, London: Cambridge University Press.
Chapman, Bruce J. and J. Ross Harding (1985), "Sex Differences in Earnings: An Analysis of Malaysian Wage Data", Journal of Development Studies, 21: 362-376.

Department of Statistics (2002), Census of Manufacturing Industries 2001 [2000 data]. Kuala Lumpur: Department of Statistics.

Department of Statistics (2010), Malaysia Economic Statistics-Time Series 2009, Kuala Lumpur: Department of Statistics.

Department of Statistics (various years), Annual Survey of Manufacturing Industries, 19921994, 1996-2005 issues [1992-1997, 1999, 2001-2004 data], Kuala Lumpur: Department of Statistics.

Dunning, John H. (1993), Multinational Enterprises and the Global Economy. Workingham, U.K.: Addison-Wesley Publishing Co.

Ismail, Rahmah and Haji Mat Zin, Ragayah (2003), "Earnings Differentials Determinants between Skills in the Malaysian Manufacturing Sector", Asian Economic Journal, 17: 325340.

Lee, Kiong-Hock and Shyamala Nagaraj (1995), "Sex Differences in Earnings: An Analysis of Malaysian Wage Data", Journal of Development Studies, 31: 467-480.
Lim, David (1977), "Do Foreign Companies Pay Higher Wages than Their Local Counterparts in Malaysian Manufacturing", Journal of Development Economics, 4: 55-66.

Lipsey, Robert E., and Fredrik Sjöholm (2004a), "Foreign Direct Investment, Education, and Wages in Indonesian Manufacturing", Journal of Development Economics, 73: 415-22.

Lipsey, Robert E., and Fredrik Sjöholm (2004b), "FDI and Wage Spillovers in Indonesian Manufacturing," Review of World Economics, 40: 321-32.

Lipsey, Robert E. and Fredrik Sjöholm (2005), "Host Country Impacts of Inward FDI: Why Such Different Answers?" in Theodore H. Moran, Edward M. Graham, and Magnus Blomstrom, eds., Does Foreign Direct Investment Promote Development?, Washington D.C.: Institute for International Economics, pp. 23-43.

Lipsey, Robert E. and Fredrik Sjöholm (2006), "Foreign Multinationals and Wages in Indonesia" in Eric D. Ramstetter and Fredrik Sjöholm, eds., Multinationals in Indonesia and Thailand: Wages, Productivity and Exports. Hampshire, UK: Palgrave-Macmillan, pp. 35-53.

Markusen, James R. (2002), Multinational Firms and the Theory of International Trade. Cambridge, MA: M.I.T. Press.

Milanovic, Branko (2006), "Inequality and Determinants of Earnings in Malaysia", Asian Economic Journal, 20: 191-216.

Movshuk, Oleksandr and Atsuko Matsuoka-Movshuk (2006), "Multinationals and Wages in Thai Manufacturing", in Eric D. Ramstetter and Fredrik Sjöholm, eds., Multinationals in Indonesia and Thailand: Wages, Productivity and Exports. Hampshire, UK: PalgraveMacmillan, pp. 54-81.

Ramstetter, Eric D. (1995), "Characteristics of Multinational Firms in Malaysia: A Time Series Perspective" in Mitsuru Toida and Daisuke Hiratsuka, eds., Ajia Kogyoken no Keizai Bunseki to Yosoku (IV) [Projections for Asian Industrializing Region (IV)], Tokyo: Institute of Developing Economies, pp. 95-171.
Ramstetter, Eric D. (1999), "Comparisons of Foreign Multinationals and Local Firms in Asian Manufacturing Over Time", Asian Economic Journal, 13(2), 163-203.
Ramstetter, Eric D. and Shahrazat Binti Haji Ahmad (2009), "Foreign Multinationals in Malaysian Manufacturing After the Crisis", Working Paper 2009-13, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. (2011), "Recent Downturn and Foreign Multinationals in East Asian Manufacturing", Working Paper 2011-11, Kitakyushu: International Centre for the Study of East Asian Development.

Schafgans, Marcia M.A. (2000), "Gender Wage Differences in Malaysia", Journal of Development Economics, 63: 351-378.

Sjöholm, Fredrik and Robert E. Lipsey (2006), "Foreign Firms and Indonesian Manufacturing Wages: An Analysis with Panel Data", Economic Development and Cultural Change, 55(1), 201-221.

Table 1: Number of Paid Workers in MNEs and MNE Shares of Paid Workers in Plants with Viable Data

| Industry | MNEs (1,000s) |  |  |  |  | MNE shares (\%) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| MEDIUM-LARGE PLANTS, 20+ workers | 598.95 | 546.93 | 571.08 | 573.79 | 607.04 | 40 | 41 | 40 | 40 | 40 |
| Sample industries | 579.05 | 527.25 | 551.56 | 557.72 | 584.52 | 41 | 42 | 41 | 41 | 42 |
| Food, beverages | 15.44 | 16.13 | 15.28 | 14.31 | 15.88 | 14 | 14 | 13 | 12 | 13 |
| Textiles | 21.33 | 18.35 | 21.83 | 16.48 | 16.33 | 48 | 47 | 50 | 43 | 45 |
| Apparel | 20.82 | 22.94 | 31.52 | 23.50 | 37.73 | 30 | 35 | 42 | 34 | 49 |
| Wood products | 17.81 | 16.42 | 16.77 | 18.73 | 19.91 | 14 | 15 | 15 | 17 | 17 |
| Paper products | 5.28 | 6.26 | 5.45 | 4.59 | 5.51 | 16 | 21 | 17 | 15 | 16 |
| Chemicals | 17.13 | 17.49 | 19.29 | 18.71 | 20.11 | 38 | 41 | 41 | 38 | 39 |
| Rubber products | 25.81 | 24.60 | 26.25 | 28.08 | 28.48 | 36 | 37 | 39 | 41 | 39 |
| Plastics | 21.31 | 19.40 | 27.44 | 30.54 | 31.18 | 23 | 24 | 28 | 30 | 31 |
| Non-metallic mineral products | 12.29 | 12.74 | 13.37 | 12.46 | 13.03 | 22 | 23 | 24 | 23 | 24 |
| Basic metals | 9.50 | 9.04 | 10.15 | 10.92 | 9.25 | 24 | 24 | 25 | 27 | 22 |
| Fabricated metals | 16.13 | 13.50 | 14.98 | 17.00 | 16.17 | 28 | 26 | 24 | 27 | 24 |
| General machinery | 24.35 | 21.22 | 18.85 | 16.99 | 20.63 | 52 | 47 | 41 | 38 | 40 |
| Electronics-related machinery | 353.95 | 313.61 | 314.03 | 328.76 | 331.41 | 70 | 77 | 73 | 74 | 75 |
| Office \& computing machinery | 59.50 | 56.83 | 53.94 | 51.69 | 61.45 | 82 | 86 | 91 | 90 | 96 |
| Electrical machinery | 41.66 | 37.31 | 33.00 | 40.50 | 39.91 | 54 | 62 | 50 | 60 | 59 |
| Radio, tv \& communication machinery | 229.66 | 194.89 | 205.20 | 213.33 | 208.21 | 70 | 78 | 74 | 73 | 73 |
| Precision machinery | 23.13 | 24.57 | 21.89 | 23.24 | 21.83 | 80 | 83 | 94 | 94 | 88 |
| Motor vehicles | 5.39 | 4.68 | 4.91 | 6.97 | 8.08 | 16 | 12 | 10 | 15 | 16 |
| Furniture | 12.51 | 10.87 | 11.44 | 9.68 | 10.81 | 20 | 18 | 17 | 14 | 14 |
| Excluded industries | 19.90 | 19.68 | 19.52 | 16.07 | 22.52 | 20 | 21 | 19 | 16 | 21 |
| SMALL PLANTS, 1-19 workers | 1.74 | 1.04 | 0.96 | 0.98 | 0.82 | 2 | 2 | 2 | 2 | 2 |

Note: Plants with viable data are those with positive paid workers, output, worker compensation, and fixed assets; exluded industries are tobacco, leather \& footwear, publishing, petroleum products, other transport equipment, and miscellaneous manufacturing.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 2: Mean Annual Compensation per Paid Worker in Medium-Large MNEs and MNE-Local Wage Differentials

| Industry | MNEs (current RM/year) |  |  |  | MNE-local differentials (\%) |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Mean of 18 sample industries | 22,744 | 23,997 | 24,767 | 26,081 | 26,390 | 29 | 26 | 26 | 27 | 23 |
| Food, beverages | 28,428 | 28,909 | 31,257 | 31,585 | 32,886 | 70 | 83 | 93 | 85 | 88 |
| Textiles | 19,341 | 20,210 | 20,166 | 20,366 | 19,744 | 31 | 26 | 24 | 22 | 12 |
| Apparel | 13,986 | 15,085 | 14,508 | 14,969 | 16,142 | 22 | 28 | 19 | 21 | 38 |
| Wood products | 15,390 | 15,853 | 15,986 | 15,274 | 16,006 | 18 | 15 | 12 | 4 | 4 |
| Paper products | 21,329 | 23,240 | 23,357 | 26,591 | 24,786 | 18 | 21 | 15 | 28 | 20 |
| Chemicals | 36,959 | 36,524 | 40,813 | 43,183 | 45,241 | 47 | 40 | 46 | 47 |  |
| Rubber products | 19,973 | 20,996 | 21,374 | 21,891 | 23,556 | 30 | 32 | 28 | 29 | 30 |
| Plastics | 19,187 | 21,252 | 22,820 | 23,429 | 23,020 | 22 | 27 | 31 | 29 | 16 |
| Non-metallic mineral products | 28,669 | 30,594 | 29,863 | 34,416 | 34,133 | 61 | 68 | 57 | 67 | 59 |
| Basic metals | 27,426 | 30,284 | 29,044 | 32,200 | 30,599 | 28 | 30 | 22 | 34 | 20 |
| Fabricated metals | 24,148 | 24,538 | 24,138 | 25,411 | 26,015 | 40 | 33 | 30 | 29 | 27 |
| General machinery | 29,093 | 32,604 | 34,257 | 37,092 | 36,321 | 41 | 42 | 44 | 55 | 47 |
| Office \& computing machinery | 21,440 | 22,661 | 25,174 | 26,031 | 25,812 | -8 | -16 | 12 | -19 | -32 |
| Electrical machinery | 19,207 | 21,746 | 21,907 | 22,944 | 23,312 | 12 | 17 | 7 | 9 | 4 |
| Radio, tv \& communication machinery | 21,109 | 24,046 | 22,766 | 23,790 | 24,426 | 14 | 26 | 20 | 11 | -1 |
| Precision machinery | 23,058 | 23,017 | 24,887 | 22,045 | 25,926 | 8 | -10 | -15 | -15 | 18 |
| Motor vehicles | 25,510 | 23,890 | 26,642 | 29,720 | 28,633 | 42 | 20 | 28 | 40 | 27 |
| Furniture | 15,141 | 16,507 | 16,839 | 18,530 | 18,455 | 19 | 26 | 18 | 31 | 25 |

Note: Samples consist of plants with 20 or more employees and positive output, employee compensation, and fixed assets; exluded industries are tobacco, leather \& footwear, publishing, petroleum products, other transport equipment, and miscellaneous manufacturing. Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 3: Mean Shares of Workers in Highly Paid Occupations in Paid Workers in Medium-Large MNEs and MNE/Local Ratios

| Industry | MNEs (\% of paid workers) |  |  |  |  |  | MNE/local ratios |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 |  | 2001-02avg |  | 2003-04avg |  | 2000 |  | 2001-02avg |  | 2003-04avg |  |
|  | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| Mean of 18 sample industries | 15.4 | 4.0 | 16.3 | 4.5 | 16.8 | 4.7 | 1.20 | 1.41 | 1.09 | 1.46 | 1.09 | 1.43 |
| Food, beverages | 18.2 | 4.5 | 20.3 | 5.0 | 19.2 | 5.1 | 1.32 | 2.53 | 1.38 | 2.23 | 1.36 | 2.15 |
| Textiles | 13.2 | 3.6 | 14.3 | 4.6 | 13.3 | 4.3 | 1.19 | 1.02 | 1.11 | 1.19 | 1.06 | 1.02 |
| Apparel | 3.8 | 5.3 | 4.2 | 5.3 | 3.7 | 5.1 | 0.86 | 1.39 | 0.79 | 1.10 | 0.53 | 0.86 |
| Wood products | 9.7 | 0.9 | 9.7 | 1.1 | 8.9 | 1.1 | 1.04 | 0.87 | 0.91 | 1.17 | 0.88 | 1.07 |
| Paper products | 14.4 | 4.1 | 15.9 | 5.0 | 16.8 | 5.5 | 1.15 | 1.48 | 1.17 | 1.64 | 1.21 | 1.75 |
| Chemicals | 26.8 | 5.9 | 27.2 | 6.4 | 28.7 | 6.6 | 1.43 | 1.19 | 1.31 | 1.14 | 1.31 | 1.13 |
| Rubber products | 11.9 | 2.7 | 13.1 | 2.9 | 12.2 | 3.1 | 1.08 | 1.43 | 1.07 | 1.38 | 1.06 | 1.43 |
| Plastics | 15.9 | 3.6 | 16.5 | 4.5 | 15.7 | 3.8 | 1.28 | 1.32 | 1.14 | 1.39 | 1.11 | 1.19 |
| Non-metallic mineral products | 19.5 | 2.9 | 17.7 | 3.6 | 20.8 | 4.0 | 1.43 | 1.82 | 1.16 | 2.20 | 1.41 | 2.06 |
| Basic metals | 21.5 | 4.2 | 21.4 | 4.3 | 22.8 | 5.0 | 1.35 | 1.84 | 1.14 | 1.71 | 1.28 | 1.88 |
| Fabricated metals | 17.0 | 3.2 | 17.3 | 3.5 | 16.9 | 4.0 | 1.26 | 1.42 | 1.06 | 1.54 | 1.03 | 1.67 |
| General machinery | 22.6 | 4.2 | 25.2 | 4.4 | 26.7 | 4.9 | 1.32 | 2.06 | 1.33 | 1.93 | 1.33 | 1.80 |
| Office \& computing machinery | 13.6 | 5.6 | 16.0 | 6.0 | 19.8 | 8.0 | 1.35 | 0.68 | 1.08 | 0.86 | 1.06 | 1.25 |
| Electrical machinery | 13.6 | 4.0 | 16.3 | 4.4 | 15.4 | 4.7 | 1.03 | 1.30 | 1.06 | 1.12 | 0.92 | 1.15 |
| Radio, tv \& communication machinery | 14.6 | 5.3 | 16.7 | 6.0 | 16.5 | 5.8 | 1.21 | 1.33 | 1.07 | 1.13 | 0.98 | 1.00 |
| Precision machinery | 14.3 | 6.6 | 13.7 | 6.7 | 14.2 | 6.0 | 1.11 | 1.17 | 0.86 | 1.42 | 0.81 | 0.80 |
| Motor vehicles | 16.1 | 3.6 | 16.5 | 4.8 | 17.8 | 5.0 | 1.12 | 1.53 | 0.96 | 1.95 | 1.12 | 2.19 |
| Furniture | 10.0 | 1.7 | 10.9 | 1.9 | 12.6 | 2.4 | 1.08 | 1.10 | 1.09 | 1.19 | 1.17 | 1.30 |

Note: Samples consist of plants with 20 or more employees and positive output, employee compensation, and fixed assets; exluded industries are tobacco, leather \& footwear, publishing, petroleum products, other transport equipment, and miscellaneous manufacturing; highly paid occupations are (1) proprieters, business partners, (2) managers, professionals, executives, and (3) technicians, professionals.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 4a: Mean Shares of Highly Educated Workers in Paid and Unpaid Workers in Medium-Large MNEs and MNE/Local Ratios

| Industry | MNEs (\% of paid workers) |  |  |  |  |  | MNE/local ratios |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 |  | 2001-02avg |  | 2003-04avg |  | 2000 |  | 2001-02avg |  | 2003-04avg |  |
|  | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| Mean of 18 sample industries | 10.1 | 4.8 | 10.5 | 5.1 | 11.7 | 5.6 | 1.23 | 1.48 | 1.40 | 1.49 | 1.34 | 1.36 |
| Food, beverages | 11.1 | 5.7 | 11.3 | 6.3 | 11.7 | 7.0 | 1.93 | 2.58 | 2.45 | 2.75 | 2.34 | 2.70 |
| Textiles | 6.0 | 2.6 | 5.0 | 2.8 | 5.7 | 3.5 | 1.01 | 0.80 | 0.93 | 0.78 | 0.92 | 0.87 |
| Apparel | 1.8 | 3.1 | 2.0 | 2.7 | 1.8 | 2.5 | 0.78 | 1.34 | 1.09 | 1.17 | 0.71 | 0.82 |
| Wood products | 5.4 | 2.0 | 5.0 | 1.8 | 4.2 | 1.7 | 1.38 | 1.57 | 1.53 | 1.38 | 1.18 | 1.14 |
| Paper products | 10.3 | 5.7 | 9.8 | 6.5 | 9.4 | 7.9 | 1.23 | 1.49 | 1.34 | 1.61 | 1.14 | 1.56 |
| Chemicals | 20.2 | 8.2 | 20.9 | 8.9 | 23.5 | 9.5 | 1.57 | 1.40 | 1.78 | 1.41 | 1.74 | 1.26 |
| Rubber products | 7.2 | 3.6 | 6.3 | 3.1 | 6.9 | 3.4 | 1.12 | 1.39 | 1.15 | 1.32 | 1.13 | 1.06 |
| Plastics | 8.8 | 5.4 | 10.4 | 6.7 | 10.6 | 5.5 | 1.16 | 1.57 | 1.54 | 1.73 | 1.43 | 1.26 |
| Non-metallic mineral products | 13.4 | 5.5 | 13.2 | 6.1 | 16.3 | 6.8 | 1.86 | 2.45 | 2.09 | 2.66 | 2.36 | 2.45 |
| Basic metals | 12.8 | 4.7 | 12.9 | 4.6 | 13.9 | 5.5 | 1.22 | 1.42 | 1.37 | 1.40 | 1.34 | 1.44 |
| Fabricated metals | 10.7 | 4.8 | 11.8 | 5.1 | 12.4 | 5.7 | 1.17 | 1.52 | 1.67 | 1.67 | 1.66 | 1.68 |
| General machinery | 19.8 | 6.6 | 22.2 | 7.0 | 25.3 | 7.9 | 1.94 | 2.20 | 2.14 | 2.14 | 2.21 | 2.05 |
| Office \& computing machinery | 11.4 | 7.0 | 12.4 | 6.3 | 15.0 | 8.4 | 1.15 | 1.31 | 1.11 | 0.92 | 0.72 | 0.78 |
| Electrical machinery | 9.2 | 4.8 | 11.6 | 5.8 | 11.4 | 5.8 | 0.91 | 1.12 | 1.24 | 1.31 | 0.93 | 1.06 |
| Radio, tv \& communication machinery | 10.4 | 6.0 | 12.4 | 6.0 | 13.0 | 6.2 | 0.97 | 1.23 | 1.14 | 1.08 | 0.97 | 0.96 |
| Precision machinery | 8.5 | 4.6 | 8.0 | 4.8 | 10.6 | 5.4 | 0.75 | 0.72 | 0.46 | 0.63 | 0.68 | 0.57 |
| Motor vehicles | 10.7 | 4.2 | 10.6 | 5.6 | 13.9 | 5.3 | 1.11 | 1.43 | 1.09 | 1.67 | 1.43 | 1.55 |
| Furniture | 4.8 | 2.2 | 3.8 | 2.2 | 5.7 | 2.7 | 0.93 | 1.13 | 1.03 | 1.12 | 1.27 | 1.24 |

