Labor Productivity in Local Plants and Foreign Multinationals by Nationality in Thai Manufacturing, 1996 and 1998

Eric D. Ramstetter
Coordinator, Research Division, ICSEAD
and
Visiting Professor, Graduate School of Economics,
Kyushu University

Working Paper Series Vol. 2001-31
November 2001

The International Centre for the Study of East Asian Development, Kitakyushu

Labor Productivity in Local Plants and Foreign Multinationals by Nationality in Thai Manufacturing, 1996 and 1998

by

Eric D. Ramstetter[1]

Acting Chief, Research Division, International Centre for the Study of East Asian Development (ISCEAD)

11-4 Otemachi, Kokurakita-ku, Kitakyushu, 803-0814, Japan (email ramst@icsead.or.jp)

and Visiting Professor, Graduate School of Economics, Kyushu University

November 2001

Abstract

The purpose of this paper is to compare labor productivity in local plants and plants of foreign multinational corporations (MNCs) by nationality in Thai manufacturing in 1996 and 1998. Differences between nationality groups of foreign MNCs and local plants are statistically insignificant in the vast majority of year-industry-nationality group combinations examined. The results for the relatively few cases in which statistically significant differences were observed suggest a weak tendency for MNCs from Europe, Japan, and the United States to have relatively high labor productivity. However, even when significant differences are observed, there is little consistency in productivity differentials across years, industries, or nationality groups, and a few significant differentials are negative. This makes it very difficult to provide a meaningful economic explanation for the pattern of differentials that is observed and suggests that differentials between foreign nationality groups and local plants may have little economic relationship to the nationality of foreign plants. In this respect, the results of this study are consistent with results from previous studies, which reveal relatively large variation in the relationship between foreign ownership, however measured, and labor productivity in Thai manufacturing, depending on foreign ownership type, labor type, industry, plant size, and year.

JEL Classification: D24, F23, O53

---

[1] I would like to thank Somsak Tambunlertchai for assistance in obtaining the data used in this study and for advice on this and other related projects. I would also like to thank Robert E. Lipsey, Atsuko Matsuoka, Oleksandr Movshuk, Fredrik Sjöholm, Sadayuki Takii, and Yaohui Zhao for various comments on this and related work. This paper was completed as a part of ICSEAD's project "Foreign Multinational Corporations and Host-Country Labor Markets in Asia" and I thank ICSEAD and Kyushu University for funding that supported the study. However, I am solely responsible for all remaining errors and for all opinions expressed.

1. Introduction

This paper investigates differences in labor productivity between plants belonging to foreign multinational corporations (MNCs) and locally owned plants in Thai manufacturing for 1996 and 1998 where foreign MNC plants are distinguished by country of owner. The results of previous studies (e.g., Khanthachai et al. 1987; Ramstetter 1993, 1994, 2001; Ramstetter and Tambunlertchai 1991) suggest that differences in labor productivity as well as more general differences in production technology between foreign MNCs and local plants or firms have generally been insignificant statistically. Among these studies, Ramstetter (1994) also investigates differences between Japanese MNCs, U.S. and European MNCs, and other MNCs for a sample of firms in 1990, finding that these differences also tend to be statistically insignificant. However, it is now possible to conduct more comprehensive tests of the differences between foreign MNCs and local plants using the industrial census data for 1996 and the industrial survey data for 1998. Correspondingly, the purpose of this paper is to provide tests for 1996 and 1998 that are similar to previous tests for 1990. The paper first reviews the theoretical and methodological issues involved (Section 2) and summarizes some important characteristics of the data (Section 3), before reporting the results obtained (Section 4), and the offering some concluding remarks (Section 5).

2. Theoretical Principles and Methodology

The theoretical literature on MNCs provides a very simple and important rationale for expecting MNCs to be more efficient than non-MNCs in at least some respect. A large body of this literature (e.g., Dunning 1988, 1993; Hymer 1960; Markusen 1991) asserts that the possession of firm-specific assets, especially intangible assets related to production techniques and processes, marketing networks, and/or management ability, is a necessary condition for a firm to become a MNC. Another body of literature (e.g., Buckley and Casson 1992; Casson 1987; Rugman 1980, 1985) disputes this view by asserting that internalization alone is a necessary condition for a firm to become a MNC and that ownership advantages such as the possession of firm-specific assets are sufficient but not necessary for a firm to become a MNC.

However, all theorists agree that MNCs do tend to possess the firm-specific assets described above in relatively large amounts and there is a large literature documenting the tendency for MNCs to spend relatively large amounts on research and development and advertising, as well as to possess a relatively large number of patents (e.g., Caves 1996; Dunning 1993; Markusen 1991).

The question taken up in this study, that is whether productivity differentials between foreign MNCs and local plants depends on the nationality of the foreign plant implies that the firm-specific assets possessed by a MNC are somehow related to the nationality of the MNC. One of the first to emphasize this possibility was Kojima (1978) who asserted that Japanese FDI was more trade-oriented and thus more efficient in some sense that U.S. and European FDI in Asian host countries. Several theoreticians have disputed the logic behind Kojima's arguments (e.g., Buckley 1985) and it is hard to find theoretical empirical evidence to support the hypothesis that Japanese MNCs were in some sense more trade oriented than other MNCs (e.g., Hill and Johns 1985, Naya and Ramstetter 1992; Ramstetter 1994, 1999). Nonetheless, Kojima's assertions have stirred interest among academics and policy makers alike and it is thus important to look at these issues carefully to avoid misunderstanding.

This paper attempts to analyze differences in labor productivity between manufacturing plants and foreign MNCs by nationality, which is only one aspect of the differences discussed in the literature. Moreover, labor productivity is only one aspect of productivity and it is important to recognize that there are several measures of productivity that could be used and that the results obtained from productivity comparisons often differ greatly depending on the measure used.[2] Here the focus is on labor productivity largely because this paper is a part of a project on foreign MNCs and labor markets in host Asian economies. However, even if the comparison is limited to labor productivity, several important questions remain. First,

[2] Other measures include capital productivity and the productivity of intangible assets. Much of the recent economic literature on productivity focuses on unexplained productivity or what is often called total factor productivity. Unexplained productivity includes important elements of productivity, for example the productivity of intangible assets that are not measured explicitly, but it also includes errors in productivity measurement that result from the inability to define and measure inputs and outputs with precision, the inability to correctly specify production technology, and/or statistical problems encountered when estimating productivity. Therefore, a focus on unexplained productivity is often misleading because it is impossible to distinguish the productivity of unmeasured factors and errors in productivity measurement.

how many kinds of labor should be considered? In this paper, two types of labor, production workers and non-production workers, are distinguished but the analytical framework used is quite restrictive, implying that productivity differentials are identical for both production and non-production workers.[3]

Second, what statistical methodology should be used to compare of labor productivity among groups of plants? The simplest method is to calculate average labor productivity for each ownership group and make comparisons similar to those in Section 3 below. One could also test for statistical differences among the mean values for various ownership groups using simple t-tests (e.g., Ramstetter 1999a). However, these simple comparisons have the disadvantage of ignoring other factors affecting average labor productivity. For example, even if foreign MNCs have significantly higher average labor productivity than local firms, this difference could result from the fact that foreign plants are more capital intensive, not from differences in ownership. More sophisticated methods of comparing labor productivity attempt to remove the effects of other variables affecting labor productivity such as factor intensities, vintage, trade orientation, and plant size. These comparisons all have the firm's or the plant's production function as their basis. Unfortunately, there are many possible forms of the production function and no clearly superior way of making comparisons. Flexible functional forms such as the translog are superior theoretically because they impose the least restrictive assumptions on technology. However, flexible forms are often difficult to estimate econometrically, especially when a large number of factors of production are included in the model, because they include a large number of cross products that are often highly correlated. Even more restrictive functional forms such as the Cobb-Douglas function are difficult to use in this case where there are a large number of nationality groups to compare.

Correspondingly, this paper uses perhaps the simplest methodology that has been used in this literature (e.g., Blomström 1990, pp. 28-34; Ramstetter 1994; Takii and Ramstetter 2000) to estimate average labor productivity as a function of factor intensities, other plant characteristics (e.g., BOI status,

[3] The ideal solution would probably be to have data on labor by skill level. The distinction between production and non-production workers, while correlated with more precise distinctions based on skill levels, is clearly not based entirely on skill levels because some production workers may be more skilled than some non-production workers. These questions cannot be investigated in this context because more detailed, skill-based distinctions are not available in the data set used.

vintage, openness to international trade, size), and then a set of ownership dummies in equations such as the following:

(1) $\ln(V/EP) = a1 + a2*\ln(EN/EP) + a3*\ln(K/EP) + a4*(Df) + a5*(Dboi) + a6*(Dold) + a7*(Dx) + a8*(Dm) + a9(Dlg)$

(2) $\ln(V/EP) = b1 + b2*\ln(EN/EP) + b3*\ln(K/EP) + b4*(Dftriad) + b5*(Dfasia4) + b6*(Dfot) + b7*(Dboi) + b8*(Dold) + b9*(Dx) + b10*(Dm) + b11(Dlg)$

(3) $\ln(V/EP) = c1 + c2*\ln(EN/EP) + c3*\ln(K/EP) + c4*(Dfeu) + c5*(Dfus) + c6*(Dfjp) + c7(Dfsi) + c8(Dftw) + c9(Dfkr) + c10(Dfch) + c11(Dfot)\ c12*(Dboi) + c13*(Dold) + c14*(Dx) + c15*(Dm) + c15(Dlg)$

where

Dboi=1 if plant i is BOI-promoted, =0 otherwise,

Df=1 if the foreign ownership share of plant i is 1% or greater, =0 otherwise,

Dfasia4=Dfch+Dfkr+Dfsi+Dftw,

Dfch=1 if the major foreign owner of plant is Chinese, =0 otherwise,

Dfeu=1 if the major foreign owner of plant is European, =0 otherwise,

Dfjp=1 if the major foreign owner of plant is Japanese, =0 otherwise,

Dfkr=1 if the major foreign owner of plant is Korean, =0 otherwise,

Dftriad=Dfeu+Dfus+Dfjp,

Dfot=Df-Dftriad-Dfasia4,

Dfsi=1 if the major foreign owner of plant is Singaporean, =0 otherwise,

Dftw=1 if the major foreign owner of plant is Taiwanese, =0 otherwise,

Dlg=1 if plant i's output is larger than the mean output for the industry plus one standard deviation, =0 otherwise,

Dm=1 if plant i imports 50% or more of their material inputs, =0 otherwise,

Dold=1 if plant i is BOI started operation in 1986 or earlier, =0 otherwise,

Dx=1 if plant i exports 50% or more of their production, =0 otherwise,

EN=hours worked by non-production workers in plant i,

EP=hours worked by production workers in plant i,

K=average book value of fixed assets multiplied by the percentage of hours used each year in plant i

V=value added in plant i.

This formulation implies that the production function is of the Cobb-Douglas type (i.e., elasticity of substitution is assumed to be one) with constant returns to scale (i.e., the function is homogeneous of degree one). These are extremely restrictive assumptions about technology but they have often been employed in the literature because they result in a much simpler production function that has fewer estimation problems than the more complex alternatives. Perhaps the largest concern is that if more complex alternatives, for example a translog formulation, are used, there are many more independent variables, greatly increasing the probability that multicollinearity could be a problem. This problem is compounded in this case because there is a need to use a large number of nationality dummies. A secondary concern is heteroscedasticity and estimating of value added per employee directly as is possible under the assumptions described above reduces the probability that heteroscedasticity will be a problem compared to estimating value added as a function of labor and capital in levels.

3. The Data, Shares of Foreign Multinationals, and Average Labor Productivity

The data used in this study are the factory-level data for 1996 that underlie the Thai industrial census conducted in 1997 (National Statistical Office 1999) and corresponding data for 1998 from the Thai

industrial survey conducted in 1999 (National Statistical Office 2001). The industrial census data for 1996 included data for a total of 32,489 plants of which 23,677 replied to the 1997 census and were included in the final compilation by the National Statistical Office (1999, see Ramstetter 2001, Table 1). The survey data for 1998 covered a much smaller number of plants, 8,552, and figures published by the National Statistical Office (2001; see Ramstetter 2001, Table 1) are estimates for 20,807 establishments, presumably extrapolated from the smaller sample of plants for which replies were obtained.

The major problem with using these data sets for economic analysis in their original form, especially the census data for 1996, is that they contain several duplicate or near-duplicate records. It was thus necessary to eliminate these duplicates and the samples used in this paper are thus much smaller than those reported by official compilations. The methodology for eliminating duplicates has been explained in a separate paper (Ramstetter 2001, pp. 8-10) and that explanation will not be repeated here. However, it should be noted that the methodology was probably biased toward leaving a record in the database if there was some doubt as to whether it was a duplicate. A second problem with the database is that many plants are very small and several other plants report apparently implausible values for important variables. Correspondingly, plants that reported non-positive values for production workers, non-production workers, intermediate consumption, or value added were also eliminated from the samples used in this study because non-positive values do not make economic sense in this context and plants with less than 20 employees were also eliminated because they are not thought to be comparable with foreign MNC plants. As a result the samples for this study were reduced to 8,952 for 1996 and 3,974 for 1998 (see Appendix Tables A1a, A1b for details on the sample by industry, owner, and size group). Furthermore, comparisons of foreign MNCs, which are predominantly large plants, and local plants are thought to be more meaningful in more homogeneous samples of large plants, so much of the analysis below focuses on even smaller samples of plants with output of 25 million baht (about US$1 million at 1996 exchange rates) or more.

Because there have been no comprehensive estimates of employment and production by foreign MNCs from official sources in Thailand, it is first helpful to compare these samples with other estimates of employment and production in Thailand. In a previous paper, Ramstetter (2001, pp. 10-11) reports that the

samples used in this and the previous paper covered 36 percent of all Thai manufacturing employment as reported in the labor force survey in 1996 and 19 percent in 1998. Ramstetter (2001) also reports that the value added of the plants in these samples amounted to 62 percent of total manufacturing value added as reported in the national accounts for 1996 and 30 percent for 1998. Thus, the 1998 survey sample is clearly much smaller than the 1996 census sample and the coverage of these samples is much better in terms of value added than in terms of employment, implying that omitted plants had relatively low average labor productivity compared to plants in the samples. There are also large variations in coverage across industries, though it is difficult to be very precise in this respect because of differences in industry definitions between the industrial censuses/surveys and the national accounts. It also seems highly likely that most of the omitted plants tended to be relatively small and predominantly Thai-owned. This latter impression is further underscored by the data in Table 1, which compare employment and gross output from these samples with home country estimates of employment and sales for Japanese and U.S. MNCs in Thailand. For 1996, Thai estimates of manufacturing employment exceeded official home country estimates for both Japanese MNCs (MITI estimates) and U.S. MNCs, though private estimates for Japanese MNCs by Toyo Keizai were slightly larger than corresponding Thai estimates. For 1998, Thai estimates were smaller than all home country estimates, reflecting the small size of survey sample in this year.

Tables 2-5 then show the shares of foreign nationality groups by industry for 1996 and 1998, for both the larger samples of all plants and smaller samples of large plants. It should first be emphasized that these are in-sample shares and that foreign shares of Thai manufacturing industries would probably be much lower in most industries if omitted plants are included because omitted plants are thought to be predominantly local as described above.[4] Second, foreign shares of employment tend to be slightly smaller than foreign shares of output and value added, suggesting that average labor productivity is higher on average in foreign MNCs. Third, as emphasized by Ramstetter (1994, 2001), there is a wide variation in

[4] For example, Ramstetter (2001) reports that the in-sample share of foreign MNCs in total manufacturing value added was 53 percent in 1996, but that the ratio of value added in foreign MNCs to total manufacturing value added as reported in the national accounts was 33 percent, and suggests that the actual foreign MNC share of Thai manufacturing value added was probably very close to the latter, smaller estimate.

foreign shares across industries, with notably high shares in the machinery industries, especially electric machinery, motor vehicles, and general machinery. Fourth, by nationality group, Japanese MNCs are by far the largest accounting for 18 percent of production employment in 1996 and 21 percent in 1998, 15 and 24 percent of non-production workers in each year, respectively, 31 and 33 percent, respectively, of gross output, and 31 and 32 percent of value added in each year, respectively (Tables 2-5). Japanese shares are also relatively large in the motor vehicle, general machinery, and electric machinery industries. They are also moderately large in metal products, chemicals, and textiles. Japanese shares are smaller in other industries but shares of value added still exceed double digits in a number of other industries, for example, food, apparel, rubber, and plastics.

In marked contrast to the large shares of Japanese MNCs, the shares of other foreign nationality groups are much smaller. For example, in 1996-1998 the 31-33 percent Japanese share of value added was followed distantly by shares of U.S., European, and Taiwanese MNCs, which were only 4-6 percent each. Shares of MNCs from Singapore, China, and Korea were 1-2 percent each, while shares of unidentified MNCs rose from 4 percent in 1996 to 9 percent in 1998. By industry, European MNCs were always relatively large (double-digit shares or larger) in rubber and jewelry, and also became large in 1998 in apparel, chemicals, and non-metallic mineral products. Here again, it is important to recall that the 1998 sample is much smaller than the 1996 sample and differences in the sample may be one important reason for larger foreign shares in 1998 compared to 1996. Likewise shares of U.S. MNCs were 10 percent or more in chemicals and electric machinery in both years, in other manufacturing for 1996 only, and in chemicals and non-metallic mineral products, in 1998 only. Taiwanese shares reached double digits in electric machinery for both years, as well as in nonmetallic mineral products for 1996 only and in rubber products for 1998 only. Chinese shares also exceeded this level in metal products in 1996 and in apparel in 1998. In short, Japanese MNCs are by far the largest nationality group in this sample followed distantly by U.S., European, and Taiwanese MNCs. All of these groups have large shares in Thailand's electric machinery industries and Japanese, U.S., and European MNCs all have substantial shares in chemicals. In contrast, Japanese MNCs dominate in general machinery and in motor vehicles.

Tables 6-7 then compare two measures of average labor productivity, value added per production worker and value added per non-production worker, between the various nationality groups and local plants, showing the percentage difference between average labor productivity in the foreign ownership group involved in the comparison and local plants. As discussed in Ramstetter (1994, 2001), one of the more surprising results of these comparisons for Thailand is the fact that foreign plants often have lower average labor productivity than do local plants.

For example, in the larger samples of all plants, value added per production worker was lower in the foreign ownership group involved for 76 industry-ownership combinations in 1996 and for 40 industry-nationality group combinations in 1998 (Table 6). In 1996 value added per production worker was higher in foreign MNCs in the same number of combinations, 76, and in 1998 it was higher in local plants in a larger number of combinations, 95. If the sample is restricted to large plants, the number of industry-nationality group combinations in which value added per production worker was larger in local plants increases to 91 in 1996 and 52 in 1998. Thus, in 1996, local plants appear to have had higher labor productivity than foreign MNCs in half of the industry-nationality groups comparisons made in samples of all plants and in 61 percent of the comparisons made in samples of large plants. In 1998 these ratios are smaller, 30 and 40 percent, respectively, but there are still a surprisingly large number of industry-nationality group combinations in which local plants appear to have higher labor productivity. If the average product of non-production workers is compared between local plants and foreign nationality groups, the same basic conclusion obtains (Table 7). Average product of is higher in local plants for 48 percent of combinations for which comparisons are possible in the sample of all plants in 1996 and 39 percent in 1998. If the sample is limited to large plants then these ratios rise to 60 and 48 percent, respectively. Thus, these calculations are consistent with the more general comparisons of foreign and local MNCs by Ramstetter (2001), indicating that there are numerous year-industry-foreign ownership group combinations where local plants appear to have higher labor productivity than foreign MNCs.

Of course there are many reasons for differences in labor productivity across groups of firms that the simple comparison of average labor productivity in this section does not account for. Among these

reasons, differences in factor intensities and more general differences in technology are perhaps the most important causes of differences in labor productivity among groups of firms. Accordingly, before it can be concluded that patterns observed in comparisons such as those made in Tables 6 and 7 are meaningful economically, it is first necessary to remove the influences of these elements and the following section attempts to do this.

4. Testing for Differences in Labor Productivity between Local Plants and Foreign MNCs by Nationality

This section describes the results of estimating equations (1)-(3), which are detailed on pp. 4-6 of this paper. As described, the purpose of these equations is to describe variation in labor productivity between foreign ownership groups and local plants, as indicated by the size and sign of the coefficient on foreign ownership dummies, after the influence of other economic factors thought to affect productivity is removed. The factors accounted for in this respect are the plant's fixed assets per worker, the plant's ratio of non-production to production workers, the plant's BOI-status, the plant's age, the plant's export propensity, and the plant's import propensity. Because production technology differs markedly across industries, as indicated by large differences in production function parameters in different industries, which are often estimated with relatively small error, it is not thought to be practical to estimate one function for all industries. Accordingly, separate production functions are estimated for each of the 14 industries listed in Table 8 for 1996 and 1998. When tests for heteroscedasticity indicate the presence of this problem, White's robust standard errors are used for calculating t-tests instead of OLS residuals (Hall Cummins 1999; White 1980). The details of these production function estimates are in Appendix Tables C1-C14 and Table 8 summarizes the most important results for this study, that is the signs and size of the statistically significant coefficients on the foreign ownership dummies in equations (1)-(3), along with a measure of goodness of fit, the adjusted R-squared. These adjusted-R-squared is rather low in a few cases, but in most cases it is of expected magnitude for cross sections such as these.

The results of these comparisons share one important characteristic with previous comparisons of

productivity among ownership groups in Thai manufacturing. Namely, in the vast majority of possible comparisons, the coefficient on the dummy variable indicating the magnitude of the difference in the dependent variable, the log of average labor productivity, between the foreign ownership group involved and local plants is statistically insignificant at the standard 5 percent level. For example, when all foreign plants were compared with local plants from estimates of equation (1), the coefficient on the foreign ownership dummy was statistically insignificant in 22 or 79 percent of the 28 possible combinations when the equation was estimated for all plants and in 21 or 81 percent of the 25 possible combinations when the equation was estimated for large plants. Of the 84 possible year-industry-foreign nationality combinations examined for all plants in equation (2), an even higher percentage of comparisons, 87 percent (73 comparisons) revealed statistically insignificant differences between the foreign ownership group involved and local plants. The same result was obtained for 65 of 78, or 83 percent, of the combinations examined for large plants. Finally, of the 207 year-industry-foreign nationality group comparisons for all plants in equation (3), coefficients were insignificant in 85 percent or 176 of the combinations examined. Of the 188 comparisons made for large plants, 90 percent or 170 of the comparisons revealed insignificant differences as well. Thus, in the vast majority of the cases examined here, it is very difficult to find evidence of statistically significant differences in labor productivity after the influences of factor intensity, BOI-status, vintage, and trade propensities are accounted for.

Of the significant differences observed, however, most are positive as would be expected. When equation (1) the coefficient on the foreign ownership dummy is significantly negative in only one case, furniture in 1998. On the other hand, there is only one industry in which the foreign ownership dummy was consistently significant in all size groups and years, chemicals. All other significant coefficients in this specification were positive, indicating significantly higher labor productivity in foreign MNCs, but there was no size-industry combination where significant differences were observed in both 1996 and 1998. As detailed in Ramstetter (2001), this suggests a very haphazard relationship between foreign ownership and labor productivity in Thailand.

The results of estimating equations (2)-(3) are also consistent with estimates of equation (1)

suggesting that the majority of significant coefficients are positive as would be expected. Moreover, the equations reveal a tendency for positive and significant dummy coefficients to be more common for MNCs from the triad (Europe, Japan, and the United States) than for other ownership groups. Thus, there is a weak tendency for MNCs from the triad to have higher labor productivity in the relatively few instances when differences in labor productivity are statistically significant. There are still a number of cases where labor productivity appears to be significantly lower in foreign MNCs, especially in estimates of equation (3) and in samples of large plants, but these differences may not indeed be significant because equation (3) often has no more explanatory power than equations (2) and/or (1), in which case the more aggregated specifications should probably be used. To formally test for this one would normally construct an F-test testing the null hypothesis that the restricted models (1) or (2) are a better fit of the data than the unrestricted models (2) or (3) but that procedure is not employed here because the presence of heteroscedasticity complicates such testing in this context.

For example, focusing on the samples of large plants, which are thought to be most relevant for these comparisons, in food in 1996, results of estimating equation (3) indicate Chinese MNCs had significantly lower labor productivity but OLS residuals indicate that equation (3) is no better a fit of the data than equation (2) and a worse fit than equation (1), suggesting that it may be most appropriate to use equation (1) in this case and ignore this result. In contrast, U.S. plants had significantly higher labor productivity in food in 1998, and the fit of equation (3) was a 5 percent improvement over the fit of the other equations, suggesting that this difference may be important. However, whatever equation is used, the regressions suggest markedly different results in 1996 and 1998 in all but three industries, apparel, chemicals, and electric machinery. In apparel, OLS residuals indicate that equation (2) fits the data best and that plants from the Asia-4 (Singapore, Taiwan, Korea, China) countries had relatively high labor productivity in both years. In chemicals, equation (1) fits the data best suggesting that all foreign MNCs have relatively high productivity, though in this case equation (2) suggests that the majority of the difference may be between MNCs from the triad and local plants. In electric machinery, all equations are consistent in suggesting no significant differences between foreign MNCs and local plants in this industry, probably because foreign

MNCs dominate this industry so heavily.