Note: Samples consist of plants with 20 or more employees and positive output, employee compensation, and fixed assets; exluded industries are tobacco, leather \& footwear, publishing, petroleum products, other transport equipment, and miscellaneous manufacturing; highly educated workers with education beyond the Malaysian Education Certificate Education (SPM; i.e., workers who progressed to vocational school, college, university, or graduate school after secondary school).
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 4b: Mean Shares of Moderately Educated Workers in Paid and Unpaid Workers in Medium-Large MNEs and MNE/Local Ratios

| Industry | MNEs (\% of paid workers) |  |  |  |  |  | MNE/local ratios |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 |  | 2001-02avg |  | 2003-04avg |  | 2000 |  | 2001-02avg |  | 2003-04avg |  |
|  | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| Mean of 18 sample industries | 19.8 | 15.1 | 21.5 | 16.4 | 21.0 | 17.0 | 1.01 | 1.04 | 1.09 | 1.33 | 1.03 | 1.35 |
| Food, beverages | 24.5 | 10.5 | 25.0 | 11.0 | 24.2 | 11.5 | 1.35 | 1.19 | 1.42 | 1.23 | 1.33 | 1.19 |
| Textiles | 18.5 | 14.0 | 19.6 | 17.4 | 18.6 | 18.5 | 1.21 | 0.94 | 1.10 | 1.13 | 1.04 | 1.25 |
| Apparel | 3.6 | 12.5 | 5.6 | 15.3 | 5.2 | 16.6 | 0.57 | 0.87 | 0.95 | 1.08 | 0.65 | 0.93 |
| Wood products | 11.1 | 6.3 | 14.2 | 7.2 | 12.9 | 8.9 | 0.89 | 0.99 | 1.07 | 1.26 | 0.94 | 1.61 |
| Paper products | 24.3 | 14.8 | 26.0 | 16.6 | 26.8 | 17.1 | 1.12 | 1.09 | 1.18 | 1.44 | 1.14 | 1.39 |
| Chemicals | 31.3 | 9.7 | 31.9 | 9.4 | 32.5 | 8.5 | 1.31 | 0.73 | 1.29 | 0.83 | 1.20 | 0.72 |
| Rubber products | 16.0 | 11.7 | 19.0 | 14.0 | 17.3 | 16.0 | 0.98 | 1.16 | 1.11 | 1.48 | 1.03 | 1.60 |
| Plastics | 18.7 | 16.3 | 23.0 | 18.6 | 21.8 | 17.1 | 0.98 | 1.08 | 1.26 | 1.42 | 1.22 | 1.30 |
| Non-metallic mineral products | 22.0 | 10.6 | 24.5 | 10.0 | 23.6 | 10.6 | 1.22 | 1.39 | 1.32 | 1.68 | 1.28 | 1.83 |
| Basic metals | 27.5 | 10.7 | 32.1 | 13.0 | 28.1 | 10.0 | 1.15 | 1.07 | 1.24 | 1.65 | 1.14 | 1.37 |
| Fabricated metals | 27.3 | 11.7 | 28.6 | 12.1 | 25.4 | 13.0 | 1.20 | 0.94 | 1.36 | 1.44 | 1.16 | 1.59 |
| General machinery | 27.0 | 12.2 | 29.9 | 10.9 | 28.5 | 11.7 | 1.06 | 1.22 | 1.05 | 1.23 | 0.99 | 1.32 |
| Office \& computing machinery | 15.0 | 22.0 | 14.2 | 24.0 | 16.5 | 29.4 | 0.64 | 0.82 | 0.58 | 0.86 | 0.95 | 1.53 |
| Electrical machinery | 12.9 | 20.8 | 15.8 | 25.9 | 16.7 | 28.3 | 0.60 | 0.99 | 0.74 | 1.48 | 0.67 | 1.78 |
| Radio, tv \& communication machinery | 13.9 | 29.5 | 14.3 | 32.3 | 14.1 | 34.4 | 0.80 | 1.14 | 1.11 | 1.25 | 0.93 | 1.20 |
| Precision machinery | 17.1 | 36.2 | 16.2 | 31.5 | 16.0 | 33.5 | 1.06 | 1.30 | 0.73 | 1.69 | 0.86 | 1.43 |
| Motor vehicles | 32.1 | 14.6 | 32.1 | 17.6 | 34.0 | 13.8 | 1.28 | 1.10 | 1.14 | 1.73 | 1.17 | 1.34 |
| Furniture | 12.8 | 6.9 | 14.2 | 7.7 | 16.0 | 6.6 | 0.75 | 0.65 | 0.89 | 1.09 | 0.88 | 0.94 |

Note: Samples consist of plants with 20 or more employees and positive output, employee compensation, and fixed assets; exluded industries are tobacco, leather \& footwear, publishing, petroleum products, other transport equipment, and miscellaneous manufacturing; highly educated workers with education beyond the Malaysian Education Certificate Education (SPM; i.e., workers who progressed to vocational school, college, university, or graduate school after secondary school).
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 5: Major Details for Estimates of MNE-Local Wage Differentials

| Independent variable, $\mathrm{R}^{2}$, industry | 2000-2002 |  | 2002-2004 |  | 2000-2004 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pooled | R. Effects | Pooled | R. Effects | Pooled | R. Effects |
| SELECTED RESULTS FOR SELECTED MANUFACTURING INDUSTRIES COMBINED |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.0335 a | 0.0394 a | 0.0302 a | 0.0318 a | 0.0325 a | 0.0358 a |
| $L O_{i t}$ | 0.1159 a | 0.1221 a | 0.1180 a | 0.1229 a | 0.1172 a | 0.1256 a |
| SMH ${ }_{\text {it }}$ | -0.0062 a | -0.0039 a | -0.0072 a | -0.0058 a | -0.0062 a | -0.0040 a |
| SFH ${ }_{\text {it }}$ | 0.0102 a | 0.0093 a | 0.0089 a | 0.0070 a | 0.0093 a | 0.0078 a |
| SML ${ }_{\text {it }}$ | -0.0155 a | -0.0132 a | -0.0144 a | -0.0133 a | -0.0147 a | -0.0125 a |
| SM3 it | 0.0228 a | 0.0190 a | 0.0240 a | 0.0212 a | 0.0226 a | 0.0184 a |
| SF3 ${ }_{\text {it }}$ | 0.0089 a | 0.0074 a | 0.0095 a | 0.0082 a | 0.0092 a | 0.0074 a |
| SM2 it | 0.0196 a | 0.0161 a | 0.0193 a | 0.0170 a | 0.0190 a | 0.0152 a |
| SF2 it | -0.0003 | -0.0005 c | 0.0013 a | 0.0009 a | 0.0002 | 0.0000 |
| SM1 it | 0.0191 a | 0.0159 a | 0.0181 a | 0.0162 a | 0.0182 a | 0.0149 a |
| $D F_{i t}$ | 0.1009 a | 0.0868 a | 0.0747 a | 0.0498 a | 0.0911 a | 0.0645 a |
| $\mathrm{R}^{2}$ | 0.57 | 0.57 | 0.58 | 0.58 | 0.57 | 0.57 |

COEFFICIENTS ON $D F_{i t}$ FROM INDUSTRY-LEVEL REGRESSIONS

| Food, beverages | 0.1017 a | 0.0845 a | 0.1212 a | 0.1376 a | 0.1131 a | 0.1034 a |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Textiles | 0.1495 a | 0.1184 b | 0.1015 a | 0.1062 b | 0.1233 a | 0.0677 |
| Apparel | 0.0391 | 0.0833 c | 0.0570 c | 0.0325 | 0.0516 b | 0.1079 a |
| Wood products | 0.0341 | 0.0245 | -0.0058 | 0.0038 | 0.0184 | 0.0229 |
| Paper products | 0.0608 c | 0.0280 | 0.0487 | 0.0344 | 0.0661 b | 0.0202 |
| Chemicals | 0.1252 a | 0.0941 a | 0.0898 a | 0.1030 a | 0.1061 a | 0.0900 a |
| Rubber products | 0.2301 a | 0.1825 a | 0.1867 a | 0.0957 a | 0.2180 a | 0.1218 a |
| Plastics | 0.1039 a | 0.0826 a | 0.0702 a | 0.0270 | 0.0889 a | 0.0387 |
| Non-metallic mineral products | 0.0817 b | 0.0694 | 0.0578 | 0.0423 | 0.0756 a | 0.0352 |
| Basic metals | 0.1265 a | 0.1000 a | 0.0924 a | 0.0583 | 0.1135 a | 0.0475 |
| Fabricated metals | 0.0899 a | 0.1102 a | 0.0137 | 0.0136 | 0.0646 a | 0.0675 b |
| General machinery | 0.0831 b | 0.1277 a | 0.0608 c | 0.1185 b | 0.0726 a | 0.1339 a |
| Office, computing, \& prec, mach. | -0.0337 | -0.0479 | -0.1045 c | -0.0756 | -0.0389 | -0.0379 |
| Electrical machinery | 0.1138 a | 0.0939 a | 0.0889 a | 0.0929 b | 0.1085 a | 0.0841 a |
| Radio, tv \& communication mach. | 0.0513 b | 0.0305 | 0.0453 b | 0.0140 | 0.0454 b | 0.0245 |
| Motor vehicles | 0.2249 a | 0.2123 a | 0.1153 b | 0.1214 | 0.1680 a | 0.1752 a |
| Furniture | 0.1177 a | 0.0960 b | 0.0981 a | 0.0716 c | 0.1070 a | 0.0680 b |

Notes: $a=$ signficant at the $1 \%$ level, $b=$ significant at the $5 \%$ level, $c=$ significant at the $10 \%$ level (all pvalues based on robust standard errors [clustered by plant for random effects]); estimated equations also include industry and state dummies as relevant (see explanation in the text); for individual industry estimates, other main coefficients and equation details presented in Appendix Table 5.

Appendix Table 1a: Number of Paid Workers in Medium-Large Plants with Viable Data (thousands)

| Industry | Majority-local plants |  |  |  |  | MNE plants |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Sample industries | 818.14 | 719.24 | 786.97 | 794.49 | 808.74 | 579.05 | 527.25 | 551.56 | 557.72 | 584.52 |
| Food, beverages | 98.50 | 97.39 | 104.94 | 109.24 | 108.92 | 15.44 | 16.13 | 15.28 | 14.31 | 15.88 |
| Textiles | 22.67 | 20.87 | 21.60 | 21.48 | 19.91 | 21.33 | 18.35 | 21.83 | 16.48 | 16.33 |
| Apparel | 48.43 | 41.83 | 42.76 | 44.71 | 39.27 | 20.82 | 22.94 | 31.52 | 23.50 | 37.73 |
| Wood products | 105.68 | 96.05 | 92.12 | 92.59 | 94.37 | 17.81 | 16.42 | 16.77 | 18.73 | 19.91 |
| Paper products | 26.90 | 23.19 | 27.45 | 25.91 | 28.53 | 5.28 | 6.26 | 5.45 | 4.59 | 5.51 |
| Chemicals | 28.28 | 24.66 | 27.79 | 30.28 | 31.25 | 17.13 | 17.49 | 19.29 | 18.71 | 20.11 |
| Rubber products | 46.70 | 42.46 | 40.34 | 40.99 | 43.83 | 25.81 | 24.60 | 26.25 | 28.08 | 28.48 |
| Plastics | 70.15 | 63.04 | 70.92 | 70.61 | 69.00 | 21.31 | 19.40 | 27.44 | 30.54 | 31.18 |
| Non-metallic mineral products | 43.22 | 42.89 | 42.36 | 41.70 | 41.15 | 12.29 | 12.74 | 13.37 | 12.46 | 13.03 |
| Basic metals | 30.38 | 28.92 | 29.98 | 29.91 | 32.83 | 9.50 | 9.04 | 10.15 | 10.92 | 9.25 |
| Fabricated metals | 41.60 | 38.59 | 46.77 | 46.66 | 51.87 | 16.13 | 13.50 | 14.98 | 17.00 | 16.17 |
| General machinery | 22.21 | 23.87 | 26.57 | 27.95 | 30.43 | 24.35 | 21.22 | 18.85 | 16.99 | 20.63 |
| Electronics-related machinery | 154.34 | 92.80 | 113.69 | 113.35 | 110.29 | 353.95 | 313.61 | 314.03 | 328.76 | 331.41 |
| Office \& computing machinery | 12.62 | 9.06 | 5.65 | 5.61 | 2.80 | 59.50 | 56.83 | 53.94 | 51.69 | 61.45 |
| Electrical machinery | 35.46 | 23.13 | 32.87 | 27.35 | 27.51 | 41.66 | 37.31 | 33.00 | 40.50 | 39.91 |
| Radio, tv \& communication machinery | 100.48 | 55.42 | 73.85 | 78.99 | 76.91 | 229.66 | 194.89 | 205.20 | 213.33 | 208.21 |
| Precision machinery | 5.78 | 5.19 | 1.32 | 1.40 | 3.08 | 23.13 | 24.57 | 21.89 | 23.24 | 21.83 |
| Motor vehicles | 28.31 | 34.32 | 41.83 | 40.81 | 42.52 | 5.39 | 4.68 | 4.91 | 6.97 | 8.08 |
| Furniture | 50.78 | 48.36 | 57.85 | 58.30 | 64.56 | 12.51 | 10.87 | 11.44 | 9.68 | 10.81 |
| Excluded industries | 80.77 | 74.60 | 83.12 | 83.87 | 84.74 | 19.90 | 19.68 | 19.52 | 16.07 | 22.52 |
| Tobacco | 8.85 | 9.02 | 9.53 | 8.51 | 8.81 | 0.56 | 0.49 | 0.49 | 0.63 | 0.79 |
| Leather, footwear | 4.98 | 3.85 | 4.57 | 4.12 | 5.52 | 2.86 | 2.54 | 2.08 | 1.75 | 1.92 |
| Publishing | 26.65 | 27.78 | 31.21 | 29.21 | 31.37 | 3.64 | 3.01 | 3.29 | 3.67 | 3.79 |
| Petroleum products | 7.00 | 3.24 | 3.64 | 3.75 | 3.48 | 1.02 | 2.02 | 1.88 | 0.80 | 0.78 |
| Other transport equipment | 18.41 | 18.15 | 22.18 | 22.85 | 24.33 | 2.32 | 2.31 | 2.69 | 2.95 | 4.80 |
| Miscellaneous manufacturing | 14.75 | 12.37 | 11.74 | 15.19 | 10.83 | 9.51 | 9.30 | 9.09 | 6.28 | 10.39 |
| Recycling | 0.14 | 0.20 | 0.26 | 0.24 | 0.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 1b: Number of Paid and Unpaid Workers in Medium-Large Plants with Viable Data (thousands)

| Industry | Majority-local plants |  |  |  |  | MNE plants |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Sample industries | 818.50 | 719.41 | 787.10 | 794.66 | 809.01 | 578.97 | 527.25 | 551.56 | 557.72 | 584.52 |
| Food, beverages | 98.52 | 97.50 | 104.99 | 109.31 | 109.01 | 15.44 | 16.13 | 15.28 | 14.32 | 15.88 |
| Textiles | 22.65 | 20.87 | 21.60 | 21.49 | 19.92 | 21.33 | 18.35 | 21.83 | 16.48 | 16.33 |
| Apparel | 48.47 | 41.83 | 42.77 | 44.72 | 39.35 | 20.82 | 22.94 | 31.52 | 23.50 | 37.73 |
| Wood products | 105.69 | 96.06 | 92.12 | 92.60 | 94.38 | 17.81 | 16.42 | 16.77 | 18.73 | 19.91 |
| Paper products | 26.93 | 23.19 | 27.45 | 25.91 | 28.53 | 5.28 | 6.26 | 5.45 | 4.59 | 5.51 |
| Chemicals | 28.27 | 24.66 | 27.79 | 30.28 | 31.25 | 17.14 | 17.49 | 19.29 | 18.71 | 20.11 |
| Rubber products | 46.70 | 42.47 | 40.34 | 40.99 | 43.83 | 25.81 | 24.60 | 26.25 | 28.08 | 28.48 |
| Plastics | 70.12 | 63.05 | 70.93 | 70.61 | 69.00 | 21.31 | 19.40 | 27.44 | 30.54 | 31.18 |
| Non-metallic mineral products | 43.22 | 42.89 | 42.36 | 41.70 | 41.15 | 12.29 | 12.74 | 13.37 | 12.46 | 13.03 |
| Basic metals | 30.38 | 28.92 | 29.99 | 29.91 | 32.84 | 9.45 | 9.04 | 10.15 | 10.92 | 9.25 |
| Fabricated metals | 41.69 | 38.61 | 46.80 | 46.69 | 51.93 | 16.13 | 13.50 | 14.98 | 17.00 | 16.17 |
| General machinery | 22.35 | 23.87 | 26.57 | 27.95 | 30.44 | 24.35 | 21.22 | 18.85 | 16.99 | 20.63 |
| Electronics-related machinery | 154.43 | 92.80 | 113.69 | 113.35 | 110.30 | 353.92 | 313.61 | 314.03 | 328.76 | 331.41 |
| Office \& computing machinery | 12.62 | 9.06 | 5.65 | 5.61 | 2.80 | 59.49 | 56.83 | 53.94 | 51.69 | 61.45 |
| Electrical machinery | 35.49 | 23.13 | 32.87 | 27.35 | 27.51 | 41.66 | 37.31 | 33.00 | 40.50 | 39.91 |
| Radio, tv \& communication machinery | 100.54 | 55.42 | 73.85 | 78.99 | 76.91 | 229.64 | 194.89 | 205.20 | 213.33 | 208.21 |
| Precision machinery | 5.78 | 5.19 | 1.32 | 1.40 | 3.08 | 23.13 | 24.57 | 21.89 | 23.24 | 21.83 |
| Motor vehicles | 28.31 | 34.32 | 41.83 | 40.81 | 42.52 | 5.39 | 4.68 | 4.91 | 6.97 | 8.08 |
| Furniture | 50.78 | 48.37 | 57.87 | 58.33 | 64.57 | 12.51 | 10.87 | 11.44 | 9.68 | 10.81 |
| Excluded industries | 80.78 | 74.62 | 83.14 | 83.90 | 84.75 | 19.90 | 19.68 | 19.52 | 16.07 | 22.52 |
| Tobacco | 8.86 | 9.03 | 9.53 | 8.52 | 8.81 | 0.56 | 0.49 | 0.49 | 0.63 | 0.79 |
| Leather, footwear | 4.98 | 3.85 | 4.57 | 4.12 | 5.52 | 2.86 | 2.54 | 2.08 | 1.75 | 1.92 |
| Publishing | 26.64 | 27.79 | 31.21 | 29.22 | 31.37 | 3.64 | 3.01 | 3.29 | 3.67 | 3.79 |
| Petroleum products | 7.00 | 3.24 | 3.64 | 3.75 | 3.48 | 1.02 | 2.02 | 1.88 | 0.80 | 0.78 |
| Other transport equipment | 18.41 | 18.15 | 22.18 | 22.85 | 24.33 | 2.32 | 2.31 | 2.69 | 2.95 | 4.80 |
| Miscellaneous manufacturing | 14.75 | 12.37 | 11.74 | 15.20 | 10.83 | 9.51 | 9.30 | 9.09 | 6.28 | 10.39 |
| Recycling | 0.14 | 0.20 | 0.26 | 0.24 | 0.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 1c: Gross Output in Medium-Large Plants with Viable Data (RM billions)

| Industry | Majority-local plants |  |  |  |  | MNE plants |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Sample industries | 176.83 | 157.05 | 189.77 | 213.09 | 249.34 | 210.18 | 188.63 | 206.72 | 239.08 | 273.39 |
| Food, beverages | 36.43 | 35.04 | 47.21 | 58.01 | 59.87 | 10.43 | 9.88 | 11.33 | 12.39 | 14.35 |
| Textiles | 2.72 | 2.44 | 2.68 | 2.44 | 2.43 | 4.95 | 4.15 | 3.82 | 3.57 | 3.96 |
| Apparel | 3.42 | 2.73 | 2.93 | 3.18 | 3.03 | 1.60 | 1.66 | 2.04 | 1.75 | 2.71 |
| Wood products | 11.05 | 9.47 | 9.76 | 10.84 | 12.11 | 2.00 | 1.80 | 1.90 | 2.02 | 2.68 |
| Paper products | 5.50 | 4.44 | 5.46 | 5.18 | 6.12 | 1.05 | 1.40 | 1.26 | 1.05 | 1.44 |
| Chemicals | 12.28 | 10.36 | 13.49 | 17.85 | 22.80 | 14.40 | 13.07 | 16.90 | 21.52 | 33.08 |
| Rubber products | 7.17 | 6.73 | 7.10 | 8.21 | 9.72 | 3.76 | 3.59 | 3.85 | 4.95 | 5.68 |
| Plastics | 8.30 | 7.26 | 9.13 | 9.80 | 10.09 | 3.07 | 2.98 | 6.84 | 7.37 | 6.42 |
| Non-metallic mineral products | 8.46 | 8.57 | 9.01 | 8.88 | 10.49 | 3.47 | 3.29 | 3.60 | 3.93 | 4.27 |
| Basic metals | 11.36 | 10.61 | 12.82 | 15.38 | 24.14 | 4.15 | 3.40 | 4.03 | 5.72 | 4.53 |
| Fabricated metals | 7.29 | 6.24 | 7.94 | 8.67 | 10.55 | 4.15 | 3.22 | 3.54 | 4.63 | 5.11 |
| General machinery | 3.49 | 4.57 | 6.22 | 5.28 | 6.26 | 7.60 | 7.24 | 6.43 | 5.87 | 8.10 |
| Electronics-related machinery | 41.51 | 27.92 | 28.67 | 37.63 | 41.07 | 146.92 | 130.65 | 138.83 | 159.69 | 175.67 |
| Office \& computing machinery | 4.87 | 3.22 | 1.47 | 9.84 | 5.58 | 35.03 | 35.28 | 42.40 | 49.10 | 55.57 |
| Electrical machinery | 6.81 | 3.70 | 5.47 | 4.83 | 6.43 | 7.58 | 5.74 | 6.79 | 7.82 | 8.31 |
| Radio, tv \& communication machinery | 28.98 | 20.12 | 21.47 | 22.69 | 28.12 | 100.19 | 85.34 | 85.24 | 98.69 | 107.11 |
| Precision machinery | 0.84 | 0.88 | 0.27 | 0.27 | 0.94 | 4.12 | 4.29 | 4.41 | 4.10 | 4.69 |
| Motor vehicles | 12.94 | 16.06 | 21.42 | 15.66 | 23.38 | 1.09 | 0.88 | 0.98 | 3.37 | 3.79 |
| Furniture | 4.92 | 4.61 | 5.93 | 6.08 | 7.27 | 1.52 | 1.43 | 1.38 | 1.24 | 1.60 |
| Excluded industries | 31.03 | 28.17 | 32.27 | 43.96 | 55.23 | 12.63 | 16.66 | 23.33 | 13.20 | 18.15 |
| Tobacco | 1.25 | 1.31 | 1.59 | 1.28 | 1.35 | 0.46 | 0.45 | 0.56 | 0.53 | 0.61 |
| Leather, footwear | 0.29 | 0.26 | 0.28 | 0.30 | 0.49 | 0.21 | 0.25 | 0.20 | 0.19 | 0.27 |
| Publishing | 4.00 | 3.98 | 4.62 | 4.62 | 5.31 | 0.50 | 0.45 | 0.47 | 0.58 | 0.60 |
| Petroleum products | 20.31 | 17.30 | 19.82 | 31.39 | 41.55 | 9.75 | 13.72 | 20.21 | 10.00 | 13.70 |
| Other transport equipment | 3.37 | 3.79 | 4.33 | 4.59 | 4.87 | 0.76 | 0.64 | 0.75 | 0.89 | 1.67 |
| Miscellaneous manufacturing | 1.76 | 1.46 | 1.55 | 1.67 | 1.53 | 0.95 | 1.16 | 1.14 | 1.01 | 1.27 |
| Recycling | 0.04 | 0.08 | 0.08 | 0.10 | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 1d: Number of Medium-Large Plants with Viable Data