In the other 10 industries for which estimates could be performed in samples of large plants, including the food example discussed above, there is tendency for some foreign plants to have significantly higher labor productivity in only one of the two years and there is also a strong tendency for one group of foreign plants to have higher or lower productivity in one year but for another group to have higher or lower productivity in the other year. For example, in textiles, using the results of equation (2) (the best fit in both years), MNCs from the triad had relatively high labor productivity in 1996 but in 1998 plants from other (non-triad, non-Asia-4) countries had relatively low productivity. In leather and footwear, there were no significant differences in 1996 but equation (2) suggests that plants from other countries had relatively high labor productivity in 1998 while equation (3) (a better fit) suggests that plants from China had relatively low labor productivity. In rubber and plastics, there were again no significant differences in 1996 but in 1998 Taiwanese plants had relatively high labor productivity in rubber while Singaporean plants had relatively low productivity in plastics. In nonmetallic mineral products and furniture the stories are similar with no significant differences in 1996 but significantly different labor productivity in triad MNCs in 1998, relatively high in nonmetallic mineral products and relatively low in furniture. In metals, there are positive differentials in both years but they involve different groups, Korean and other plants in 1996 and all Asia-4 or Taiwanese plants in 1998. In general machinery, European plants had relatively high labor productivity in 1996 while U.S. plants had relatively low labor productivity in 1998. In motor vehicles, Korean plants had relatively low labor productivity in 1996 while Japanese plants had relatively high labor productivity in 1998.

There are several problems one has when trying to generalize from these results but one thing does seem clear. This study, like others before it, has real trouble finding consistent evidence that foreign MNCs have higher labor productivity than local plants in Thailand. The major point of this paper is that disaggregating MNCs by source country does not affect this most prominent result as the vast majority of coefficients on foreign ownership dummies are statistically insignificant. It is true that disaggregating foreign MNCs by country of origin does result in one or more significant coefficients in most industries, but

these results are generally inconsistent across industries and years. Moreover, across industries, there is clearly no strong tendency for one or more specific groups of foreign plants to be more or less productive than others, though there is a weak tendency for firms from the triad to be have relatively high labor productivity in the few cases when significant differentials are observed. In short, it is very difficult to come up with rationale explanations for the inconsistencies across time in individual industries and the lack of consistent differences among nationalities of MNCs suggests that the these relationships may be rather haphazard in Thailand. This is consistent with the results of previous studies which suggest large variation in average labor productivity in local and foreign plants in Thailand. However, it is also possible that these results obtain because unduly restrictive assumptions about technology have been imposed.

5. Conclusion

This paper has examined differences in average labor productivity between local plants and foreign MNCs in Thai manufacturing in 1996 and 1998. The paper first reviewed the theoretical literature stressing that theory of the multinational corporation provides a very good rationale for expecting MNCs to be more productive than non-MNCs in some respect. In contrast, the theoretical rationale for expecting differences in productivity among nationality groups of MNCs is much weaker, though assertions about such differences have attracted some attention in the literature. The paper then examined foreign shares of Thai manufacturing by country, showing that Japanese MNCs are by far the largest group of MNCs in this sample, followed distantly by European, U.S., and Taiwanese MNCs. Simple comparisons of average labor productivity between groups of foreign MNCs and local plants then showed that these differentials are unexpectedly negative, indicating higher labor productivity in local plants, in large number of possible comparisons. Regression analysis was then used to test for differences in average labor productivity between local plants and foreign ownership groups after controlling for the effects of factor intensities, BOI status, vintage, and trade propensities on labor productivity. As in previous studies of this nature, the vast majority of comparisons revealed that differences between local plants and foreign MNCs were statistically

insignificant. There was a weak tendency for firms from triad countries (Europe, Japan, and the United States) to have relatively high labor productivity in the few cases where significant differences were observed, but results were often inconsistent across time and industries suggesting that there may be little economic reason for the patterns observed between the nationality of foreign MNCs and labor productivity levels in Thai manufacturing.

At first glance, the above results seem reasonable and in line with previous results for Thai manufacturing. However, the methodology used in this study has the severe drawback of imposing very restrictive assumptions about technology. Moreover, there are serious aggregation issues in studies like this and it would be desirable to experiment with different levels of disaggregation by country and by industry. Unfortunately, the ability to explore these extensions with the data sets at hand is somewhat limited, however.

References

Blomström, Magnus, 1990. *Foreign Investment and Spillovers*. London: Routledge.

Buckley, Peter J., 1985. "The Economic Analysis of the Multinational Enterprise: Reading versus Japan?", *Hitotsubashi Journal of Economics*, Vol. 26, No. 2 (December).

Buckley, Peter J. and Mark Casson, 1992. The Future of the Multinational Enterprise, 2nd Edition. London: Macmillan.

Business Research and Development, various years. *Thailand Business Profiles*, 1996-1997 and 1997-1998 issues. Bangkok: Business Research and Development.

Casson, Mark, 1987. *The Firm and the Market: Studies on the Multinational and the Scope of the Firm*. Cambridge, MA: MIT Press.

Caves, Richard E., 1996. *Multinational Enterprise and Economic Analysis*, second edition. Cambridge, UK: Cambridge University Press.

Dunning, John H., 1988. *Explaining International Production*. London: Unwin Hyman.

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

Hall, Bronwyn H. and Clint Cummins, 1999. *Time Series Processor, User's Guide Version 4.5*. Palo Alto: TSP International.

Hill, Hal and Brian Johns, 1985. "The Role of Foreign Investment in Developing East Asian Countries," *Weltwirtschaftliches Archiv*, Band 121, Heft 2, pp. 355-381.

Hill, Hal, 1988. *Foreign Investment and Industrialization in Indonesia*. Singapore: Oxford University Press.

Hymer, Stephen H., 1960. "The International Operations of National Firms: A Study of Direct Foreign Investment," Ph.D. dissertation, MIT (published by MIT Press, 1976).

Ministry of International Trade and Industry, 1999. Wagakuni Kikyou no Kaigai Jigyou Katsudou Dai 27 Kai (The 27th Survey of Overseas Business Activities of Japanese Companies), 1997 survey of 1996 data. Tokyo: Ministry of Finance Printing Bureau (in Japanese).

Ministry of International Trade and Industry, 2001. Dai 29 Kai Kaigai Jigyou Katsudou Kihon Chousa (The 29th Basic Survey of Overseas Business Activities), 1999 survey of 1998 data. Tokyo: Ministry of Finance Printing Bureau (in Japanese).

Khanthachai, Nathabhol, Kanchana Tanmavad, Tawatchai Boonsiri, Chantana Nisaisook, and Anucha Arttanuchit, 1987. *Technology and Skills in Thailand*. Singapore: Institute of Southeast Asian Studies.

Kojima, Kiyoshi, 1978. *Direct Foreign Investment: A Japanese Model of Multinational Business Operations*. London: Croom Helm; New York: Praeger; Tokyo: Tuttle.

Markusen, James R., 1991. "The Theory of the Multinational Enterprise: A Common Analytical Framework," in Eric D. Ramstetter, ed., *Direct Foreign Investment in Asia's Developing Economies and Structural Change in the Asia-Pacific Region*, Boulder, Co: Westview Press, pp. 11-32.

National Statistical Office, 1999. *Report on the 1997 Industrial Census of the Whole Kingdom*. Bangkok: National Statistical Office.

National Statistical Office, 2001. Compilations of Data from the 1999 Industrial Survey, downloaded from the NSO website (http://www.nso.go.th/eng/stat/industrial/index.htm) in March 2001. Bangkok: National Statistical Office.

Naya, Seiji and Eric D. Ramstetter, 1992. "United States Direct Foreign Investment in Asia's Developing Economies," in United Nations, Economic and Social Commission for Asia and the Pacific (ESCAP), ed., *Foreign Investment and Industrial Comparative Advantage in East Asia and the Pacific*, Bangkok: ESCAP (document no. E/ESCAP/1015), pp. 51-111.

Ramstetter, Eric D., 1993. "Production Technology in Foreign and Local Firms in Thai Manufacturing", Discussion Paper No. 8. Nagoya: Graduate School of International Development, Nagoya University.

_____, 1994. "Comparisons of Japanese Multinationals and Other Firms in Thailand's Nonoil Manufacturing Industries," *ASEAN Economic Bulletin*, Vol. 11, No. 1, pp. 36-58.

_____, 1998. "Export Propensities and Foreign Ownership Shares in Southeast Asian Manufacturing", in F. Gerard Adams and Shinichi Ichimura, eds., *East Asian Development: Will the East Asian Miracle Survive?* Westport, CN: Praeger, pp. 171-192.

_____, 1999. "Comparisons of Foreign Multinationals and Local Firms in Asian Manufacturing Over Time ", *Asian Economic Journal*, Vol. 13, No. 3 (June), pp. 163-203.

_____, 2001. "Labor Productivity in Foreign Multinationals and Local Plants in Thai Manufacturing, 1996 and 1998", Working Paper 2001-13, Kitakyushu: International Centre for the Study of East Asian Development.

Rugman, Alan M., 1980. Internalization as a General Theory of Foreign Direct Investment: A Re-Appraisal of the Literature," *Weltwirtschaftliches Archiv*, Band 116, Heft 2, pp. 365-379.

_____, 1985. "Internalization is Still a General Theory of Foreign Direct Investment," *Weltwirtschaftliches Archiv*, Band 121, Heft 3, pp. 570-575.

Takii, Sadayuki and Eric D. Ramstetter, 2000. "Foreign Multinationals in Indonesian Manufacturing 1985-1998: Shares, Relative Size, and Relative Labor Productivity", Working Paper 2000-18, Kitakyushu: International Centre for the Study of East Asian Development.

Tambunlertchai, Somsak and Eric D. Ramstetter, 1991. "Foreign Firms in Promoted Industries and Structural Change in Thailand," in Eric D. Ramstetter, ed., *Direct Foreign Investment in Asia's Developing Economies and Structural Change in the Asia-Pacific Region*, Boulder, CO: Westview Press, pp. 65-102.

Toyo Keizai, various years. *Kaigai Shinshutsu Kigyo Soran (A Comprehensive Survey of Firms Overseas)*, CD-ROMs with data from 1998 and 2000 issues (data for 1996, 1998). Tokyo: Toyo Keizai (in Japanese).

U.S. Bureau of Economic Analysis, 1999. *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and Their Foreign Affiliates, Revised 1996 Estimates*. Washington, D.C.: Bureau of Economic Analysis (data downloaded from www.bea.gov).

_____, 2000. *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and Their Foreign Affiliates, Preliminary 1998 Estimates*. Washington, D.C.: Bureau of Economic Analysis (data downloaded from www.bea.gov).

White, Halbert, 1980. "A Heterosckedasticity-Consistent Covariance Matrix Estimator and A Direct Test for Heteroskedasticity", *Econometrica*, Vol. 48, No. 4 (May), pp. 817-838.

Table 1: Estimates of Employment and Sales or Gross Output for Japanese and U.S. Manufacturing Affiliates in Thailand

	Japanese Affiliates						U.S. Affiliates			
	Japanese MITI		Japanese Toyo Keizai		Thai NSO, these samples		U.S. BEA		Thai NSO, these samples	
Industry	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998
EMPLOYMENT (NUMBER OF PRODUCTION & NON-PRODUCTION WORKERS)										
Manufacturing	246,426	229,197	310,698	304,216	298,642	185,978	95,700	101,500	104,500	43,900
Food & beverages	13,673	8,449	15,971	14,647	34,037	18,395	25,000-49,999	25,100	23,854	6,480
Chemicals	12,341	12,027	10,570	12,767	8,282	5,388	5,600	5,900	5,853	1,170
General & electric machinery-a	99,490	104,492	120,418	133,512	111,173	84,283	35,000-55,800	59,700	48,019	17,072
Transportation machinery	53,678	45,063	57,585	50,316	44,879	18,990	400	200	409	75
Other manufacturing	67,244	59,166	106,154	92,974	100,271	58,922	8,900	10,600	26,365	19,103
Textiles & apparel	18,321	19,901	28,241	20,491	29,045	8,459	NA	NA	3,022	699
Metals & metal products-b	17,641	15,299	31,364	32,745	17,024	10,081	2,500-4,999	2,500-4,999	899	377
SALES (Japan, METI & U.S. BEA) or Gross Output (Thai NSO), billion baht										
Manufacturing	719	690	NA	NA	852	445	183	327	240	67
Food & beverages	28	26	NA	NA	42	32	36	48	30	11
Chemicals	39	58	NA	NA	40	18	28	44	16	4
General & electric machinery-a	211	287	NA	NA	229	179	101	212	92	24
Transportation machinery	305	170	NA	NA	373	98	1	1	1	0
Other manufacturing	135	149	NA	NA	169	117	17	22	101	28
Textiles & apparel	29	39	NA	NA	38	9	NA	NA	2	1
Metals & metal products-b	56	44	NA	NA	52	32	NA	NA	3	0

Notes: NA=not available or not disclosed;

a-Electric machinery excludes precision machinery in this table; electric machinery includes precision machinery in subsequent tables.

b-Japanese METI estimates exclude metal products

Sources: International Monetary Fund (2001); Japan, Ministry of International Trade and Industry (1999, 2001); Toyo Keizai (various years); U.S. Bureau of Economic Analysis (1999, 2000); compilations from plant-level data underlying National Statistical Office (1999, 2001).

Table 2: Foreign Shares of Production Workers by Industry, and Country of Major Owner, 1996 and 1998 (percent)

	1996								1998							
Industry	EU	US	JP	SG	TW	KR	CH	OT	EU	US	JP	SG	TW	KR	CH	OT
ALL SAMPLE PLANTS																
Manufacturing	2	5	18	1	6	1	3	6	3	5	21	1	6	1	2	5
Food	3	3	14	1	3	1	3	4	2	3	11	1	5	0	2	6
Textiles	1	1	14	0	9	2	8	5	3	1	6	0	9	1	0	11
Apparel	1	2	8	1	3	0	3	15	7	0	10	0	3	0	7	19
Leather & footwear	1	6	6	0	7	6	0	4	0	6	1	0	3	2	1	5
Chemicals & products	3	8	13	1	3	1	3	5	5	2	19	1	4	0	1	5
Rubber products	3	4	9	3	6	0	1	15	3	14	11	1	6	0	1	6
Plastics & products	1	0	13	1	4	1	3	9	2	1	22	2	6	1	12	2
Nonmetallic mineral products	1	1	4	1	10	0	3	2	4	9	12	1	6	0	1	2
Metal products	1	1	13	2	7	0	13	2	0	1	21	2	6	0	2	1
General machinery	1	0	46	8	5	1	0	3	1	2	71	1	1	1	0	7
Electric machinery	6	23	36	2	11	2	0	5	9	12	41	3	15	3	0	5
Office & computing mach.	0	73	8	1	15	1	0	2	0	38	17	4	38	0	0	1
Miscellaneous electric mach.	0	8	45	0	16	0	0	2	24	2	38	2	12	0	0	7
Radio, TV, communication	8	5	49	3	7	5	0	7	0	12	53	3	9	9	0	5
Precision machinery	24	7	38	0	2	0	0	13	1	3	52	0	5	0	0	0
Motor vehicles	0	0	56	0	0	0	0	1	0	0	60	1	1	0	0	1
Furniture	0	3	9	0	4	2	1	8	1	1	10	0	3	0	0	1
Jewelry	19	9	4	2	2	0	0	25	5	23	3	0	0	0	8	14
Other manufacturing indus.	2	5	12	1	5	1	3	3	4	3	18	1	6	4	2	3
LARGE PLANTS (OUTPUT>=25 million baht)																
Manufacturing	2	6	20	1	6	1	3	6	4	5	23	1	7	1	2	6
Food	3	3	15	1	4	1	4	4	2	4	12	2	5	0	2	6
Textiles	1	1	16	0	10	2	8	6	3	1	7	0	10	1	0	11
Apparel	1	2	9	1	4	0	3	16	8	0	11	0	3	0	7	21
Leather & footwear	1	6	6	0	8	6	0	4	0	6	1	0	3	2	1	6
Chemicals & products	3	9	14	1	3	1	4	5	5	2	20	1	4	0	1	5
Rubber products	3	4	9	3	6	0	1	16	3	14	11	1	6	0	1	6
Plastics & products	1	0	14	1	4	1	3	11	2	1	24	3	5	1	13	2
Nonmetallic mineral products	1	2	5	2	12	0	3	2	4	10	15	1	7	0	0	2
Metal products	1	1	16	2	8	1	15	2	0	0	24	2	7	0	2	1
General machinery	1	0	50	9	6	1	0	3	1	2	75	1	1	1	0	8
Electric machinery	6	24	37	2	11	2	0	5	9	13	41	3	16	3	0	5
Office & computing mach.	0	73	8	1	14	1	0	2	0	38	17	4	38	0	0	1
Miscellaneous electric mach.	0	8	47	1	17	0	0	2	25	2	38	2	12	0	0	7
Radio, TV, communication	8	5	50	3	7	5	0	7	0	12	54	3	9	9	0	5
Precision machinery	25	7	39	0	2	0	0	14	0	4	54	0	5	0	0	0
Motor vehicles	0	1	62	0	0	0	0	2	0	0	67	1	1	0	0	1
Furniture	1	4	10	0	5	2	1	9	1	1	14	0	4	0	0	1
Jewelry	20	10	4	2	2	0	0	24	4	25	3	0	0	0	8	15
Other manufacturing indus.	2	6	13	1	5	1	3	3	4	4	20	1	6	4	2	3

Note: EU=Europe, US=United States, JP=Japan, SG=Singapore, TW=Taiwan, KR=Korea, CH=China, OT=other.
Sources: Appendix Tables A2a, A2b.

Table 3: Foreign Shares of Non-Production Workers by Industry, and Country of Major Owner, 1996 and 1998 (percent)

	1996								1998							
Industry	EU	US	JP	SG	TW	KR	CH	OT	EU	US	JP	SG	TW	KR	CH	OT
ALL SAMPLE PLANTS																
Manufacturing	3	10	15	1	4	1	2	6	3	6	24	2	5	1	2	5
Food	3	3	9	0	2	0	4	3	5	1	10	3	5	0	2	4
Textiles	1	1	10	0	7	3	6	6	2	1	11	0	7	0	0	8
Apparel	1	3	6	0	4	0	1	12	14	0	14	0	1	0	4	19
Leather & footwear	0	9	8	0	4	1	0	2	0	2	1	0	2	3	1	2
Chemicals & products	5	10	11	2	2	0	2	5	9	8	16	4	3	0	0	5
Rubber products	4	1	13	2	3	0	1	18	8	7	20	1	2	0	2	5
Plastics & products	1	0	15	1	4	1	1	16	0	0	19	2	13	0	12	3
Nonmetallic mineral products	3	2	4	1	6	0	1	3	1	14	13	0	2	0	1	5
Metal products	2	1	16	1	8	1	8	3	1	1	18	2	7	0	3	0
General machinery	2	2	44	5	3	2	0	2	3	1	70	1	1	3	0	3
Electric machinery	5	18	35	3	8	2	0	7	0	21	41	7	10	2	0	7
Office & computing mach.	0	47	17	0	23	1	0	10	0	51	27	1	19	0	0	1
Miscellaneous electric mach.	0	20	36	3	9	0	0	3	1	7	42	14	9	0	0	12
Radio, TV, communication	8	8	42	4	3	3	0	8	0	17	47	6	5	6	0	8
Precision machinery	17	15	26	0	1	0	0	13	1	11	54	0	9	0	0	0
Motor vehicles	0	1	47	0	0	0	0	3	0	0	79	1	0	0	0	1
Furniture	0	6	3	0	13	2	1	12	2	0	7	0	4	0	0	1
Jewelry	18	9	3	2	1	1	1	20	5	11	3	0	0	0	10	7
Other manufacturing indus.	3	27	6	0	2	1	1	6	3	6	13	1	3	1	1	4
LARGE PLANTS (OUTPUT>=25 million baht)																
Manufacturing	3	11	16	1	4	1	2	7	3	7	26	3	5	1	2	5
Food	3	4	10	1	2	0	4	3	5	1	10	4	6	0	2	5
Textiles	1	1	11	0	7	3	6	6	2	1	12	0	8	0	0	9
Apparel	1	3	7	0	4	0	1	13	15	0	15	0	1	0	4	21
Leather & footwear	0	10	9	0	5	1	0	2	0	2	1	0	1	3	1	2
Chemicals & products	5	11	11	2	2	0	2	6	10	8	17	4	3	0	0	6
Rubber products	5	1	13	3	3	0	1	19	9	7	20	1	2	0	2	5
Plastics & products	1	0	17	1	3	1	1	18	0	0	21	2	14	0	14	2
Nonmetallic mineral products	3	3	4	1	7	0	1	3	1	16	15	0	2	0	0	6
Metal products	2	1	19	2	9	1	10	4	0	0	20	3	7	0	3	0
General machinery	2	2	47	6	3	2	0	2	3	1	74	1	1	4	0	3
Electric machinery	5	19	36	3	8	2	0	7	0	22	41	8	10	2	0	7
Office & computing mach.	0	47	17	0	23	1	0	10	0	51	27	1	19	0	0	1
Miscellaneous electric mach.	0	21	37	3	9	0	0	3	1	7	43	14	9	0	0	12
Radio, TV, communication	8	8	42	5	3	3	0	8	0	17	48	6	5	7	0	8
Precision machinery	19	17	28	0	2	0	0	14	0	12	56	0	9	0	0	0
Motor vehicles	0	1	53	0	0	0	0	3	0	0	83	1	0	0	0	1
Furniture	0	7	3	0	15	2	1	14	3	0	8	0	4	0	0	1
Jewelry	20	10	3	1	1	1	1	20	3	11	4	0	0	0	10	8
Other manufacturing indus.	4	30	6	0	2	1	1	6	3	6	15	1	3	1	2	4

Note: EU=Europe, US=United States, JP=Japan, SG=Singapore, TW=Taiwan, KR=Korea, CH=China, OT=other.
Sources: Appendix Tables A3a, A3b.

Table 4: Foreign Shares of Gross Output by Industry, and Country of Major Owner, 1996 and 1998 (percent)

	1996								1998							
Industry	EU	US	JP	SG	TW	KR	CH	OT	EU	US	JP	SG	TW	KR	CH	OT
ALL SAMPLE PLANTS																
Manufacturing	5	9	31	1	5	1	2	5	3	5	33	2	5	1	1	7
Food	3	3	12	1	2	0	3	5	2	2	13	2	4	0	1	8
Textiles	1	1	25	0	16	2	6	8	3	2	14	0	11	1	0	13
Apparel	2	1	11	4	4	0	2	15	21	0	8	0	6	0	16	19
Leather & footwear	1	8	11	0	8	3	0	3	0	3	1	0	2	1	1	4
Chemicals & products	17	10	23	2	2	0	2	5	14	4	17	2	6	0	0	4
Rubber products	6	1	12	6	6	0	1	9	1	9	22	2	5	0	1	9
Plastics & products	1	0	21	1	3	1	1	9	1	0	17	3	8	1	5	2
Nonmetallic mineral products	2	2	5	1	18	0	4	3	8	19	29	0	3	0	0	5
Metal products	1	1	37	3	9	1	6	2	1	0	42	3	6	0	4	0
General machinery	1	1	60	5	3	3	0	3	1	1	82	0	1	4	0	4
Electric machinery	5	24	42	1	10	2	0	6	1	11	53	5	12	4	0	8
Office & computing mach.	0	59	11	0	23	1	0	6	0	19	48	2	29	0	0	0
Miscellaneous electric mach.	1	21	46	1	10	0	0	2	4	4	50	7	13	0	0	10
Radio, TV, communication	10	6	56	2	2	5	0	9	0	13	55	6	4	9	0	11
Precision machinery	6	7	66	0	1	0	0	7	0	2	64	0	8	0	0	0
Motor vehicles	0	0	88	0	0	0	0	1	0	0	91	1	0	0	0	0
Furniture	0	3	7	0	8	3	1	7	0	0	8	0	4	0	0	1
Jewelry	13	7	5	3	1	0	0	20	3	18	4	0	0	0	5	16
Other manufacturing indus.	8	18	7	0	1	1	1	2	3	4	18	1	2	1	1	11
LARGE PLANTS (OUTPUT>=25 million baht)																
Manufacturing	5	9	32	1	5	1	2	5	3	5	34	2	5	1	1	7
Food	3	3	12	1	2	0	3	5	2	2	13	2	4	0	1	8
Textiles	0	1	26	0	17	2	6	8	3	2	14	0	11	1	0	13
Apparel	2	1	11	4	4	0	2	16	21	0	8	0	6	0	16	20
Leather & footwear	1	9	11	0	8	3	0	3	0	3	1	0	2	1	1	4
Chemicals & products	17	10	24	2	2	0	2	6	14	4	17	2	6	0	0	4
Rubber products	6	1	12	6	6	0	1	9	1	9	22	2	5	0	1	9
Plastics & products	1	0	21	1	3	1	1	10	1	0	18	3	8	1	6	2
Nonmetallic mineral products	3	2	5	1	18	0	4	3	8	19	30	0	3	0	0	5
Metal products	1	1	39	3	9	1	6	2	0	0	43	3	6	0	4	0
General machinery	1	1	61	5	3	3	0	3	1	1	83	0	1	4	0	4
Electric machinery	5	24	42	1	10	2	0	6	1	11	53	5	12	4	0	8
Office & computing mach.	0	59	11	0	23	1	0	6	0	19	48	2	29	0	0	0
Miscellaneous electric mach.	1	21	46	1	10	0	0	2	4	4	50	7	13	0	0	10
Radio, TV, communication	10	6	56	2	2	5	0	9	0	13	55	6	4	9	0	11
Precision machinery	6	7	67	0	1	0	0	8	0	2	65	0	8	0	0	0
Motor vehicles	0	0	89	0	0	0	0	1	0	0	92	1	0	0	0	0
Furniture	0	3	8	0	8	3	1	7	0	0	9	0	4	0	0	1
Jewelry	13	7	5	3	1	0	0	21	2	18	4	0	0	0	4	16
Other manufacturing indus.	8	18	7	0	1	1	2	2	3	4	18	1	2	1	1	11

Note: EU=Europe, US=United States, JP=Japan, SG=Singapore, TW=Taiwan, KR=Korea, CH=China, OT=other.
Sources: Appendix Tables A6a, A6b.