| Industry | Majority-local plants |  |  |  |  | MNE plants |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Sample industries | 6,204 | 5,317 | 5,461 | 5,455 | 5,511 | 1,432 | 1,280 | 1,308 | 1,289 | 1,234 |
| Food, beverages | 1,126 | 1,105 | 1,137 | 1,086 | 1,094 | 93 | 91 | 96 | 90 | 89 |
| Textiles | 173 | 147 | 148 | 151 | 145 | 42 | 40 | 37 | 34 | 33 |
| Apparel | 313 | 266 | 214 | 220 | 255 | 48 | 41 | 38 | 40 | 36 |
| Wood products | 724 | 602 | 597 | 583 | 547 | 54 | 46 | 46 | 43 | 44 |
| Paper products | 231 | 181 | 185 | 196 | 213 | 37 | 36 | 40 | 37 | 39 |
| Chemicals | 280 | 234 | 228 | 259 | 276 | 128 | 123 | 137 | 133 | 134 |
| Rubber products | 287 | 205 | 211 | 207 | 215 | 98 | 89 | 81 | 76 | 76 |
| Plastics | 599 | 460 | 488 | 489 | 484 | 116 | 109 | 111 | 119 | 115 |
| Non-metallic mineral products | 413 | 381 | 370 | 359 | 362 | 50 | 52 | 53 | 51 | 53 |
| Basic metals | 232 | 212 | 215 | 211 | 240 | 56 | 51 | 52 | 51 | 48 |
| Fabricated metals | 526 | 505 | 555 | 544 | 577 | 115 | 102 | 97 | 111 | 100 |
| General machinery | 282 | 260 | 275 | 315 | 297 | 87 | 82 | 79 | 64 | 77 |
| Electronics-related machinery | 453 | 299 | 332 | 328 | 284 | 429 | 350 | 374 | 373 | 322 |
| Office \& computing machinery | 20 | 16 | 19 | 18 | 9 | 43 | 35 | 35 | 35 | 34 |
| Electrical machinery | 223 | 170 | 178 | 179 | 177 | 123 | 98 | 107 | 106 | 97 |
| Radio, tv \& communication machinery | 193 | 96 | 124 | 118 | 83 | 227 | 188 | 200 | 201 | 164 |
| Precision machinery | 17 | 17 | 11 | 13 | 15 | 36 | 29 | 32 | 31 | 27 |
| Motor vehicles | 133 | 117 | 135 | 134 | 127 | 19 | 17 | 18 | 21 | 21 |
| Furniture | 432 | 343 | 371 | 373 | 395 | 60 | 51 | 49 | 46 | 47 |
| Excluded industries | 806 | 715 | 711 | 710 | 738 | 98 | 94 | 90 | 90 | 98 |
| Tobacco | 167 | 133 | 125 | 124 | 136 | 3 | 2 | 2 | 3 | 3 |
| Leather, footwear | 63 | 58 | 63 | 54 | 66 | 9 | 9 | 8 | 7 | 7 |
| Publishing | 305 | 303 | 293 | 290 | 289 | 22 | 20 | 20 | 21 | 21 |
| Petroleum products | 31 | 19 | 15 | 23 | 21 | 6 | 7 | 5 | 4 | 4 |
| Other transport equipment | 102 | 86 | 98 | 94 | 95 | 8 | 10 | 10 | 12 | 18 |
| Miscellaneous manufacturing | 134 | 111 | 110 | 119 | 120 | 50 | 46 | 45 | 43 | 44 |
| Recycling | 4 | 5 | 7 | 6 | 11 | 0 | 0 | 0 | 0 | 1 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 1e: Number of Paid Workers in All Plants with Viable Data (thousands)

| Industry | Majority-local plants |  |  |  |  | MNE plants |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Sample industries | 879.24 | 760.12 | 825.26 | 830.82 | 840.72 | 580.64 | 528.22 | 552.47 | 558.62 | 585.26 |
| Food, beverages | 111.25 | 105.45 | 113.08 | 116.63 | 116.59 | 15.53 | 16.19 | 15.31 | 14.38 | 15.98 |
| Textiles | 24.72 | 22.52 | 22.82 | 22.70 | 21.07 | 21.36 | 18.35 | 21.86 | 16.49 | 16.34 |
| Apparel | 54.71 | 47.54 | 48.41 | 49.59 | 42.20 | 20.82 | 22.97 | 31.53 | 23.50 | 37.73 |
| Wood products | 109.43 | 98.76 | 94.48 | 94.91 | 96.28 | 17.84 | 16.44 | 16.79 | 18.74 | 19.93 |
| Paper products | 27.88 | 23.71 | 28.06 | 26.60 | 29.25 | 5.36 | 6.28 | 5.45 | 4.62 | 5.55 |
| Chemicals | 30.03 | 25.57 | 28.81 | 31.35 | 32.40 | 17.44 | 17.70 | 19.47 | 18.88 | 20.24 |
| Rubber products | 47.57 | 42.90 | 40.79 | 41.47 | 44.26 | 25.86 | 24.63 | 26.32 | 28.17 | 28.50 |
| Plastics | 73.64 | 64.39 | 72.41 | 72.15 | 70.50 | 21.49 | 19.49 | 27.58 | 30.61 | 31.26 |
| Non-metallic mineral products | 46.48 | 45.29 | 44.54 | 43.92 | 43.23 | 12.42 | 12.81 | 13.42 | 12.50 | 13.11 |
| Basic metals | 32.53 | 29.94 | 31.03 | 31.10 | 33.64 | 9.58 | 9.08 | 10.21 | 10.99 | 9.29 |
| Fabricated metals | 51.64 | 46.09 | 53.11 | 52.98 | 57.06 | 16.32 | 13.60 | 15.06 | 17.06 | 16.23 |
| General machinery | 28.21 | 27.28 | 29.68 | 30.82 | 33.02 | 24.56 | 21.34 | 18.95 | 17.15 | 20.71 |
| Electronics-related machinery | 155.65 | 93.53 | 114.42 | 114.00 | 111.09 | 354.13 | 313.78 | 314.18 | 328.87 | 331.49 |
| Office \& computing machinery | 12.65 | 9.08 | 5.66 | 5.63 | 2.84 | 59.53 | 56.83 | 53.94 | 51.69 | 61.45 |
| Electrical machinery | 36.37 | 23.61 | 33.42 | 27.81 | 28.14 | 41.71 | 37.40 | 33.09 | 40.59 | 39.96 |
| Radio, tv \& communication machinery | 100.79 | 55.60 | 73.97 | 79.12 | 76.99 | 229.76 | 194.97 | 205.26 | 213.36 | 208.25 |
| Precision machinery | 5.85 | 5.25 | 1.36 | 1.44 | 3.12 | 23.13 | 24.57 | 21.89 | 23.24 | 21.83 |
| Motor vehicles | 29.41 | 34.86 | 42.30 | 41.31 | 43.03 | 5.41 | 4.68 | 4.91 | 6.97 | 8.08 |
| Furniture | 56.10 | 52.30 | 61.32 | 61.30 | 67.10 | 12.55 | 10.88 | 11.44 | 9.68 | 10.83 |
| Excluded industries | 90.75 | 80.58 | 88.76 | 89.41 | 90.45 | 20.05 | 19.75 | 19.57 | 16.15 | 22.60 |
| Tobacco | 9.64 | 9.19 | 9.72 | 8.69 | 9.00 | 0.56 | 0.49 | 0.49 | 0.63 | 0.79 |
| Leather, footwear | 6.11 | 4.77 | 5.36 | 4.77 | 6.10 | 2.90 | 2.54 | 2.09 | 1.76 | 1.93 |
| Publishing | 31.41 | 29.92 | 33.28 | 31.50 | 33.85 | 3.67 | 3.01 | 3.29 | 3.69 | 3.81 |
| Petroleum products | 7.19 | 3.33 | 3.71 | 3.85 | 3.58 | 1.02 | 2.02 | 1.88 | 0.80 | 0.78 |
| Other transport equipment | 19.19 | 18.79 | 22.78 | 23.41 | 24.85 | 2.35 | 2.31 | 2.71 | 2.98 | 4.81 |
| Miscellaneous manufacturing | 17.01 | 14.32 | 13.58 | 16.87 | 12.58 | 9.56 | 9.37 | 9.11 | 6.30 | 10.43 |
| Recycling | 0.20 | 0.27 | 0.33 | 0.32 | 0.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 |

[^12]Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 1f: Number of Paid and Unpaid Workers in All Plants with Viable Data (thousands)

| Industry | Majority-local plants |  |  |  |  | MNE plants |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Sample industries | 880.90 | 761.36 | 826.42 | 832.00 | 841.87 | 580.56 | 528.22 | 552.47 | 558.63 | 585.26 |
| Food, beverages | 111.82 | 106.01 | 113.56 | 117.09 | 117.04 | 15.53 | 16.19 | 15.31 | 14.39 | 15.98 |
| Textiles | 24.76 | 22.57 | 22.86 | 22.73 | 21.11 | 21.36 | 18.35 | 21.86 | 16.49 | 16.34 |
| Apparel | 54.96 | 47.74 | 48.65 | 49.82 | 42.43 | 20.82 | 22.97 | 31.53 | 23.50 | 37.73 |
| Wood products | 109.49 | 98.82 | 94.52 | 94.96 | 96.33 | 17.84 | 16.44 | 16.79 | 18.74 | 19.93 |
| Paper products | 27.92 | 23.72 | 28.07 | 26.61 | 29.26 | 5.36 | 6.28 | 5.45 | 4.62 | 5.55 |
| Chemicals | 30.05 | 25.59 | 28.82 | 31.37 | 32.42 | 17.44 | 17.70 | 19.47 | 18.88 | 20.24 |
| Rubber products | 47.57 | 42.90 | 40.79 | 41.48 | 44.26 | 25.86 | 24.63 | 26.32 | 28.17 | 28.50 |
| Plastics | 73.62 | 64.40 | 72.42 | 72.16 | 70.51 | 21.49 | 19.49 | 27.58 | 30.61 | 31.26 |
| Non-metallic mineral products | 46.53 | 45.34 | 44.58 | 43.96 | 43.27 | 12.42 | 12.81 | 13.42 | 12.50 | 13.11 |
| Basic metals | 32.55 | 29.95 | 31.04 | 31.11 | 33.65 | 9.53 | 9.08 | 10.21 | 10.99 | 9.29 |
| Fabricated metals | 51.87 | 46.22 | 53.26 | 53.14 | 57.22 | 16.32 | 13.60 | 15.06 | 17.06 | 16.23 |
| General machinery | 28.39 | 27.30 | 29.69 | 30.84 | 33.05 | 24.56 | 21.34 | 18.95 | 17.15 | 20.71 |
| Electronics-related machinery | 155.75 | 93.54 | 114.42 | 114.01 | 111.10 | 354.09 | 313.78 | 314.18 | 328.87 | 331.49 |
| Office \& computing machinery | 12.65 | 9.08 | 5.66 | 5.63 | 2.84 | 59.52 | 56.83 | 53.94 | 51.69 | 61.45 |
| Electrical machinery | 36.40 | 23.62 | 33.42 | 27.82 | 28.15 | 41.71 | 37.40 | 33.09 | 40.59 | 39.96 |
| Radio, tv \& communication machinery | 100.85 | 55.60 | 73.97 | 79.12 | 76.99 | 229.74 | 194.97 | 205.26 | 213.36 | 208.25 |
| Precision machinery | 5.85 | 5.25 | 1.36 | 1.44 | 3.12 | 23.13 | 24.57 | 21.89 | 23.24 | 21.83 |
| Motor vehicles | 29.42 | 34.86 | 42.31 | 41.32 | 43.03 | 5.41 | 4.68 | 4.91 | 6.97 | 8.08 |
| Furniture | 56.22 | 52.39 | 61.42 | 61.39 | 67.19 | 12.55 | 10.88 | 11.44 | 9.68 | 10.83 |
| Excluded industries | 90.93 | 80.70 | 88.90 | 89.55 | 90.58 | 20.05 | 19.75 | 19.57 | 16.15 | 22.60 |
| Tobacco | 9.68 | 9.20 | 9.75 | 8.72 | 9.04 | 0.56 | 0.49 | 0.49 | 0.63 | 0.79 |
| Leather, footwear | 6.17 | 4.81 | 5.40 | 4.80 | 6.12 | 2.90 | 2.54 | 2.09 | 1.76 | 1.93 |
| Publishing | 31.43 | 29.94 | 33.29 | 31.53 | 33.88 | 3.67 | 3.01 | 3.29 | 3.69 | 3.81 |
| Petroleum products | 7.20 | 3.33 | 3.71 | 3.85 | 3.58 | 1.02 | 2.02 | 1.88 | 0.80 | 0.78 |
| Other transport equipment | 19.20 | 18.80 | 22.78 | 23.42 | 24.85 | 2.35 | 2.31 | 2.71 | 2.98 | 4.81 |
| Miscellaneous manufacturing | 17.06 | 14.36 | 13.63 | 16.92 | 12.62 | 9.56 | 9.37 | 9.11 | 6.30 | 10.43 |
| Recycling | 0.20 | 0.27 | 0.33 | 0.32 | 0.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 |

Note: This table includes all plants with positive paid employees, output, employee compensation, and fixed assets.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 1g: Gross Output in All Plants with Viable Data (RM billions)

| Industry | Majority-local plants |  |  |  |  | MNE plants |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Sample industries | 182.05 | 160.03 | 192.67 | 215.83 | 252.29 | 210.61 | 188.86 | 206.92 | 239.38 | 273.59 |
| Food, beverages | 37.64 | 35.70 | 47.90 | 58.70 | 60.67 | 10.44 | 9.90 | 11.34 | 12.43 | 14.37 |
| Textiles | 2.90 | 2.55 | 2.77 | 2.53 | 2.53 | 4.96 | 4.15 | 3.82 | 3.57 | 3.96 |
| Apparel | 3.62 | 2.92 | 3.11 | 3.36 | 3.14 | 1.60 | 1.67 | 2.04 | 1.75 | 2.71 |
| Wood products | 11.31 | 9.63 | 9.87 | 10.97 | 12.28 | 2.00 | 1.80 | 1.90 | 2.02 | 2.68 |
| Paper products | 5.64 | 4.50 | 5.52 | 5.25 | 6.20 | 1.08 | 1.41 | 1.26 | 1.06 | 1.45 |
| Chemicals | 12.70 | 10.51 | 13.85 | 18.07 | 23.13 | 14.53 | 13.18 | 16.95 | 21.65 | 33.15 |
| Rubber products | 7.28 | 6.81 | 7.15 | 8.25 | 9.76 | 3.77 | 3.59 | 3.86 | 4.96 | 5.68 |
| Plastics | 8.69 | 7.39 | 9.26 | 9.95 | 10.28 | 3.11 | 2.99 | 6.87 | 7.39 | 6.44 |
| Non-metallic mineral products | 8.69 | 8.76 | 9.14 | 9.05 | 10.68 | 3.48 | 3.29 | 3.60 | 3.93 | 4.28 |
| Basic metals | 11.61 | 10.69 | 12.91 | 15.49 | 24.21 | 4.16 | 3.41 | 4.05 | 5.77 | 4.56 |
| Fabricated metals | 8.07 | 6.83 | 8.43 | 9.11 | 10.96 | 4.17 | 3.23 | 3.55 | 4.64 | 5.11 |
| General machinery | 3.97 | 4.88 | 6.48 | 5.49 | 6.44 | 7.64 | 7.25 | 6.44 | 5.89 | 8.12 |
| Electronics-related machinery | 41.69 | 28.00 | 28.75 | 37.69 | 41.16 | 147.05 | 130.69 | 138.86 | 159.71 | 175.68 |
| Office \& computing machinery | 4.88 | 3.22 | 1.47 | 9.85 | 5.58 | 35.03 | 35.28 | 42.40 | 49.10 | 55.57 |
| Electrical machinery | 6.93 | 3.76 | 5.53 | 4.88 | 6.51 | 7.59 | 5.75 | 6.80 | 7.83 | 8.31 |
| Radio, tv \& communication machinery | 29.03 | 20.13 | 21.47 | 22.69 | 28.13 | 100.30 | 85.38 | 85.25 | 98.69 | 107.11 |
| Precision machinery | 0.85 | 0.89 | 0.28 | 0.27 | 0.95 | 4.12 | 4.29 | 4.41 | 4.10 | 4.69 |
| Motor vehicles | 13.08 | 16.10 | 21.45 | 15.70 | 23.43 | 1.10 | 0.88 | 0.98 | 3.37 | 3.79 |
| Furniture | 5.17 | 4.77 | 6.07 | 6.21 | 7.41 | 1.53 | 1.43 | 1.38 | 1.24 | 1.60 |
| Excluded industries | 37.70 | 33.56 | 37.65 | 50.68 | 62.56 | 12.65 | 16.68 | 23.34 | 13.21 | 18.16 |
| Tobacco | 1.26 | 1.31 | 1.59 | 1.28 | 1.35 | 0.46 | 0.45 | 0.56 | 0.53 | 0.61 |
| Leather, footwear | 0.35 | 0.31 | 0.31 | 0.34 | 0.54 | 0.21 | 0.25 | 0.20 | 0.19 | 0.28 |
| Publishing | 4.30 | 4.09 | 4.72 | 4.77 | 5.45 | 0.51 | 0.45 | 0.47 | 0.58 | 0.60 |
| Petroleum products | 26.36 | 22.32 | 24.90 | 37.77 | 48.54 | 9.75 | 13.72 | 20.21 | 10.00 | 13.70 |
| Other transport equipment | 3.42 | 3.83 | 4.37 | 4.62 | 4.91 | 0.76 | 0.64 | 0.75 | 0.90 | 1.68 |
| Miscellaneous manufacturing | 1.95 | 1.61 | 1.68 | 1.79 | 1.63 | 0.96 | 1.17 | 1.14 | 1.02 | 1.27 |
| Recycling | 0.06 | 0.09 | 0.08 | 0.11 | 0.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 |

Note: This table includes all plants with positive paid employees, output, employee compensation, and fixed assets.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 1h: Number of All Plants with Viable Data

| Industry | Majority-local plants |  |  |  |  | MNE plants |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Sample industries | 14,951 | 10,310 | 9,981 | 9,984 | 9,115 | 1,584 | 1,364 | 1,385 | 1,363 | 1,299 |
| Food, beverages | 2,824 | 1,969 | 1,966 | 1,908 | 1,947 | 104 | 96 | 100 | 96 | 99 |
| Textiles | 454 | 360 | 322 | 331 | 310 | 44 | 40 | 39 | 35 | 34 |
| Apparel | 1,747 | 1,307 | 1,191 | 1,187 | 712 | 49 | 43 | 39 | 40 | 36 |
| Wood products | 1,215 | 946 | 890 | 871 | 779 | 56 | 48 | 48 | 44 | 45 |
| Paper products | 336 | 240 | 254 | 269 | 281 | 44 | 37 | 40 | 39 | 43 |
| Chemicals | 483 | 343 | 346 | 374 | 396 | 160 | 144 | 153 | 150 | 145 |
| Rubber products | 377 | 251 | 258 | 256 | 258 | 103 | 92 | 86 | 83 | 78 |
| Plastics | 979 | 595 | 634 | 640 | 622 | 135 | 117 | 121 | 124 | 122 |
| Non-metallic mineral products | 811 | 647 | 617 | 610 | 592 | 62 | 59 | 56 | 54 | 59 |
| Basic metals | 492 | 318 | 315 | 335 | 327 | 62 | 56 | 58 | 57 | 52 |
| Fabricated metals | 2,040 | 1,285 | 1,238 | 1,276 | 1,107 | 132 | 110 | 104 | 117 | 106 |
| General machinery | 1,034 | 642 | 602 | 623 | 573 | 105 | 90 | 88 | 76 | 84 |
| Electronics-related machinery | 587 | 380 | 399 | 386 | 354 | 443 | 363 | 386 | 381 | 327 |
| Office \& computing machinery | 22 | 17 | 20 | 20 | 12 | 45 | 35 | 35 | 35 | 34 |
| Electrical machinery | 319 | 228 | 229 | 220 | 232 | 127 | 104 | 113 | 112 | 100 |
| Radio, tv \& communication machinery | 220 | 112 | 133 | 128 | 90 | 235 | 195 | 206 | 203 | 166 |
| Precision machinery | 26 | 23 | 17 | 18 | 20 | 36 | 29 | 32 | 31 | 27 |
| Motor vehicles | 264 | 188 | 190 | 193 | 182 | 20 | 17 | 18 | 21 | 21 |
| Furniture | 1,308 | 839 | 759 | 725 | 675 | 65 | 52 | 49 | 46 | 48 |
| Excluded industries | 2,152 | 1,424 | 1,359 | 1,384 | 1,380 | 112 | 99 | 95 | 97 | 104 |
| Tobacco | 239 | 147 | 140 | 139 | 152 | 3 | 2 | 2 | 3 | 3 |
| Leather, footwear | 254 | 179 | 160 | 152 | 137 | 12 | 9 | 9 | 8 | 8 |
| Publishing | 864 | 510 | 492 | 522 | 532 | 25 | 20 | 20 | 22 | 22 |
| Petroleum products | 51 | 26 | 23 | 32 | 30 | 6 | 7 | 5 | 4 | 4 |
| Other transport equipment | 194 | 156 | 166 | 159 | 149 | 10 | 10 | 12 | 15 | 19 |
| Miscellaneous manufacturing | 540 | 395 | 365 | 367 | 360 | 56 | 51 | 47 | 45 | 47 |
| Recycling | 10 | 11 | 13 | 13 | 20 | 0 | 0 | 0 | 0 | 1 |

Note: This table includes all plants with positive paid employees, output, employee compensation, and fixed assets.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 2: Mean Annual Compensation per Paid Worker in Medium-Large Plants (current RM/year)

| Industry | Majority-local plants |  |  |  |  | MNE plants |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Mean of 18 sample industries | 17,679 | 18,976 | 19,597 | 20,572 | 21,506 | 22,744 | 23,997 | 24,767 | 26,081 | 26,390 |
| Food, beverages | 16,703 | 15,757 | 16,186 | 17,058 | 17,510 | 28,428 | 28,909 | 31,257 | 31,585 | 32,886 |
| Textiles | 14,793 | 16,001 | 16,278 | 16,724 | 17,660 | 19,341 | 20,210 | 20,166 | 20,366 | 19,744 |
| Apparel | 11,444 | 11,798 | 12,164 | 12,372 | 11,698 | 13,986 | 15,085 | 14,508 | 14,969 | 16,142 |
| Wood products | 13,081 | 13,782 | 14,275 | 14,757 | 15,430 | 15,390 | 15,853 | 15,986 | 15,274 | 16,006 |
| Paper products | 18,012 | 19,164 | 20,354 | 20,711 | 20,600 | 21,329 | 23,240 | 23,357 | 26,591 | 24,786 |
| Chemicals | 25,093 | 26,075 | 27,895 | 29,391 | 30,127 | 36,959 | 36,524 | 40,813 | 43,183 | 45,241 |
| Rubber products | 15,343 | 15,907 | 16,746 | 16,980 | 17,827 | 19,973 | 20,996 | 21,374 | 21,891 | 23,556 |
| Plastics | 15,768 | 16,710 | 17,465 | 18,163 | 19,888 | 19,187 | 21,252 | 22,820 | 23,429 | 23,020 |
| Non-metallic mineral products | 17,758 | 18,265 | 19,024 | 20,571 | 21,474 | 28,669 | 30,594 | 29,863 | 34,416 | 34,133 |
| Basic metals | 21,349 | 23,326 | 23,855 | 24,082 | 25,582 | 27,426 | 30,284 | 29,044 | 32,200 | 30,599 |
| Fabricated metals | 17,277 | 18,451 | 18,606 | 19,728 | 20,502 | 24,148 | 24,538 | 24,138 | 25,411 | 26,015 |
| General machinery | 20,644 | 23,007 | 23,870 | 23,907 | 24,763 | 29,093 | 32,604 | 34,257 | 37,092 | 36,321 |
| Office \& computing machinery | 23,207 | 27,097 | 22,392 | 32,062 | 37,751 | 21,440 | 22,661 | 25,174 | 26,031 | 25,812 |
| Electrical machinery | 17,193 | 18,597 | 20,410 | 20,972 | 22,387 | 19,207 | 21,746 | 21,907 | 22,944 | 23,312 |
| Radio, tv \& communication machinery | 18,436 | 19,068 | 18,896 | 21,416 | 24,630 | 21,109 | 24,046 | 22,766 | 23,790 | 24,426 |
| Precision machinery | 21,447 | 25,644 | 29,260 | 25,944 | 21,951 | 23,058 | 23,017 | 24,887 | 22,045 | 25,926 |
| Motor vehicles | 17,918 | 19,844 | 20,805 | 21,276 | 22,534 | 25,510 | 23,890 | 26,642 | 29,720 | 28,633 |
| Furniture | 12,750 | 13,071 | 14,266 | 14,179 | 14,797 | 15,141 | 16,507 | 16,839 | 18,530 | 18,455 |
| Mean of 6 excluded industries | 18,059 | 17,945 | 19,687 | 22,357 | 23,675 | 26,296 | 30,110 | 34,721 | 34,907 | 40,615 |
| Tobacco | 3,080 | 3,845 | 4,386 | 4,395 | 4,305 | 23,577 | 39,479 | 45,728 | 44,904 | 44,517 |
| Leather, footwear | 14,563 | 15,400 | 14,943 | 16,577 | 15,088 | 14,221 | 13,479 | 15,411 | 16,705 | 20,452 |
| Publishing | 19,945 | 21,043 | 21,793 | 22,149 | 22,221 | 21,342 | 23,554 | 23,504 | 26,821 | 27,919 |
| Petroleum products | 29,154 | 30,041 | 31,887 | 53,742 | 62,005 | 82,908 | 88,698 | 104,275 | 104,865 | 123,614 |
| Other transport equipment | 22,045 | 18,339 | 20,468 | 20,894 | 21,323 | 23,839 | 23,193 | 33,010 | 29,536 | 27,700 |
| Miscellaneous manufacturing | 15,517 | 17,043 | 18,401 | 19,468 | 20,811 | 18,186 | 22,364 | 21,118 | 21,520 | 22,335 |
| Recycling | 22,109 | 19,904 | 25,932 | 19,271 | 19,974 | 0 | 0 | 0 | 0 | 17,767 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

| Industry | Male workers |  |  |  |  |  |  |  |  |  | Female workers |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Mean of 18 sample industries | 12.5 | 14.2 | 15.0 | 14.8 | 15.3 | 15.4 | 16.0 | 16.6 | 17.3 | 16.2 | 3.1 | 3.3 | 3.3 | 3.5 | 3.8 | 4.0 | 4.4 | 4.6 | 4.8 | 4.6 |
| Food, beverages | 13.8 | 14.0 | 15.4 | 14.1 | 14.2 | 18.2 | 19.9 | 20.6 | 19.5 | 18.8 | 1.8 | 2.3 | 2.2 | 2.4 | 2.4 | 4.5 | 4.7 | 5.3 | 5.2 | 5.0 |
| Textiles | 11.0 | 12.3 | 13.5 | 12.5 | 12.6 | 13.2 | 14.6 | 14.0 | 14.2 | 12.4 | 3.5 | 3.6 | 4.0 | 4.1 | 4.2 | 3.6 | 4.5 | 4.6 | 4.5 | 4.0 |
| Apparel | 4.5 | 4.8 | 5.9 | 5.2 | 8.8 | 3.8 | 3.8 | 4.6 | 3.7 | 3.8 | 3.8 | 4.9 | 4.7 | 4.9 | 7.1 | 5.3 | 4.9 | 5.6 | 5.2 | 5.1 |
| Wood products | 9.3 | 10.1 | 11.2 | 10.0 | 10.2 | 9.7 | 9.6 | 9.8 | 8.5 | 9.2 | 1.0 | 0.9 | 0.9 | 1.0 | 1.0 | 0.9 | 0.9 | 1.3 | 1.0 | 1.2 |
| Paper products | 12.5 | 12.9 | 14.3 | 14.2 | 13.6 | 14.4 | 15.1 | 16.8 | 18.0 | 15.6 | 2.8 | 3.0 | 3.2 | 3.2 | 3.1 | 4.1 | 4.8 | 5.2 | 5.8 | 5.2 |
| Chemicals | 18.7 | 20.3 | 21.1 | 22.5 | 21.3 | 26.8 | 26.3 | 28.1 | 29.6 | 27.8 | 4.9 | 5.4 | 5.9 | 5.9 | 5.7 | 5.9 | 6.4 | 6.4 | 6.7 | 6.4 |
| Rubber products | 11.1 | 12.0 | 12.5 | 11.5 | 11.7 | 11.9 | 12.8 | 13.3 | 12.1 | 12.3 | 1.9 | 2.1 | 2.1 | 2.2 | 2.2 | 2.7 | 2.9 | 3.0 | 3.1 | 3.2 |
| Plastics | 12.4 | 14.3 | 14.6 | 13.7 | 14.5 | 15.9 | 16.9 | 16.1 | 16.4 | 14.9 | 2.7 | 3.2 | 3.3 | 3.0 | 3.3 | 3.6 | 4.7 | 4.3 | 4.1 | 3.5 |
| Non-metallic mineral products | 13.7 | 14.8 | 15.8 | 14.6 | 14.9 | 19.5 | 18.4 | 17.0 | 21.8 | 19.7 | 1.6 | 1.6 | 1.7 | 1.9 | 2.0 | 2.9 | 3.5 | 3.8 | 4.0 | 4.1 |
| Basic metals | 16.0 | 18.4 | 19.1 | 18.3 | 17.4 | 21.5 | 20.6 | 22.1 | 24.4 | 21.2 | 2.3 | 2.6 | 2.5 | 2.9 | 2.5 | 4.2 | 4.2 | 4.5 | 5.1 | 5.0 |
| Fabricated metals | 13.4 | 15.5 | 17.2 | 16.2 | 16.6 | 17.0 | 17.0 | 17.7 | 17.7 | 16.2 | 2.3 | 2.3 | 2.1 | 2.4 | 2.4 | 3.2 | 3.2 | 3.7 | 4.3 | 3.7 |
| General machinery | 17.1 | 17.4 | 20.5 | 19.9 | 20.1 | 22.6 | 24.9 | 25.4 | 27.7 | 25.6 | 2.0 | 2.2 | 2.3 | 2.5 | 2.9 | 4.2 | 4.5 | 4.2 | 4.8 | 5.0 |
| Office \& computing machinery | 10.1 | 16.6 | 13.1 | 15.5 | 21.9 | 13.6 | 14.5 | 17.6 | 19.9 | 19.6 | 8.3 | 8.2 | 5.7 | 5.9 | 6.9 | 5.6 | 5.4 | 6.6 | 8.4 | 7.5 |
| Electrical machinery | 13.2 | 14.8 | 15.8 | 16.8 | 16.6 | 13.6 | 16.0 | 16.5 | 15.7 | 15.2 | 3.1 | 3.9 | 4.0 | 3.8 | 4.4 | 4.0 | 4.3 | 4.5 | 4.5 | 4.8 |
| Radio, tv \& communication machinery | 12.1 | 14.7 | 16.5 | 16.5 | 17.1 | 14.6 | 16.8 | 16.6 | 16.1 | 17.0 | 4.0 | 5.1 | 5.4 | 5.1 | 6.4 | 5.3 | 5.9 | 6.0 | 6.0 | 5.6 |
| Precision machinery | 12.9 | 15.8 | 16.2 | 18.0 | 17.0 | 14.3 | 13.9 | 13.6 | 13.4 | 15.0 | 5.7 | 4.5 | 5.0 | 7.9 | 7.1 | 6.6 | 7.1 | 6.4 | 5.9 | 6.1 |
| Motor vehicles | 14.4 | 16.6 | 17.6 | 15.8 | 15.8 | 16.1 | 15.5 | 17.5 | 18.6 | 16.9 | 2.4 | 2.4 | 2.5 | 2.2 | 2.4 | 3.6 | 4.8 | 4.8 | 5.2 | 4.9 |
| Furniture | 9.3 | 9.9 | 10.1 | 10.5 | 11.0 | 10.0 | 10.7 | 11.1 | 14.5 | 10.7 | 1.5 | 1.5 | 1.8 | 1.9 | 1.8 | 1.7 | 1.8 | 2.1 | 2.3 | 2.4 |
| Mean of 6 excluded industries | 12.3 | 14.2 | 16.3 | 15.0 | 14.9 | 16.9 | 18.0 | 19.3 | 17.9 | 20.7 | 2.4 | 2.9 | 2.8 | 2.8 | 3.0 | 3.8 | 4.1 | 4.6 | 4.1 | 4.5 |
| Tobacco | 7.0 | 8.2 | 12.0 | 7.3 | 6.9 | 29.8 | 28.5 | 31.6 | 22.6 | 29.2 | 0.8 | 1.0 | 0.6 | 0.6 | 0.6 | 8.6 | 8.3 | 9.2 | 6.7 | 8.0 |
| Leather, footwear | 10.0 | 9.3 | 11.2 | 9.9 | 10.8 | 5.0 | 6.5 | 8.0 | 7.7 | 9.3 | 3.4 | 3.2 | 2.9 | 3.6 | 2.3 | 1.6 | 1.9 | 2.4 | 2.2 | 4.1 |
| Publishing | 11.6 | 13.1 | 14.1 | 12.4 | 12.2 | 10.0 | 10.4 | 10.3 | 11.9 | 11.0 | 4.4 | 4.8 | 4.7 | 4.6 | 5.0 | 5.2 | 6.0 | 6.4 | 6.2 | 5.3 |
| Petroleum products | 18.4 | 26.2 | 28.7 | 33.7 | 28.6 | 42.5 | 47.2 | 53.7 | 47.1 | 44.2 | 2.1 | 3.4 | 2.9 | 3.2 | 5.1 | 5.0 | 5.0 | 6.3 | 7.2 | 7.6 |
| Other transport equipment | 14.5 | 15.8 | 18.2 | 16.8 | 17.7 | 17.7 | 18.5 | 17.3 | 21.3 | 18.6 | 1.6 | 1.4 | 1.8 | 1.9 | 1.9 | 3.3 | 3.7 | 3.8 | 2.8 | 2.8 |
| Miscellaneous manufacturing | 10.6 | 12.1 | 12.5 | 12.6 | 12.7 | 13.0 | 14.8 | 14.4 | 14.8 | 14.9 | 3.2 | 4.0 | 4.0 | 4.2 | 4.3 | 3.3 | 4.0 | 4.2 | 4.1 | 3.6 |
| Recycling | 14.0 | 14.6 | 17.4 | 12.1 | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 | 17.6 | 1.4 | 2.6 | 3.1 | 1.5 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets; highly paid occupations are (1) proprieters,
business partners, (2) managers, professionals, executives, and (3) technicians, professionals.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 3b: Mean Shares of Workers in Lowly Paid Occupations in Paid Workers of Medium-Large Plants (percent)

| Industry | Male workers |  |  |  |  |  |  |  |  |  | Female workers |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Mean of 18 sample industries | 50.0 | 49.4 | 51.0 | 50.9 | 50.4 | 42.3 | 41.4 | 41.2 | 40.4 | 41.8 | 34.4 | 33.1 | 31.3 | 30.8 | 30.6 | 38.4 | 38.3 | 37.8 | 37.5 | 37.4 |
| Food, beverages | 55.7 | 53.7 | 53.4 | 52.8 | 54.3 | 48.7 | 46.7 | 46.6 | 45.5 | 47.3 | 28.7 | 30.0 | 30.1 | 30.8 | 29.2 | 28.6 | 28.7 | 27.8 | 29.8 | 29.0 |
| Textiles | 42.7 | 41.8 | 41.5 | 44.3 | 41.6 | 38.3 | 35.5 | 38.4 | 37.8 | 36.9 | 42.7 | 42.3 | 41.7 | 39.0 | 41.6 | 45.0 | 45.3 | 43.1 | 43.5 | 46.7 |
| Apparel | 21.1 | 18.4 | 21.8 | 21.3 | 18.7 | 17.7 | 21.9 | 22.8 | 23.0 | 22.5 | 70.6 | 71.9 | 68.2 | 68.7 | 65.4 | 73.2 | 69.3 | 67.0 | 68.1 | 68.7 |
| Wood products | 67.1 | 65.7 | 66.0 | 67.1 | 67.6 | 58.1 | 56.1 | 52.7 | 51.2 | 51.7 | 22.6 | 23.3 | 22.7 | 21.9 | 21.2 | 31.4 | 33.4 | 36.2 | 39.4 | 37.9 |
| Paper products | 53.4 | 53.7 | 52.9 | 53.9 | 53.5 | 48.5 | 46.6 | 44.9 | 43.1 | 46.8 | 31.3 | 30.4 | 30.0 | 28.7 | 29.8 | 33.0 | 33.5 | 33.2 | 33.2 | 32.4 |
| Chemicals | 48.1 | 48.2 | 48.1 | 46.4 | 47.7 | 47.6 | 46.7 | 46.5 | 45.4 | 47.7 | 28.2 | 26.1 | 25.3 | 25.2 | 25.4 | 19.8 | 20.6 | 19.0 | 18.3 | 18.1 |
| Rubber products | 54.7 | 54.5 | 53.4 | 54.8 | 56.5 | 47.2 | 44.5 | 43.1 | 42.0 | 43.5 | 32.3 | 31.4 | 32.2 | 31.5 | 29.6 | 38.2 | 39.9 | 40.6 | 42.7 | 41.0 |
| Plastics | 46.7 | 44.9 | 46.4 | 47.6 | 47.1 | 37.3 | 37.3 | 40.4 | 42.3 | 43.4 | 38.1 | 37.6 | 36.1 | 35.6 | 35.1 | 43.2 | 41.2 | 39.8 | 37.3 | 38.2 |
| Non-metallic mineral products | 67.2 | 66.9 | 67.0 | 66.9 | 67.7 | 53.2 | 54.8 | 58.0 | 52.7 | 53.2 | 17.5 | 16.6 | 16.6 | 16.6 | 15.4 | 24.4 | 23.3 | 21.4 | 21.5 | 23.0 |
| Basic metals | 65.1 | 65.5 | 65.8 | 66.3 | 66.8 | 52.8 | 54.6 | 52.9 | 49.6 | 53.2 | 16.7 | 13.5 | 13.4 | 12.6 | 13.3 | 21.5 | 20.6 | 20.5 | 20.9 | 20.6 |
| Fabricated metals | 62.1 | 63.9 | 64.0 | 64.0 | 63.9 | 52.0 | 53.1 | 51.2 | 48.9 | 52.7 | 22.2 | 18.2 | 17.8 | 17.4 | 17.1 | 27.8 | 26.7 | 27.8 | 29.1 | 27.5 |
| General machinery | 64.0 | 64.6 | 61.7 | 61.9 | 60.7 | 49.5 | 50.2 | 49.2 | 47.9 | 48.1 | 16.9 | 15.9 | 16.5 | 15.7 | 16.3 | 23.8 | 20.4 | 21.4 | 19.6 | 21.3 |
| Office \& computing machinery | 32.4 | 27.5 | 41.6 | 33.7 | 29.6 | 26.4 | 23.0 | 20.2 | 18.7 | 20.3 | 49.3 | 47.6 | 40.2 | 44.9 | 41.6 | 54.4 | 57.1 | 55.7 | 52.9 | 52.6 |
| Electrical machinery | 42.9 | 40.6 | 41.5 | 44.0 | 45.0 | 26.7 | 25.4 | 28.3 | 27.8 | 27.9 | 40.8 | 40.7 | 38.9 | 35.5 | 33.9 | 55.7 | 54.2 | 50.7 | 52.0 | 52.1 |
| Radio, tv \& communication machinery | 29.6 | 24.7 | 24.4 | 24.4 | 23.8 | 22.0 | 19.0 | 19.1 | 19.8 | 19.5 | 54.4 | 55.5 | 54.3 | 53.9 | 52.7 | 58.0 | 58.2 | 58.4 | 58.2 | 57.9 |
| Precision machinery | 25.0 | 30.3 | 42.6 | 39.4 | 31.3 | 20.5 | 19.8 | 21.3 | 23.4 | 23.5 | 56.4 | 49.4 | 36.2 | 34.7 | 44.6 | 58.5 | 59.3 | 58.7 | 57.3 | 55.4 |
| Motor vehicles | 58.9 | 60.1 | 58.8 | 61.4 | 62.8 | 51.5 | 48.2 | 43.7 | 49.9 | 49.6 | 24.3 | 20.8 | 21.9 | 20.6 | 19.0 | 28.8 | 31.5 | 34.0 | 26.3 | 28.6 |
| Furniture | 63.5 | 64.7 | 66.7 | 66.6 | 67.8 | 63.0 | 61.9 | 61.3 | 58.2 | 64.3 | 25.7 | 23.9 | 22.0 | 21.0 | 19.4 | 25.4 | 25.6 | 25.9 | 25.0 | 22.6 |
| Mean of 6 excluded industries | 49.4 | 50.1 | 49.2 | 49.2 | 51.1 | 38.7 | 38.0 | 35.9 | 37.4 | 48.2 | 35.9 | 32.8 | 32.9 | 33.0 | 30.9 | 26.3 | 25.6 | 26.0 | 26.3 | 26.6 |
| Tobacco | 28.0 | 29.6 | 29.5 | 30.9 | 30.6 | 30.7 | 33.8 | 32.7 | 39.4 | 35.1 | 64.2 | 61.2 | 62.6 | 61.1 | 61.9 | 30.9 | 29.5 | 26.6 | 31.4 | 27.7 |
| Leather, footwear | 42.4 | 46.1 | 46.3 | 42.1 | 46.3 | 50.5 | 53.1 | 44.7 | 36.0 | 41.3 | 44.2 | 41.5 | 39.8 | 44.4 | 40.6 | 42.9 | 38.5 | 44.9 | 54.1 | 45.3 |
| Publishing | 47.9 | 46.7 | 48.2 | 49.4 | 48.4 | 44.7 | 44.6 | 42.0 | 46.9 | 47.8 | 36.2 | 35.5 | 34.0 | 33.5 | 34.4 | 40.2 | 39.0 | 41.4 | 35.0 | 35.9 |
| Petroleum products | 53.4 | 56.3 | 52.3 | 47.7 | 51.7 | 48.9 | 45.9 | 37.8 | 43.8 | 46.5 | 26.1 | 14.2 | 16.7 | 15.4 | 14.7 | 3.6 | 2.0 | 2.2 | 1.9 | 1.6 |
| Other transport equipment | 69.7 | 71.3 | 69.6 | 70.1 | 68.1 | 58.2 | 53.5 | 57.7 | 56.6 | 56.0 | 14.2 | 11.4 | 11.9 | 11.3 | 12.3 | 20.7 | 24.3 | 21.6 | 19.3 | 22.6 |
| Miscellaneous manufacturing | 46.4 | 44.2 | 45.2 | 44.9 | 46.7 | 38.1 | 35.2 | 36.3 | 38.8 | 38.2 | 39.8 | 39.7 | 39.2 | 38.2 | 36.3 | 45.6 | 46.0 | 45.4 | 42.4 | 43.3 |
| Recycling | 58.0 | 56.4 | 53.6 | 58.9 | 66.2 | 0.0 | 0.0 | 0.0 | 0.0 | 72.5 | 26.7 | 26.3 | 25.9 | 27.4 | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 9.8 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets; highly paid occupations are (1) proprieters,
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