Table 5: Foreign Shares of Value Added by Industry, and Country of Major Owner, 1996 and 1998 (percent)

	1996								1998							
Industry	EU	US	JP	SG	TW	KR	CH	OT	EU	US	JP	SG	TW	KR	CH	OT
ALL SAMPLE PLANTS																
Manufacturing	4	6	31	1	4	1	2	4	4	6	32	2	5	1	1	9
Food	2	3	11	1	2	0	2	4	2	3	14	2	3	0	1	6
Textiles	1	1	31	0	7	3	6	6	5	2	13	0	9	1	0	13
Apparel	1	1	13	2	5	0	2	12	22	0	7	0	7	0	15	14
Leather & footwear	1	2	8	0	4	7	0	4	0	2	1	0	3	1	0	5
Chemicals & products	7	10	30	3	2	0	1	5	19	7	18	3	4	0	0	5
Rubber products	16	2	10	8	2	0	1	6	3	18	23	1	10	0	1	6
Plastics & products	0	0	19	1	3	1	2	11	2	0	18	2	7	1	6	2
Nonmetallic mineral products	2	3	5	1	10	0	5	1	12	18	23	0	4	0	0	4
Metal products	1	1	31	2	8	1	11	5	1	0	36	2	8	0	5	0
General machinery	2	0	57	3	4	2	0	3	1	1	82	0	1	2	0	5
Electric machinery	4	12	47	1	16	2	0	7	3	15	46	5	14	4	0	6
Office & computing mach.	0	33	6	0	54	2	0	3	0	40	25	3	30	0	0	0
Miscellaneous electric mach.	2	10	58	0	13	1	0	1	10	2	42	10	12	0	0	14
Radio, TV, communication	8	5	52	3	2	4	0	13	0	10	59	4	6	10	0	5
Precision machinery	3	2	81	0	0	0	0	5	0	3	60	0	6	0	0	0
Motor vehicles	0	0	88	0	0	0	0	1	0	0	93	1	0	0	0	0
Furniture	0	1	5	0	5	5	1	6	1	0	7	0	5	0	0	0
Jewelry	12	7	3	1	1	1	0	28	5	20	3	0	0	0	5	15
Other manufacturing indus.	8	10	5	0	1	1	1	3	2	4	13	1	1	1	1	21
LARGE PLANTS (OUTPUT>=25 million baht)																
Manufacturing	4	6	32	1	4	1	2	4	4	6	32	2	5	1	1	9
Food	2	3	11	1	2	0	2	4	2	3	14	2	3	0	1	7
Textiles	1	1	32	0	7	3	6	7	5	2	13	0	10	1	0	13
Apparel	1	1	13	2	5	0	2	12	23	0	7	0	7	0	15	14
Leather & footwear	1	2	8	0	4	8	0	4	0	2	1	0	3	1	0	5
Chemicals & products	7	10	30	3	2	0	1	5	19	7	19	3	4	0	0	5
Rubber products	16	2	10	8	2	0	1	7	3	18	23	1	10	0	1	6
Plastics & products	0	0	20	1	2	1	2	12	2	0	19	2	6	1	6	1
Nonmetallic mineral products	2	3	6	1	11	0	5	1	12	18	23	0	4	0	0	4
Metal products	1	1	32	2	9	2	12	5	1	0	38	2	8	0	5	0
General machinery	2	0	58	4	4	2	0	3	2	1	83	0	1	2	0	5
Electric machinery	4	12	47	1	16	2	0	7	3	15	46	5	14	4	0	6
Office & computing mach.	0	33	6	0	54	2	0	3	0	40	25	3	30	0	0	0
Miscellaneous electric mach.	2	10	59	0	14	1	0	1	10	2	42	10	12	0	0	14
Radio, TV, communication	9	5	52	3	2	4	0	13	0	11	59	4	6	10	0	5
Precision machinery	3	2	82	0	0	0	0	5	0	3	60	0	6	0	0	0
Motor vehicles	0	0	88	0	0	0	0	1	0	0	94	1	0	0	0	0
Furniture	0	1	6	0	5	5	1	7	1	0	7	0	5	0	0	0
Jewelry	11	7	3	1	1	1	0	28	4	20	3	0	0	0	5	16
Other manufacturing indus.	8	10	5	0	1	1	1	3	2	4	13	1	1	1	1	22

Note: EU=Europe, US=United States, JP=Japan, SG=Singapore, TW=Taiwan, KR=Korea, CH=China, OT=other.
Sources: Appendix Tables A6a, A6b.

Table 6: Percentage Differences in Mean Value Added per Hour for Production Workers between Foreign Ownership Groups by Country of Major Owner and Thai Plants, 1996 and 1998 (percent)

	1996								1998							
Industry	EU	US	JP	SG	TW	KR	CH	OT	EU	US	JP	SG	TW	KR	CH	OT
ALL SAMPLE PLANTS																
Manufacturing	341	99	100	88	-18	24	-40	17	164	187	119	136	24	5	-2	180
Food	-29	98	-35	-35	-34	-52	-80	21	134	407	58	46	16	13	-14	137
Textiles	35	187	91	-49	52	44	-44	31	114	129	109	-	258	238	-89	1,466
Apparel	55	-65	13	17	13	-27	8	-37	293	-	64	-98	191	-	298	38
Leather & footwear	-42	-45	41	-	-26	-37	-22	-17	-	-56	59	-	-26	-20	-57	-22
Chemicals & products	262	192	595	232	-16	14	-49	16	348	352	163	191	21	-	-61	166
Rubber products	1,645	144	-60	484	-34	27	29	-42	115	94	32	59	252	80	-28	50
Plastics & products	207	-58	73	-25	-14	166	-12	-15	-56	-51	32	-71	-20	-10	63	-15
Nonmetallic mineral products	99	-60	-25	-56	-7	-38	-59	-34	113	85	75	-74	-17	-	-58	-48
Metal products	163	161	177	-14	61	385	-25	186	227	-98	85	6	90	-	104	-14
General machinery	301	13	41	95	18	119	-70	114	151	-59	302	61	1	469	113	89
Electric machinery	246	-35	19	-6	7	23	-2	37	-20	-9	133	155	58	12	-23	358
Office & computing mach.	-	-78	-70	-82	58	53	-	12	-	-16	169	-37	31	-	-	56
Miscellaneous electric mach.	1,016	-26	73	95	-21	57	-	112	7	-4	180	359	38	-	-27	216
Radio, TV, communication	71	-15	-23	-50	-66	-23	-24	0	-	1	100	99	89	18	-	885
Precision machinery	-60	-84	17	-	-58	-	-	-22	-80	-49	99	-	135	-	-	-
Motor vehicles	7	345	373	-	-25	-93	-78	146	7	33	350	124	19	-	4	9
Furniture	-52	-44	-52	21	-42	138	-50	13	-26	-72	-16	-	8	-	-	-80
Jewelry	-68	-61	-50	-74	-85	-29	-81	-48	36	48	50	-	-	-	22	575
Other manufacturing indus.	1,701	107	10	-8	-57	24	-18	37	16	253	69	285	-48	-67	-24	141
LARGE PLANTS (OUTPUT>=25 million baht)																
Manufacturing	245	44	47	43	-38	-7	-53	-13	131	142	83	119	13	-5	-3	149
Food	-49	34	-50	-51	-52	-67	-84	-6	67	261	22	4	-14	-19	-2	69
Textiles	33	141	63	-64	48	43	-50	23	64	75	62	-	205	158	-	1,215
Apparel	99	-61	4	71	7	-33	-43	-44	226	-	36	-	141	-	623	14
Leather & footwear	-56	-58	8	-	-46	-27	-	-39	-	-64	9	-	-19	-32	-64	-36
Chemicals & products	189	161	510	165	-33	-24	-58	-8	278	317	136	145	23	-	-70	139
Rubber products	1,283	93	-65	362	-37	1	2	-54	91	72	26	40	244	60	-37	33
Plastics & products	235	-73	63	-27	-8	124	-13	-30	-66	-65	-5	-79	-36	-36	37	-26
Nonmetallic mineral products	29	-76	-52	-73	-39	-	-60	-65	203	132	120	-67	36	-	-38	-4
Metal products	100	158	101	-29	47	231	-49	95	416	-	42	9	74	-	103	-2
General machinery	228	-20	10	39	-3	56	-73	69	55	-75	148	0	-17	251	121	27
Electric machinery	168	-52	-7	-30	-14	-11	-29	6	-9	-27	100	126	31	-10	19	290
Office & computing mach.	-	-77	-70	-82	82	53	-	12	-	-16	169	-37	31	-	-	56
Miscellaneous electric mach.	689	-48	28	38	-43	11	-	73	-16	-25	140	260	17	-	9	148
Radio, TV, communication	30	-35	-37	-64	-72	-42	-42	-24	-	-6	90	111	76	10	-	1,184
Precision machinery	-73	-88	3	-	-69	-	-	-41	-	-62	69	-	74	-	-	-
Motor vehicles	-37	161	186	-	-48	-96	-87	139	-36	-20	179	35	-29	-	-38	-6
Furniture	-68	-62	-65	-	-67	62	-52	0	-47	-80	-37	-	-17	-	-	-84
Jewelry	-80	-77	-71	-82	-92	-61	-90	-65	9	-6	-12	-	-	-	-4	297
Other manufacturing indus.	1,330	40	-22	-39	-72	-8	-43	-4	-15	202	24	322	-61	-72	-50	80

Note: EU=Europe, US=United States, JP=Japan, SG=Singapore, TW=Taiwan, KR=Korea, CH=China, OT=other.
Sources: Appendix Tables B4a, B4b.

Table 7: Percentage Differences in Mean Value Added per Hour for Non-Production Workers between Foreign Ownership Groups by Country of Major Owner and Thai Plants, 1996 and 1998 (percent)

	1996								1998							
Industry	EU	US	JP	SG	TW	KR	CH	OT	EU	US	JP	SG	TW	KR	CH	OT
ALL SAMPLE PLANTS																
Manufacturing	88	19	53	85	24	79	-35	21	159	56	52	34	129	85	98	137
Food	-18	157	12	-36	22	-18	-73	-16	109	291	43	-31	64	-48	-62	11
Textiles	36	6	256	-66	24	338	-45	416	123	44	-6	-	634	1,964	-76	735
Apparel	112	-71	157	87	17	-33	67	-9	28	-	1	-99	479	-	1,182	27
Leather & footwear	66	-75	195	-	30	16	34	23	-	-71	15	-	-3	-53	-71	82
Chemicals & products	53	40	97	59	-13	110	-52	22	81	-31	46	55	-5	-	0	96
Rubber products	1,085	-31	-74	626	-39	92	-2	-51	8	59	17	114	648	-13	-61	24
Plastics & products	-79	-50	-7	-59	-33	387	116	-37	156	-14	-28	-82	-49	17	-61	-4
Nonmetallic mineral products	-62	-90	-64	-8	117	-54	-53	-83	823	130	251	-26	54	-	-57	-72
Metal products	25	35	108	-31	35	116	-17	38	23	-97	109	-36	26	-	1	6
General machinery	27	-72	6	-6	76	-16	-77	64	5	-20	161	39	85	368	-20	100
Electric machinery	216	22	62	-28	123	89	-27	33	312	-36	65	-35	151	6	-44	325
Office & computing mach.	-	-9	-45	-33	170	148	-	-57	-	96	54	95	481	-	-	-60
Miscellaneous electric mach.	857	-62	68	-83	44	55	-	-47	637	-59	91	-17	20	-	-30	392
Radio, TV, communication	20	-2	47	-5	-2	57	-20	51	-	-69	7	-77	48	-36	-	282
Precision machinery	23	-82	147	-	11	-	-	151	-44	-82	126	-	78	-	-	-
Motor vehicles	-73	126	376	-	14	-89	-76	-21	-23	154	93	-13	121	-	-77	19
Furniture	-55	-74	-7	162	-52	82	-59	-53	-83	-34	37	-	-29	-	-	-74
Jewelry	-28	-25	14	-59	-67	-36	-82	116	-25	43	-25	-	-	-	-44	176
Other manufacturing indus.	338	-20	-20	-47	9	154	-42	-38	15	64	2	242	-25	-29	-29	17
LARGE PLANTS (OUTPUT>=25 million baht)																
Manufacturing	44	-14	15	41	0	45	-47	-7	110	20	17	15	98	54	86	91
Food	-40	80	-11	-62	-9	-42	-76	-35	45	171	7	-52	18	-64	-60	-23
Textiles	9	-11	208	-70	20	350	-37	387	54	0	-32	-	474	1,327	-	522
Apparel	181	-70	141	149	11	-60	91	-10	-12	-	-31	-	296	-	1,966	-13
Leather & footwear	20	-82	113	-	-8	46	-	50	-	-77	3	-	4	-60	-77	46
Chemicals & products	26	24	76	31	-20	103	-68	0	45	-41	23	24	-12	-	-9	65
Rubber products	822	-46	-78	465	-42	49	-24	-61	-3	42	14	92	635	-22	-65	11
Plastics & products	-87	-83	-19	-65	-36	280	120	-51	191	-46	-52	-88	-64	-25	-72	-30
Nonmetallic mineral products	-77	-94	-78	-47	41	-	-65	-94	976	136	260	-24	116	-	-51	-67
Metal products	-2	24	49	-41	14	49	-30	-5	28	-	65	-38	12	-	-4	10
General machinery	-3	-81	-20	-37	56	-44	-61	23	-20	-39	99	5	151	255	3	83
Electric machinery	158	-4	37	-48	102	48	-43	11	363	-50	35	-44	100	-18	-23	255
Office & computing mach.	-	-4	-45	-33	221	148	-	-57	-	96	54	95	481	-	-	-60
Miscellaneous electric mach.	709	-68	48	-85	38	31	-	-55	583	-62	90	-23	21	-	13	356
Radio, TV, communication	-13	-29	14	-38	-42	13	-42	9	-	-81	-31	-84	-8	-60	-	251
Precision machinery	-28	-89	92	-	-29	-	-	92	-	-88	71	-	18	-	-	-
Motor vehicles	-83	40	205	-	-19	-93	-85	-20	-50	62	27	-44	41	-	-85	-75
Furniture	-70	-82	-28	-	-62	23	-62	-66	-89	-56	2	-	-45	-	-	-86
Jewelry	-51	-52	-24	-67	-80	-62	-89	59	-44	-8	-54	-	-	-	-63	70
Other manufacturing indus.	253	-44	-44	-62	-14	115	-60	-55	-14	37	-27	289	-38	-44	-53	-14

Note: EU=Europe, US=United States, JP=Japan, SG=Singapore, TW=Taiwan, KR=Korea, CH=China, OT=other.
Sources: Appendix Tables B4a, B4b.

Table 8: Significant Coeffients on Foreign Ownership Dummies and Adjusted R-squared from Estimates of Equations (1) to (3) for 14 Manufacturing Industries

Coeffi-cents,	Food		Textiles		Apparel		Leather & footwear		Chemicals & products		Rubber products		Plastics & products	
Adj. R^2	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998
ALL FIRMS														
Equation 1														
Df	ns	0.26	ns	ns	ns	ns	ns	ns	0.42	0.39	ns	ns	ns	ns
Adj. R^2	0.173	0.197	0.093	0.280	0.116	0.180	0.047	0.291	0.238	0.351	0.123	0.273	0.142	0.129
Equation 2														
Dftriad	ns	0.38	0.53	ns	ns	ns	ns	ns	0.49	0.47	ns	ns	ns	ns
Dfasia4	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.59	ns	ns
Dfot	ns	ns	ns	ns	ns	ns	ns	0.36	ns	ns	ns	ns	ns	ns
Adj. R^2	0.173	0.197	0.103	0.279	0.119	0.165	0.039	0.281	0.235	0.347	0.124	0.283	0.142	0.121
Equation 3														
Dfeu	ns	ns	0.82	ns	ns	ns	ns	-	0.72	0.86	ns	ns	ns	ns
Dfus	ns	1.47	1.15	ns	-1.08	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dfjp	-0.38	ns	0.43	ns	ns	-	ns	ns	0.44	ns	-0.84	ns	ns	ns
Dfsg	ns	ns	ns	-	ns	-3.27	-	-	ns	0.85	ns	ns	ns	ns
Dftw	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.85	ns	ns
Dfkr	ns	ns	ns	ns	ns	-	ns	ns	ns	-	ns	ns	ns	ns
Dfch	-0.89	ns	-0.55	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dfot	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Adj. R^2	0.175	0.205	0.105	0.273	0.118	0.221	0.026	0.333	0.230	0.349	0.124	0.299	0.142	0.117
LARGE FIRMS (output >=25 million baht)														
Equation 1														
Df	ns	ns	ns	ns	ns	ns	ns	ns	0.38	0.44	ns	ns	ns	ns
Adj. R^2	0.209	0.196	0.090	0.230	0.133	0.228	0.049	0.305	0.203	0.351	0.148	0.297	0.148	0.183
Equation 2														
Dftriad	ns	ns	0.57	ns	ns	ns	ns	ns	0.50	0.55	ns	ns	ns	ns
Dfasia4	ns	ns	ns	ns	0.36	1.05	ns	ns	ns	ns	ns	0.58	ns	ns
Dfot	ns	ns	ns	-0.43	ns	ns	ns	0.50	ns	ns	ns	ns	ns	ns
Adj. R^2	0.208	0.196	0.096	0.232	0.137	0.233	0.033	0.290	0.201	0.348	0.152	0.298	0.152	0.168
Equation 3														
Dfeu	ns	ns	ns	ns	ns	ns	ns	-	ns	0.88	ns	ns	ns	ns
Dfus	ns	1.15	ns	ns	ns	-	ns	ns	ns	ns	ns	ns	ns	ns
Dfjp	ns	ns	0.48	ns	ns	ns	ns	ns	0.48	0.46	ns	ns	ns	ns
Dfsg	ns	ns	ns	-	0.96	-	-	-	ns	ns	ns	ns	ns	-1.53
Dftw	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.84	ns	ns
Dfkr	ns	ns	ns	ns	ns	-	ns	ns	ns	-	ns	ns	ns	ns
Dfch	-0.99	ns	ns	-	ns	ns	-	-1.27	ns	ns	ns	ns	ns	ns
Dfot	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Adj. R^2	0.208	0.206	0.093	0.225	0.128	0.229	0.017	0.370	0.194	0.348	0.143	0.307	0.147	0.180

Table 8 (continued)

Coeffi-cents,	Nonmetal-lic mineral products		Metal products		General machinery		Electric machinery		Motor vehicles		Furniture		Jewelry	
Adj. R^2	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998
ALL FIRMS														
Equation 1														
Df	ns	0.57	0.34	ns	ns	ns	ns	ns	ns	0.79	ns	ns	ns	ns
Adj. R^2	0.160	0.265	0.147	0.212	0.197	0.513	0.221	0.237	0.319	0.419	0.216	0.381	0.365	0.253
Equation 2														
Dftriad	ns	0.96	0.44	ns	ns	ns	ns	ns	ns	0.84	ns	ns	ns	ns
Dfasia4	0.59	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dfot	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-0.54	ns	ns
Adj. R^2	0.164	0.287	0.152	0.207	0.196	0.509	0.219	0.235	0.325	0.412	0.217	0.372	0.356	0.254
Equation 3														
Dfeu	ns	1.17	ns	ns	1.22	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dfus	ns	ns	ns	-2.57	ns	ns	ns	ns	1.17	ns	ns	ns	ns	ns
Dfjp	ns	0.84	0.48	ns	ns	ns	ns	ns	ns	0.87	ns	ns	ns	1.82
Dfsg	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	ns	-	ns	-
Dftw	0.64	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-
Dfkr	0.60	-	1.58	-	ns	ns	0.61	ns	-2.99	-	ns	-	ns	-
Dfch	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	ns
Dfot	ns	-1.38	1.02	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	1.89
Adj. R^2	0.162	0.280	0.157	0.221	0.218	0.507	0.220	0.248	0.338	0.396	0.212	0.363	0.338	0.209
LARGE FIRMS (output >=25 million baht)														
Equation 1														
Df	ns	0.58	0.38	ns	ns	ns	ns	ns	ns	ns	ns	-0.63	n<30	n<30
Adj. R^2	0.112	0.281	0.223	0.241	0.182	0.439	0.243	0.246	0.353	0.422	0.301	0.218	n<30	n<30
Equation 2														
Dftriad	ns	0.82	ns	ns	ns	ns	ns	ns	ns	0.61	ns	-0.68	n<30	n<30
Dfasia4	ns	ns	ns	0.58	ns	ns	ns	ns	-1.18	ns	ns	ns	n<30	n<30
Dfot	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	n<30	n<30
Adj. R^2	0.113	0.306	0.226	0.237	0.185	0.441	0.239	0.242	0.370	0.426	0.299	0.211	n<30	n<30
Equation 3														
Dfeu	ns	1.08	ns	ns	1.27	ns	ns	ns	ns	ns	ns	ns	n<30	n<30
Dfus	ns	ns	ns	-	ns	-1.31	ns	ns	ns	ns	ns	ns	n<30	n<30
Dfjp	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.68	ns	ns	n<30	n<30
Dfsg	ns	ns	ns	ns	ns	ns	ns	ns	-	ns	-	-	n<30	n<30
Dftw	ns	ns	ns	0.72	ns	ns	ns	ns	ns	ns	ns	ns	n<30	n<30
Dfkr	-	-	1.31	-	ns	ns	ns	ns	-3.84	-	ns	-	n<30	n<30
Dfch	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	-	n<30	n<30
Dfot	ns	ns	0.94	ns	ns	ns	ns	ns	ns	ns	ns	ns	n<30	n<30
Adj. R^2	0.110	0.293	0.230	0.228	0.199	0.448	0.238	0.266	0.400	0.415	0.294	0.192	n<30	n<30

Notes: ns=coefficient not significant at the 5% level or better; - = no plants in this category.

n<30 = sample size smaller than 30.

See Appendix Tables C1-C14 for detailed estimatation results.