| Industry | Male workers |  |  |  |  |  |  |  |  |  | Female workers |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Mean of 18 sample industries | 8.2 | 7.6 | 8.1 | 8.7 | 9.6 | 10.1 | 10.2 | 10.9 | 11.9 | 11.6 | 3.5 | 3.6 | 3.9 | 4.5 | 4.7 | 4.8 | 4.9 | 5.3 | 5.6 | 5.6 |
| Food, beverages | 5.7 | 4.6 | 4.6 | 4.9 | 5.1 | 11.1 | 10.9 | 11.7 | 11.8 | 11.6 | 2.2 | 2.2 | 2.3 | 2.4 | 2.8 | 5.7 | 5.7 | 6.8 | 7.0 | 7.1 |
| Textiles | 6.0 | 5.2 | 5.6 | 6.3 | 6.1 | 6.0 | 4.9 | 5.1 | 5.9 | 5.5 | 3.3 | 3.2 | 4.1 | 4.2 | 3.9 | 2.6 | 2.8 | 2.8 | 3.7 | 3.3 |
| Apparel | 2.2 | 1.6 | 2.0 | 2.2 | 2.8 | 1.8 | 2.1 | 1.9 | 1.9 | 1.7 | 2.3 | 2.0 | 2.5 | 2.7 | 3.5 | 3.1 | 2.5 | 2.8 | 2.7 | 2.3 |
| Wood products | 3.9 | 3.1 | 3.4 | 3.4 | 3.7 | 5.4 | 4.8 | 5.3 | 4.1 | 4.3 | 1.2 | 1.2 | 1.4 | 1.4 | 1.6 | 2.0 | 1.7 | 1.9 | 1.7 | 1.8 |
| Paper products | 8.3 | 7.0 | 7.7 | 8.3 | 8.3 | 10.3 | 9.9 | 9.7 | 10.2 | 8.7 | 3.8 | 3.8 | 4.2 | 5.2 | 4.9 | 5.7 | 5.5 | 7.4 | 8.3 | 7.5 |
| Chemicals | 12.9 | 11.3 | 12.1 | 12.7 | 14.2 | 20.2 | 20.3 | 21.5 | 22.7 | 24.4 | 5.8 | 6.0 | 6.7 | 7.4 | 7.7 | 8.2 | 8.7 | 9.2 | 9.2 | 9.8 |
| Rubber products | 6.4 | 5.2 | 5.8 | 6.4 | 5.9 | 7.2 | 6.6 | 6.1 | 7.0 | 6.8 | 2.6 | 2.3 | 2.5 | 3.2 | 3.1 | 3.6 | 3.1 | 3.2 | 3.2 | 3.5 |
| Plastics | 7.5 | 6.6 | 7.0 | 6.8 | 8.0 | 8.8 | 9.8 | 11.0 | 11.0 | 10.1 | 3.4 | 3.7 | 4.0 | 4.1 | 4.6 | 5.4 | 6.5 | 6.8 | 5.9 | 5.1 |
| Non-metallic mineral products | 7.2 | 6.3 | 6.4 | 6.3 | 7.5 | 13.4 | 12.9 | 13.6 | 18.2 | 14.4 | 2.2 | 2.2 | 2.4 | 2.7 | 2.9 | 5.5 | 6.4 | 5.9 | 6.8 | 6.7 |
| Basic metals | 10.5 | 9.6 | 9.2 | 10.0 | 10.8 | 12.8 | 12.7 | 13.1 | 15.0 | 12.8 | 3.3 | 3.2 | 3.4 | 3.9 | 3.7 | 4.7 | 4.4 | 4.8 | 5.4 | 5.7 |
| Fabricated metals | 9.2 | 7.3 | 6.9 | 7.2 | 7.8 | 10.7 | 11.4 | 12.2 | 12.3 | 12.6 | 3.1 | 3.1 | 3.0 | 3.3 | 3.4 | 4.8 | 4.9 | 5.3 | 5.5 | 5.8 |
| General machinery | 10.2 | 9.5 | 11.2 | 10.8 | 12.1 | 19.8 | 21.0 | 23.4 | 27.2 | 23.4 | 3.0 | 3.1 | 3.5 | 3.5 | 4.2 | 6.6 | 6.7 | 7.3 | 7.8 | 8.0 |
| Office \& computing machinery | 9.9 | 12.3 | 10.0 | 17.4 | 24.4 | 11.4 | 11.2 | 13.6 | 15.2 | 14.8 | 5.3 | 7.9 | 5.7 | 11.3 | 10.4 | 7.0 | 5.4 | 7.1 | 8.7 | 8.2 |
| Electrical machinery | 10.1 | 9.1 | 9.6 | 12.4 | 12.1 | 9.2 | 11.4 | 11.8 | 11.4 | 11.4 | 4.3 | 4.2 | 4.7 | 5.1 | 5.9 | 4.8 | 5.7 | 5.9 | 5.6 | 6.1 |
| Radio, tv \& communication machinery | 10.8 | 9.8 | 12.0 | 12.8 | 14.0 | 10.4 | 12.6 | 12.3 | 12.4 | 13.7 | 4.9 | 5.3 | 5.8 | 5.9 | 7.1 | 6.0 | 6.0 | 6.0 | 6.1 | 6.4 |
| Precision machinery | 11.3 | 15.7 | 19.4 | 15.4 | 15.8 | 8.5 | 8.9 | 7.2 | 8.3 | 12.9 | 6.4 | 6.9 | 8.2 | 9.5 | 9.8 | 4.6 | 4.9 | 4.6 | 4.8 | 6.1 |
| Motor vehicles | 9.7 | 9.3 | 10.2 | 9.8 | 9.7 | 10.7 | 8.8 | 12.5 | 14.5 | 13.3 | 2.9 | 3.0 | 3.7 | 3.3 | 3.6 | 4.2 | 5.0 | 6.1 | 5.7 | 5.0 |
| Furniture | 5.2 | 4.0 | 3.3 | 4.0 | 5.0 | 4.8 | 3.3 | 4.2 | 5.8 | 5.6 | 2.0 | 2.1 | 1.9 | 2.2 | 2.3 | 2.2 | 2.2 | 2.2 | 2.8 | 2.7 |
| Mean of 6 excluded industries | 7.8 | 7.3 | 7.1 | 9.0 | 8.9 | 14.0 | 13.7 | 15.0 | 15.3 | 17.1 | 3.2 | 3.4 | 3.6 | 3.8 | 4.0 | 6.3 | 5.7 | 6.2 | 5.4 | 6.0 |
| Tobacco | 1.6 | 1.7 | 1.2 | 1.5 | 1.3 | 23.8 | 24.2 | 22.6 | 20.4 | 22.1 | 0.8 | 0.9 | 0.5 | 0.6 | 0.5 | 15.5 | 15.0 | 15.6 | 11.4 | 11.7 |
| Leather, footwear | 4.3 | 4.3 | 3.8 | 4.7 | 5.4 | 6.8 | 4.2 | 4.0 | 4.2 | 5.7 | 2.6 | 3.2 | 3.0 | 3.4 | 2.7 | 4.1 | 2.7 | 3.1 | 2.8 | 4.1 |
| Publishing | 8.1 | 7.8 | 8.0 | 7.8 | 9.5 | 9.6 | 10.6 | 9.4 | 11.6 | 12.0 | 4.8 | 5.5 | 5.4 | 6.0 | 6.5 | 9.5 | 9.4 | 9.6 | 9.2 | 9.8 |
| Petroleum products | 15.9 | 15.2 | 14.7 | 23.9 | 19.9 | 41.3 | 37.3 | 48.7 | 50.7 | 50.3 | 4.7 | 4.4 | 4.8 | 6.3 | 6.0 | 6.8 | 5.1 | 6.1 | 6.8 | 6.9 |
| Other transport equipment | 7.8 | 6.2 | 8.5 | 9.5 | 10.0 | 10.7 | 12.1 | 11.2 | 11.1 | 11.3 | 2.3 | 1.8 | 2.8 | 2.7 | 2.8 | 3.1 | 2.5 | 3.8 | 2.5 | 3.1 |
| Miscellaneous manufacturing | 6.8 | 6.4 | 5.0 | 7.1 | 7.7 | 6.2 | 7.3 | 8.8 | 8.7 | 8.1 | 3.3 | 3.1 | 2.9 | 4.2 | 5.2 | 5.2 | 5.0 | 5.2 | 5.2 | 4.9 |
| Recycling | 10.1 | 9.4 | 8.8 | 8.2 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 9.8 | 3.8 | 5.1 | 5.6 | 3.6 | 4.3 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets; highly educated workers with education beyond
the Malaysian Education Certificate Education (SPM), an exam taken by all students in the 5th year of secondary school (i.e., workers who progressed to vocational school, college, university, or graduate school)
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

| Industry | Male workers |  |  |  |  |  |  |  |  |  | Female workers |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Mean of 18 sample industries | 19.1 | 19.5 | 20.0 | 19.9 | 20.1 | 19.8 | 21.6 | 21.3 | 21.3 | 20.7 | 14.6 | 12.9 | 12.5 | 12.4 | 13.1 | 15.1 | 16.5 | 16.2 | 16.9 | 17.1 |
| Food, beverages | 18.2 | 17.8 | 17.3 | 17.8 | 18.4 | 24.5 | 25.3 | 24.8 | 22.2 | 26.1 | 8.8 | 9.0 | 8.9 | 9.4 | 9.9 | 10.5 | 11.5 | 10.5 | 11.5 | 11.6 |
| Textiles | 15.2 | 17.8 | 17.8 | 17.7 | 18.1 | 18.5 | 17.3 | 21.9 | 18.0 | 19.1 | 15.0 | 15.7 | 15.1 | 13.9 | 15.7 | 14.0 | 16.6 | 18.2 | 17.7 | 19.3 |
| Apparel | 6.3 | 6.2 | 5.7 | 6.7 | 9.3 | 3.6 | 5.3 | 5.9 | 5.3 | 5.2 | 14.3 | 14.7 | 13.7 | 15.9 | 19.8 | 12.5 | 16.9 | 13.7 | 14.8 | 18.5 |
| Wood products | 12.5 | 12.8 | 13.7 | 13.5 | 14.0 | 11.1 | 14.7 | 13.8 | 13.4 | 12.3 | 6.3 | 5.7 | 5.7 | 5.5 | 5.5 | 6.3 | 7.2 | 7.2 | 8.6 | 9.1 |
| Paper products | 21.6 | 22.0 | 21.9 | 23.5 | 23.4 | 24.3 | 25.7 | 26.2 | 27.9 | 25.7 | 13.6 | 11.2 | 11.8 | 11.8 | 12.7 | 14.8 | 15.8 | 17.3 | 17.3 | 16.8 |
| Chemicals | 23.8 | 24.0 | 25.5 | 27.2 | 27.0 | 31.3 | 31.6 | 32.3 | 33.1 | 31.9 | 13.3 | 11.5 | 11.3 | 11.7 | 12.1 | 9.7 | 9.6 | 9.3 | 8.6 | 8.4 |
| Rubber products | 16.3 | 18.4 | 16.0 | 15.7 | 17.9 | 16.0 | 18.4 | 19.7 | 16.8 | 17.9 | 10.1 | 9.2 | 9.7 | 10.4 | 9.6 | 11.7 | 14.1 | 13.9 | 14.7 | 17.4 |
| Plastics | 19.1 | 18.6 | 17.9 | 17.3 | 18.4 | 18.7 | 22.5 | 23.4 | 23.7 | 19.9 | 15.1 | 13.4 | 12.8 | 12.9 | 13.4 | 16.3 | 19.6 | 17.7 | 16.5 | 17.7 |
| Non-metallic mineral products | 17.9 | 19.4 | 17.7 | 18.5 | 18.4 | 22.0 | 24.3 | 24.7 | 24.3 | 23.0 | 7.6 | 5.9 | 6.0 | 5.8 | 5.8 | 10.6 | 11.0 | 9.0 | 10.1 | 11.1 |
| Basic metals | 23.9 | 25.3 | 26.3 | 24.4 | 24.8 | 27.5 | 32.1 | 32.2 | 28.8 | 27.5 | 10.0 | 7.8 | 8.0 | 7.3 | 7.4 | 10.7 | 12.5 | 13.6 | 10.2 | 9.9 |
| Fabricated metals | 22.6 | 21.4 | 20.5 | 22.1 | 21.7 | 27.3 | 29.1 | 28.1 | 24.9 | 25.9 | 12.5 | 8.6 | 8.2 | 8.1 | 8.3 | 11.7 | 12.2 | 11.9 | 13.6 | 12.4 |
| General machinery | 25.6 | 29.3 | 27.7 | 28.2 | 29.5 | 27.0 | 30.2 | 29.6 | 29.1 | 27.9 | 10.0 | 8.8 | 9.0 | 8.8 | 9.0 | 12.2 | 11.1 | 10.7 | 11.2 | 12.2 |
| Office \& computing machinery | 23.4 | 21.3 | 27.5 | 18.4 | 16.3 | 15.0 | 14.8 | 13.5 | 16.8 | 16.3 | 27.0 | 31.4 | 24.5 | 18.6 | 19.8 | 22.0 | 22.8 | 25.1 | 29.6 | 29.3 |
| Electrical machinery | 21.5 | 21.0 | 21.9 | 24.8 | 24.6 | 12.9 | 16.2 | 15.5 | 16.2 | 17.2 | 20.9 | 17.9 | 17.1 | 15.7 | 16.0 | 20.8 | 26.6 | 25.1 | 29.0 | 27.6 |
| Radio, tv \& communication machinery | 17.3 | 12.2 | 13.4 | 15.3 | 15.1 | 13.9 | 14.5 | 14.1 | 14.8 | 13.4 | 25.8 | 24.5 | 27.3 | 27.8 | 29.8 | 29.5 | 33.1 | 31.5 | 34.6 | 34.3 |
| Precision machinery | 16.2 | 18.7 | 25.7 | 21.8 | 15.4 | 17.1 | 16.1 | 16.3 | 16.0 | 16.0 | 27.8 | 19.6 | 17.6 | 22.5 | 24.5 | 36.2 | 33.3 | 29.8 | 34.4 | 32.6 |
| Motor vehicles | 25.1 | 27.9 | 28.6 | 28.0 | 29.9 | 32.1 | 35.0 | 29.1 | 34.9 | 33.0 | 13.3 | 9.6 | 10.8 | 11.0 | 9.6 | 14.6 | 15.9 | 19.3 | 13.9 | 13.7 |
| Furniture | 17.1 | 16.6 | 15.5 | 17.6 | 18.8 | 12.8 | 16.1 | 12.3 | 17.2 | 14.9 | 10.7 | 7.2 | 6.8 | 7.0 | 7.1 | 6.9 | 8.0 | 7.4 | 7.2 | 6.0 |
| Mean of 6 excluded industries | 17.4 | 17.6 | 17.9 | 18.4 | 18.7 | 21.9 | 21.3 | 20.0 | 18.9 | 22.0 | 11.2 | 10.2 | 9.6 | 10.1 | 10.2 | 11.5 | 9.8 | 10.2 | 9.9 | 11.9 |
| Tobacco | 6.0 | 6.8 | 6.9 | 8.0 | 7.6 | 20.6 | 26.3 | 35.9 | 23.7 | 21.9 | 4.3 | 6.2 | 8.7 | 7.7 | 6.8 | 13.8 | 7.4 | 9.3 | 9.8 | 10.1 |
| Leather, footwear | 11.7 | 12.6 | 13.7 | 15.3 | 15.2 | 16.4 | 14.6 | 9.6 | 9.5 | 12.6 | 9.7 | 10.6 | 10.0 | 10.7 | 11.2 | 18.6 | 12.5 | 11.2 | 13.2 | 15.4 |
| Publishing | 21.0 | 22.6 | 22.4 | 24.3 | 24.3 | 22.0 | 20.6 | 19.9 | 21.2 | 24.8 | 16.2 | 16.1 | 15.3 | 15.6 | 16.5 | 17.3 | 15.9 | 17.2 | 14.2 | 17.5 |
| Petroleum products | 26.2 | 26.8 | 23.2 | 23.9 | 20.9 | 32.5 | 37.1 | 27.0 | 21.8 | 22.2 | 20.0 | 7.4 | 9.4 | 9.4 | 8.6 | 1.7 | 1.8 | 2.3 | 2.2 | 2.3 |
| Other transport equipment | 21.3 | 19.2 | 24.8 | 24.6 | 24.9 | 41.6 | 29.2 | 27.8 | 34.5 | 28.5 | 7.8 | 5.2 | 4.7 | 5.9 | 6.0 | 12.3 | 12.0 | 10.0 | 11.2 | 12.8 |
| Miscellaneous manufacturing | 18.7 | 17.8 | 18.4 | 17.3 | 20.6 | 19.9 | 21.2 | 19.8 | 21.6 | 20.7 | 13.6 | 12.2 | 12.7 | 13.5 | 13.7 | 17.0 | 18.7 | 21.6 | 18.6 | 19.4 |
| Recycling | 16.6 | 17.3 | 16.0 | 15.3 | 17.5 | 0.0 | 0.0 | 0.0 | 0.0 | 23.5 | 7.1 | 13.7 | 6.8 | 7.7 | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 5.9 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets; moderately educated workers are those
completing the Malaysian Education Certificate Education (SPM), an exam taken by all students in the 5th year of secondary school, but no further education.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 4c: Mean Shares of Lowly Educated Workers in Paid and Unpaid Workers of Medium-Large Plants (percent)