Appendix Table A1a: Number of All Plants by Industry and Country of Major Owner, 1996 and 1998

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	7,214	137	121	663	65	363	68	82	239	3,026	64	66	408	40	186	24	49	111
Food	1,069	19	16	71	7	33	5	9	26	678	9	10	44	5	23	2	5	15
Textiles	474	7	4	43	2	34	10	11	16	213	3	4	18	0	16	1	1	11
Apparel	508	9	3	31	2	15	3	8	28	78	2	0	12	1	3	0	5	7
Leather & footwear	206	2	2	8	0	13	6	1	4	119	0	2	4	0	4	6	2	2
Chemicals & products	343	17	17	53	6	23	5	5	20	167	10	10	31	7	15	0	4	16
Rubber products	197	3	3	18	7	9	1	4	26	128	3	4	11	1	9	1	3	10
Plastics & products	431	4	2	46	6	26	3	6	15	111	2	1	24	2	15	2	5	7
Nonmetallic mineral products	689	12	2	15	4	16	2	2	4	334	8	5	11	2	9	0	3	3
Metal products	581	7	6	41	5	37	4	7	10	216	3	1	33	5	14	0	3	4
General machinery	333	6	2	57	4	19	3	4	8	135	6	2	42	2	6	2	2	9
Electric machinery	237	13	21	126	10	55	9	4	20	99	3	11	75	7	35	2	2	13
Office & computing machinery	2	0	9	7	1	11	1	0	1	2	0	2	4	1	9	0	0	1
Miscellaneous electric machinery	142	3	3	48	3	30	1	0	6	62	2	3	30	2	12	0	2	9
Radio, TV, communication	54	6	7	52	6	12	7	4	8	23	0	5	33	4	11	2	0	3
Precision machinery	39	4	2	19	0	2	0	0	5	12	1	1	8	0	3	0	0	0
Motor vehicles	330	2	3	58	0	4	1	1	7	81	1	1	45	1	2	0	1	2
Furniture	326	2	2	14	1	11	2	4	7	112	1	1	7	0	5	0	0	2
Jewelry	81	20	12	8	4	3	1	1	23	16	4	6	2	0	0	0	3	3
Other manufacturing industries	1,409	14	26	74	7	65	13	15	25	539	9	8	49	7	30	8	10	7
Beverages	81	0	8	0	1	0	0	0	3	43	0	2	1	1	0	0	0	2
Tobacco	32	2	0	0	0	0	0	1	0	25	0	1	0	0	0	0	0	0
Wood products	386	1	0	7	3	6	0	4	6	181	1	1	6	2	4	0	1	2
Paper products	216	1	3	9	0	16	2	5	4	68	0	1	5	1	8	1	2	2
Printing & publishing	281	2	5	8	1	0	0	0	2	40	1	1	2	2	0	0	0	0
Oil, coal, nuclear, etc.	13	1	2	5	0	0	1	0	1	4	0	0	1	0	0	0	0	0
Basic metals	143	2	1	19	0	4	4	3	2	102	1	1	18	1	2	0	2	1
Misc. transportation machinery	79	2	0	6	2	1	0	1	2	26	3	0	4	0	1	0	0	0
Other misc. manufacturing	178	3	7	20	0	38	6	1	5	50	3	1	12	0	15	7	5	0

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A1b: Number of Large Plants (output >=25 billion baht) by Industry and Country of Major Owner, 1996 and 1998

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	3,742	115	110	587	55	271	55	57	202	1,669	56	61	377	33	151	20	35	96
Food	637	18	16	59	6	29	5	6	22	395	9	10	39	5	22	2	2	15
Textiles	240	5	4	41	1	26	8	7	14	116	3	4	17	0	14	1	0	10
Apparel	279	4	2	26	1	12	1	4	20	42	2	0	12	0	3	0	2	7
Leather & footwear	96	2	2	8	0	11	3	0	2	86	0	2	3	0	3	5	2	2
Chemicals & products	234	17	15	48	6	18	4	4	20	113	10	9	29	7	12	0	3	15
Rubber products	141	3	3	16	7	7	1	4	25	98	3	4	10	1	8	1	3	10
Plastics & products	227	3	1	40	5	15	3	4	14	59	1	1	22	2	10	2	4	3
Nonmetallic mineral products	325	11	2	14	4	14	0	1	2	149	7	5	11	2	6	0	2	2
Metal products	252	6	4	37	4	25	4	5	10	107	1	0	28	3	9	0	2	2
General machinery	168	5	2	47	4	12	3	1	7	59	6	2	42	2	3	2	1	7
Electric machinery	131	12	20	114	9	44	9	4	18	60	2	11	70	6	34	2	1	12
Office & computing machinery	2	0	8	7	1	9	1	0	1	2	0	2	4	1	9	0	0	1
Miscellaneous electric machinery	81	3	3	45	3	25	1	0	5	38	2	3	27	2	11	0	1	9
Radio, TV, communication	32	6	7	47	5	8	7	4	8	13	0	5	32	3	11	2	0	2
Precision machinery	16	3	2	15	0	2	0	0	4	7	0	1	7	0	3	0	0	0
Motor vehicles	117	2	3	56	0	3	1	1	4	29	1	1	43	1	2	0	1	1
Furniture	151	2	2	12	0	9	2	2	5	62	1	1	6	0	4	0	0	1
Jewelry	41	14	10	7	2	3	1	1	18	8	2	5	2	0	0	0	2	3
Other manufacturing industries	703	11	24	62	6	43	10	13	21	286	8	6	43	4	21	5	10	6
Beverages	36	0	8	0	1	0	0	0	3	20	0	2	1	1	0	0	0	2
Tobacco	3	2	0	0	0	0	0	1	0	8	0	1	0	0	0	0	0	0
Wood products	189	1	0	6	3	1	0	3	5	93	1	0	3	1	3	0	1	1
Paper products	138	1	3	9	0	9	2	4	4	50	0	1	5	0	5	1	2	2
Printing & publishing	122	2	4	6	1	0	0	0	2	27	1	1	2	1	0	0	0	0
Oil, coal, nuclear, etc.	13	1	2	5	0	0	1	0	1	4	0	0	1	0	0	0	0	0
Basic metals	85	1	1	17	0	3	2	3	2	59	1	1	16	1	1	0	2	1
Misc. transportation machinery	39	1	0	6	1	1	0	1	1	8	2	0	4	0	1	0	0	0
Other misc. manufacturing	78	2	6	13	0	29	5	1	3	17	3	0	11	0	11	4	5	0

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A2a: Number of Production Workers in All Plants by Industry and Country of Major Owner, 1996 and 1998 (thousands)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	793.56	31.790	76.860	258.11	18.639	82.915	15.811	40.887	80.511	391.17	24.460	35.503	153.02	8.477	45.407	8.265	12.892	39.130
Food	148.41	6.218	6.383	30.276	1.554	7.280	1.394	7.534	8.204	98.942	2.830	5.005	15.799	2.144	7.374	0.165	3.186	7.960
Textiles	73.155	0.861	0.616	17.224	0.469	11.215	1.891	9.495	6.383	40.176	1.525	0.624	3.642	0.000	5.221	0.300	0.026	6.093
Apparel	74.848	1.183	1.770	9.211	0.759	3.889	0.303	2.825	17.361	18.495	2.633	0.000	3.613	0.155	1.117	0.000	2.501	6.810
Leather & footwear	32.141	0.529	2.563	2.702	0.000	3.375	2.814	0.031	1.786	31.942	0.000	2.346	0.395	0.000	1.143	0.806	0.419	2.128
Chemicals & products	29.220	1.400	3.929	6.195	0.625	1.620	0.254	1.621	2.321	13.535	1.080	0.496	4.071	0.280	0.913	0.000	0.269	1.007
Rubber products	31.887	1.585	2.081	4.660	1.765	3.447	0.242	0.595	8.338	22.260	1.145	5.164	4.250	0.306	2.249	0.035	0.529	2.163
Plastics & products	44.550	0.370	0.287	8.570	0.454	2.716	0.474	1.681	6.187	14.736	0.494	0.188	6.133	0.702	1.612	0.266	3.299	0.681
Nonmetallic mineral products	58.682	0.640	1.045	3.200	1.089	7.544	0.135	1.921	1.184	28.924	1.772	3.856	5.487	0.458	2.752	0.000	0.235	0.826
Metal products	43.027	0.864	0.461	9.436	1.406	4.859	0.335	8.997	1.340	18.361	0.068	0.300	5.584	0.436	1.677	0.000	0.489	0.234
General machinery	25.460	0.536	0.260	34.152	5.996	4.029	0.779	0.183	2.380	7.671	0.476	1.053	34.342	0.317	0.539	0.497	0.043	3.523
Electric machinery	27.569	10.360	43.108	67.318	3.014	20.327	4.373	0.258	9.563	11.636	9.028	12.159	40.034	2.597	15.048	3.218	0.110	4.424
Office & computing machinery	0.227	0.000	34.563	3.770	0.350	6.884	0.530	0.000	1.106	0.442	0.000	6.831	3.052	0.784	6.967	0.000	0.000	0.093
Miscellaneous electric machinery	14.154	0.194	3.971	22.282	0.241	8.172	0.153	0.000	0.892	5.178	8.924	0.770	13.867	0.850	4.402	0.000	0.110	2.466
Radio, TV, communication	10.091	5.804	3.359	34.342	2.423	4.975	3.690	0.258	5.135	3.103	0.000	4.296	19.123	0.963	3.286	3.218	0.000	1.865
Precision machinery	3.097	4.362	1.215	6.924	0.000	0.296	0.000	0.000	2.430	2.913	0.104	0.262	3.992	0.000	0.393	0.000	0.000	0.000
Motor vehicles	26.983	0.106	0.306	37.219	0.000	0.320	0.108	0.094	0.973	6.908	0.061	0.069	11.390	0.186	0.170	0.000	0.044	0.189
Furniture	34.060	0.209	1.541	4.144	0.037	1.813	0.723	0.587	3.621	25.138	0.150	0.273	2.933	0.000	0.794	0.000	0.000	0.247
Jewelry	7.650	3.740	1.781	0.751	0.409	0.367	0.078	0.080	5.047	2.271	0.265	1.117	0.149	0.000	0.000	0.000	0.376	0.661
Other manufacturing industries	135.91	3.189	10.729	23.054	1.062	10.114	1.908	4.985	5.823	50.171	2.933	2.853	15.199	0.896	4.798	2.978	1.366	2.184

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A2b: Number of Production Workers in Large Plants (Output>=25 million baht by Industry and Country of Major Owner, 1996 and 1998 (thousands)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	670.64	30.778	76.226	254.37	18.157	78.670	15.154	39.823	77.678	333.95	24.005	35.072	151.54	8.163	43.677	8.031	12.240	38.395
Food	135.13	6.137	6.383	29.442	1.480	7.104	1.394	7.425	8.002	90.368	2.830	5.005	15.582	2.144	7.132	0.165	3.125	7.960
Textiles	63.421	0.730	0.616	17.162	0.426	10.868	1.792	9.390	6.260	34.392	1.525	0.624	3.609	0.000	5.139	0.300	0.000	5.867
Apparel	65.376	1.016	1.634	8.863	0.629	3.646	0.185	2.659	16.587	16.320	2.633	0.000	3.613	0.000	1.117	0.000	2.200	6.810
Leather & footwear	28.163	0.529	2.563	2.702	0.000	3.320	2.689	0.000	1.726	29.894	0.000	2.346	0.379	0.000	0.993	0.777	0.419	2.128
Chemicals & products	26.079	1.400	3.849	6.059	0.625	1.514	0.236	1.586	2.321	11.993	1.080	0.479	4.012	0.280	0.745	0.000	0.226	0.978
Rubber products	29.869	1.585	2.081	4.549	1.765	3.055	0.242	0.595	8.322	21.337	1.145	5.164	4.207	0.306	2.186	0.035	0.529	2.163
Plastics & products	37.823	0.341	0.237	8.298	0.394	2.303	0.474	1.606	6.164	12.577	0.460	0.188	6.074	0.702	1.391	0.266	3.270	0.444
Nonmetallic mineral products	45.527	0.558	1.045	3.173	1.089	7.459	0.000	1.752	1.046	22.496	1.621	3.856	5.487	0.458	2.612	0.000	0.160	0.806
Metal products	31.995	0.847	0.332	9.129	1.388	4.429	0.335	8.944	1.340	14.843	0.020	0.000	5.427	0.374	1.496	0.000	0.460	0.179
General machinery	20.171	0.511	0.260	33.813	5.996	3.786	0.779	0.120	2.351	4.861	0.476	1.053	34.342	0.317	0.447	0.497	0.027	3.492
Electric machinery	23.636	10.276	43.028	66.716	2.987	19.994	4.373	0.258	9.502	10.305	8.924	12.159	39.713	2.581	15.020	3.218	0.077	4.407
Office & computing machinery	0.227	0.000	34.483	3.770	0.350	6.830	0.530	0.000	1.106	0.442	0.000	6.831	3.052	0.784	6.967	0.000	0.000	0.093
Miscellaneous electric machinery	11.786	0.194	3.971	22.129	0.241	8.045	0.153	0.000	0.862	4.323	8.924	0.770	13.617	0.850	4.374	0.000	0.077	2.466
Radio, TV, communication	9.249	5.804	3.359	34.029	2.396	4.823	3.690	0.258	5.135	2.814	0.000	4.296	19.089	0.947	3.286	3.218	0.000	1.848
Precision machinery	2.374	4.278	1.215	6.788	0.000	0.296	0.000	0.000	2.399	2.726	0.000	0.262	3.955	0.000	0.393	0.000	0.000	0.000
Motor vehicles	20.602	0.106	0.306	37.118	0.000	0.292	0.108	0.094	0.895	4.948	0.061	0.069	11.342	0.186	0.170	0.000	0.044	0.150
Furniture	25.902	0.209	1.541	3.974	0.000	1.783	0.723	0.491	3.496	16.660	0.150	0.273	2.861	0.000	0.764	0.000	0.000	0.186
Jewelry	6.003	3.419	1.694	0.731	0.353	0.367	0.078	0.080	4.126	1.986	0.171	1.092	0.149	0.000	0.000	0.000	0.337	0.661
Other manufacturing industries	110.93	3.114	10.657	22.638	1.025	8.750	1.746	4.823	5.540	40.973	2.909	2.764	14.743	0.815	4.465	2.773	1.366	2.164

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A3a: Number of Non-Production Workers in All Plants by Industry and Country of Major Owner, 1996 and 1998 (thousands)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	155.43	7.765	27.640	40.530	3.226	11.222	2.529	5.246	16.831	70.427	4.303	8.397	32.957	3.194	6.370	1.175	2.186	6.367
Food	30.786	1.114	1.372	3.761	0.194	0.717	0.109	1.633	1.285	18.088	1.292	0.278	2.510	0.835	1.415	0.043	0.554	1.125
Textiles	10.243	0.114	0.136	1.576	0.067	1.049	0.423	0.902	0.849	4.341	0.122	0.075	0.693	0.000	0.465	0.004	0.001	0.506
Apparel	11.683	0.160	0.500	1.034	0.047	0.589	0.041	0.210	1.942	1.690	0.505	0.000	0.511	0.014	0.035	0.000	0.147	0.679
Leather & footwear	4.560	0.021	0.543	0.468	0.000	0.255	0.088	0.002	0.109	4.678	0.000	0.113	0.064	0.000	0.092	0.137	0.043	0.079
Chemicals & products	11.868	0.914	1.924	2.087	0.343	0.422	0.053	0.409	1.043	4.550	0.795	0.674	1.317	0.332	0.280	0.000	0.035	0.437
Rubber products	3.877	0.303	0.076	0.898	0.171	0.230	0.020	0.098	1.271	2.707	0.410	0.357	0.974	0.028	0.114	0.009	0.078	0.256
Plastics & products	6.162	0.113	0.047	1.515	0.085	0.370	0.053	0.137	1.586	2.686	0.006	0.009	1.053	0.094	0.722	0.017	0.674	0.154
Nonmetallic mineral products	14.316	0.480	0.429	0.726	0.171	1.163	0.020	0.216	0.525	7.075	0.129	1.496	1.466	0.043	0.209	0.000	0.061	0.553
Metal products	6.982	0.248	0.106	1.850	0.173	0.899	0.087	0.964	0.374	3.631	0.032	0.028	0.952	0.130	0.367	0.000	0.159	0.022
General machinery	5.144	0.245	0.259	5.644	0.697	0.386	0.272	0.034	0.283	1.723	0.267	0.097	6.514	0.057	0.092	0.324	0.019	0.279
Electric machinery	7.390	1.542	5.935	11.562	0.973	2.653	0.544	0.046	2.180	2.139	0.041	4.127	7.871	1.443	1.915	0.413	0.016	1.381
Office & computing machinery	0.057	0.000	2.016	0.736	0.014	0.997	0.050	0.000	0.441	0.059	0.000	2.458	1.313	0.038	0.895	0.000	0.000	0.054
Miscellaneous electric machinery	3.619	0.051	2.495	4.495	0.342	1.185	0.025	0.000	0.316	1.170	0.036	0.479	3.040	1.000	0.617	0.000	0.016	0.837
Radio, TV, communication	3.107	1.120	1.096	5.752	0.617	0.441	0.469	0.046	1.146	0.678	0.000	1.088	3.032	0.405	0.324	0.413	0.000	0.490
Precision machinery	0.607	0.371	0.328	0.579	0.000	0.030	0.000	0.000	0.277	0.232	0.005	0.102	0.486	0.000	0.079	0.000	0.000	0.000
Motor vehicles	5.825	0.046	0.103	5.740	0.000	0.031	0.010	0.012	0.377	1.481	0.014	0.006	6.417	0.079	0.015	0.000	0.033	0.102
Furniture	5.137	0.032	0.486	0.204	0.002	1.020	0.125	0.064	0.922	2.644	0.070	0.012	0.217	0.000	0.123	0.000	0.000	0.024
Jewelry	1.490	0.601	0.305	0.082	0.055	0.036	0.019	0.018	0.670	0.806	0.058	0.136	0.041	0.000	0.000	0.000	0.121	0.088
Other manufacturing industries	29.968	1.832	15.419	3.383	0.248	1.402	0.665	0.501	3.415	12.188	0.562	0.989	2.357	0.139	0.526	0.228	0.245	0.682

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A3b: Number of Non-Production Workers in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	133.15	7.638	27.568	39.938	3.168	10.652	2.445	5.063	16.423	59.740	4.203	8.338	32.683	3.128	6.092	1.158	2.092	6.245
Food	27.770	1.106	1.372	3.646	0.192	0.698	0.109	1.614	1.255	15.616	1.292	0.278	2.463	0.835	1.388	0.043	0.535	1.125
Textiles	8.899	0.102	0.136	1.561	0.058	1.006	0.415	0.853	0.838	3.743	0.122	0.075	0.677	0.000	0.456	0.004	0.000	0.504
Apparel	10.296	0.144	0.489	0.998	0.042	0.561	0.030	0.180	1.850	1.446	0.505	0.000	0.511	0.000	0.035	0.000	0.123	0.679
Leather & footwear	3.862	0.021	0.543	0.468	0.000	0.251	0.076	0.000	0.094	4.338	0.000	0.113	0.059	0.000	0.072	0.132	0.043	0.079
Chemicals & products	10.964	0.914	1.913	2.066	0.343	0.380	0.040	0.404	1.043	3.973	0.795	0.659	1.287	0.332	0.256	0.000	0.024	0.435
Rubber products	3.555	0.303	0.076	0.862	0.171	0.198	0.020	0.098	1.257	2.577	0.410	0.357	0.960	0.028	0.111	0.009	0.078	0.256
Plastics & products	4.990	0.109	0.043	1.460	0.079	0.284	0.053	0.128	1.581	2.282	0.004	0.009	1.035	0.094	0.695	0.017	0.669	0.082
Nonmetallic mineral products	12.155	0.471	0.429	0.710	0.171	1.151	0.000	0.208	0.512	5.612	0.101	1.496	1.466	0.043	0.182	0.000	0.045	0.552
Metal products	5.049	0.240	0.096	1.807	0.168	0.853	0.087	0.950	0.374	2.934	0.013	0.000	0.915	0.118	0.317	0.000	0.155	0.014
General machinery	4.125	0.234	0.259	5.578	0.697	0.349	0.272	0.009	0.272	1.217	0.267	0.097	6.514	0.057	0.069	0.324	0.012	0.266
Electric machinery	6.546	1.537	5.932	11.486	0.970	2.565	0.544	0.046	2.168	1.845	0.036	4.127	7.821	1.433	1.906	0.413	0.014	1.366
Office & computing machinery	0.057	0.000	2.013	0.736	0.014	0.986	0.050	0.000	0.441	0.059	0.000	2.458	1.313	0.038	0.895	0.000	0.000	0.054
Miscellaneous electric machinery	3.207	0.051	2.495	4.474	0.342	1.129	0.025	0.000	0.311	1.006	0.036	0.479	3.013	1.000	0.608	0.000	0.014	0.837
Radio, TV, communication	2.863	1.120	1.096	5.718	0.614	0.420	0.469	0.046	1.146	0.581	0.000	1.088	3.015	0.395	0.324	0.413	0.000	0.475
Precision machinery	0.419	0.366	0.328	0.558	0.000	0.030	0.000	0.000	0.270	0.199	0.000	0.102	0.480	0.000	0.079	0.000	0.000	0.000
Motor vehicles	4.608	0.046	0.103	5.722	0.000	0.029	0.010	0.012	0.342	1.101	0.014	0.006	6.402	0.079	0.015	0.000	0.033	0.100
Furniture	3.704	0.032	0.486	0.183	0.000	1.002	0.125	0.051	0.910	2.216	0.070	0.012	0.207	0.000	0.113	0.000	0.000	0.020
Jewelry	1.206	0.555	0.294	0.077	0.042	0.036	0.019	0.018	0.560	0.748	0.038	0.133	0.041	0.000	0.000	0.000	0.116	0.088
Other manufacturing industries	25.416	1.824	15.397	3.314	0.235	1.289	0.645	0.492	3.367	10.092	0.536	0.976	2.325	0.109	0.477	0.216	0.245	0.679

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A4a: Fixed Asset Stocks in All Plants by Industry and Country of Major Owner, 1996 and 1998
(average of values at 1 January and at 31 December, billion baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	613.91	33.53	106.06	355.64	15.42	65.25	12.81	14.63	73.51	315.37	31.40	38.12	267.78	17.67	21.77	10.01	5.99	55.29
Food	79.43	4.79	7.52	15.14	1.17	2.16	0.47	2.33	5.21	53.44	2.04	1.60	12.60	7.26	2.33	0.11	0.73	4.69
Textiles	33.41	1.13	1.01	14.84	0.09	20.37	1.10	3.63	17.69	16.75	1.59	1.32	7.30	0.00	3.73	5.19	0.00	6.72
Apparel	11.34	0.43	0.15	1.83	0.25	0.50	0.01	0.53	1.70	2.48	1.21	0.00	0.61	0.01	0.29	0.00	1.25	0.97
Leather & footwear	5.86	0.05	1.13	0.67	0.00	0.97	0.11	0.01	0.32	9.36	0.00	0.45	0.06	0.00	0.19	0.07	0.10	0.58
Chemicals & products	40.53	8.04	8.37	25.80	2.84	2.61	0.26	0.57	5.74	65.08	12.19	4.77	13.78	2.95	0.79	0.00	0.21	4.95
Rubber products	15.70	3.41	0.79	7.29	0.31	1.11	0.17	0.09	3.73	8.83	0.60	2.92	15.37	0.04	1.20	0.02	0.23	1.16
Plastics & products	22.34	0.11	0.02	8.98	0.24	1.15	0.66	0.51	4.66	8.24	0.14	0.01	3.74	0.33	0.69	0.04	0.80	0.20
Nonmetallic mineral products	55.39	0.51	1.09	6.96	0.21	14.87	0.08	2.68	1.56	46.52	3.12	10.11	45.08	0.09	0.80	0.00	0.21	13.71
Metal products	18.07	1.00	0.56	18.45	2.14	6.87	0.26	1.90	0.85	10.40	0.49	0.01	11.99	0.80	1.16	0.00	1.47	0.06
General machinery	67.31	0.42	0.07	38.07	3.72	1.73	0.83	0.03	2.34	4.40	0.45	0.32	53.79	0.12	0.24	1.33	0.01	0.88
Electric machinery	12.37	8.64	18.96	121.93	2.75	7.77	3.80	0.08	6.13	6.49	2.11	14.93	40.02	4.23	8.26	2.04	0.09	3.13
Office & computing machinery	0.02	0.00	9.41	2.49	0.27	2.72	0.36	0.00	0.75	0.06	0.00	8.91	2.57	0.46	3.09	0.00	0.00	0.27
Miscellaneous electric machinery	6.87	0.47	4.57	22.18	0.30	3.82	0.22	0.00	0.92	3.06	2.11	3.80	9.28	2.13	3.70	0.00	0.09	1.89
Radio, TV, communication	4.97	7.16	3.76	92.93	2.18	1.06	3.22	0.08	3.18	2.04	0.00	2.15	24.29	1.64	1.18	2.04	0.00	0.96
Precision machinery	0.51	1.01	1.22	4.34	0.00	0.18	0.00	0.00	1.29	1.32	0.00	0.07	3.88	0.00	0.29	0.00	0.00	0.00
Motor vehicles	23.38	0.12	0.43	78.53	0.00	0.19	0.37	0.03	0.48	6.39	0.10	0.01	46.21	0.23	0.12	0.00	0.01	0.07
Furniture	7.76	0.03	0.21	1.08	0.00	0.67	0.25	0.10	1.29	5.22	0.14	0.01	0.77	0.00	0.15	0.00	0.00	0.07
Jewelry	1.90	0.50	0.37	0.32	0.10	0.04	0.01	0.00	0.56	0.82	0.07	0.22	0.22	0.00	0.00	0.00	0.02	0.16
Other manufacturing industries	219.12	4.38	65.37	15.76	1.60	4.22	4.41	2.14	21.24	70.96	7.12	1.44	16.24	1.61	1.82	1.20	0.87	17.96

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A4b: Fixed Asset Stocks in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998
(average of values at 1 January and at 31 December, billion baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	579.39	33.34	105.96	293.89	15.19	63.86	12.62	14.35	72.90	293.99	31.25	38.10	266.68	17.53	21.24	9.99	5.77	55.07
Food	74.00	4.78	7.52	14.77	1.17	2.10	0.47	2.32	5.08	48.21	2.04	1.60	12.56	7.26	2.26	0.11	0.71	4.69
Textiles	30.90	1.12	1.01	14.79	0.08	20.28	1.08	3.56	17.62	15.56	1.59	1.32	7.25	0.00	3.70	5.19	0.00	6.71
Apparel	9.91	0.41	0.14	1.78	0.24	0.50	0.00	0.47	1.63	2.28	1.21	0.00	0.61	0.00	0.29	0.00	1.20	0.97
Leather & footwear	5.32	0.05	1.13	0.67	0.00	0.95	0.10	0.00	0.31	9.13	0.00	0.45	0.05	0.00	0.18	0.06	0.10	0.58
Chemicals & products	39.35	8.04	8.36	25.77	2.84	2.55	0.22	0.55	5.74	64.24	12.19	4.76	13.76	2.95	0.76	0.00	0.12	4.94
Rubber products	14.85	3.41	0.79	7.16	0.31	1.00	0.17	0.09	3.71	8.58	0.60	2.92	15.27	0.04	1.19	0.02	0.23	1.16
Plastics & products	20.23	0.11	0.01	8.79	0.20	1.02	0.66	0.48	4.66	7.41	0.14	0.01	3.66	0.33	0.61	0.04	0.79	0.14
Nonmetallic mineral products	50.50	0.51	1.09	6.72	0.21	14.84	0.00	2.65	1.52	42.63	3.11	10.11	45.08	0.09	0.71	0.00	0.17	13.68
Metal products	15.06	0.98	0.56	18.39	2.12	6.78	0.26	1.88	0.85	9.39	0.41	0.00	11.76	0.77	1.12	0.00	1.47	0.02
General machinery	65.90	0.42	0.07	37.93	3.72	1.58	0.83	0.02	2.34	3.17	0.45	0.32	53.79	0.12	0.21	1.33	0.01	0.87
Electric machinery	11.28	8.58	18.96	61.61	2.64	7.63	3.80	0.08	6.10	6.06	2.11	14.93	39.66	4.22	8.20	2.04	0.08	3.10
Office & computing machinery	0.02	0.00	9.40	2.49	0.27	2.68	0.36	0.00	0.75	0.06	0.00	8.91	2.57	0.46	3.09	0.00	0.00	0.27
Miscellaneous electric machinery	6.29	0.47	4.57	22.06	0.30	3.80	0.22	0.00	0.90	2.82	2.11	3.80	8.95	2.13	3.64	0.00	0.08	1.89
Radio, TV, communication	4.61	7.16	3.76	32.73	2.07	0.97	3.22	0.08	3.18	1.94	0.00	2.15	24.27	1.63	1.18	2.04	0.00	0.93
Precision machinery	0.37	0.95	1.22	4.32	0.00	0.18	0.00	0.00	1.27	1.24	0.00	0.07	3.88	0.00	0.29	0.00	0.00	0.00
Motor vehicles	21.13	0.12	0.43	78.49	0.00	0.19	0.37	0.03	0.41	5.05	0.10	0.01	46.16	0.23	0.12	0.00	0.01	0.02
Furniture	6.58	0.03	0.21	1.06	0.00	0.66	0.25	0.10	1.27	4.46	0.14	0.01	0.76	0.00	0.15	0.00	0.00	0.07
Jewelry	1.64	0.46	0.31	0.32	0.08	0.04	0.01	0.00	0.49	0.79	0.04	0.22	0.22	0.00	0.00	0.00	0.02	0.16
Other manufacturing industries	212.74	4.35	65.37	15.66	1.58	3.76	4.39	2.10	21.16	67.04	7.10	1.43	16.07	1.52	1.74	1.18	0.87	17.95