| Industry | Male workers |  |  |  |  |  |  |  |  |  | Female workers |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  | Majority-local plants |  |  |  |  | MNE Plants |  |  |  |  |
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 | 2000 | 2001 | 2002 | 2003 | 2004 |
| Mean of 18 sample industries | 35.3 | 36.5 | 37.2 | 37.1 | 35.9 | 27.8 | 25.6 | 25.4 | 24.5 | 25.7 | 19.4 | 19.9 | 18.3 | 17.3 | 16.5 | 22.5 | 21.2 | 20.9 | 19.8 | 19.3 |
| Food, beverages | 45.7 | 45.3 | 45.7 | 44.1 | 44.9 | 31.4 | 30.5 | 30.3 | 31.1 | 28.4 | 19.4 | 21.0 | 21.1 | 21.3 | 18.8 | 16.8 | 16.1 | 15.8 | 16.4 | 15.2 |
| Textiles | 32.4 | 31.1 | 31.0 | 32.9 | 30.0 | 27.0 | 27.9 | 25.4 | 28.0 | 24.7 | 28.1 | 27.0 | 26.5 | 25.1 | 26.2 | 31.9 | 30.4 | 26.6 | 26.6 | 28.0 |
| Apparel | 17.1 | 15.5 | 19.4 | 17.6 | 15.3 | 16.2 | 18.3 | 19.6 | 19.5 | 19.4 | 57.8 | 60.0 | 56.7 | 54.9 | 49.3 | 62.9 | 54.8 | 56.2 | 55.8 | 52.9 |
| Wood products | 60.0 | 59.8 | 59.2 | 60.2 | 60.1 | 51.3 | 46.2 | 43.5 | 42.1 | 44.3 | 16.0 | 17.3 | 16.6 | 16.0 | 15.1 | 24.0 | 25.4 | 28.4 | 30.1 | 28.2 |
| Paper products | 36.0 | 37.7 | 37.2 | 36.4 | 35.4 | 28.4 | 26.1 | 25.7 | 23.0 | 28.0 | 16.6 | 18.2 | 17.2 | 14.8 | 15.3 | 16.6 | 17.0 | 13.7 | 13.3 | 13.2 |
| Chemicals | 30.1 | 33.3 | 31.2 | 29.0 | 27.7 | 22.8 | 21.2 | 20.7 | 19.3 | 19.2 | 14.0 | 14.0 | 13.2 | 11.9 | 11.3 | 7.8 | 8.7 | 7.0 | 7.1 | 6.3 |
| Rubber products | 43.1 | 42.9 | 43.9 | 44.2 | 44.5 | 35.9 | 32.3 | 30.6 | 30.4 | 31.2 | 21.6 | 22.0 | 22.2 | 20.2 | 19.0 | 25.7 | 25.6 | 26.5 | 27.9 | 23.3 |
| Plastics | 32.5 | 34.1 | 35.7 | 37.3 | 35.2 | 25.8 | 21.8 | 21.4 | 24.0 | 28.3 | 22.4 | 23.7 | 22.6 | 21.6 | 20.3 | 25.1 | 19.8 | 19.6 | 18.9 | 18.8 |
| Non-metallic mineral products | 55.8 | 56.1 | 57.6 | 56.7 | 56.7 | 37.4 | 36.0 | 36.5 | 32.0 | 35.5 | 9.3 | 10.1 | 9.9 | 10.0 | 8.8 | 11.2 | 9.4 | 10.3 | 8.5 | 9.3 |
| Basic metals | 46.7 | 49.0 | 48.6 | 50.2 | 48.5 | 34.1 | 30.5 | 29.7 | 30.3 | 34.1 | 5.6 | 5.1 | 4.6 | 4.2 | 4.7 | 10.1 | 7.9 | 6.6 | 10.4 | 10.1 |
| Fabricated metals | 43.6 | 50.7 | 52.5 | 50.8 | 50.9 | 31.0 | 29.5 | 28.2 | 29.3 | 30.4 | 8.9 | 9.0 | 8.8 | 8.5 | 7.9 | 14.5 | 12.8 | 14.3 | 14.4 | 12.9 |
| General machinery | 45.3 | 43.1 | 42.3 | 42.7 | 39.3 | 25.2 | 23.9 | 21.5 | 19.4 | 22.4 | 6.0 | 6.2 | 6.3 | 6.0 | 5.9 | 9.2 | 7.1 | 7.5 | 5.4 | 6.0 |
| Office \& computing machinery | 9.1 | 10.5 | 16.7 | 13.6 | 10.8 | 13.5 | 11.5 | 10.6 | 6.6 | 8.8 | 25.2 | 16.5 | 15.6 | 20.8 | 18.3 | 31.1 | 34.3 | 30.1 | 23.1 | 22.7 |
| Electrical machinery | 24.5 | 25.3 | 25.5 | 23.7 | 24.9 | 18.2 | 13.8 | 17.5 | 15.8 | 14.5 | 18.6 | 22.5 | 21.1 | 18.3 | 16.4 | 34.1 | 26.2 | 24.2 | 22.0 | 23.2 |
| Radio, tv \& communication machinery | 13.7 | 17.4 | 14.8 | 12.9 | 11.8 | 12.4 | 8.8 | 9.3 | 8.7 | 9.4 | 27.5 | 30.8 | 26.7 | 25.3 | 22.2 | 27.8 | 25.1 | 26.9 | 23.5 | 22.8 |
| Precision machinery | 10.4 | 11.6 | 13.7 | 20.1 | 17.1 | 9.2 | 8.6 | 11.5 | 12.5 | 9.7 | 27.9 | 27.4 | 15.3 | 10.6 | 17.5 | 24.4 | 28.2 | 30.7 | 24.1 | 22.7 |
| Motor vehicles | 38.4 | 39.5 | 36.8 | 39.4 | 39.0 | 24.7 | 19.9 | 19.5 | 19.1 | 20.2 | 10.5 | 10.7 | 9.9 | 8.5 | 8.2 | 13.6 | 15.3 | 13.4 | 11.9 | 14.7 |
| Furniture | 50.5 | 54.1 | 57.3 | 55.5 | 55.0 | 55.3 | 53.2 | 55.6 | 49.8 | 54.4 | 14.6 | 16.1 | 15.1 | 13.8 | 11.8 | 17.9 | 17.2 | 18.3 | 17.4 | 16.3 |
| Mean of 6 excluded industries | 36.6 | 39.4 | 39.2 | 36.8 | 38.4 | 19.7 | 21.1 | 20.1 | 21.1 | 29.8 | 23.9 | 22.1 | 22.5 | 22.0 | 19.7 | 12.3 | 14.3 | 14.2 | 15.2 | 13.1 |
| Tobacco | 27.5 | 29.3 | 28.7 | 28.9 | 28.8 | 16.2 | 11.8 | 5.8 | 17.8 | 20.2 | 59.9 | 55.1 | 54.0 | 53.3 | 55.0 | 10.1 | 15.4 | 10.8 | 16.9 | 14.0 |
| Leather, footwear | 36.5 | 38.5 | 39.8 | 32.0 | 36.6 | 32.3 | 40.8 | 39.1 | 30.0 | 32.3 | 35.2 | 30.9 | 29.7 | 34.0 | 29.0 | 21.8 | 25.2 | 33.0 | 40.3 | 29.9 |
| Publishing | 30.3 | 29.4 | 31.0 | 29.7 | 26.9 | 23.1 | 23.9 | 22.9 | 25.9 | 22.0 | 19.5 | 18.6 | 18.0 | 16.6 | 16.3 | 18.5 | 19.6 | 21.0 | 17.8 | 13.9 |
| Petroleum products | 29.7 | 40.4 | 42.5 | 33.6 | 39.4 | 17.6 | 18.7 | 15.8 | 18.5 | 18.3 | 3.6 | 5.7 | 5.4 | 2.9 | 5.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Other transport equipment | 55.1 | 61.7 | 53.0 | 52.7 | 50.9 | 23.6 | 30.7 | 35.7 | 32.3 | 34.8 | 5.7 | 5.9 | 6.1 | 4.6 | 5.4 | 8.7 | 13.4 | 11.5 | 8.4 | 9.5 |
| Miscellaneous manufacturing | 31.6 | 32.0 | 33.3 | 33.1 | 31.0 | 25.0 | 21.6 | 21.8 | 23.3 | 24.3 | 26.0 | 28.4 | 27.6 | 24.8 | 21.7 | 26.7 | 26.3 | 22.8 | 22.6 | 22.6 |
| Recycling | 45.2 | 44.3 | 46.3 | 47.5 | 55.7 | 0.0 | 0.0 | 0.0 | 0.0 | 56.9 | 17.2 | 10.2 | 16.6 | 17.7 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |

Note: This table includes plants with 20 or more employees and positive output, employee compensation, and fixed assets; lowly educated workers are those not
completing the Malaysian Education Certificate Education (SPM), an exam taken by all students in the 5th year of secondary school.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 5: Estimates of MNE-Local Wage Differentials and Related Details (all p-values based on robust standard errors [clustered by plant for random effects])

| Indepen- |  | 2000 | 002 |  |  | 200 | 004 |  |  | 200 | 2004 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| dent | Pool |  | Rand. | fects | Pool |  | Rand. | fects | Pool |  | Rand. | fects |
| variable, statistic | Value | P- <br> val. | Value | P- <br> val. | Value | Pval. | Value | P- <br> val. | Value | Pval. | Value | P- |

SELECTED MANUFACTURING INDUSTRIES COMBINED

| $L K E_{i t}$ | 0.0335 | 0.00 | 0.0394 | 0.00 | 0.0302 | 0.00 | 0.0318 | 0.00 | 0.0325 | 0.00 | 0.0358 | 0.00 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $L O_{i t}$ | 0.1159 | 0.00 | 0.1221 | 0.00 | 0.1180 | 0.00 | 0.1229 | 0.00 | 0.1172 | 0.00 | 0.1256 | 0.00 |
| SMH ${ }_{\text {it }}$ | -0.0062 | 0.00 | -0.0039 | 0.01 | -0.0072 | 0.00 | -0.0058 | 0.00 | -0.0062 | 0.00 | -0.0040 | 0.00 |
| SFH ${ }_{\text {it }}$ | 0.0102 | 0.00 | 0.0093 | 0.00 | 0.0089 | 0.00 | 0.0070 | 0.00 | 0.0093 | 0.00 | 0.0078 | 0.00 |
| $S M L$ it | -0.0155 | 0.00 | -0.0132 | 0.00 | -0.0144 | 0.00 | -0.0133 | 0.00 | -0.0147 | 0.00 | -0.0125 | 0.00 |
| SM3 it | 0.0228 | 0.00 | 0.0190 | 0.00 | 0.0240 | 0.00 | 0.0212 | 0.00 | 0.0226 | 0.00 | 0.0184 | 0.00 |
| SF3 ${ }_{\text {it }}$ | 0.0089 | 0.00 | 0.0074 | 0.00 | 0.0095 | 0.00 | 0.0082 | 0.00 | 0.0092 | 0.00 | 0.0074 | 0.00 |
| SM2 it | 0.0196 | 0.00 | 0.0161 | 0.00 | 0.0193 | 0.00 | 0.0170 | 0.00 | 0.0190 | 0.00 | 0.0152 | 0.00 |
| SF2 it | -0.0003 | 0.29 | -0.0005 | 0.09 | 0.0013 | 0.00 | 0.0009 | 0.01 | 0.0002 | 0.43 | 0.0000 | 0.92 |
| SM1 it | 0.0191 | 0.00 | 0.0159 | 0.00 | 0.0181 | 0.00 | 0.0162 | 0.00 | 0.0182 | 0.00 | 0.0149 | 0.00 |
| $D F_{i t}$ | 0.1009 | 0.00 | 0.0868 | 0.00 | 0.0747 | 0.00 | 0.0498 | 0.00 | 0.0911 | 0.00 | 0.0645 | 0.00 |
| Obs./R ${ }^{2}$ | 21,002 | 0.57 | 21,002 | 0.57 | 20,258 | 0.58 | 20,258 | 0.58 | 34,491 | 0.57 | 34,491 | 0.57 |
| FOOD, BEVERAGES (MSIC=15) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.0263 | 0.00 | 0.0298 | 0.00 | 0.0289 | 0.00 | 0.0322 | 0.00 | 0.0278 | 0.00 | 0.0307 | 0.00 |
| $L O_{i t}$ | 0.1438 | 0.00 | 0.1398 | 0.00 | 0.1346 | 0.00 | 0.1373 | 0.00 | 0.1372 | 0.00 | 0.1306 | 0.00 |
| SMH ${ }_{\text {it }}$ | -0.0067 | 0.00 | -0.0034 | 0.00 | -0.0084 | 0.00 | -0.0054 | 0.00 | -0.0070 | 0.00 | -0.0043 | 0.00 |
| SFH ${ }_{\text {it }}$ | 0.0089 | 0.00 | 0.0082 | 0.00 | 0.0116 | 0.00 | 0.0078 | 0.00 | 0.0104 | 0.00 | 0.0078 | 0.00 |
| $S M L$ | -0.0146 | 0.00 | -0.0115 | 0.00 | -0.0155 | 0.00 | -0.0118 | 0.00 | -0.0147 | 0.00 | -0.0116 | 0.00 |
| SM3 it | 0.0252 | 0.00 | 0.0209 | 0.00 | 0.0253 | 0.00 | 0.0195 | 0.00 | 0.0248 | 0.00 | 0.0205 | 0.00 |
| SF3 it | 0.0107 | 0.00 | 0.0107 | 0.00 | 0.0108 | 0.00 | 0.0108 | 0.00 | 0.0106 | 0.00 | 0.0108 | 0.00 |
| SM2 it | 0.0187 | 0.00 | 0.0150 | 0.00 | 0.0205 | 0.00 | 0.0160 | 0.00 | 0.0193 | 0.00 | 0.0153 | 0.00 |
| SF2 it | 0.0016 | 0.06 | 0.0017 | 0.00 | 0.0017 | 0.04 | 0.0030 | 0.00 | 0.0016 | 0.01 | 0.0019 | 0.01 |
| SM1 it | 0.0177 | 0.00 | 0.0146 | 0.00 | 0.0188 | 0.00 | 0.0151 | 0.00 | 0.0179 | 0.00 | 0.0150 | 0.00 |
| $D F_{i t}$ | 0.1017 | 0.00 | 0.0845 | 0.00 | 0.1212 | 0.00 | 0.1376 | 0.01 | 0.1131 | 0.00 | 0.1034 | 0.00 |
| Obs./R ${ }^{2}$ | 3,648 | 0.63 | 3,648 | 0.63 | 3,592 | 0.63 | 3,592 | 0.62 | 6,007 | 0.63 | 6,007 | 0.62 |
| TEXTILES (MSIC=17) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.0438 | 0.00 | 0.0537 | 0.00 | 0.0324 | 0.00 | 0.0197 | 0.24 | 0.0343 | 0.00 | 0.0265 | 0.05 |
| $L O_{i t}$ | 0.1115 | 0.00 | 0.1114 | 0.00 | 0.1087 | 0.00 | 0.1289 | 0.00 | 0.1121 | 0.00 | 0.1316 | 0.00 |
| SMH ${ }_{\text {it }}$ | 0.0016 | 0.84 | -0.0008 | 0.81 | -0.0051 | 0.48 | -0.0020 | 0.58 | 0.0008 | 0.92 | 0.0005 | 0.87 |
| SFH ${ }_{\text {it }}$ | 0.0094 | 0.01 | 0.0140 | 0.00 | 0.0101 | 0.00 | 0.0163 | 0.00 | 0.0098 | 0.00 | 0.0159 | 0.00 |
| SML ${ }_{\text {it }}$ | -0.0132 | 0.09 | -0.0122 | 0.00 | -0.0213 | 0.00 | -0.0183 | 0.00 | -0.0150 | 0.05 | -0.0131 | 0.00 |
| SM3 it | 0.0101 | 0.22 | 0.0094 | 0.04 | 0.0272 | 0.00 | 0.0241 | 0.00 | 0.0158 | 0.05 | 0.0152 | 0.00 |
| SF3 ${ }_{\text {it }}$ | 0.0098 | 0.01 | 0.0039 | 0.33 | 0.0069 | 0.06 | 0.0093 | 0.01 | 0.0086 | 0.00 | 0.0069 | 0.08 |
| SM2 it | 0.0101 | 0.20 | 0.0115 | 0.00 | 0.0212 | 0.00 | 0.0194 | 0.00 | 0.0133 | 0.08 | 0.0132 | 0.00 |
| SF2 it | 0.0024 | 0.05 | 0.0005 | 0.64 | 0.0034 | 0.00 | 0.0025 | 0.02 | 0.0023 | 0.01 | 0.0009 | 0.31 |
| SM1 it | 0.0129 | 0.10 | 0.0129 | 0.00 | 0.0216 | 0.00 | 0.0192 | 0.00 | 0.0147 | 0.05 | 0.0137 | 0.00 |
| $D F_{i t}$ | 0.1495 | 0.00 | 0.1184 | 0.02 | 0.1015 | 0.00 | 0.1062 | 0.02 | 0.1233 | 0.00 | 0.0677 | 0.21 |
| Obs./R ${ }^{2}$ | 587 | 0.54 | 587 | 0.52 | 548 | 0.59 | 548 | 0.57 | 950 | 0.54 | 950 | 0.52 |