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A5a: Intermediate Comsumption in All Plants by Industry and Country of Major Owner, 1996 and 1998 (billion baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	766.90	90.39	194.57	601.50	26.33	90.38	17.71	32.27	88.21	394.61	28.08	40.79	315.36	17.77	43.23	12.04	10.03	59.05
Food	183.46	8.19	8.57	31.58	4.54	6.96	0.75	9.69	13.45	127.64	3.81	2.67	23.91	3.54	7.98	0.12	3.11	16.62
Textiles	35.36	0.45	1.35	21.01	0.23	17.79	1.49	5.61	7.68	17.67	0.69	0.70	4.42	0.00	3.99	0.40	0.00	4.18
Apparel	27.52	0.71	0.51	4.41	1.95	1.48	0.04	0.76	7.51	4.50	3.38	0.00	1.53	0.01	0.84	0.00	2.71	3.82
Leather & footwear	12.35	0.22	2.18	2.37	0.00	1.91	0.23	0.02	0.43	24.44	0.00	0.85	0.12	0.00	0.59	0.28	0.39	1.01
Chemicals & products	42.44	24.71	10.72	24.00	1.59	2.40	0.19	3.01	6.76	44.24	9.41	2.56	13.31	1.21	5.10	0.00	0.22	2.92
Rubber products	51.99	2.11	0.94	11.24	4.84	6.59	0.41	1.36	8.33	29.56	0.49	3.47	11.39	1.01	1.52	0.11	0.24	5.39
Plastics & products	28.75	0.30	0.03	9.74	0.22	1.46	0.60	0.52	3.97	9.18	0.16	0.02	2.45	0.44	1.27	0.14	0.77	0.30
Nonmetallic mineral products	43.91	1.73	0.81	3.38	0.45	14.98	0.01	2.01	2.56	18.96	2.78	10.29	17.96	0.16	0.99	0.00	0.10	2.51
Metal products	29.31	0.96	0.99	29.04	2.31	6.32	0.23	2.69	0.82	13.31	0.15	0.00	13.82	1.00	1.76	0.00	1.24	0.04
General machinery	22.36	0.86	0.99	59.49	5.47	3.00	2.65	0.08	2.67	4.17	0.71	0.51	52.84	0.33	0.64	3.43	0.03	1.84
Electric machinery	27.37	14.28	79.15	112.52	2.64	19.71	6.89	0.15	17.77	6.73	0.53	14.30	80.84	7.30	15.52	6.69	0.10	12.38
Office & computing machinery	0.05	0.00	51.18	9.90	0.09	10.07	0.10	0.00	5.17	0.53	0.00	1.93	16.17	0.17	7.59	0.00	0.00	0.15
Miscellaneous electric machinery	16.27	0.84	19.89	32.11	1.07	6.66	0.06	0.00	2.32	3.34	0.52	1.71	17.78	2.00	4.59	0.00	0.10	2.73
Radio, TV, communication	9.62	12.47	6.84	66.08	1.48	2.91	6.73	0.15	9.28	1.18	0.00	10.51	41.90	5.14	2.69	6.69	0.00	9.50
Precision machinery	1.43	0.97	1.25	4.44	0.00	0.07	0.00	0.00	1.01	1.68	0.01	0.15	4.99	0.00	0.66	0.00	0.00	0.00
Motor vehicles	29.62	0.14	0.40	257.21	0.00	0.13	0.26	0.02	3.25	6.15	0.04	0.07	64.07	0.44	0.07	0.00	0.02	0.05
Furniture	14.41	0.05	0.74	1.74	0.00	1.87	0.44	0.35	1.55	6.22	0.03	0.02	0.66	0.00	0.27	0.00	0.00	0.12
Jewelry	8.82	2.47	1.14	0.99	0.57	0.21	0.06	0.02	2.92	2.17	0.07	0.64	0.16	0.00	0.00	0.00	0.16	0.64
Other manufacturing industries	209.22	33.20	86.05	32.79	1.52	5.57	3.48	5.99	8.54	79.67	5.84	4.68	27.88	2.32	2.68	0.87	0.93	7.22

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A5b: Intermediate Comsumption in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (billion baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	743.28	90.21	194.48	600.83	26.24	89.62	17.60	32.05	87.86	385.21	28.02	40.78	315.12	17.72	42.93	12.01	9.95	58.95
Food	180.24	8.17	8.57	31.45	4.54	6.92	0.75	9.64	13.42	125.46	3.81	2.67	23.87	3.54	7.98	0.12	3.09	16.62
Textiles	33.84	0.43	1.35	20.99	0.21	17.72	1.46	5.57	7.64	16.94	0.69	0.70	4.41	0.00	3.98	0.40	0.00	4.17
Apparel	26.14	0.68	0.50	4.38	1.94	1.46	0.02	0.75	7.45	4.33	3.38	0.00	1.53	0.00	0.84	0.00	2.70	3.82
Leather & footwear	11.68	0.22	2.18	2.37	0.00	1.89	0.21	0.00	0.42	24.23	0.00	0.85	0.12	0.00	0.57	0.27	0.39	1.01
Chemicals & products	41.48	24.71	10.70	23.95	1.59	2.35	0.18	3.00	6.76	43.85	9.41	2.56	13.28	1.21	5.06	0.00	0.21	2.92
Rubber products	51.53	2.11	0.94	11.22	4.84	6.57	0.41	1.36	8.32	29.27	0.49	3.47	11.38	1.01	1.51	0.11	0.24	5.39
Plastics & products	27.07	0.30	0.01	9.67	0.22	1.37	0.60	0.50	3.96	8.71	0.15	0.02	2.43	0.44	1.23	0.14	0.76	0.27
Nonmetallic mineral products	41.91	1.73	0.81	3.37	0.45	14.96	0.00	2.00	2.54	17.77	2.77	10.29	17.96	0.16	0.97	0.00	0.09	2.51
Metal products	27.03	0.96	0.98	29.01	2.30	6.23	0.23	2.68	0.82	12.59	0.13	0.00	13.79	0.98	1.72	0.00	1.24	0.02
General machinery	21.13	0.85	0.99	59.41	5.47	2.93	2.65	0.04	2.66	3.71	0.71	0.51	52.84	0.33	0.60	3.43	0.03	1.83
Electric machinery	26.56	14.27	79.14	112.40	2.62	19.63	6.89	0.15	17.75	6.48	0.52	14.30	80.80	7.30	15.51	6.69	0.10	12.37
Office & computing machinery	0.05	0.00	51.17	9.90	0.09	10.05	0.10	0.00	5.17	0.53	0.00	1.93	16.17	0.17	7.59	0.00	0.00	0.15
Miscellaneous electric machinery	15.79	0.84	19.89	32.07	1.07	6.63	0.06	0.00	2.30	3.19	0.52	1.71	17.77	2.00	4.58	0.00	0.10	2.73
Radio, TV, communication	9.44	12.47	6.84	66.02	1.47	2.88	6.73	0.15	9.28	1.11	0.00	10.51	41.89	5.13	2.69	6.69	0.00	9.49
Precision machinery	1.28	0.96	1.25	4.41	0.00	0.07	0.00	0.00	1.00	1.65	0.00	0.15	4.98	0.00	0.66	0.00	0.00	0.00
Motor vehicles	28.36	0.14	0.40	257.20	0.00	0.13	0.26	0.02	3.22	5.78	0.04	0.07	64.05	0.44	0.07	0.00	0.02	0.04
Furniture	13.22	0.05	0.74	1.71	0.00	1.86	0.44	0.34	1.54	5.92	0.03	0.02	0.65	0.00	0.27	0.00	0.00	0.12
Jewelry	8.60	2.41	1.14	0.97	0.55	0.21	0.06	0.02	2.86	2.14	0.06	0.64	0.16	0.00	0.00	0.00	0.16	0.64
Other manufacturing industries	204.48	33.17	86.04	32.74	1.50	5.41	3.46	5.96	8.50	78.04	5.82	4.68	27.83	2.30	2.61	0.84	0.93	7.22

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A6a: Gross Output in All Plants by Industry and Country of Major Owner, 1996 and 1998 (billion baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	1,145	124.64	240.12	852.39	35.34	125.56	25.66	45.51	123.32	559.40	46.04	66.56	445.04	24.12	63.54	16.32	14.20	93.76
Food	255.68	10.44	11.66	42.35	5.10	8.81	1.18	11.37	17.33	167.78	5.24	4.65	31.93	4.58	9.97	0.17	3.54	20.41
Textiles	49.90	0.63	1.65	31.05	0.32	20.19	2.50	7.58	9.74	30.05	1.69	1.02	7.25	0.00	6.02	0.58	0.00	6.88
Apparel	39.67	0.98	0.61	6.77	2.36	2.35	0.08	1.15	9.74	8.10	5.73	0.00	2.24	0.01	1.59	0.00	4.31	5.31
Leather & footwear	19.50	0.35	2.39	3.11	0.00	2.27	0.95	0.02	0.78	34.31	0.00	1.11	0.27	0.00	0.92	0.44	0.43	1.61
Chemicals & products	64.74	28.42	16.08	39.67	3.19	3.48	0.36	3.76	9.23	55.64	14.30	4.43	18.11	1.86	6.06	0.00	0.35	4.31
Rubber products	69.38	7.19	1.70	14.59	7.40	7.20	0.45	1.73	10.43	36.43	1.03	6.58	15.39	1.15	3.32	0.13	0.36	6.50
Plastics & products	40.80	0.38	0.04	13.37	0.33	1.94	0.84	0.90	6.12	15.22	0.32	0.04	4.19	0.62	1.90	0.23	1.32	0.47
Nonmetallic mineral products	69.17	2.54	1.83	5.27	0.70	18.55	0.04	3.80	2.86	32.00	6.76	16.24	25.56	0.31	2.39	0.00	0.19	3.94
Metal products	40.03	1.29	1.35	37.35	2.84	8.56	0.62	5.67	2.04	19.05	0.23	0.01	18.15	1.28	2.72	0.00	1.81	0.09
General machinery	31.36	1.49	1.12	77.93	6.60	4.34	3.38	0.10	3.73	6.49	1.18	0.80	78.83	0.45	0.84	4.14	0.06	3.50
Electric machinery	38.85	18.76	92.71	163.99	3.98	37.83	9.25	0.25	24.98	10.86	2.13	23.06	107.13	10.26	23.47	9.01	0.14	16.00
Office & computing machinery	0.13	0.00	59.23	11.45	0.20	23.02	0.65	0.00	5.93	0.72	0.00	7.79	19.90	0.65	11.95	0.00	0.00	0.20
Miscellaneous electric machinery	21.01	1.40	23.19	50.83	1.17	11.01	0.24	0.00	2.59	4.98	2.11	2.08	24.63	3.64	6.57	0.00	0.14	5.06
Radio, TV, communication	15.17	16.08	8.81	88.30	2.61	3.69	8.36	0.25	14.95	2.40	0.00	12.94	55.60	5.97	4.10	9.01	0.00	10.73
Precision machinery	2.53	1.27	1.48	13.42	0.00	0.11	0.00	0.00	1.52	2.76	0.02	0.25	7.00	0.00	0.84	0.00	0.00	0.00
Motor vehicles	43.36	0.17	0.73	370.74	0.00	0.25	0.26	0.03	4.89	8.05	0.07	0.09	96.81	0.64	0.12	0.00	0.03	0.13
Furniture	22.30	0.07	0.86	2.29	0.02	2.39	0.96	0.43	2.22	9.87	0.05	0.04	0.95	0.00	0.47	0.00	0.00	0.13
Jewelry	12.76	3.40	1.68	1.19	0.65	0.26	0.10	0.03	5.14	3.16	0.15	1.02	0.22	0.00	0.00	0.00	0.26	0.92
Other manufacturing industries	347.82	48.55	105.71	42.73	1.86	7.14	4.68	8.68	14.10	122.39	7.14	7.48	38.00	2.96	3.75	1.63	1.39	23.56

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A6b: Gross Output in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (billion baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	1,106	124.32	239.98	851.34	35.19	124.26	25.46	45.16	122.77	544.16	45.91	66.51	444.60	24.04	63.04	16.27	14.04	93.56
Food	250.76	10.42	11.66	42.16	5.09	8.75	1.18	11.32	17.29	164.54	5.24	4.65	31.87	4.58	9.96	0.17	3.52	20.41
Textiles	47.32	0.60	1.65	31.02	0.30	20.07	2.46	7.53	9.69	28.93	1.69	1.02	7.23	0.00	6.00	0.58	0.00	6.86
Apparel	37.23	0.92	0.59	6.70	2.34	2.31	0.04	1.11	9.62	7.78	5.73	0.00	2.24	0.00	1.59	0.00	4.27	5.31
Leather & footwear	18.33	0.35	2.39	3.11	0.00	2.24	0.91	0.00	0.76	33.92	0.00	1.11	0.26	0.00	0.91	0.43	0.43	1.61
Chemicals & products	63.30	28.42	16.05	39.61	3.19	3.39	0.34	3.74	9.23	54.95	14.30	4.41	18.09	1.86	6.01	0.00	0.33	4.30
Rubber products	68.69	7.19	1.70	14.56	7.40	7.16	0.45	1.73	10.41	36.02	1.03	6.58	15.38	1.15	3.30	0.13	0.36	6.50
Plastics & products	38.19	0.37	0.03	13.27	0.33	1.78	0.84	0.87	6.11	14.52	0.32	0.04	4.16	0.62	1.82	0.23	1.31	0.40
Nonmetallic mineral products	65.57	2.53	1.83	5.26	0.70	18.52	0.00	3.78	2.82	30.03	6.74	16.24	25.56	0.31	2.35	0.00	0.17	3.94
Metal products	36.25	1.28	1.33	37.28	2.83	8.42	0.62	5.66	2.04	17.80	0.19	0.00	18.08	1.25	2.64	0.00	1.81	0.07
General machinery	29.35	1.48	1.12	77.79	6.60	4.24	3.38	0.06	3.71	5.66	1.18	0.80	78.83	0.45	0.79	4.14	0.06	3.48
Electric machinery	37.47	18.73	92.69	163.82	3.96	37.67	9.25	0.25	24.94	10.38	2.11	23.06	107.05	10.24	23.45	9.01	0.13	15.98
Office & computing machinery	0.13	0.00	59.22	11.45	0.20	22.98	0.65	0.00	5.93	0.72	0.00	7.79	19.90	0.65	11.95	0.00	0.00	0.20
Miscellaneous electric machinery	20.19	1.40	23.19	50.78	1.17	10.95	0.24	0.00	2.57	4.69	2.11	2.08	24.58	3.64	6.55	0.00	0.13	5.06
Radio, TV, communication	14.90	16.08	8.81	88.22	2.59	3.63	8.36	0.25	14.95	2.27	0.00	12.94	55.58	5.95	4.10	9.01	0.00	10.72
Precision machinery	2.24	1.24	1.48	13.37	0.00	0.11	0.00	0.00	1.50	2.70	0.00	0.25	6.99	0.00	0.84	0.00	0.00	0.00
Motor vehicles	41.05	0.17	0.73	370.71	0.00	0.24	0.26	0.03	4.86	7.42	0.07	0.09	96.79	0.64	0.12	0.00	0.03	0.10
Furniture	20.36	0.07	0.86	2.26	0.00	2.37	0.96	0.41	2.21	9.42	0.05	0.04	0.94	0.00	0.46	0.00	0.00	0.12
Jewelry	12.37	3.29	1.66	1.17	0.63	0.26	0.10	0.03	5.06	3.11	0.12	1.01	0.22	0.00	0.00	0.00	0.25	0.92
Other manufacturing industries	340.08	48.52	105.69	42.63	1.84	6.85	4.65	8.65	14.03	119.67	7.13	7.47	37.92	2.92	3.64	1.59	1.39	23.56

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A7a: Value Added in All Plants by Industry and Country of Major Owner, 1996 and 1998 (billion baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	378.40	34.25	45.55	250.89	9.01	35.18	7.94	13.23	35.11	164.79	17.95	25.78	129.68	6.35	20.31	4.28	4.18	34.70
Food	72.22	2.25	3.09	10.76	0.55	1.85	0.43	1.68	3.89	40.14	1.43	1.98	8.02	1.04	1.98	0.05	0.43	3.79
Textiles	14.53	0.18	0.31	10.05	0.09	2.40	1.01	1.97	2.06	12.39	0.99	0.32	2.82	0.00	2.03	0.18	0.00	2.70
Apparel	12.15	0.27	0.10	2.36	0.41	0.87	0.04	0.39	2.23	3.60	2.35	0.00	0.70	0.00	0.74	0.00	1.60	1.49
Leather & footwear	7.14	0.12	0.21	0.73	0.00	0.36	0.72	0.01	0.35	9.87	0.00	0.26	0.15	0.00	0.33	0.16	0.03	0.59
Chemicals & products	22.29	3.70	5.36	15.67	1.60	1.08	0.17	0.75	2.47	11.41	4.90	1.86	4.81	0.66	0.96	0.00	0.13	1.39
Rubber products	17.39	5.08	0.77	3.35	2.56	0.61	0.04	0.37	2.09	6.87	0.54	3.11	4.00	0.14	1.80	0.02	0.12	1.11
Plastics & products	12.05	0.08	0.02	3.63	0.11	0.49	0.24	0.37	2.15	6.04	0.17	0.02	1.74	0.19	0.63	0.09	0.55	0.17
Nonmetallic mineral products	25.26	0.80	1.02	1.89	0.25	3.57	0.03	1.79	0.30	13.03	3.98	5.94	7.60	0.14	1.40	0.00	0.09	1.43
Metal products	10.72	0.32	0.36	8.31	0.53	2.24	0.39	2.98	1.22	5.74	0.08	0.01	4.33	0.28	0.96	0.00	0.57	0.05
General machinery	9.00	0.63	0.13	18.44	1.13	1.34	0.73	0.02	1.06	2.31	0.47	0.29	25.99	0.12	0.20	0.71	0.03	1.66
Electric machinery	11.47	4.48	13.56	51.47	1.34	18.12	2.36	0.10	7.21	4.12	1.59	8.76	26.29	2.95	7.94	2.31	0.04	3.62
Office & computing machinery	0.08	0.00	8.06	1.55	0.11	12.95	0.55	0.00	0.76	0.19	0.00	5.87	3.73	0.48	4.36	0.00	0.00	0.05
Miscellaneous electric machinery	4.74	0.56	3.30	18.72	0.10	4.35	0.18	0.00	0.27	1.64	1.59	0.37	6.86	1.64	1.98	0.00	0.04	2.33
Radio, TV, communication	5.55	3.61	1.97	22.22	1.13	0.78	1.63	0.10	5.67	1.22	0.00	2.42	13.70	0.83	1.41	2.31	0.00	1.23
Precision machinery	1.10	0.30	0.22	8.98	0.00	0.04	0.00	0.00	0.50	1.07	0.01	0.09	2.00	0.00	0.19	0.00	0.00	0.00
Motor vehicles	13.74	0.02	0.34	113.53	0.00	0.11	0.01	0.01	1.64	1.90	0.04	0.02	32.75	0.20	0.06	0.00	0.01	0.07
Furniture	7.89	0.03	0.11	0.55	0.01	0.52	0.52	0.08	0.67	3.65	0.02	0.02	0.29	0.00	0.20	0.00	0.00	0.01
Jewelry	3.93	0.93	0.54	0.20	0.09	0.05	0.05	0.01	2.22	0.99	0.09	0.37	0.06	0.00	0.00	0.00	0.10	0.29
Other manufacturing industries	138.60	15.36	19.65	9.94	0.34	1.57	1.20	2.69	5.56	42.72	1.30	2.80	10.11	0.63	1.07	0.76	0.47	16.34

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A7b: Value Added in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (billion baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	363.03	34.11	45.50	250.51	8.95	34.64	7.86	13.11	34.91	158.95	17.89	25.74	129.48	6.32	20.11	4.26	4.09	34.62
Food	70.52	2.25	3.09	10.71	0.55	1.84	0.43	1.68	3.87	39.08	1.43	1.98	8.00	1.04	1.98	0.05	0.42	3.79
Textiles	13.49	0.17	0.31	10.03	0.08	2.35	1.01	1.96	2.05	11.99	0.99	0.32	2.82	0.00	2.02	0.18	0.00	2.69
Apparel	11.09	0.24	0.09	2.32	0.40	0.85	0.03	0.36	2.17	3.46	2.35	0.00	0.70	0.00	0.74	0.00	1.57	1.49
Leather & footwear	6.65	0.12	0.21	0.73	0.00	0.35	0.71	0.00	0.34	9.70	0.00	0.26	0.14	0.00	0.33	0.16	0.03	0.59
Chemicals & products	21.81	3.70	5.35	15.66	1.60	1.04	0.16	0.74	2.47	11.10	4.90	1.85	4.80	0.66	0.95	0.00	0.12	1.38
Rubber products	17.16	5.08	0.77	3.34	2.56	0.59	0.04	0.37	2.09	6.75	0.54	3.11	4.00	0.14	1.79	0.02	0.12	1.11
Plastics & products	11.12	0.07	0.01	3.60	0.11	0.41	0.24	0.37	2.15	5.81	0.16	0.02	1.73	0.19	0.59	0.09	0.55	0.13
Nonmetallic mineral products	23.67	0.80	1.02	1.89	0.25	3.56	0.00	1.77	0.28	12.27	3.96	5.94	7.60	0.14	1.38	0.00	0.08	1.43
Metal products	9.22	0.32	0.35	8.27	0.53	2.19	0.39	2.97	1.22	5.22	0.06	0.00	4.29	0.27	0.92	0.00	0.57	0.04
General machinery	8.22	0.62	0.13	18.38	1.13	1.31	0.73	0.01	1.06	1.95	0.47	0.29	25.99	0.12	0.19	0.71	0.03	1.65
Electric machinery	10.91	4.46	13.55	51.41	1.33	18.04	2.36	0.10	7.20	3.90	1.59	8.76	26.25	2.94	7.94	2.31	0.04	3.61
Office & computing machinery	0.08	0.00	8.05	1.55	0.11	12.93	0.55	0.00	0.76	0.19	0.00	5.87	3.73	0.48	4.36	0.00	0.00	0.05
Miscellaneous electric machinery	4.41	0.56	3.30	18.71	0.10	4.32	0.18	0.00	0.27	1.50	1.59	0.37	6.82	1.64	1.98	0.00	0.04	2.33
Radio, TV, communication	5.46	3.61	1.97	22.19	1.12	0.76	1.63	0.10	5.67	1.17	0.00	2.42	13.70	0.82	1.41	2.31	0.00	1.23
Precision machinery	0.96	0.29	0.22	8.96	0.00	0.04	0.00	0.00	0.50	1.05	0.00	0.09	2.00	0.00	0.19	0.00	0.00	0.00
Motor vehicles	12.68	0.02	0.34	113.51	0.00	0.11	0.01	0.01	1.63	1.64	0.04	0.02	32.73	0.20	0.06	0.00	0.01	0.06
Furniture	7.14	0.03	0.11	0.55	0.00	0.51	0.52	0.08	0.67	3.50	0.02	0.02	0.29	0.00	0.19	0.00	0.00	0.01
Jewelry	3.76	0.88	0.53	0.20	0.08	0.05	0.05	0.01	2.20	0.97	0.07	0.36	0.06	0.00	0.00	0.00	0.09	0.29
Other manufacturing industries	135.59	15.34	19.65	9.89	0.33	1.44	1.20	2.69	5.52	41.63	1.30	2.79	10.09	0.62	1.03	0.75	0.47	16.34

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A8a: Mean Number of Hours in Operation in All Plants by Industry and Country of Major Owner, 1996 and 1998

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	3,031	3,831	4,304	4,258	4,429	3,655	3,592	3,800	3,934	2,991	3,413	3,941	3,707	3,964	3,414	2,981	3,343	3,596
Food	3,474	4,187	3,786	3,911	5,302	3,762	3,340	3,700	4,407	3,437	3,649	2,506	3,939	3,769	2,836	2,240	2,230	3,462
Textiles	3,642	3,055	4,052	6,022	4,650	5,408	5,172	5,320	5,542	3,646	2,549	5,546	5,608	-	5,233	2,400	2,400	3,230
Apparel	2,692	2,731	2,871	3,081	3,300	2,421	2,331	2,546	2,669	2,750	2,400	-	2,839	7,200	2,397	-	2,326	2,406
Leather & footwear	2,518	3,580	4,796	2,327	-	2,924	3,417	2,240	3,386	2,605	-	4,920	2,320	-	4,042	2,607	2,404	2,679
Chemicals & products	3,088	5,495	4,424	4,614	6,976	3,546	3,354	3,264	4,467	3,225	3,946	4,392	4,285	3,841	3,846	-	5,224	3,937
Rubber products	3,517	7,456	7,488	5,780	4,214	4,177	704	3,743	4,975	3,145	4,256	5,232	5,706	2,504	3,410	2,400	5,037	4,251
Plastics & products	4,191	6,048	2,400	5,171	5,511	4,466	4,192	3,344	5,808	4,197	4,956	2,400	4,783	4,674	4,411	4,824	4,322	3,481
Nonmetallic mineral products	2,836	3,781	7,980	4,434	4,130	3,462	2,280	6,216	3,904	2,655	3,172	2,915	4,226	4,816	2,648	-	3,968	5,899
Metal products	2,626	4,639	3,055	4,125	4,423	3,318	3,679	4,135	3,600	2,582	2,549	6,336	3,640	3,528	2,849	-	2,885	2,689
General machinery	2,605	2,744	2,400	3,947	2,212	2,889	2,480	2,668	3,213	2,404	3,478	3,478	2,937	2,108	2,431	2,268	2,352	2,464
Electric machinery	2,863	4,081	5,613	4,498	5,034	3,995	3,532	3,257	4,152	2,898	4,467	5,554	3,768	5,211	3,390	5,560	5,456	3,758
Office & computing machinery	3,946	-	5,096	5,837	6,600	3,164	2,496	-	2,259	2,432	-	6,600	2,516	7,200	3,054	-	-	2,400
Miscellaneous electric machinery	2,773	2,659	6,765	4,081	4,104	4,227	5,552	-	3,657	2,805	5,240	5,939	3,340	4,600	3,036	-	5,456	4,594
Radio, TV, communication	3,244	4,418	4,986	5,046	5,239	4,465	3,392	3,257	5,480	2,642	-	4,671	4,528	5,020	4,325	5,560	-	1,704
Precision machinery	2,608	4,643	8,400	3,554	-	2,256	-	-	3,000	3,946	2,920	6,720	2,862	-	2,379	-	-	-
Motor vehicles	2,567	2,288	3,200	3,354	-	4,078	7,080	2,336	2,941	2,357	4,800	2,288	2,533	4,128	2,228	-	1,920	2,332
Furniture	2,471	2,396	2,400	3,227	2,376	3,686	2,490	2,300	2,113	2,364	2,400	3,120	2,435	-	2,355	-	-	2,360
Jewelry	2,540	2,391	2,659	2,308	2,389	2,685	2,400	2,400	2,425	2,509	2,374	2,383	2,239	-	-	-	2,448	1,683
Other manufacturing industries	2,907	3,404	4,619	4,057	2,954	2,948	3,484	4,453	3,656	2,710	3,001	3,390	3,603	3,095	3,163	2,664	3,077	6,528

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table A8b: Mean Number of Hours in Operation in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	3,335	4,107	4,481	4,430	4,728	3,868	3,683	4,294	4,145	3,273	3,557	3,957	3,776	3,873	3,461	3,096	3,595	3,751
Food	3,517	4,288	3,786	4,058	5,781	3,899	3,340	4,357	4,474	3,438	3,649	2,506	4,181	3,769	2,849	2,240	2,572	3,462
Textiles	4,416	3,509	4,052	6,197	6,900	5,953	5,066	6,466	5,502	4,467	2,549	5,546	5,797	-	5,644	2,400	-	3,314
Apparel	2,780	2,840	2,420	3,192	4,200	2,461	2,400	2,400	2,680	2,947	2,400	-	2,839	-	2,397	-	2,432	2,406
Leather & footwear	2,623	3,580	4,796	2,327	-	3,014	2,777	-	4,412	2,687	-	4,920	2,258	-	3,683	2,670	2,404	2,679
Chemicals & products	3,339	5,495	4,694	4,828	6,976	3,824	3,672	3,466	4,467	3,682	3,946	4,311	4,457	3,841	4,277	-	6,120	4,015
Rubber products	3,657	7,456	7,488	6,207	4,214	4,711	704	3,743	5,078	3,346	4,256	5,232	6,045	2,504	3,538	2,400	5,037	4,251
Plastics & products	4,822	7,264	2,400	5,316	6,152	4,359	4,192	3,826	6,063	4,864	7,512	2,400	5,016	4,674	4,810	4,824	4,808	4,168
Nonmetallic mineral products	3,207	3,834	7,980	4,429	4,130	3,185	-	8,784	5,628	3,054	3,282	2,915	4,226	4,816	2,772	-	4,800	7,824
Metal products	2,842	5,048	3,376	4,381	4,233	3,789	3,679	4,803	3,600	2,796	2,920	-	3,651	3,205	2,704	-	3,160	2,778
General machinery	2,690	2,793	2,400	4,193	2,212	3,347	2,480	2,432	3,315	2,503	3,478	3,478	2,937	2,108	2,531	2,268	2,384	2,410
Electric machinery	3,159	4,222	5,749	4,623	5,312	4,303	3,532	3,257	4,371	3,014	5,240	5,554	3,769	5,418	3,269	5,560	2,512	3,879
Office & computing machinery	3,946	-	5,373	5,837	6,600	3,237	2,496	-	2,259	2,432	-	6,600	2,516	7,200	3,054	-	-	2,400
Miscellaneous electric machinery	2,932	2,659	6,765	4,198	4,104	4,594	5,552	-	3,917	2,779	5,240	5,939	3,216	4,600	2,632	-	2,512	4,594
Radio, TV, communication	3,760	4,418	4,986	5,090	5,779	5,107	3,392	3,257	5,480	3,029	-	4,671	4,580	5,370	4,325	5,560	-	1,404
Precision machinery	3,012	5,393	8,400	3,864	-	2,256	-	-	3,248	4,425	-	6,720	2,914	-	2,379	-	-	-
Motor vehicles	2,713	2,288	3,200	3,356	-	4,605	7,080	2,336	3,337	2,387	4,800	2,288	2,543	4,128	2,228	-	1,920	2,344
Furniture	2,582	2,396	2,400	3,322	-	3,435	2,490	2,352	2,278	2,434	2,400	3,120	2,441	-	2,354	-	-	2,400
Jewelry	2,396	2,440	2,718	2,281	2,188	2,685	2,400	2,400	2,443	2,400	2,396	2,379	2,239	-	-	-	2,396	1,683
Other manufacturing industries	3,315	3,719	4,819	4,349	2,946	2,997	3,822	4,760	3,828	3,074	3,117	3,701	3,646	2,534	2,919	2,797	3,077	7,196

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B1a: Mean Output per Production Worker in All Plants by Industry and Country of Major Owner, 1996 and 1998 (thousand baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	1,226	6,973	4,468	3,126	3,005	1,427	1,637	1,311	3,070	1,354	3,770	4,205	3,330	3,633	1,773	1,745	1,473	3,335
Food	1,929	1,923	5,178	2,090	4,165	1,307	1,059	1,098	9,522	1,954	3,686	6,268	2,341	2,501	1,962	1,225	885	6,327
Textiles	704	864	2,636	2,227	570	3,075	1,140	793	1,603	677	786	2,591	2,125	-	844	1,934	95	917
Apparel	553	752	404	655	1,930	568	319	352	376	414	1,466	-	967	67	1,196	-	2,129	709
Leather & footwear	679	545	964	973	-	822	552	688	382	1,114	-	649	772	-	1,159	783	2,250	670
Chemicals & products	1,878	17,497	5,261	7,478	7,071	1,886	1,788	1,097	4,476	2,782	10,101	10,156	7,057	7,377	5,197	-	1,905	6,471
Rubber products	1,869	25,457	7,014	1,745	6,002	1,687	1,871	3,087	2,380	1,702	1,573	1,743	3,163	3,761	2,292	3,673	1,165	3,104
Plastics & products	874	3,314	219	1,975	964	877	1,866	540	995	931	465	213	980	643	1,107	824	1,325	792
Nonmetallic mineral products	1,082	4,835	1,453	1,843	798	1,861	308	1,139	1,580	946	2,805	3,527	6,419	793	1,513	-	912	3,042
Metal products	917	2,036	2,733	4,539	3,114	1,492	2,795	607	1,825	987	3,712	30	2,464	2,137	2,020	-	2,667	578
General machinery	945	3,178	3,158	2,194	2,605	1,640	2,897	591	2,281	852	3,337	522	4,157	1,449	1,174	9,278	1,311	1,745
Electric machinery	1,310	3,612	2,138	2,428	2,281	1,476	2,011	1,473	6,473	841	569	2,038	2,898	3,035	1,690	2,780	942	2,801
Office & computing machinery	1,859	-	1,851	2,050	577	3,137	1,229	-	5,359	1,381	-	1,360	3,595	825	1,783	-	-	2,162
Miscellaneous electric machinery	1,067	8,262	4,471	3,025	5,785	1,191	1,574	-	15,981	898	771	2,916	2,632	3,378	1,620	-	942	2,711
Radio, TV, communication	1,818	3,419	1,799	2,368	814	855	2,185	1,473	3,003	739	-	2,003	3,397	3,417	1,325	2,780	-	3,284
Precision machinery	1,465	415	1,113	1,226	-	355	-	-	836	651	167	935	1,487	-	3,027	-	-	-
Motor vehicles	1,001	1,653	2,911	6,884	-	875	2,442	304	2,185	682	1,220	1,350	3,411	3,452	684	-	624	623
Furniture	751	365	796	639	428	926	1,520	1,102	592	510	327	137	390	-	464	-	-	398
Jewelry	2,263	875	1,065	1,831	1,015	986	1,306	430	1,307	1,281	755	1,291	1,602	-	-	-	1,437	5,099
Other manufacturing industries	1,402	25,563	9,213	2,893	2,070	858	2,199	2,957	2,411	1,516	4,031	5,510	4,541	5,168	1,197	418	1,461	5,404

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B1b: Mean Output per Production Worker in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (thousand baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	1,973	8,234	4,888	3,480	3,480	1,760	1,907	1,687	3,559	2,120	4,248	4,521	3,568	4,310	2,086	2,041	1,943	3,791
Food	2,910	2,018	5,178	2,438	4,836	1,436	1,059	1,371	11,187	2,994	3,686	6,268	2,587	2,501	2,049	1,225	1,584	6,327
Textiles	1,065	1,112	2,636	2,309	695	3,852	1,313	954	1,776	993	786	2,591	2,212	-	921	1,934	-	999
Apparel	741	1,183	532	739	3,720	668	241	364	439	564	1,466	-	967	-	1,196	-	5,083	709
Leather & footwear	1,029	545	964	973	-	871	622	-	409	1,432	-	649	725	-	1,512	856	2,250	670
Chemicals & products	2,482	17,497	5,908	8,199	7,071	2,154	1,964	1,243	4,476	3,816	10,101	11,165	7,510	7,377	6,398	-	2,364	6,894
Rubber products	2,436	25,457	7,014	1,927	6,002	2,099	1,871	3,087	2,433	2,066	1,573	1,743	3,448	3,761	2,543	3,673	1,165	3,104
Plastics & products	1,248	4,358	120	2,216	1,136	1,224	1,866	560	1,035	1,347	686	213	1,018	643	1,405	824	1,576	1,333
Nonmetallic mineral products	1,864	5,269	1,453	1,958	798	2,056	-	2,156	2,628	1,601	3,186	3,527	6,419	793	2,068	-	1,207	4,470
Metal products	1,550	2,247	4,019	4,979	3,765	2,040	2,795	717	1,825	1,581	9,683	-	2,808	3,280	2,877	-	3,936	796
General machinery	1,416	3,696	3,158	2,552	2,605	2,220	2,897	484	2,515	1,480	3,337	522	4,157	1,449	1,707	9,278	2,078	2,005
Electric machinery	2,007	3,889	2,235	2,646	2,453	1,714	2,011	1,473	7,124	1,118	771	2,038	3,080	3,400	1,723	2,780	1,724	2,960
Office & computing machinery	1,859	-	2,058	2,050	577	3,656	1,229	-	5,359	1,381	-	1,360	3,595	825	1,783	-	-	2,162
Miscellaneous electric machinery	1,576	8,262	4,471	3,199	5,785	1,325	1,574	-	19,042	1,223	771	2,916	2,890	3,378	1,718	-	1,724	2,711
Radio, TV, communication	2,688	3,419	1,799	2,582	829	1,085	2,185	1,473	3,003	899	-	2,003	3,486	4,274	1,325	2,780	-	4,481
Precision machinery	2,845	455	1,113	1,469	-	355	-	-	908	878	-	935	1,660	-	3,027	-	-	-
Motor vehicles	2,081	1,653	2,911	7,117	-	1,097	2,442	304	3,502	1,224	1,220	1,350	3,543	3,452	684	-	624	689
Furniture	1,148	365	796	698	-	953	1,520	1,996	771	707	327	137	420	-	528	-	-	665
Jewelry	4,109	1,080	1,231	1,938	1,631	986	1,306	430	1,554	2,312	1,176	1,487	1,602	-	-	-	1,984	5,099
Other manufacturing industries	2,386	32,413	9,956	3,394	2,309	1,143	2,689	3,337	2,778	2,522	4,448	7,293	5,127	8,718	1,537	544	1,461	6,254

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B2a: Mean Output per Hour for Production Workers in All Plants by Industry and Country of Major Owner, 1996 and 1998 (baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	448	2,367	1,007	959	818	437	552	355	1,014	555	1,188	1,326	1,121	1,421	659	684	539	1,426
Food	687	512	1,676	562	658	467	374	308	2,942	699	999	2,505	597	1,030	736	537	379	2,113
Textiles	221	368	866	582	143	554	243	186	275	218	301	670	435	-	976	806	40	3,594
Apparel	217	282	159	236	472	240	137	143	143	159	611	-	363	9	499	-	880	295
Leather & footwear	280	147	264	413	-	270	167	307	140	462	-	210	343	-	296	277	937	258
Chemicals & products	701	6,193	1,255	2,638	1,018	614	629	315	1,201	880	3,291	2,757	2,341	2,165	1,035	-	668	1,661
Rubber products	664	3,518	1,072	323	2,394	668	2,658	1,156	666	714	673	503	643	1,502	892	1,530	490	816
Plastics & products	251	529	91	427	183	247	517	189	213	302	97	89	271	128	244	259	503	207
Nonmetallic mineral products	411	1,162	180	470	199	716	135	139	446	885	1,110	1,208	1,172	154	430	-	234	427
Metal products	363	653	1,061	1,226	577	517	1,137	179	593	394	1,310	5	667	772	776	-	849	204
General machinery	375	1,388	1,316	714	1,155	607	1,188	221	726	356	1,137	139	1,930	694	474	4,080	553	718
Electric machinery	480	1,478	507	711	725	426	627	431	3,034	328	244	430	995	1,268	794	698	353	1,279
Office & computing machinery	497	-	628	388	87	953	492	-	2,372	568	-	205	1,469	115	639	-	-	901
Miscellaneous electric machinery	423	3,787	613	939	2,004	313	284	-	8,761	361	337	592	1,042	1,386	585	-	353	757
Radio, TV, communication	541	1,240	412	666	191	272	695	431	513	282	-	481	993	1,498	1,017	698	-	2,971
Precision machinery	601	103	132	374	-	156	-	-	327	206	57	139	587	-	1,279	-	-	-
Motor vehicles	401	721	1,113	2,474	-	211	345	130	953	294	254	590	1,526	836	306	-	325	267
Furniture	311	152	332	196	180	300	624	465	281	215	136	44	160	-	195	-	-	167
Jewelry	960	367	434	793	452	341	544	179	560	555	334	545	718	-	-	-	596	5,635
Other manufacturing industries	498	9,721	1,406	745	834	306	640	611	669	562	859	1,841	1,422	2,784	441	158	435	760

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B2b: Mean Output per Hour for Production Workers in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	703	2,789	1,097	1,064	941	526	640	431	1,171	760	1,332	1,427	1,199	1,694	775	798	702	1,623
Food	1,021	535	1,676	645	758	509	374	347	3,458	1,060	999	2,505	648	1,030	768	537	639	2,113
Textiles	310	462	866	600	101	670	269	183	304	293	301	670	445	-	1,096	806	-	3,950
Apparel	289	436	219	265	886	281	100	151	167	201	611	-	363	-	499	-	2,090	295
Leather & footwear	420	147	264	413	-	277	245	-	132	591	-	210	336	-	388	296	937	258
Chemicals & products	907	6,193	1,400	2,891	1,018	662	655	342	1,201	1,167	3,291	3,040	2,483	2,165	1,243	-	821	1,769
Rubber products	861	3,518	1,072	348	2,394	830	2,658	1,156	676	861	673	503	694	1,502	988	1,530	490	816
Plastics & products	333	681	50	473	211	353	517	179	215	419	91	89	273	128	281	259	595	301
Nonmetallic mineral products	681	1,266	180	500	199	801	-	245	623	580	1,260	1,208	1,172	154	562	-	280	595
Metal products	595	703	1,558	1,332	696	694	1,137	197	593	611	3,316	-	757	1,218	1,112	-	1,246	271
General machinery	556	1,618	1,316	822	1,155	781	1,188	199	793	612	1,137	139	1,930	694	671	4,080	872	835
Electric machinery	709	1,591	529	772	773	483	627	431	3,340	428	337	430	1,058	1,444	815	698	686	1,353
Office & computing machinery	497	-	698	388	87	1,101	492	-	2,372	568	-	205	1,469	115	639	-	-	901
Miscellaneous electric machinery	622	3,787	613	990	2,004	332	284	-	10,455	492	337	592	1,150	1,386	632	-	686	757
Radio, TV, communication	733	1,240	412	727	172	341	695	431	513	312	-	481	1,018	1,926	1,017	698	-	4,264
Precision machinery	1,133	97	132	439	-	156	-	-	341	256	-	139	655	-	1,279	-	-	-
Motor vehicles	825	721	1,113	2,558	-	253	345	130	1,535	528	254	590	1,586	836	306	-	325	294
Furniture	472	152	332	211	-	314	624	837	349	297	136	44	172	-	222	-	-	277
Jewelry	1,755	449	500	845	750	341	544	179	669	1,016	526	629	718	-	-	-	827	5,635
Other manufacturing industries	821	12,318	1,513	865	938	399	759	673	760	907	924	2,433	1,604	4,747	566	201	435	867

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B3a: Mean Value Added per Production Worker in All Plants by Industry and Country of Major Owner, 1996 and 1998 (thousand baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	390	2,227	1,182	916	1,023	358	516	338	599	357	1,223	1,580	959	984	484	415	406	1,007
Food	573	508	1,239	504	719	321	301	149	1,128	371	937	1,745	670	501	386	338	257	835
Textiles	196	235	583	616	146	339	395	208	362	239	417	634	807	-	275	597	20	389
Apparel	186	290	67	210	341	193	125	196	119	170	610	-	281	10	450	-	619	214
Leather & footwear	224	195	299	311	-	208	197	162	193	312	-	170	473	-	375	288	135	266
Chemicals & products	543	2,926	2,320	3,066	4,498	529	572	294	910	632	3,556	4,740	1,736	2,387	972	-	391	2,182
Rubber products	498	23,622	3,002	404	2,516	287	168	592	382	300	625	787	925	449	1,053	490	257	716
Plastics & products	253	1,367	73	572	298	206	511	175	306	315	226	118	465	162	343	334	446	271
Nonmetallic mineral products	425	1,529	594	620	341	565	247	555	277	343	1,455	1,478	2,266	376	799	-	460	1,015
Metal products	271	609	737	994	400	425	1,401	245	1,028	326	1,224	17	765	393	669	-	858	338
General machinery	315	1,221	337	607	546	405	670	93	788	298	969	192	1,121	416	312	1,628	635	584
Electric machinery	425	1,205	391	712	457	597	650	565	750	325	261	497	939	901	494	703	274	1,129
Office & computing machinery	1,016	-	211	417	314	1,527	1,033	-	687	330	-	713	856	614	497	-	-	507
Miscellaneous electric machinery	329	3,340	696	898	697	446	1,193	-	607	328	361	499	951	1,494	529	-	274	1,310
Radio, TV, communication	713	818	552	615	361	203	517	565	1,157	316	-	437	1,046	676	428	703	-	796
Precision machinery	344	183	181	619	-	129	-	-	282	321	60	362	498	-	583	-	-	-
Motor vehicles	324	314	1,418	1,748	-	385	63	64	680	266	594	352	1,142	1,070	306	-	230	295
Furniture	267	125	148	158	315	196	660	128	272	187	140	68	159	-	201	-	-	38
Jewelry	810	257	332	392	208	138	578	155	413	294	388	430	412	-	-	-	362	804
Other manufacturing industries	465	8,081	1,863	794	404	193	585	752	890	454	587	2,128	932	1,206	249	143	359	3,072

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B3b: Mean Value Added per Production Worker in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (thousand baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	600	2,623	1,289	1,016	1,180	420	590	427	684	523	1,370	1,688	1,021	1,153	557	479	517	1,134
Food	851	535	1,239	586	823	351	301	189	1,309	523	937	1,745	732	501	402	338	433	835
Textiles	255	291	583	636	196	399	476	272	401	348	417	634	838	-	296	597	-	424
Apparel	227	445	84	233	635	223	141	121	128	220	610	-	281	-	450	-	1,369	214
Leather & footwear	300	195	299	311	-	207	241	-	197	386	-	170	375	-	497	311	135	266
Chemicals & products	707	2,926	2,609	3,369	4,498	578	531	314	910	792	3,556	5,178	1,850	2,387	1,192	-	426	2,325
Rubber products	635	23,622	3,002	448	2,516	347	168	592	384	348	625	787	1,011	449	1,165	490	257	716
Plastics & products	333	1,800	57	642	351	243	511	213	315	464	358	118	488	162	419	334	534	386
Nonmetallic mineral products	721	1,665	594	659	341	616	-	1,013	302	588	1,648	1,478	2,266	376	1,095	-	608	1,513
Metal products	405	676	1,071	1,075	485	569	1,401	261	1,028	483	2,939	-	846	558	894	-	1,253	565
General machinery	449	1,398	337	685	546	526	670	113	876	486	969	192	1,121	416	432	1,628	1,075	626
Electric machinery	624	1,292	406	774	475	687	650	565	813	409	361	497	997	960	505	703	474	1,179
Office & computing machinery	1,016	-	226	417	314	1,784	1,033	-	687	330	-	713	856	614	497	-	-	507
Miscellaneous electric machinery	465	3,340	696	950	697	487	1,193	-	695	417	361	499	1,037	1,494	566	-	474	1,310
Radio, TV, communication	1,060	818	552	664	373	219	517	565	1,157	375	-	437	1,075	719	428	703	-	926
Precision machinery	506	191	181	754	-	129	-	-	304	451	-	362	568	-	583	-	-	-
Motor vehicles	576	314	1,418	1,804	-	479	63	64	1,124	445	594	352	1,180	1,070	306	-	230	425
Furniture	397	125	148	169	-	169	660	183	367	265	140	68	169	-	218	-	-	42
Jewelry	1,464	293	362	407	248	138	578	155	509	489	519	465	412	-	-	-	479	804
Other manufacturing industries	768	10,234	2,012	921	421	213	702	852	1,017	724	656	2,796	1,046	1,993	283	188	359	3,558

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B4a: Mean Value Added per Hour for Production Workers in All Plants by Industry and Country of Major Owner, 1996 and 1998 (baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	145	639	288	290	272	119	179	87	169	148	389	424	323	348	184	155	145	414
Food	207	148	410	135	134	136	100	42	251	131	308	666	208	192	152	148	113	312
Textiles	67	91	192	128	34	102	96	37	88	74	158	169	154	-	264	249	8	1,152
Apparel	73	113	26	83	85	82	54	79	46	65	254	-	106	1	188	-	257	89
Leather & footwear	92	53	51	131	-	69	58	72	77	129	-	57	206	-	96	103	56	101
Chemicals & products	188	681	550	1,308	625	158	214	97	218	214	960	969	563	623	259	-	84	570
Rubber products	188	3,275	458	75	1,095	123	239	242	109	113	244	219	149	179	398	204	81	170
Plastics & products	73	223	30	126	55	63	193	64	62	100	43	49	132	29	79	90	163	84
Nonmetallic mineral products	175	347	70	130	77	162	108	71	116	270	575	499	474	71	224	-	112	141
Metal products	111	292	290	307	95	179	539	83	318	134	439	3	249	142	255	-	274	116
General machinery	125	500	140	176	244	147	273	37	267	126	316	51	505	203	127	715	267	238
Electric machinery	151	522	97	180	142	161	185	148	207	129	104	117	301	329	204	144	99	591
Office & computing machinery	271	-	60	80	48	427	414	-	304	136	-	113	365	85	177	-	-	211
Miscellaneous electric machinery	137	1,527	101	236	266	108	215	-	290	136	145	130	381	625	188	-	99	431
Radio, TV, communication	194	332	166	149	96	67	149	148	194	122	-	122	243	242	230	144	-	1,198
Precision machinery	137	54	22	160	-	57	-	-	107	105	21	54	209	-	247	-	-	-
Motor vehicles	125	133	555	589	-	93	9	28	306	115	124	154	519	259	137	-	120	126
Furniture	110	52	62	53	133	64	262	55	124	79	59	22	66	-	85	-	-	16
Jewelry	341	107	133	171	89	53	241	65	177	123	168	182	184	-	-	-	150	828
Other manufacturing industries	167	3,012	347	183	154	73	208	137	229	169	196	597	286	650	88	56	129	407