Appendix Table 5 (continued)

| Indepen- <br> dent <br> variable, <br> statistic | 2000-2002 |  |  |  | 2002-2004 |  |  |  | 2000-2004 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  |
|  | alue | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Valu | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ |
| APPAREL (MSIC=18) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{\text {it }}$ | 0.0209 | 0.03 | 0229 | 0.08 | 0.0269 | 0.00 | 0.0346 | 0.00 | 0.0325 | 00 | 0.0394 | 0.00 |
| LO | 0.1549 | 0.00 | . 1598 | 0.00 | . 1473 | 0.00 | 0.1490 | 0.00 | 0.1467 | 0.00 | 46 | 0.00 |
| SM | -0.0088 | 0.35 | -0.0114 | 0.16 | -0.0066 | 0.30 | -0.0052 | 0.43 | -0.0081 | 0.16 | -0.0101 | 0.05 |
| SF | -0.000 | 0.98 | 0.0031 | 0.57 | -0.0090 | 0.00 | -0.0074 | 0.02 | -0.0068 | 0.01 | -0.0033 | 0.28 |
| SM | -0.02 | 00 | -0.0353 | 0.00 | 0.0009 | 0.90 | -0.0020 | 0.81 | -0.0099 | 0.12 | -0.0166 | 0.01 |
| SM | 0.0223 | 0.04 | 0.01 | 10 | 0.0 | 0.51 | 0.0062 | 0.45 | 0.0079 | 0.26 | 0.0079 | 0.24 |
| SF | 0.0036 | 0.33 | 0.00 | 0.20 | 0.0 | 0.22 | 0.0035 | 0.32 | 0.0054 | 0.08 | 0.0047 | 0.08 |
| SM | 0.0 | 0.01 | 0.03 | 0.00 | 0.0029 | 0.70 | 0.0032 | 0.68 | 0.0087 | 0.18 | 0.0128 | 0.03 |
| SF2 | -0.00 | 0.61 | -0.0007 | 0.36 | -0.0001 | 0.92 | -0.0003 | 0.74 | -0.0005 | 0.56 | 0.0001 | 0.94 |
| SM1 | 0.028 | 0.00 | 0.034 | 0.00 | -0.0003 | 0.97 | 0.0025 | 0.76 | 0.0101 | 0.11 | 0.0171 | 0.00 |
| DF | 0.0 | 0.20 | 0. | 0.0 | 0.05 | 0.09 | 0.0325 | 0. | 0.0516 | . 04 | 0.1079 | 0.01 |
| Obs./R ${ }^{2}$ |  | 0.45 | 92 | 0.4 | 803 | 0. | 3 | 0.44 | 1 | 2 | 1 |  |
| WOOD PRODUCTS (MSIC=20) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.0299 | 0.00 | 0.03 | 0.0 | 0.0300 | 0.0 | 0.0349 | 0.00 | 0.0299 | 0.00 |  |  |
| LO | 0.1 | 0.00 | 0.1160 | 0.00 | 0.1008 | 0.00 | 0.0934 | 0.00 | 0.1109 | 0.00 | 29 |  |
| SMH ${ }_{\text {it }}$ | -0.0 | 0.01 | -0.01 | 0.02 | -0.0107 | 0.01 | -0.0126 | 0.01 | -0.0102 | 0.02 | -0.0114 |  |
| SFH ${ }_{\text {it }}$ | 0.0 | 0.00 | 0.017 | 0.02 | 0.0287 | 0.00 | 0.0149 | 0.03 | 0.0253 | 0.00 | 0.0132 |  |
| SML ${ }_{\text {it }}$ | -0.0 | 0.00 | -0.02 | 0.00 | -0.02 | 0.00 | -0.0271 | 0.00 | -0.0248 | 0.00 | -0.0259 |  |
| SM3 ${ }_{\text {it }}$ | 0. | 0.00 | 0.0 | 0.00 | 0.0294 | 0.00 | 0.0 | 0.00 | 0.0 | 0.00 | 5 |  |
| SF3 ${ }_{\text {it }}$ | 0.0041 | 0.25 | 0.0055 | 0.19 | 0.0103 | 0.01 | 0.0 | 0.00 | 0.0 | 0.00 | 0.0071 |  |
| SM2 ${ }_{\text {it }}$ | 0.0316 | 00 | 0.0300 | 0.00 | 0.0302 | 0.00 | 0.0 | . 00 | 0.0 | 0.00 | 0 |  |
| SF2 ${ }_{\text {it }}$ | 0.0027 | 0.06 | 0.0010 | 0.52 | . 00 | 0.00 | 0.0 | 0.01 | 0.0 | 0.00 | 0.0015 |  |
| SM1 ${ }_{\text {i }}$ | 0.0315 | 0.00 | 0.0 | 0.00 | 0.0297 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.0297 |  |
| DF ${ }_{\text {it }}$ | 0.0 | 0.1 | 0. | 0.46 | -0.005 | 0.8 | 0.00 | 0.9 | 0.01 | 0.36 | 0.0229 |  |
| Obs./R | 2,0 | 0.50 | 2,0 | 0.49 | 1,86 | 0.51 | 1,860 | 0.49 | 3,286 | 0.49 | 3,286 |  |
| PAPER PRODUCTS (MSIC=21) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ |  | 0.00 | 0 | 0.0 |  | 0. |  |  |  | 0.00 |  |  |
| $L O_{i t}$ | 0. | 0.00 | 1267 | 0.00 | 0.095 | 0.00 | 0.1167 | 0.00 | 0.1078 | 0.00 | 0.1355 | . 00 |
| SMH |  | 0.20 | 0082 | 0.31 | 0.0052 | 0.27 | 0.0042 | 0.14 | 0.0094 | 0.13 | 0.0111 |  |
| SF | 0.0 | 0.00 | 0.0087 | 0.01 | 0.0102 | 0.00 | 0.0084 | 0.03 | 0.0102 | 0.00 | 0.0089 | 0.00 |
| SML ${ }_{\text {it }}$ | -0.00 | 0.76 | -0.0021 | 0.81 | -0.0010 | 0.84 | -0.0009 | 0.80 | 0.0010 | 0.88 | 0.0026 | 0.77 |
| SM3 ${ }_{\text {it }}$ | 0.0 | 0.54 | 0.000 | 0.95 | 0.00 | 0.17 | 0.0 | 0.06 | 0.0017 | 0.80 | -0.0014 |  |
| SF3 ${ }_{\text {it }}$ | 0.008 | 0.01 | 0.0 | 0.08 | . 00 | 0.05 | 0.0054 | . 16 | 0.0 | . 0 | 0.0039 |  |
| SM2 ${ }_{\text {it }}$ |  | 0.58 | 0.0030 | 0.73 | 0.0025 | 0.62 | 0.0021 | 0.59 | 0.0003 | 0.97 | -0.0031 |  |
| $S F 2{ }_{\text {it }}$ | 0.0017 | 0.29 | 0.00 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 0.00 | 0.0 |  |
| SM1 ${ }_{\text {it }}$ | 0.00 | 0.54 | 0.002 | 0.74 | 0.0026 | 0.6 | 0.00 | 0.56 | 0.0 | 0.95 | -0.00 | 0.72 |
| DF ${ }_{\text {it }}$ | 0.060 | 0.10 | 0.0280 | 0.48 | 0.0487 | 0.17 | 0.03 | 0.46 | 0.06 | 0.0 | 0.02 | 0.68 |
| Obs./R $/{ }^{2}$ | 710 | 0.52 | 710 | 0.54 | 710 | 0.46 | 710 | 0.45 | 1,195 | 0.48 | 1,195 | 0.4 |

Appendix Table 5 (continued)

| Indepen- <br> dent <br> variable, <br> statistic | 2000-2002 |  |  |  | 2002-2004 |  |  |  | 2000-2004 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  |
|  | alue | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Valu | Pval. |
| CHEMICALS (MSIC=24) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.0344 | 0.00 | 0370 | 0.02 | 0.0136 | 0.18 | 0.0400 | 0.02 | 0.0237 | 0.00 | 0.0221 | 0.03 |
| LO | 0.1811 | 0.00 | 0.1814 | . 00 | . 1625 | 0.00 | 0.1217 | 0.00 | 0.1625 | 0.00 | 1649 | 0.00 |
| SM | 0.0195 | 0.00 | 7 | 0.02 | 0.0158 | 0.00 | 0.0048 | 0.34 | 0.0216 | 0.00 | 0106 | 0.06 |
| SF | -0.0 | 71 | 0.0016 | . 88 | . 0092 | 0.20 | 0.0065 | 0.11 | 0.0048 | 0.41 | 0.0053 | 0.34 |
| SM | 0.0116 | 0.03 | 0.0046 | . 37 | . 0066 | 0.23 | -0.0041 | 0.42 | 0.0126 | 0.0 | 0.0025 | 0.67 |
| SM | -0. | 0.23 | 0.0019 | 0.74 | 0.0013 | 0.82 | 0.0090 | 0.09 | -0.0066 | 0.29 | 0.0037 | 0.52 |
| SF | 0.0178 | 0.00 | 0.01 | 00 | 0.0097 | 0.01 | 0.00 | 0.14 | 0.0112 | 0.00 | 0.0074 | 0.00 |
| SM | -0.008 | 0.11 | -0.0029 | 0.59 | -0.0016 | 0.77 | 0.0066 | 0.20 | -0.0085 | 0.17 | 0.0002 | 0.98 |
| SF | 0.0 | 0.26 | -0.000 | 0.78 | 0.0028 | 0.09 | -0.0026 | 0.27 | 0.0017 | 0.20 | -0.0012 | 0.41 |
| SM1 | -0.007 | 0.18 | -0.0018 | 0.73 | -0.0016 | 0.77 | 0.0056 | 0.28 | -0.0083 | 0.18 | -0.0003 | 0.96 |
| DF | 0.1 | 0.00 | 0.0 | 0.00 | 0.08 | 0.00 | 0.1030 | 0.01 | 0.1061 | 0.00 | 0.0900 | 0.00 |
| Obs./R |  | 0.44 | 1,1 | 0.4 | 1,1 | 0.4 | 7 | 0.51 | 2 | . 51 | 32 |  |
| RUBBER PRODUCTS (MSIC=251) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.0025 | 0.60 | 0.0107 | 0.02 | -0.00 | 0.9 | 0.0014 | 0.79 | 0.0006 | 0.88 | 2 |  |
| LO | 0.09 | 0.00 | 0.1112 | 0.00 | 0.09 | 0.00 | 0.1084 | 0.00 | 0.0986 | 0.00 | 9 |  |
| SM | -0.0 | 0.79 | 0.0045 | 0.50 | -0.0047 | 0.65 | -0.0091 | 0.01 | -0.0035 | 70 | 8 |  |
| $S F H_{i t}$ | 0.0 | 0.01 | 0.0 | 0.00 | 0.01 | 0.00 | 0.0148 | 0.01 | 0.0117 | 0.00 | 0.0125 |  |
| SML ${ }_{\text {it }}$ | -0.0 | 0.07 | -0.0081 | 0.24 | -0.01 | . 14 | -0.0214 | 0.00 | -0.0167 | 0.07 | -0.0124 |  |
| SM3 ${ }_{\text {it }}$ | 0.0236 | 0.01 | 0.0127 | . 08 | 0.0267 | . 01 | 0.0309 | 0.00 | 0.02 | 0.01 | 7 |  |
| SF3 | 0.0127 | 00 | 0.0099 | 01 | 0.0060 | 0.05 | 0.0 | 0.67 | 0.0 | 0.00 | 5 |  |
| SM | 0.0217 | 0.01 | 0.0 | 0.07 | 0.0 | 0.04 | 0.02 | 0.00 | 0.0 | 0.0 | 0.0153 |  |
| SF2 | -0. | . 02 | -0.00 | 0.21 | -0.0005 | 0.65 | -0.00 | 0.78 | -0.00 | 0.05 | -0.0011 |  |
| SM1 ${ }_{\text {it }}$ | 0.0207 | 0.02 | 0.01 | 0.08 | 0.0195 | 0.06 | 0.02 | 0.00 | 0.0 | 0.0 |  |  |
| DF ${ }_{\text {it }}$ | 0. | 0.0 | 0. | 0.00 | 0.186 | 0.0 | 0.09 | 0.01 | 0.21 | 0.00 | 0.1218 |  |
| Obs./R ${ }^{2}$ | 97 | 0.4 | 971 | 0.43 | 866 | 0.44 | 866 | 0.00 | 1,5 | 0.43 |  | 0.40 |
| PLASTICS (MSIC=252) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ |  | 0.00 |  | 0. |  | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |
| $L O_{i t}$ | 0.102 | 0.00 | 0.098 | 0.00 | 0.107 | 0.00 | 0.1092 | 0.00 | 0.1069 | 0.00 | 0.1115 | . 00 |
| SMH ${ }_{\text {it }}$ | -0.010 | 0.02 | -0.0050 | 0.27 | -0.0130 | 0.00 | -0.0129 | 0.02 | -0.0105 | 0.02 | -0.0074 |  |
| SFH ${ }_{\text {it }}$ | 0.01 | 0.00 | 0.009 | 0.01 | 0.0186 | 0.00 | 0.0162 | 0.00 | 0.0161 | 0.00 | 0.0118 | 00 |
| SML ${ }_{\text {it }}$ | -0.0236 | 0.00 | -0.0192 | 0.00 | -0.0251 | 0.00 | -0.0255 | 0.00 | -0.0232 | 0.00 | -0.0211 | 0.00 |
| SM3 it | 0.0272 | . 00 | 0.0212 | 00 | 0.032 | 0.00 | 0.0 | 0.00 | 0.0285 | 0.00 | 9 |  |
| SF3 ${ }_{\text {it }}$ | 0.0066 | . 00 | 0.0075 | 0.00 | 0.00 | . 00 | 0.0 | . 02 | 0.0064 | 0.00 | 0 |  |
| SM2 ${ }_{\text {it }}$ | 0.0264 | 0.00 | 0.0 | 0.00 | 0.0295 | 00 | 0.0285 | . 00 | 0.0 | 0.00 | 0.0224 | . 00 |
| SF2 ${ }_{\text {it }}$ | -0.000, | . 00 | -0.00 | 0.01 | 0.0005 | 0.45 | 0.0000 | . 00 | -0.0 | 0.01 | -0.0. |  |
| SM1 ${ }_{\text {it }}$ | 0.0 | 0.00 | 0.02 | 0.00 | 0.02 | 0.00 | 0.02 | . 00 | 0.0 | 0.0 | 0.0 |  |
| $D F_{i t}$ | 0.1039 | 0.00 | 0.0 | 0.00 | 0.0702 | 0.00 | 0.02 | 0.32 | 0.08 | 0.0 | 0.03 |  |
| Obs./R $/{ }^{2}$ | 1,883 | 0.51 | 1,883 | 0.50 | 1,806 | 0.52 | 1,806 | 0.52 | 3,090 | 0.50 | 3,090 | 0.5 |

Appendix Table 5 (continued)

| Indepen- <br> dent <br> variable, <br> statistic | 2000-2002 |  |  |  | 2002-2004 |  |  |  | 2000-2004 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  |
|  | lue | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{array}{\|c} \hline \text { P- } \\ \text { val. } \end{array}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{array}{\|c\|} \hline \mathrm{P}- \\ \mathrm{val} . \end{array}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Valu | Pval. |
| NON-METALLIC MINERAL PRODUCTS (MSIC=26) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{\text {it }}$ | 0.0633 | 0.00 | 0.0774 | 0.00 | 0.0442 | 0.00 | 0.0676 | 0.00 | 0.0522 | 0.00 | 0.0651 | 0.00 |
| LO | 0.1322 | . 00 | . 1307 | 0.00 | . 1401 | 0.00 | 0.1301 | 0.00 | 0.1391 | 0.00 | 0.1331 | 0.00 |
| SM | -0.0 | 00 | -0.0021 | 0.11 | -0.0099 | 0.00 | -0.0040 | 0.02 | -0.0105 | 0.00 | -0.0024 | 0.10 |
| SF | 0.0019 | 0.64 | 0.00 | 0.24 | -0.0021 | 0.55 | -0.0009 | 0.81 | -0.0001 | 0.97 | 0.0022 | 0.53 |
| SM | -0.01 | , 0 | -0.0098 | . 00 | -0.0188 | 0.00 | -0.0129 | 0.00 | -0.0182 | 0.00 | -0.0108 | 0.00 |
| SM | 0.0221 | . 00 | 0.0119 | 0.00 | 0.0293 | 0. | 0.0214 | 0.00 | 0.0254 | 0.00 | 0.0162 | 0.00 |
| SF | 0.0 | 0.00 | 0.0 | 00 | 0.0176 | 0.00 | 0.0126 | 0.00 | 0.0196 | 0.00 | 0.0100 | 0.00 |
| SM | 0.0 | 0.00 | 0.0 | 0.00 | 0.0230 | 0.00 | 0.0159 | 0.00 | 0.0214 | 0.00 | 0.0118 | 0.00 |
| SF2 | 0.0 | 0.2 | 0.0 | 0.78 | 0.0099 | 0.00 | 0.0088 | 0.00 | 0.0059 | 0.00 | 0.0029 | 0.12 |
| SM1 | 0.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.00 | 0.0 | 0.00 | 0.0220 | 0.00 | 0.0118 | 0.00 |
| DF | 0.0 | 0.02 | 0.0 | 0.18 | 0.0 | 0.11 | 0.0423 | 0.3 | 0.0756 | 0.01 | 0.0352 | 0.38 |
| Obs./R |  | 0.67 | 1,3 | 0.6 | 1,2 | 0.6 | 8 | 0. | 2,144 | 0.67 | 4 |  |
| BASIC METALS (MSIC=27) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.0258 | 0.00 | 0.0363 | 0.00 | 0.0231 | 0.00 | 0.0313 |  | 0.0265 |  |  |  |
| LO | 0.0 | 0.00 | 0.10 | 0.00 | 0.1 | 0.00 | 0.1128 | 0.00 | 0.1080 | 0.00 | 5 |  |
| SM | -0.00 | 0.67 | 0.0 | 0.79 | -0.0031 | 0.39 | -0.0002 | 0.93 | -0.0014 | 0.70 | 0.0007 |  |
| $S F H_{i t}$ | 0.0 | 0.04 | 0.0 | 0.03 | 0.0 | 0.00 | 0.0102 | 0.02 | 0.0121 | 0.00 | 0.0101 |  |
| SML ${ }_{\text {it }}$ | -0.007 | 0.06 | 0.0 | 0.01 | -0.00 | 0.01 | -0.0066 | 0.03 | -0.0079 | 0.03 | -0.0051 |  |
| SM3 ${ }_{\text {it }}$ | 0.0188 | 0.00 | 0.0 | 0.00 | 0.0 | 0.00 | 0.01 | 0.00 | 0.0175 | 0.00 | 0 |  |
| SF3 | 0.0138 | 0.00 | 0.0116 | 00 | 0.0062 | 0.10 | 0.0 | 0.28 | 0.00 | 0.0 | 5 |  |
| SM2 |  | 0.00 | 0.0082 | 0.00 | 0.0135 | 0.00 | 0.00 | 0.05 | 0.0 | 0.00 | 0 | 0.03 |
| SF2 it | 0.0037 | 0.07 | 0.0012 | 0.37 | 0.0055 | 0.03 | -0.00 | 0.97 | 0.0 | 0.0 | 3 |  |
| SM1 |  | 0.00 | 0.008 | 0.00 | 0.0 | 0.00 | 0.00 | 0.04 | 0.0 | . 00 | , |  |
| DF ${ }_{\text {it }}$ |  | 0.00 | 0.1000 | 0.0 | 0. | 0.0 | 0.05 | 0.1 | 0.1135 | 0.00 | 0.0475 |  |
| Obs./ | 818 | 0.48 | 818 | 0.4 | 817 | 0.50 | 817 | 0.48 | 1,368 | 0.48 | 1,368 |  |
| METAL PRODUCTS (MSIC=28) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ |  | 0.00 | 0.03 | 0. |  | 0.00 |  |  |  | 0.00 |  | 0.00 |
| $L O_{i t}$ | 0.13 | 0.00 | 0.143 | 0.00 | 0.13 | 0.00 | 0.1466 | 0.00 | 0.1380 | 0.00 | 0.1436 | . 00 |
| SMH | -0.0027 | 0.43 | -0.00 | 0.53 | -0.0028 | 0.46 | -0.0030 | 0.27 | -0.0029 | 0.40 | -0.0017 | . 40 |
|  | 0.01 | 0.00 | 0.015 | 0.00 | 0.0157 | 0.00 | 0.01 | 0.00 | 0.0160 | 0.00 | 0.0122 | . 00 |
| SML ${ }_{\text {it }}$ | -0.010 | 0.00 | -0.009 | 0.00 | -0.0068 | 0.08 | -0.0077 | 0.01 | -0.0088 | 0.01 | -0.0084 | 0.00 |
| SM3 it | 0.0179 | . 00 | 0.0147 | 0.00 | 0.0179 | 0.00 | 0.0146 | . 00 | 0.0175 | 0.00 |  |  |
| SF3 ${ }_{\text {it }}$ |  | 0.00 | 0.0067 | 0.01 | 0.0 | 0.00 |  | 00 | 0.0088 | 0.00 |  |  |
| SM2 ${ }_{\text {it }}$ |  | . 00 | 0.0 | 0.00 | 0.0115 | 0.00 | 0.0106 | 00 | 0.0 | . 0.0 | 0.0109 | 00 |
| SF2 ${ }_{\text {it }}$ | -0.00 | 0.11 | -0.00 | 0.06 | . 0 | 0.0 | 0.0017 | 0.12 | -0.0 | 0.7 | -0.00 |  |
| SM1 ${ }_{\text {it }}$ | 0.0 | 0.00 | 0.01 | 0.00 | 0.0 | 0.01 | 0.0 | 0.00 | 0.0 | 0.00 | 0.0103 |  |
| $D F_{\text {it }}$ | 0.089 | 0.00 | 0.110 | 0.00 | 0.013 | 0.55 | 0.01 | 0.70 | 0.06 | 0.00 | 0.06 | 0.04 |
| Obs./R ${ }^{2}$ | 1,900 | 0.54 | 1,900 | 0.54 | 1,984 | 0.53 | 1,984 | 0.52 | 3,232 | 0.52 | 3,232 | 0.5 |