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B4b: Mean Value Added per Hour for Production Workers in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	217	748	313	320	310	136	203	102	190	187	433	453	343	410	211	178	182	467
Food	306	155	410	153	150	148	100	48	288	184	308	666	224	192	159	148	181	312
Textiles	80	106	192	130	28	118	114	40	98	96	158	169	156	-	294	249	-	1,266
Apparel	88	176	35	92	151	95	59	50	50	78	254	-	106	-	188	-	563	89
Leather & footwear	121	53	51	131	-	65	89	-	75	159	-	57	173	-	128	108	56	101
Chemicals & products	236	681	615	1,439	625	157	180	99	218	254	960	1,060	599	623	313	-	75	607
Rubber products	237	3,275	458	82	1,095	149	239	242	108	128	244	219	161	179	440	204	81	170
Plastics & products	86	288	24	140	63	79	193	75	61	142	48	49	135	29	90	90	194	105
Nonmetallic mineral products	292	378	70	139	77	178	-	115	101	215	651	499	474	71	292	-	132	207
Metal products	163	325	420	326	116	239	539	83	318	195	1,006	-	277	213	340	-	396	192
General machinery	175	573	140	192	244	170	273	46	296	204	316	51	505	203	170	715	451	259
Electric machinery	209	560	101	194	145	178	185	148	220	159	145	117	319	361	209	144	189	621
Office & computing machinery	271	-	63	80	48	492	414	-	304	136	-	113	365	85	177	-	-	211
Miscellaneous electric machinery	193	1,527	101	248	266	109	215	-	334	174	145	130	417	625	204	-	189	431
Radio, TV, communication	256	332	166	160	92	72	149	148	194	131	-	122	249	276	230	144	-	1,681
Precision machinery	185	50	22	190	-	57	-	-	110	141	-	54	239	-	247	-	-	-
Motor vehicles	213	133	555	609	-	110	9	28	509	192	124	154	537	259	137	-	120	181
Furniture	162	52	62	57	-	53	262	77	161	111	59	22	70	-	92	-	-	17
Jewelry	620	121	144	179	113	53	241	65	218	208	227	197	184	-	-	-	200	828
Other manufacturing industries	266	3,810	373	208	163	74	245	151	255	258	218	779	321	1,089	99	72	129	465

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B5a: Mean Output per Non-Production Worker in All Plants by Industry and Country of Major Owner, 1996 and 1998 (thousand baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	8,327	27,337	16,879	18,284	18,331	13,275	12,090	8,748	12,024	8,862	18,194	14,046	16,295	13,677	13,172	16,554	18,072	15,156
Food	11,578	12,649	32,571	12,880	32,371	15,128	11,036	6,058	17,200	11,281	18,305	29,382	15,920	8,371	17,794	3,827	3,217	24,678
Textiles	6,858	6,303	11,791	35,064	3,615	13,761	15,467	8,909	26,038	8,446	10,853	15,504	13,380	-	11,008	145,057	2,479	14,050
Apparel	5,776	9,362	3,416	10,517	29,682	7,046	2,511	10,487	5,863	6,701	7,759	-	7,460	743	46,958	-	125,538	13,414
Leather & footwear	6,667	13,828	4,129	16,992	-	9,210	5,607	10,660	4,653	10,251	-	7,068	5,548	-	10,270	4,044	10,833	14,985
Chemicals & products	8,441	100,297	10,202	16,614	14,254	8,094	8,095	4,421	14,453	10,380	17,593	7,433	22,631	16,403	9,674	-	14,078	17,765
Rubber products	17,600	139,178	17,845	11,158	67,176	17,488	22,643	17,952	14,528	15,420	10,537	15,741	20,662	41,106	37,783	14,284	5,003	23,189
Plastics & products	7,513	3,205	2,316	8,808	4,257	5,736	19,262	13,715	7,260	9,583	41,506	4,458	8,047	5,264	6,567	12,884	4,057	5,735
Nonmetallic mineral products	7,817	11,258	2,945	8,029	10,337	34,400	2,091	10,367	4,340	4,411	45,248	13,340	58,377	7,823	7,707	-	3,372	5,699
Metal products	6,708	8,740	12,225	23,248	15,250	11,693	9,302	6,060	7,414	5,857	7,127	322	16,549	8,838	8,215	-	8,133	4,445
General machinery	8,309	7,249	8,381	14,677	13,335	21,848	9,231	2,841	12,926	4,467	9,658	6,255	13,917	8,831	11,637	46,571	2,959	9,096
Electric machinery	7,011	19,186	26,533	17,479	5,022	14,291	19,264	5,816	15,202	7,437	44,663	12,058	20,256	8,013	16,470	21,943	6,061	14,855
Office & computing machinery	12,265	-	50,973	17,993	14,429	26,280	13,026	-	13,440	8,763	-	35,843	17,234	17,026	29,552	-	-	3,723
Miscellaneous electric machinery	6,597	58,942	10,264	17,829	3,461	12,540	9,633	-	11,728	6,450	65,258	4,448	14,375	7,430	8,198	-	6,061	16,682
Radio, TV, communication	7,893	8,912	8,250	17,146	4,235	9,345	21,531	5,816	18,417	10,532	-	9,041	27,807	6,051	15,272	21,943	-	13,086
Precision machinery	7,030	4,781	4,944	17,315	-	4,284	-	-	14,580	6,380	3,473	2,402	12,667	-	14,701	-	-	-
Motor vehicles	6,106	3,505	9,999	41,143	-	9,619	26,373	2,378	5,940	5,047	5,314	15,522	9,616	8,128	7,758	-	832	5,939
Furniture	5,872	3,067	3,095	12,310	7,919	8,339	7,692	5,076	2,651	4,589	700	3,108	7,379	-	3,443	-	-	4,092
Jewelry	9,231	7,231	9,382	20,496	8,322	10,239	5,361	1,912	13,259	8,119	2,341	7,903	5,392	-	-	-	4,142	10,035
Other manufacturing industries	8,623	40,464	16,230	12,382	7,813	12,130	12,353	11,443	7,494	10,623	7,821	17,133	14,003	28,046	7,854	5,406	6,020	16,783

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B5b: Mean Output per Non-Production Worker in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (thousand baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	13,190	31,918	18,310	20,301	21,017	16,507	14,317	11,334	13,717	13,908	20,463	15,090	17,452	16,254	15,571	19,136	24,403	16,892
Food	17,342	13,238	32,571	14,947	36,920	16,359	11,036	7,795	19,797	17,216	18,305	29,382	17,678	8,371	18,587	3,827	6,052	24,678
Textiles	10,505	7,314	11,791	36,596	5,104	16,936	18,127	12,759	27,871	13,089	10,853	15,504	14,090	-	12,012	145,057	-	14,423
Apparel	7,882	15,568	4,208	12,051	55,710	8,393	1,487	18,645	7,549	10,341	7,759	-	7,460	-	46,958	-	307,838	13,414
Leather & footwear	10,589	13,828	4,129	16,992	-	9,464	8,177	-	7,976	13,356	-	7,068	6,425	-	13,442	4,365	10,833	14,985
Chemicals & products	11,165	100,297	11,166	17,958	14,254	9,569	9,742	4,627	14,453	14,441	17,593	8,124	24,033	16,403	11,599	-	18,081	18,827
Rubber products	23,287	139,178	17,845	12,423	67,176	22,118	22,643	17,952	15,061	18,783	10,537	15,741	22,634	41,106	41,754	14,284	5,003	23,189
Plastics & products	11,228	3,836	660	9,835	4,904	8,091	19,262	18,617	7,637	15,142	78,858	4,458	8,647	5,264	8,066	12,884	4,605	7,295
Nonmetallic mineral products	13,559	12,226	2,945	8,575	10,337	38,886	-	18,158	5,774	7,127	51,607	13,340	58,377	7,823	10,316	-	4,300	6,700
Metal products	11,318	9,924	17,344	25,421	18,603	15,485	9,302	8,011	7,414	9,126	14,897	-	19,103	13,377	11,101	-	11,729	5,637
General machinery	13,296	8,430	8,381	17,164	13,335	32,795	9,231	6,447	14,530	6,599	9,658	6,255	13,917	8,831	20,730	46,571	4,675	11,078
Electric machinery	10,165	20,371	27,593	19,004	4,845	16,854	19,264	5,816	16,531	10,536	65,258	12,058	21,573	9,123	16,905	21,943	9,481	16,009
Office & computing machinery	12,265	-	56,680	17,993	14,429	31,025	13,026	-	13,440	8,763	-	35,843	17,234	17,026	29,552	-	-	3,723
Miscellaneous electric machinery	8,816	58,942	10,264	18,698	3,461	14,540	9,633	-	13,264	8,466	65,258	4,448	15,741	7,430	8,790	-	9,481	16,682
Radio, TV, communication	11,470	8,912	8,250	18,713	3,759	11,288	21,531	5,816	18,417	17,301	-	9,041	28,642	7,618	15,272	21,943	-	19,123
Precision machinery	14,122	4,718	4,944	21,311	-	4,284	-	-	17,617	9,714	-	2,402	14,235	-	14,701	-	-	-
Motor vehicles	11,906	3,505	9,999	42,551	-	11,838	26,373	2,378	9,474	9,150	5,314	15,522	9,967	8,128	7,758	-	832	1,034
Furniture	8,950	3,067	3,095	14,076	-	9,897	7,692	8,690	3,093	6,424	700	3,108	8,358	-	4,146	-	-	6,185
Jewelry	15,213	8,966	10,755	22,809	13,867	10,239	5,361	1,912	15,959	14,112	3,157	8,972	5,392	-	-	-	4,875	10,035
Other manufacturing industries	14,132	50,215	17,491	14,285	8,813	15,892	15,644	12,384	8,573	17,859	8,717	22,442	15,511	47,944	9,913	6,222	6,020	19,248

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B6a: Mean Output per Hour for Non-Production Workers in All Plants by Industry and Country of Major Owner, 1996 and 1998 (baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	3,012	10,013	4,573	5,490	5,517	4,162	4,414	2,562	3,741	3,281	5,440	4,430	4,900	5,718	7,033	6,454	7,055	7,118
Food	4,186	4,133	9,367	4,006	4,696	6,155	2,936	1,902	4,184	4,150	5,674	10,190	5,024	3,078	7,215	1,719	1,339	7,003
Textiles	1,899	2,533	3,600	10,896	813	2,711	4,820	1,586	8,298	2,552	4,201	3,173	2,222	-	24,527	60,440	1,033	24,148
Apparel	2,240	3,550	1,314	3,756	7,393	2,990	1,084	4,349	2,233	2,538	3,233	-	2,834	103	19,561	-	51,837	5,557
Leather & footwear	2,761	3,812	1,191	7,174	-	3,503	1,734	4,759	1,767	4,223	-	1,420	2,527	-	3,733	1,443	4,501	6,048
Chemicals & products	2,899	45,753	3,758	4,731	1,945	2,225	2,984	1,244	4,257	2,937	5,680	2,203	5,533	6,277	2,359	-	4,228	4,764
Rubber products	6,098	19,291	2,247	1,992	26,545	4,778	32,163	6,783	4,149	6,281	2,858	3,211	5,025	16,416	14,210	5,952	1,146	7,372
Plastics & products	1,957	534	965	1,824	829	1,660	6,930	4,379	1,422	3,265	6,114	1,858	1,900	1,104	1,746	4,043	1,342	2,154
Nonmetallic mineral products	3,247	3,062	350	2,414	3,636	6,656	917	1,387	1,230	2,918	15,431	4,710	8,755	1,589	2,590	-	884	1,199
Metal products	2,532	2,757	4,089	7,688	3,097	3,591	3,567	1,426	2,038	2,297	2,618	51	4,442	3,121	3,189	-	2,609	1,589
General machinery	3,366	2,499	3,492	3,872	5,895	8,659	3,797	1,138	4,539	1,874	3,306	1,631	5,930	4,118	4,809	20,836	1,249	3,708
Electric machinery	2,485	6,091	6,855	4,602	1,309	4,098	6,895	1,823	4,426	2,744	6,210	2,250	6,788	2,112	8,251	5,218	2,044	8,571
Office & computing machinery	3,287	-	13,882	3,796	2,186	8,453	5,219	-	5,950	3,603	-	4,848	5,846	2,365	12,933	-	-	1,551
Miscellaneous electric machinery	2,604	19,630	1,564	4,541	1,125	3,146	1,735	-	4,741	2,340	8,720	1,228	5,188	1,648	3,200	-	2,044	7,208
Radio, TV, communication	2,112	2,347	1,879	4,654	1,254	2,844	7,872	1,823	3,087	4,253	-	2,203	8,913	2,281	10,498	5,218	-	15,001
Precision machinery	2,528	1,553	589	4,909	-	1,959	-	-	5,887	1,797	1,190	357	4,488	-	6,175	-	-	-
Motor vehicles	2,464	1,547	3,927	14,229	-	2,332	3,725	1,018	2,276	2,174	1,107	6,784	4,085	1,969	3,479	-	433	2,557
Furniture	2,434	1,281	1,290	3,331	3,333	2,763	3,092	2,163	1,488	1,926	292	996	3,068	-	1,452	-	-	1,719
Jewelry	3,837	2,949	3,523	9,057	3,700	3,546	2,234	797	5,633	3,524	998	3,339	2,409	-	-	-	1,705	7,314
Other manufacturing industries	3,030	13,094	2,975	3,331	3,144	4,738	4,155	2,753	2,506	3,284	2,810	7,349	4,298	15,271	2,897	2,026	2,009	2,600

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B6b: Mean Output per Hour for Non-Production Workers in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	4,634	11,646	4,928	6,057	6,268	5,073	5,233	3,188	4,253	4,785	6,082	4,754	5,233	6,839	8,429	7,445	9,487	7,974
Food	6,188	4,315	9,367	4,587	5,131	6,652	2,936	2,312	4,778	6,267	5,674	10,190	5,543	3,078	7,537	1,719	2,349	7,003
Textiles	2,599	2,618	3,600	11,355	740	3,201	5,682	2,097	9,205	3,534	4,201	3,173	2,321	-	27,786	60,440	-	26,132
Apparel	3,031	5,972	1,728	4,285	13,264	3,545	619	7,769	2,873	3,818	3,233	-	2,834	-	19,561	-	126,578	5,557
Leather & footwear	4,364	3,812	1,191	7,174	-	3,552	2,594	-	2,975	5,491	-	1,420	2,980	-	4,928	1,519	4,501	6,048
Chemicals & products	3,692	45,753	4,094	5,073	1,945	2,484	3,550	1,189	4,257	3,927	5,680	2,421	5,842	6,277	2,709	-	5,365	5,038
Rubber products	8,034	19,291	2,247	2,187	26,545	5,981	32,163	6,783	4,295	7,570	2,858	3,211	5,486	16,416	15,671	5,952	1,146	7,372
Plastics & products	2,709	529	275	1,984	906	2,354	6,930	5,744	1,460	5,090	10,498	1,858	2,014	1,104	1,973	4,043	1,482	2,646
Nonmetallic mineral products	5,598	3,323	350	2,580	3,636	7,518	-	2,067	1,142	2,709	17,591	4,710	8,755	1,589	3,366	-	997	896
Metal products	4,064	3,092	5,724	8,324	3,782	4,549	3,567	1,805	2,038	3,399	5,102	-	5,105	4,777	4,367	-	3,712	1,989
General machinery	5,371	2,892	3,492	4,434	5,895	12,642	3,797	2,651	5,091	2,742	3,306	1,631	5,930	4,118	8,529	20,836	1,961	4,541
Electric machinery	3,457	6,426	7,106	4,968	1,164	4,737	6,895	1,823	4,755	3,809	8,720	2,250	7,227	2,408	8,488	5,218	3,774	9,249
Office & computing machinery	3,287	-	15,386	3,796	2,186	9,964	5,219	-	5,950	3,603	-	4,848	5,846	2,365	12,933	-	-	1,551
Miscellaneous electric machinery	3,436	19,630	1,564	4,709	1,125	3,563	1,735	-	5,346	2,982	8,720	1,228	5,686	1,648	3,470	-	3,774	7,208
Radio, TV, communication	2,855	2,347	1,879	5,074	983	3,223	7,872	1,823	3,087	6,906	-	2,203	9,180	2,928	10,498	5,218	-	22,282
Precision machinery	4,787	1,378	589	5,957	-	1,959	-	-	7,056	2,604	-	357	5,033	-	6,175	-	-	-
Motor vehicles	4,757	1,547	3,927	14,717	-	2,714	3,725	1,018	3,606	3,931	1,107	6,784	4,234	1,969	3,479	-	433	441
Furniture	3,695	1,281	1,290	3,773	-	3,309	3,092	3,683	1,597	2,684	292	996	3,475	-	1,749	-	-	2,577
Jewelry	6,435	3,615	4,019	10,104	6,398	3,546	2,234	797	6,807	6,233	1,349	3,794	2,409	-	-	-	2,032	7,314
Other manufacturing industries	4,726	16,077	3,180	3,766	3,567	6,222	5,226	2,847	2,858	5,227	3,122	9,630	4,739	26,393	3,777	2,254	2,009	2,902

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B7a: Mean Value Added per Non-Production Worker in All Plants by Industry and Country of Major Owner, 1996 and 1998 (thousand baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	2,738	7,494	4,373	5,303	5,515	4,185	5,067	2,400	3,552	2,603	8,681	4,957	4,746	3,421	4,415	4,643	4,942	4,495
Food	3,159	3,016	11,162	4,004	3,671	3,504	3,850	979	4,403	2,425	5,459	11,237	3,876	1,988	3,095	1,057	789	3,311
Textiles	2,004	2,241	2,188	8,424	950	2,878	7,870	2,308	5,462	3,216	5,311	5,332	5,334	-	4,243	44,781	520	4,782
Apparel	1,917	4,068	578	4,637	5,364	2,048	1,150	3,015	1,723	2,845	3,233	-	2,755	110	14,553	-	32,438	3,202
Leather & footwear	2,016	4,944	1,180	5,860	-	2,765	3,271	2,508	2,399	3,062	-	1,705	3,245	-	3,295	1,629	868	5,714
Chemicals & products	2,583	3,843	3,167	4,487	9,023	2,752	4,029	1,147	3,320	2,450	5,268	2,342	4,925	3,930	2,599	-	4,475	5,278
Rubber products	4,330	128,640	8,294	2,060	25,178	2,972	2,035	3,711	2,520	2,506	5,391	7,501	5,783	4,906	18,890	1,904	1,954	4,190
Plastics & products	2,288	641	713	2,731	1,320	1,358	7,214	3,842	2,141	3,682	21,389	2,464	3,489	1,189	2,141	5,233	1,524	2,937
Nonmetallic mineral products	3,694	2,569	1,449	2,408	4,287	19,609	1,679	5,286	679	1,673	26,391	6,434	20,474	3,692	4,435	-	1,702	1,692
Metal products	2,139	2,604	3,274	4,952	2,310	3,154	4,944	3,046	4,373	2,085	2,717	184	4,800	1,501	2,762	-	2,614	2,535
General machinery	2,675	3,909	724	4,858	2,231	5,048	2,172	603	4,776	1,784	3,025	2,291	4,746	2,189	3,346	7,842	1,432	3,711
Electric machinery	2,336	7,565	4,425	5,646	2,184	6,556	4,886	2,104	4,400	2,692	33,313	3,571	5,484	3,448	5,918	5,688	1,905	6,716
Office & computing machinery	6,605	-	7,477	4,750	7,856	15,248	10,953	-	1,723	2,195	-	12,870	3,970	12,676	11,726	-	-	873
Miscellaneous electric machinery	2,102	24,365	1,922	5,995	397	5,403	7,302	-	1,364	2,107	49,340	1,057	4,435	3,081	2,605	-	1,905	8,443
Radio, TV, communication	2,839	2,606	2,526	4,340	2,133	2,272	3,675	2,104	6,895	4,286	-	1,888	6,891	1,325	5,503	5,688	-	3,484
Precision machinery	2,273	2,404	1,091	8,669	-	1,737	-	-	4,585	2,740	1,258	929	4,375	-	3,270	-	-	-
Motor vehicles	2,243	573	5,037	12,611	-	4,210	677	503	1,775	1,623	2,590	4,046	3,121	2,518	3,436	-	306	1,922
Furniture	2,274	998	592	3,038	5,834	1,374	4,369	886	786	1,785	301	1,546	2,471	-	1,258	-	-	454
Jewelry	3,777	2,783	3,152	4,050	1,514	1,340	2,374	690	7,963	2,042	1,495	2,807	1,400	-	-	-	1,135	4,461
Other manufacturing industries	3,045	15,976	3,331	3,303	1,502	2,933	7,251	2,989	2,058	3,602	2,909	4,436	3,445	6,582	2,175	1,917	1,904	8,841

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B7b: Mean Value Added per Non-Production Worker in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (thousand baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	4,124	8,616	4,691	5,864	6,203	5,132	6,042	3,022	4,031	3,892	9,753	5,279	5,051	4,031	5,183	5,334	6,477	4,932
Food	4,534	3,165	11,162	4,652	3,708	3,733	3,850	1,270	4,989	3,507	5,459	11,237	4,240	1,988	3,224	1,057	1,306	3,311
Textiles	2,756	2,551	2,188	8,752	1,440	3,439	9,655	3,375	5,920	5,094	5,311	5,332	5,613	-	4,635	44,781	-	4,859
Apparel	2,375	6,476	671	5,335	9,516	2,398	870	4,156	2,102	4,272	3,233	-	2,755	-	14,553	-	77,067	3,202
Leather & footwear	2,823	4,944	1,180	5,860	-	2,739	5,681	-	4,037	3,824	-	1,705	3,507	-	4,377	1,753	868	5,714
Chemicals & products	3,370	3,843	3,437	4,865	9,023	3,279	4,783	1,053	3,320	3,240	5,268	2,502	5,224	3,930	3,107	-	5,595	5,592
Rubber products	5,618	128,640	8,294	2,289	25,178	3,707	2,035	3,711	2,606	2,899	5,391	7,501	6,339	4,906	20,851	1,904	1,954	4,190
Plastics & products	3,250	693	313	3,074	1,518	1,624	7,214	5,171	2,234	5,888	41,174	2,464	3,755	1,189	2,499	5,233	1,769	3,411
Nonmetallic mineral products	6,413	2,769	1,449	2,572	4,287	22,232	-	8,532	538	2,521	30,082	6,434	20,474	3,692	6,204	-	2,167	2,338
Metal products	3,259	2,964	4,436	5,291	2,833	3,988	4,944	3,985	4,373	3,109	4,521	-	5,427	2,047	3,552	-	3,676	3,821
General machinery	4,055	4,538	724	5,660	2,231	7,385	2,172	1,504	5,393	2,384	3,025	2,291	4,746	2,189	5,995	7,842	2,419	4,439
Electric machinery	3,188	7,969	4,516	6,145	2,130	7,753	4,886	2,104	4,785	3,536	49,340	3,571	5,805	3,877	6,081	5,688	2,609	7,225
Office & computing machinery	6,605	-	8,087	4,750	7,856	18,189	10,953	-	1,723	2,195	-	12,870	3,970	12,676	11,726	-	-	873
Miscellaneous electric machinery	2,528	24,365	1,922	6,327	397	6,282	7,302	-	1,436	2,292	49,340	1,057	4,752	3,081	2,808	-	2,609	8,443
Radio, TV, communication	4,174	2,606	2,526	4,703	2,024	2,113	3,675	2,104	6,895	6,990	-	1,888	7,099	1,474	5,503	5,688	-	4,922
Precision machinery	4,127	2,298	1,091	10,769	-	1,737	-	-	5,515	4,261	-	929	4,998	-	3,270	-	-	-
Motor vehicles	3,668	573	5,037	13,032	-	5,136	677	503	2,893	2,561	2,590	4,046	3,217	2,518	3,436	-	306	638
Furniture	3,395	998	592	3,498	-	1,586	4,369	1,237	952	2,685	301	1,546	2,767	-	1,471	-	-	389
Jewelry	6,152	3,198	3,423	4,465	1,887	1,340	2,374	690	9,760	3,266	1,831	2,943	1,400	-	-	-	1,207	4,461
Other manufacturing industries	4,880	19,772	3,555	3,696	1,608	3,501	9,307	3,278	2,282	5,892	3,267	5,602	3,761	11,149	2,582	2,318	1,904	10,146