Appendix Table 5 (continued)

| Independent variable, statistic | 2000-2002 |  |  |  | 2002-2004 |  |  |  | 2000-2004 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  |
|  | Value | $\begin{array}{\|c} \hline \text { P- } \\ \text { val. } \end{array}$ | Value | $\begin{array}{\|c} \hline \text { P- } \\ \text { val. } \end{array}$ | Value | $\begin{gathered} \hline \text { P- } \\ \mathrm{val} . \end{gathered}$ | Value | $\begin{gathered} \hline \mathrm{P}- \\ \mathrm{val} . \end{gathered}$ | Value | $\begin{gathered} \hline \mathrm{P}- \\ \mathrm{val} . \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ |
| GENERAL MACHINERY (MSIC=29) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.057 | 0.00 | 0.0653 | 0.01 | 0.0442 | 0.00 | 0.0371 | 0.00 | 0.0511 | 0.00 | 0.0499 | 0.00 |
| LO | 0.1150 | 0. | 0.1215 | 0.00 | 0.1258 | 0.00 | 0.1335 | 0.00 | 0.1245 | 0.00 | 0.1313 | 0.00 |
| SM | -0. | 0.2 | -0.0056 | 0.06 | -0.0060 | 0.16 | -0.0032 | 0.12 | -0.0059 | 0.17 | -0.0038 | 0.07 |
| SF | 0.0139 | 0. | 0.009 | 0.01 | 0.0012 | 0.87 | 0.0031 | 0.60 | 0.0057 | 0.30 | 0.0051 | 0.19 |
| SM | -0.00 | 0.03 | -0.0089 | 0.0 | -0.0084 | 0.05 | -0.0076 | 0.00 | -0.0095 | 0.03 | -0.0076 | 0.00 |
| SM | 0.0237 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.01 | 0.00 | 0.0226 | 0.00 | 4 | 0.00 |
| SF | 0.0019 | 0.6 | 0.0 | 0.9 | 0.00 | 0.01 | 0.01 | 0.00 | 0.0061 | 0.03 | 0.0070 | 1 |
| SM | 0.0 | 0.0 | 0.0 | 0.00 | 0.01 | 0.00 | 0.0137 | 0.00 | 0.0169 | 0.00 | 0.0120 | .00 |
| SF | 0.0 | 0.67 | -0.00 | 0.5 | 0.00 | 0.00 | 0.00 | 0.01 | 0.0029 | 0.07 | 0.0015 | 3 |
| SM1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.01 | 0.00 | 0.01 | 0.00 | 0.0154 | 0.00 | 0.0110 | 0 |
| $D F_{i t}$ | 0.0 | 0.0 | 0.1 | 0.0 | 0.06 | 0.09 | 0.1185 | 0.03 | 0.0726 | 0.01 | 0.1339 | 0 |
| Obs./R |  | 0.42 |  | 0.4 | 1,107 | 0.47 | 1,107 | 5 | 1,818 | . 46 | 1,818 |  |
| OFFICE, COMPUTING, \& PRECISION MACHINERY (MSIC=30, 33) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{\text {it }}$ | 0.0830 | 0.00 | 0.1035 | 0.00 | 0.0541 | 0.03 | 0.0918 | 0.00 | 0.0718 | , 0 | 4 |  |
| LO | 0.0 | 0.0 | 0.0712 | 0.0 | 0.100 | 0.00 | 0.1072 | 0.00 | 0.0825 | 0.00 | 88 | 0 |
| SM | -0.0 | 0.11 | -0.04 | 0.01 | -0.03 | 0.01 | 0.00 | 0.34 | -0.0297 | 0.06 | -0.0357 | 0.16 |
| SFH ${ }_{\text {it }}$ | 0.0 | 0.54 | -0.0 | 0. | 0.0 | 0.04 | 0.0 | 0.11 | 0.0052 | 0.21 | 0.0001 | 0.98 |
| SML | -0.0 | 0.06 | -0.0 | 0.0 | -0.03 | 0.01 | 0.0 | 0.31 | -0.0327 | 0.03 | -0.0384 |  |
| SM | 0.0318 | 0. | 0.0614 | 0. | 0.05 | 0.0 | 0.0 | 0. | 0.04 | 0.01 | 7 |  |
| SF | 0.0155 | 0.04 | 0.0132 | 0.08 | 0.0131 | 0.02 | 0.0 | 0.17 | 0.0 | 0.03 | 0.0081 |  |
| SM | 0.028 | 0.03 | 0.0564 | 0.00 | 0.0422 | 0.00 | -0.00 | 0.4 | 0.0 | 0.02 | 0.0 |  |
| SF | 0.003 | 0.02 | 0.0045 | 0.01 | 0.00 | 0.97 | -0.00 | 0.83 | 0.0022 | 0.04 | 0.0021 | 0.07 |
| SM1 | 0.026 | 0.03 | 0.0 | 0.00 | 0.04 | 0.00 | -0.0048 | 0.53 | 0.0358 | 0.02 | 0.0412 | 0 |
| DF it | -0.033 |  | -0.0479 | 0.4 | -0.104 | 0.0 | -0.0756 | 0.30 | -0.0389 | 0.36 | -0.0379 |  |
| Obs. | 310 | 0.43 | 0 | 0.41 | 279 | 0.57 | 279 | 0.54 | 492 | 0.52 | 492 | 0.49 |
| ELECTRICAL MACHINERY (MSIC=31) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ |  |  |  | 0.26 | 01 | 0.0 | 0.018 | 0.05 | 0.0165 | 0.01 |  |  |
| LO it | 0.1015 | 0.0 | 0.1085 | 0.00 | 0.1060 | 0.00 | 0.0949 | 0.00 | 0.1027 | 0.00 | . 1021 | 0 |
| SMH ${ }_{\text {it }}$ | -0.0 |  | -0.0100 | 0.38 | -0.0234 | 0.17 | 0.0036 | 0.82 | -0.0208 | 0.16 | 0.0060 | 0.58 |
| SF | 0.0 |  | 0.009 | 0.00 | 0.012 | 0.00 | 0.0110 | 0.00 | 0.0114 | 0.00 | 0.0094 | 0.00 |
| SM | -0.038 | , 03 | -0.022 | 0.06 | -0.0316 | 0.06 | -0.0047 | 0.77 | -0.0324 | 0.03 | -0.00 | 0.7 |
| SM3 ${ }_{\text {it }}$ | 0.0 | 0.01 | 0.0258 | 0. | 03 | 0.03 | 0.0117 | 0.46 | 0.0369 | 0.0 | 0.0095 | 0.39 |
| SF3 ${ }_{\text {it }}$ | 0.00 | 0.25 | 0.0037 | 0.30 | 0.0087 | 0.0 | 0.00 | 0.0 | 0.0057 | 0.02 | 0.0046 | . 08 |
| SM2 ${ }_{\text {it }}$ |  |  | 0.02 | 0.03 | 0.03 | 0.03 | 0.01 | 0.50 | 0.0375 | 0.0 | 0.0 | 0.48 |
| SF2 it | 0.0 | 0.65 | -0.000 | 0.3 | -0.0002 | 0.77 | 0.0002 | 0.88 | -0.000 | 0.8 | -0.00 | 0.20 |
| SM1 ${ }_{\text {it }}$ | 0.0 | 0. | 0.026 | 0.0 | 0.036 | 0.03 | 0.009 | 0.54 | 0.0369 | 0.0 | 0.0 | 0.45 |
| DF it | 0.1 | 0. | 0.093 | 0.00 | 0.0889 | 0.00 | 0.0929 | 0.02 | 0.1085 | 0.00 | 0.08 | 0.00 |
| Obs./R2 | 899 | 0.61 | 899 | 0.61 | 844 | 0.60 | 844 | 0.60 | 1,458 | 0.60 | 1,458 | 0.5 |

Appendix Table 5 (continued)

| Indepen- <br> dent <br> variable, <br> statistic | 2000-2002 |  |  |  | 2002-2004 |  |  |  | 2000-2004 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  | Pooled |  | Rand. Effects |  |
|  | Value | $\begin{gathered} \hline \mathrm{P}- \\ \mathrm{val} . \end{gathered}$ | Value | $\begin{gathered} \hline \mathrm{P}- \\ \mathrm{val} . \end{gathered}$ | Value | $\begin{gathered} \mathrm{P}- \\ \mathrm{val} . \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ | Value | $\begin{gathered} \hline \text { P- } \\ \text { val. } \end{gathered}$ |
| RADIO, TV, \& COMMUNICATION MACHINERY (MSIC=32) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.0515 | 0.00 | 0.0620 | 0.00 | 0.0331 | 0.00 | 0.0342 | 0.01 | 0.0410 | 0.00 | 0.0471 | 0.00 |
| LO | 0.0882 | . 0 | , | 0.00 | 0.0794 | 0.00 | 0.0832 | 0.00 | 0.0860 | 0.00 | 0.0908 | 0 |
| SM | -0.0 | 0.00 | -0.0148 | 0.02 | -0.0171 | 0.00 | -0.0119 | 0.03 | -0.0189 | 0.00 | -0.0133 | 2 |
| SF | 0.0117 | 0.00 | 0.0097 | 0.00 | 0.00 | 0.0 | 0.0077 | 0.01 | 0.0099 | 0.00 | 0.0097 | 0 |
| SM | -0.025 | 0.00 | -0.0230 | 0.00 | -0.0208 | 0.00 | -0.0157 | 0.01 | -0.0252 | 0.00 | -0.0189 | . 0 |
| SM | 0.0352 | . 00 | 0.0 | 0.00 | 0.0347 | 0.00 | 0.0275 | 0.00 | 0.0364 | 0.00 | 0.0285 | . 00 |
| SF | 0.0049 | 0.12 | 0.0 | 0.01 | 0.0029 | 0.33 | 0.0037 | 0.22 | 0.0050 | 0.05 | 0.0052 | 1 |
| SM | 0.0279 | 0.00 | 0.0 | 0.00 | 0.02 | 0.00 | 0.0199 | 0.00 | 0.0285 | 0.00 | 0.0221 | . 0 |
| SF | 0.0002 | 0.71 | 0.0 | 0.18 | -0.0008 | 0.19 | -0.0006 | 0.49 | -0.0002 | 0.76 | 0.0005 | 0.50 |
| SM1 | 0.0293 | 0.00 | 0.02 | 0.00 | 0.0232 | 0.00 | 0.0177 | 0.00 | 0.0289 | 0.00 | 0.0224 | 0 |
| $D F_{\text {it }}$ | 0.0 | 0.02 | 0.030 | 0.2 | 0.04 | 0.05 | 0.0140 | 0.62 | 0.0454 | 0.01 | 0.0245 | 0.34 |
| Obs./R |  | 0.60 |  | 0.0 | 890 | 0.57 | 890 | 0.57 | 1,594 | 0.58 | 1,594 | 7 |
| MOTOR VEHICLES (MSIC=34) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.03 | 0.00 | 0.050 | 0. | 22 | 0.3 | 0.0106 | 0.49 | 0.0206 | 0.03 | 64 |  |
| LO | 0.0 | 0.00 | 0.08 | 0. | 0.10 | 0.00 | 0.1096 | 0.00 | 0.0955 | 0.00 | 0.0996 | 0 |
| SM | -0.010 | 0.06 | -0.0051 | 0.30 | -0.010 | 0.20 | -0.0046 | 0.21 | -0.0135 | 0.08 | -0.0033 | 0.24 |
| SF | 0.0 | 0.01 | 0.0 | 0.05 | 0.02 | 0.00 | 0.0149 | 0.11 | 0.0228 | 0.00 | 0.0140 | 0.07 |
| SML ${ }_{\text {it }}$ | -0.02 | 0.00 | -0.01 | 0.00 | -0.0216 | 0.01 | -0.0157 | 0.00 | -0.0246 | 0.00 | -0.0142 | . 00 |
| SM3 ${ }_{\text {it }}$ | 0.0289 | 0.00 | 0.01 | 0.00 | 0.02 | 0.00 | 0.0215 | 0.00 | 0.0282 | 0.00 | 0.0169 | , 0 |
| SF | 0.00 | 0.41 | 0.00 | 0.37 | 0.0 | 0.35 | 0.0070 | 0.28 | 0.0035 | 0.4 | 0.0 | 0.40 |
| SM | 0. | 0.00 | 0.0185 | 0.00 | 0.0 | 0.00 | 0.0 | 0.00 | 0.0268 | 0.00 | 0.01 | 0.00 |
| SF | -0.0020 | 0.36 | 0.0023 | 0.44 | 0.0 | 0.9 | 0.0 | 0.63 | -0.0013 | 0.4 | 0.0 | 0.75 |
| SM1 ${ }_{\text {it }}$ | 0.0282 | 0.00 | 0.01 | 0.00 | 0.02 | 0.0 | 0.01 | 0.00 | 0.02 | 0.0 | 0.01 | 0.00 |
| DF | 0.2 | 0.00 | 0.212 | 0. | 0.1153 | 0.0 | 0.1214 | 0.11 | 0.1680 | 0.00 | 0.1752 | 0.01 |
| Obs./R ${ }^{2}$ | 439 | 0.47 | 439 | 0.46 | 456 | 0.47 | 456 | 0.46 | 74 | 0.45 | 742 |  |
| FURNITURE (MSIC=361) |  |  |  |  |  |  |  |  |  |  |  |  |
| $L K E_{i t}$ | 0.026 | 0.01 | 7 |  | 0282 | 0.00 | 338 | 0.00 | 68 | 0.00 | 37 | 0.00 |
| $L O_{i t}$ | 0. | 0.00 | 0.1182 | 0.00 | 0.1098 | 0.00 | 0.1196 | 0.00 | 18 | 0.00 | , | 0.00 |
| SMH ${ }_{\text {it }}$ | 0.0027 | 0.46 | 0 | 0.82 |  | 0.5 | -0. | 0.97 | 0.00 | 0.29 | 0 | 0.55 |
| SFH ${ }_{\text {it }}$ | 0.0149 | . 01 | 0.0 | 0. | 0.0163 | 0.00 | 0.016 | 0.00 | 0.0194 | 0.00 | 0.0165 | 0.00 |
| SML ${ }_{\text {it }}$ | -0.010 | 0.00 | -0.0220 | 0.00 | -0.0092 | 0.03 | -0.0117 | 0.00 | -0.0109 | 0.01 | -0. | 0.00 |
| SM3 ${ }_{\text {it }}$ | 0.0183 | 0.00 | 0.0209 | 0.00 | 0.0150 | 0.00 | 0.0 | 0.00 | 0.0136 | 0.00 |  | 0.00 |
| SF3 ${ }_{\text {it }}$ | 0.0099 | 0.02 | 0.0117 | 0.0 | 0.0140 | 0.00 | 0.0 | 0.00 | 0.01 | 0.00 | 0.0112 | 0.00 |
| SM2 ${ }_{\text {it }}$ | 0.0215 | 0.00 | 0.02 | 0. | 0. | 0.00 | 0.0 | 0.00 | 0.0144 | . 00 | 0. | 0 |
| SF2 ${ }_{\text {it }}$ | -0. | 0.03 | -0.00 | 0.09 | 0.0018 | 0.27 | 0. | 0.1 | -0. | 0.01 | -0 |  |
| SM1 ${ }_{\text {it }}$ | 0.0220 | 0.00 | 0.02 | 0.00 | 0.0 | 0.01 | 0.0 | 0.00 | 0.0 | 0.00 | 0.0168 | 0 |
| $D F_{i t}$ | 0.1177 | 0.00 | 0.096 | 0.01 | 0.0981 | 0.01 | 0.0716 | 0.06 | 0.1070 | 0.00 | 0.06 | 0.03 |
| Obs./R ${ }^{2}$ | 1,306 | 0.38 | 1,306 | 0.39 | 1,281 | 0.40 | 1,281 | 0.40 | 2,167 | 0.39 | 2,167 | 0.3 |

Notes: In Obs./ $\mathrm{R}^{2}$ rows, the coefficient column contains the number of observations and the P-value column contains the R-squared (overall in the case of random effects); industry and state dummies also included as relevant (see explanation in the text).


[^0]:    ${ }^{1}$ With the exception of Lee and Nagaraj's (1995) analysis of a limited sample of workers in the Klang Valley, which focuses primarily on male-female differentials, previous studies of Malaysia do not analyze MNE-local wage differentials.

[^1]:    ${ }^{2}$ These authors also examine relationships of wage differentials to other plant characteristics in (Lipsey and Sjöholm (2004b, 2005, 2006) and (Sjöholm and Lipsey 2006).
    ${ }^{3}$ These variables were union membership, marital status, migration status, total hours worked, plant size, and plant export-orientation

[^2]:    ${ }^{4}$ Some theorists (especially Dunning) view the possession of firm-specific assets or ownership advantages as a key necessary condition for a firm to become an MNE (in addition to internalization and location advantages). Other theorists (Buckley and Casson 1992; Casson 1987; Rugman 1980, 1985) dispute this view, choosing instead to emphasize the key role of internalization as the key distinguishing characteristic between MNEs compared to non-MNEs. However, the key point here is that all agree that MNCs tend to possess these kinds of firm-specific assets in relatively large amounts.

[^3]:    ${ }^{5}$ In addition to explicit training costs, firms often incur implicit adaptation costs when labor turnover is high because it takes workers time to understand new jobs and perform them efficiently. Moreover these costs probably increase with the complexity of the job.
    ${ }^{6}$ For evidence on Malaysia, see Chapman and Harding (1985), Lee and Nagaraj (1995), Milanovic (2006), and Schafgans (2000).

[^4]:    ${ }^{7}$ Samples were 13,197 in 2001, 12,820 in 2002, 12,828 in 2003, and 11,898 in 2004 (see Appendix Table 1h).
    ${ }^{8}$ See Appendix Table 1d for details.
    ${ }^{9}$ These data thus differ somewhat from those for other countries (e.g., Indonesia, Thailand, and Vietnam) where minority-foreign plants, especially those with foreign ownership shares of 10 percent or more, are usually defined as MNEs as well.

[^5]:    ${ }^{10}$ For example, in the entire sample from 2000-2004 there were 4,592 observations of plants paying extremely low average compensation per worker of less than RM100 (about US\$26) per year. However, if samples are limited to medium-large plants, there were only 20 such observations.
    ${ }^{11}$ For example, there were 10 or fewer medium-large MNEs in tobacco, leather and footwear, petroleum products and recycling in all years and in other transport equipment in 2000-2002. Meanwhile, government intervention, technological characteristics, and/or heterogeneous definitions combine to make tobacco, petroleum products, printing and publishing, and miscellaneous manufacturing substantially different than the other 18 industries included in this analysis.
    ${ }^{12}$ For MNEs, medium-large plants in excluded industries accounted for 2.8-3.7 percent of paid workers in all plants, while small MNEs employed only 0.1-0.3 percent. For local plants, these shares were 8-9 and 5-7 percent, respectively.
    ${ }^{13}$ At 1987 prices, growth rates of real manufacturing GDP in 2000-2004 were 18 percent, -5.9 percent, 4.3 percent, 8.6 percent, 9.8 percent, respectively. At 2000 prices, growth rates for 2001-2004 were -4.3 percent, 4.1 percent, 9.2 percent, and 9.6 percent respectively (Department of Statistics 2010).

[^6]:    ${ }^{14}$ In Table 1 and below, industries are generally defined at the 2-digit level of the Malaysian Standard Industrial Classification (MSIC), the exceptions being the use of 3-digit categories to distinguish, rubber, plastics, and furniture, which are relatively large industries in Malaysia. Another six industries are excluded from the analysis here. Four of these (tobacco, leather and footwear, petroleum products, other transport equipment) are 2-digit categories with 10 or fewer medium-large MNEs in at least three of the five years, printing and publishing is a 2digit category which is probably better characterized as a services’ industry subject to severe government regulation in Malaysia, and miscellaneous manufacturing is a heterogeneous 3-digit category.
    ${ }^{15}$ Comparisons with labor force data, including workers excluded from the census/surveys, suggests foreign MNEs accounted for 25-30 percent of Malaysia's manufacturing employment in 2000-2004. These shares were smaller than in Singapore (43-47 percent), but larger than in Vietnam (10-20 percent) and Hong Kong or Indonesia (11 percent or less) during 2000-2004, and larger than in China in 2003 (14 percent), Thailand in 2006 (17 percent), or Taiwan in 2001 and 2006 (3 percent; data from compilations by Ramstetter 2011).
    ${ }^{16}$ In sample plants, narrowly defined wages accounted for an average of 82-84 percent of total compensation while payments in kind accounted for 5-6 percent and social insurance payments 8 percent.

[^7]:    ${ }^{17}$ To conserve space the tables on labor quality average observations for 2001-02 and 2003-04, but relatively small variation over time is also observed in annual data (Appendix Tables 3a-3b, 4a-4c).
    ${ }^{18}$ Conversely, occupations that tended to be lowly paid were defined as clerics and related workers, elementary occupations, plant and machine operators, assemblers, and part-time workers.

[^8]:    ${ }^{19}$ A $44^{\text {th }}$ industry (MSIC 151=meat, fish, fruits, vegetables, oils, fats) is used as the reference group.
    ${ }^{20} \mathrm{~A} 15^{\text {th }}$ federal territory (Kuala Lumpur) is used as the reference group.

[^9]:    ${ }^{21}$ Interpretations of alternative regressions including only one dimension of labor quality (occupation or education) are more straightforward (all coefficients are positive and significant) and generally yielded higher estimates of MNE-local differentials than those in Table 1.

[^10]:    ${ }^{22}$ This approach is acceptable for compensation but it would be preferable to use industry-specific, wholesale or producer-price indices for output and capital-intensity. Unfortunately, Malaysia only publishes such data classified by product, not industry.

[^11]:    ${ }^{23}$ Because ownership is a fixed (unchanging) characteristic for most plants, fixed effects estimates cannot provide evidence on average wage differentials between the vast majority of MNEs and local plants that did not change ownership and are not presented here. Fixed effects estimates of coefficients on ownership dummies would reveal wage differentials between plants changing ownership and those with consistent ownership, but not the average wage differentials between MNEs and corresponding local plants, which are the subject of this paper.

[^12]:    Note: This table includes all plants with positive paid employees, output, employee compensation, and fixed assets.