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B8a: Mean Value Added per Hour for Non-Production Workers in All Plants by Industry and Country of Major Owner, 1996 and 1998 (baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	1,010	1,898	1,202	1,544	1,868	1,248	1,804	659	1,218	946	2,447	1,471	1,441	1,265	2,168	1,748	1,871	2,240
Food	1,183	967	3,041	1,324	753	1,439	975	322	994	919	1,923	3,593	1,311	638	1,507	475	345	1,022
Textiles	592	806	626	2,107	200	734	2,594	328	3,058	904	2,019	1,305	853	-	6,641	18,659	217	7,548
Apparel	741	1,569	218	1,901	1,385	869	495	1,238	672	1,051	1,347	-	1,057	15	6,078	-	13,470	1,330
Leather & footwear	834	1,384	209	2,459	-	1,085	966	1,120	1,027	1,259	-	361	1,453	-	1,225	594	361	2,290
Chemicals & products	767	1,174	1,074	1,513	1,221	668	1,611	366	937	762	1,383	522	1,109	1,183	721	-	760	1,490
Rubber products	1,506	17,851	1,046	385	10,930	916	2,891	1,475	733	914	989	1,457	1,072	1,959	6,830	793	357	1,131
Plastics & products	600	123	297	560	248	402	2,922	1,294	378	1,199	3,075	1,026	859	217	615	1,407	472	1,154
Nonmetallic mineral products	1,614	606	167	587	1,478	3,508	736	765	282	985	9,095	2,269	3,463	727	1,513	-	426	279
Metal products	838	1,048	1,134	1,743	579	1,130	1,814	693	1,154	839	1,030	29	1,755	533	1,055	-	845	892
General machinery	1,063	1,345	302	1,129	1,003	1,875	889	248	1,743	750	787	598	1,962	1,042	1,391	3,508	603	1,498
Electric machinery	812	2,563	988	1,317	587	1,808	1,538	590	1,078	1,046	4,314	671	1,727	680	2,622	1,105	591	4,447
Office & computing machinery	1,766	-	1,601	969	1,190	4,772	4,388	-	763	902	-	1,767	1,391	1,761	5,243	-	-	364
Miscellaneous electric machinery	849	8,126	325	1,423	147	1,222	1,315	-	448	849	6,255	346	1,624	708	1,018	-	591	4,177
Radio, TV, communication	741	892	729	1,091	706	726	1,163	590	1,121	1,735	-	535	1,858	395	2,570	1,105	-	6,618
Precision machinery	728	898	130	1,795	-	806	-	-	1,829	769	431	138	1,740	-	1,366	-	-	-
Motor vehicles	898	246	2,030	4,275	-	1,025	96	216	713	698	539	1,769	1,343	610	1,541	-	160	827
Furniture	937	417	247	869	2,455	452	1,704	382	441	753	125	496	1,029	-	533	-	-	193
Jewelry	1,555	1,123	1,166	1,774	638	511	989	288	3,359	830	621	1,186	625	-	-	-	465	2,290
Other manufacturing industries	1,065	4,670	852	849	565	1,163	2,702	617	656	1,052	1,215	1,725	1,074	3,594	784	743	742	1,227

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Appendix Table B8b: Mean Value Added per Hour for Non-Production Workers in Large Plants (Output>=25 million baht) by Industry and Country of Major Owner, 1996 and 1998 (baht)

	1996									1998								
Industry	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other	Thai-land	Eur-ope	USA	Japan	Sing-apore	Tai-wan	Korea	China	Other
Manufacturing	1,475	2,128	1,274	1,691	2,082	1,479	2,143	781	1,376	1,301	2,727	1,561	1,527	1,497	2,580	1,999	2,425	2,484
Food	1,690	1,013	3,041	1,511	642	1,535	975	400	1,098	1,326	1,923	3,593	1,422	638	1,571	475	536	1,022
Textiles	707	768	626	2,176	209	846	3,184	448	3,445	1,307	2,019	1,305	889	-	7,497	18,659	-	8,135
Apparel	909	2,558	276	2,191	2,266	1,013	362	1,732	820	1,533	1,347	-	1,057	-	6,078	-	31,689	1,330
Leather & footwear	1,155	1,384	209	2,459	-	1,064	1,691	-	1,732	1,567	-	361	1,610	-	1,630	625	361	2,290
Chemicals & products	933	1,174	1,153	1,637	1,221	744	1,892	302	937	953	1,383	561	1,168	1,183	839	-	867	1,576
Rubber products	1,936	17,851	1,046	422	10,930	1,127	2,891	1,475	756	1,023	989	1,457	1,170	1,959	7,516	793	357	1,131
Plastics & products	769	97	130	620	269	492	2,922	1,690	378	1,886	5,481	1,026	914	217	682	1,407	532	1,330
Nonmetallic mineral products	2,814	651	167	627	1,478	3,971	-	971	161	963	10,361	2,269	3,463	727	2,084	-	471	321
Metal products	1,216	1,189	1,505	1,818	713	1,389	1,814	856	1,154	1,211	1,548	-	1,997	749	1,358	-	1,163	1,334
General machinery	1,599	1,553	302	1,273	1,003	2,499	889	618	1,966	988	787	598	1,962	1,042	2,481	3,508	1,015	1,805
Electric machinery	1,038	2,682	992	1,419	535	2,091	1,538	590	1,151	1,351	6,255	671	1,823	756	2,698	1,105	1,039	4,796
Office & computing machinery	1,766	-	1,688	969	1,190	5,675	4,388	-	763	902	-	1,767	1,391	1,761	5,243	-	-	364
Miscellaneous electric machinery	1,004	8,126	325	1,489	147	1,382	1,315	-	453	916	6,255	346	1,737	708	1,105	-	1,039	4,177
Radio, TV, communication	1,026	892	729	1,175	636	594	1,163	590	1,121	2,793	-	535	1,914	454	2,570	1,105	-	9,795
Precision machinery	1,136	817	130	2,185	-	806	-	-	2,179	1,162	-	138	1,987	-	1,366	-	-	-
Motor vehicles	1,447	246	2,030	4,419	-	1,175	96	216	1,161	1,089	539	1,769	1,385	610	1,541	-	160	272
Furniture	1,387	417	247	998	-	525	1,704	531	473	1,128	125	496	1,152	-	624	-	-	162
Jewelry	2,587	1,265	1,251	1,962	863	511	989	288	4,123	1,351	755	1,245	625	-	-	-	503	2,290
Other manufacturing industries	1,612	5,684	898	910	610	1,386	3,461	644	722	1,584	1,364	2,169	1,163	6,153	975	883	742	1,364

Note: - = sample size is 0.

Source: Compilations from plant-level data underlying National Statistical Office (1999, 2001).

Table C1: Estimates of Value Added per Production Worker for Food

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.372	0.00	3.379	0.00	3.393	0.00	3.484	0.00	3.494	0.00	3.520	0.00
ln(EN/EP)	0.293	0.00	0.292	0.00	0.293	0.00	0.237	0.00	0.236	0.00	0.240	0.00
ln(K/EP)	0.305	0.00	0.302	0.00	0.298	0.00	0.224	0.00	0.222	0.00	0.216	0.00
Df	-0.225	0.06	-	-	-	-	0.261	0.05	-	-	-	-
Dftriad	-	-	-0.188	0.18	-	-	-	-	0.384	0.02	-	-
Dfeu	-	-	-	-	-0.063	0.79	-	-	-	-	0.641	0.09
Dfus	-	-	-	-	0.495	0.12	-	-	-	-	1.473	0.00
Dfjp	-	-	-	-	-0.379	0.03	-	-	-	-	0.067	0.72
Dfasia4	-	-	-0.347	0.09	-	-	-	-	0.064	0.76	-	-
Dfsg	-	-	-	-	-0.185	0.57	-	-	-	-	-0.038	0.94
Dftw	-	-	-	-	-0.281	0.33	-	-	-	-	0.055	0.82
Dfkr	-	-	-	-	-0.082	0.86	-	-	-	-	0.183	0.82
Dfch	-	-	-	-	-0.894	0.03	-	-	-	-	0.017	0.97
Dfot	-	-	-0.122	0.64	-0.124	0.64	-	-	0.212	0.48	0.198	0.51
Dboi	0.030	0.80	0.029	0.80	0.028	0.81	-	-	-	-	-	-
Dold	0.113	0.14	0.113	0.14	0.112	0.14	0.076	0.35	0.070	0.39	0.065	0.43
Dx	0.227	0.01	0.230	0.01	0.235	0.00	0.436	0.00	0.436	0.00	0.466	0.00
Dm	0.070	0.37	0.066	0.40	0.061	0.43	0.261	0.01	0.252	0.01	0.231	0.02
Dlarge	0.629	0.01	0.628	0.01	0.696	0.00	0.472	0.01	0.484	0.01	0.535	0.00
F-test	33.90	0.00	27.17	0.00	18.69	0.00	28.66	0.00	22.49	0.00	15.57	0.00
White	80.95	0.00	104.37	0.00	136.96	0.00	32.50	0.34	36.42	0.78	40.14	1.00
Adjusted R-sq.	0.173	-	0.173	-	0.175	-	0.197	-	0.197	-	0.205	-
Observations	1,255	-	1,255	-	1,255	-	791	-	791	-	791	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.528	0.00	3.546	0.00	3.545	0.00	3.921	0.00	3.933	0.00	3.950	0.00
ln(EN/EP)	0.283	0.00	0.281	0.00	0.282	0.00	0.247	0.00	0.246	0.00	0.251	0.00
ln(K/EP)	0.363	0.00	0.359	0.00	0.358	0.00	0.233	0.00	0.231	0.00	0.226	0.00
Df	-0.225	0.08	-	-	-	-	0.134	0.30	-	-	-	-
Dftriad	-	-	-0.149	0.30	-	-	-	-	0.260	0.10	-	-
Dfeu	-	-	-	-	-0.158	0.54	-	-	-	-	0.434	0.22
Dfus	-	-	-	-	0.362	0.24	-	-	-	-	1.154	0.00
Dfjp	-	-	-	-	-0.290	0.10	-	-	-	-	-0.028	0.88
Dfasia4	-	-	-0.404	0.08	-	-	-	-	-0.035	0.86	-	-
Dfsg	-	-	-	-	-0.477	0.14	-	-	-	-	-0.191	0.68
Dftw	-	-	-	-	-0.321	0.34	-	-	-	-	-0.001	1.00
Dfkr	-	-	-	-	-0.131	0.80	-	-	-	-	-0.018	0.98
Dfch	-	-	-	-	-0.990	0.02	-	-	-	-	-0.436	0.55
Dfot	-	-	-0.158	0.56	-0.165	0.55	-	-	-0.007	0.98	-0.026	0.93
Dboi	-0.044	0.72	-0.048	0.69	-0.042	0.73	-	-	-	-	-	-
Dold	0.172	0.08	0.168	0.09	0.176	0.08	0.100	0.28	0.096	0.31	0.091	0.34
Dx	-0.048	0.65	-0.045	0.67	-0.045	0.67	0.167	0.12	0.167	0.12	0.200	0.07
Dm	-0.051	0.60	-0.059	0.54	-0.060	0.54	0.270	0.01	0.257	0.01	0.247	0.02
Dlarge	0.507	0.03	0.512	0.03	0.582	0.02	0.197	0.31	0.234	0.24	0.291	0.14
F-test	27.36	0.00	21.99	0.00	14.94	0.00	18.35	0.00	14.49	0.00	10.25	0.00
White	68.56	0.00	94.14	0.00	115.36	0.02	30.00	0.47	32.44	0.88	36.63	1.00
Adjusted R-sq.	0.209	-	0.208	-	0.208	-	0.196	-	0.196	-	0.206	-
Observations	798	-	798	-	798	-	499	-	499	-	499	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.

Table C2: Estimates of Value Added per Production Worker for Textiles

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.257	0.00	4.294	0.00	4.279	0.00	3.914	0.00	3.911	0.00	3.998	0.00
ln(EN/EP)	0.357	0.00	0.361	0.00	0.361	0.00	0.401	0.00	0.404	0.00	0.422	0.00
ln(K/EP)	0.044	0.20	0.040	0.27	0.042	0.24	0.197	0.00	0.205	0.00	0.192	0.00
Df	0.149	0.23	-	-	-	-	0.117	0.54	-	-	-	-
Dftriad	-	-	0.527	0.01	-	-	-	-	0.019	0.94	-	-
Dfeu	-	-	-	-	0.817	0.00	-	-	-	-	0.263	0.69
Dfus	-	-	-	-	1.153	0.05	-	-	-	-	-0.026	0.96
Dfjp	-	-	-	-	0.429	0.05	-	-	-	-	0.015	0.96
Dfasia4	-	-	-0.041	0.82	-	-	-	-	0.017	0.95	-	-
Dfsg	-	-	-	-	-0.226	0.08	-	-	-	-	-	-
Dftw	-	-	-	-	0.021	0.92	-	-	-	-	-0.024	0.93
Dfkr	-	-	-	-	0.321	0.53	-	-	-	-	1.424	0.22
Dfch	-	-	-	-	-0.550	0.04	-	-	-	-	-0.414	0.71
Dfot	-	-	-0.083	0.82	-0.099	0.79	-	-	0.509	0.16	0.522	0.15
Dboi	-0.093	0.54	-0.212	0.23	-0.236	0.18	-	-	-	-	-	-
Dold	0.034	0.71	0.028	0.75	0.054	0.55	-0.264	0.07	-0.278	0.05	-0.273	0.06
Dx	0.031	0.77	0.012	0.91	-0.001	0.99	0.505	0.00	0.496	0.00	0.493	0.00
Dm	-0.074	0.45	-0.080	0.42	-0.078	0.43	-0.008	0.96	-0.015	0.93	-0.032	0.84
Dlarge	0.398	0.05	0.457	0.08	0.528	0.05	0.780	0.00	0.742	0.01	0.770	0.00
F-test	8.70	0.00	7.89	0.00	5.67	0.00	15.80	0.00	12.45	0.00	8.69	0.00
White	50.73	0.08	94.24	0.00	121.10	0.00	27.80	0.53	41.74	0.44	44.65	0.65
Adjusted R-sq.	0.093	-	0.103	-	0.105	-	0.280	-	0.279	-	0.273	-
Observations	601	-	601	-	601	-	267	-	267	-	267	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.610	0.00	4.650	0.00	4.606	0.00	4.179	0.00	4.166	0.00	4.307	0.00
ln(EN/EP)	0.389	0.00	0.392	0.00	0.387	0.00	0.306	0.00	0.293	0.00	0.319	0.00
ln(K/EP)	-0.011	0.83	-0.018	0.74	-0.013	0.80	0.176	0.00	0.183	0.00	0.162	0.02
Df	0.280	0.08	-	-	-	-	-0.043	0.83	-	-	-	-
Dftriad	-	-	0.569	0.01	-	-	-	-	-0.053	0.84	-	-
Dfeu	-	-	-	-	0.915	0.09	-	-	-	-	0.023	0.97
Dfus	-	-	-	-	1.121	0.06	-	-	-	-	-0.139	0.81
Dfjp	-	-	-	-	0.480	0.04	-	-	-	-	-0.023	0.94
Dfasia4	-	-	0.106	0.60	-	-	-	-	-0.281	0.35	-	-
Dfsg	-	-	-	-	-0.341	0.77	-	-	-	-	-	-
Dftw	-	-	-	-	0.078	0.75	-	-	-	-	-0.361	0.24
Dfkr	-	-	-	-	0.628	0.14	-	-	-	-	1.116	0.32
Dfch	-	-	-	-	-0.329	0.48	-	-	-	-	-	-
Dfot	-	-	0.059	0.86	0.032	0.92	-	-	0.377	0.30	0.382	0.30
Dboi	-0.149	0.42	-0.240	0.21	-0.269	0.16	-	-	-	-	-	-
Dold	-0.085	0.52	-0.087	0.51	-0.043	0.75	-0.399	0.02	-0.431	0.02	-0.433	0.02
Dx	-0.023	0.87	-0.032	0.83	-0.036	0.80	0.409	0.04	0.386	0.06	0.387	0.06
Dm	-0.025	0.87	-0.027	0.86	-0.027	0.86	-0.108	0.59	-0.126	0.54	-0.147	0.47
Dlarge	0.453	0.11	0.498	0.08	0.592	0.04	0.820	0.00	0.765	0.01	0.808	0.01
F-test	5.28	0.00	4.66	0.00	3.37	0.00	8.01	0.00	6.49	0.00	4.98	0.00
White	45.32	0.16	61.87	0.19	77.32	0.40	20.45	0.88	39.88	0.52	44.72	0.61
Adjusted R-sq.	0.090	-	0.096	-	0.093	-	0.230	-	0.232	-	0.225	-
Observations	346	-	346	-	346	-	165	-	165	-	165	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.

Table C3: Estimates of Value Added per Production Worker for Apparel

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.164	0.00	4.167	0.00	4.171	0.00	3.699	0.00	3.667	0.00	3.722	0.00
ln(EN/EP)	0.262	0.00	0.263	0.00	0.265	0.00	0.252	0.04	0.238	0.07	0.267	0.03
ln(K/EP)	0.125	0.00	0.123	0.00	0.121	0.00	0.128	0.19	0.130	0.19	0.127	0.19
Df	-0.044	0.69	-	-	-	-	0.524	0.12	-	-	-	-
Dftriad	-	-	-0.050	0.80	-	-	-	-	0.647	0.13	-	-
Dfeu	-	-	-	-	0.170	0.58	-	-	-	-	1.005	0.30
Dfus	-	-	-	-	-1.082	0.04	-	-	-	-	-	-
Dfjp	-	-	-	-	-0.008	0.97	-	-	-	-	0.525	0.23
Dfasia4	-	-	0.202	0.17	-	-	-	-	0.391	0.44	-	-
Dfsg	-	-	-	-	0.138	0.83	-	-	-	-	-3.267	0.01
Dftw	-	-	-	-	0.165	0.50	-	-	-	-	1.078	0.17
Dfkr	-	-	-	-	0.126	0.81	-	-	-	-	-	-
Dfch	-	-	-	-	0.326	0.31	-	-	-	-	0.888	0.16
Dfot	-	-	-0.291	0.16	-0.290	0.11	-	-	0.445	0.42	0.440	0.41
Dboi	-0.159	0.28	-0.149	0.32	-0.167	0.26	-	-	-	-	-	-
Dold	0.027	0.76	0.037	0.66	0.056	0.54	0.430	0.15	0.429	0.15	0.390	0.18
Dx	-0.042	0.63	-0.041	0.64	-0.044	0.61	0.349	0.31	0.333	0.34	0.373	0.28
Dm	0.015	0.87	0.021	0.80	0.024	0.78	-0.196	0.57	-0.203	0.56	-0.132	0.70
Dlarge	0.381	0.03	0.365	0.03	0.384	0.03	1.179	0.05	1.241	0.05	0.872	0.17
F-test	10.91	0.00	9.18	0.00	6.42	0.00	4.34	0.00	3.34	0.00	3.53	0.00
White	45.67	0.18	79.89	0.01	87.83	0.13	10.90	1.00	12.08	1.00	11.86	1.00
Adjusted R-sq.	0.116	-	0.119	-	0.118	-	0.180	-	0.165	-	0.221	-
Observations	607	-	607	-	607	-	108	-	108	-	108	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.639	0.00	4.658	0.00	4.674	0.00	3.904	0.00	4.031	0.00	3.958	0.00
ln(EN/EP)	0.262	0.00	0.264	0.00	0.267	0.00	0.097	0.43	0.131	0.33	0.120	0.38
ln(K/EP)	0.127	0.03	0.118	0.03	0.114	0.05	0.172	0.04	0.152	0.08	0.172	0.05
Df	0.049	0.74	-	-	-	-	0.493	0.06	-	-	-	-
Dftriad	-	-	0.019	0.93	-	-	-	-	0.473	0.13	-	-
Dfeu	-	-	-	-	0.276	0.77	-	-	-	-	1.349	0.07
Dfus	-	-	-	-	-0.557	0.35	-	-	-	-	-	-
Dfjp	-	-	-	-	0.036	0.88	-	-	-	-	0.376	0.24
Dfasia4	-	-	0.364	0.02	-	-	-	-	1.047	0.03	-	-
Dfsg	-	-	-	-	0.962	0.00	-	-	-	-	-	-
Dftw	-	-	-	-	0.366	0.10	-	-	-	-	0.997	0.06
Dfkr	-	-	-	-	0.185	0.14	-	-	-	-	-	-
Dfch	-	-	-	-	0.307	0.21	-	-	-	-	1.602	0.11
Dfot	-	-	-0.203	0.44	-0.191	0.47	-	-	0.234	0.53	0.310	0.42
Dboi	-0.225	0.21	-0.219	0.23	-0.243	0.20	-	-	-	-	-	-
Dold	-0.020	0.86	-0.011	0.92	0.001	0.99	0.247	0.32	0.272	0.27	0.286	0.25
Dx	-0.389	0.00	-0.399	0.00	-0.397	0.00	-0.047	0.89	-0.080	0.81	-0.074	0.82
Dm	-0.077	0.50	-0.059	0.61	-0.061	0.61	-0.201	0.49	-0.158	0.59	-0.170	0.56
Dlarge	0.394	0.04	0.410	0.02	0.373	0.05	0.894	0.08	0.690	0.19	0.139	0.85
F-test	7.65	0.00	6.52	0.00	4.41	0.00	3.82	0.00	3.26	0.00	2.81	0.01
White or LM	72.09	0.00	111.37	0.00	126.15	0.00	11.80	0.99	15.87	0.99	0.28	0.60
Adjusted R-sq.	0.133	-	0.137	-	0.128	-	0.228	-	0.233	-	0.229	-
Observations	349	-	349	-	349	-	68	-	68	-	68	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less;
LM-test used for equation 3, large firms in 1998 because White could not be calculated.

Table C4: Estimates of Value Added per Production Worker for Leather and Footwear

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.237	0.00	4.235	0.00	4.249	0.00	3.226	0.00	3.232	0.00	3.049	0.00
ln(EN/EP)	0.226	0.00	0.225	0.00	0.233	0.00	0.206	0.03	0.207	0.03	0.192	0.04
ln(K/EP)	0.114	0.05	0.115	0.05	0.116	0.05	0.285	0.00	0.285	0.00	0.311	0.00
Df	0.078	0.71	-	-	-	-	0.043	0.85	-	-	-	-
Dftriad	-	-	0.153	0.65	-	-	-	-	0.144	0.73	-	-
Dfeu	-	-	-	-	0.334	0.67	-	-	-	-	-	-
Dfus	-	-	-	-	-0.328	0.68	-	-	-	-	-1.024	0.13
Dfjp	-	-	-	-	0.228	0.57	-	-	-	-	0.697	0.15
Dfasia4	-	-	0.000	1.00	-	-	-	-	-0.022	0.94	-	-
Dfsg	-	-	-	-	-	-	-	-	-	-	-	-
Dftw	-	-	-	-	0.050	0.88	-	-	-	-	-0.552	0.24
Dfkr	-	-	-	-	-0.142	0.75	-	-	-	-	0.769	0.05
Dfch	-	-	-	-	0.338	0.76	-	-	-	-	-1.189	0.08
Dfot	-	-	0.256	0.64	0.256	0.64	-	-	0.132	0.85	0.064	0.92
Dboi	-0.018	0.93	-0.013	0.95	-0.029	0.89	-	-	-	-	-	-
Dold	-0.012	0.95	-0.013	0.94	-0.009	0.96	0.361	0.05	0.364	0.05	0.364	0.04
Dx	-0.068	0.66	-0.078	0.61	-0.080	0.61	0.567	0.00	0.552	0.00	0.606	0.00
Dm	-0.036	0.82	-0.032	0.84	-0.029	0.86	0.276	0.16	0.282	0.16	0.332	0.09
Dlarge	-0.266	0.40	-0.284	0.38	-0.246	0.46	-0.051	0.86	-0.065	0.83	-0.012	0.97
F-test	2.47	0.01	1.99	0.04	1.45	0.13	9.10	0.00	6.99	0.00	6.75	0.00
White	26.71	0.87	26.43	0.98	28.00	1.00	23.16	0.77	32.13	0.65	25.57	0.97
Adjusted R-sq.	0.047	-	0.039	-	0.026	-	0.291	-	0.281	-	0.333	-
Observations	242	-	242	-	242	-	139	-	139	-	139	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.733	0.00	4.737	0.00	4.722	0.00	3.741	0.00	3.746	0.00	3.538	0.00
ln(EN/EP)	0.218	0.05	0.219	0.06	0.228	0.05	0.204	0.02	0.207	0.02	0.217	0.01
ln(K/EP)	0.108	0.20	0.108	0.21	0.118	0.17	0.292	0.00	0.291	0.00	0.331	0.00
Df	0.070	0.79	-	-	-	-	0.035	0.86	-	-	-	-
Dftriad	-	-	0.046	0.90	-	-	-	-	-0.037	0.91	-	-
Dfeu	-	-	-	-	0.286	0.72	-	-	-	-	0.000	0.00
Dfus	-	-	-	-	-0.531	0.52	-	-	-	-	-0.975	0.06
Dfjp	-	-	-	-	0.136	0.75	-	-	-	-	0.571	0.17
Dfasia4	-	-	0.064	0.85	-	-	-	-	0.051	0.84	-	-
Dfsg	-	-	-	-	-	-	-	-	-	-	0.000	0.00
Dftw	-	-	-	-	-0.047	0.90	-	-	-	-	0.227	0.58
Dfkr	-	-	-	-	0.481	0.47	-	-	-	-	0.550	0.11
Dfch	-	-	-	-	-	-	-	-	-	-	-1.267	0.01
Dfot	-	-	0.250	0.75	0.258	0.75	-	-	0.133	0.81	0.095	0.85
Dboi	-0.261	0.28	-0.262	0.29	-0.258	0.31	-	-	-	-	-	-
Dold	0.021	0.94	0.022	0.94	0.032	0.91	0.497	0.00	0.497	0.00	0.456	0.00
Dx	-0.225	0.34	-0.226	0.34	-0.213	0.37	0.152	0.42	0.159	0.42	0.260	0.17
Dm	-0.217	0.44	-0.216	0.45	-0.229	0.42	0.138	0.48	0.134	0.50	0.176	0.35
Dlarge	-0.211	0.63	-0.199	0.66	-0.199	0.67	-0.180	0.46	-0.182	0.46	-0.115	0.63
F-test	1.79	0.09	1.42	0.18	1.16	0.32	7.39	0.00	5.64	0.00	5.99	0.00
White	37.42	0.31	37.73	0.57	39.19	0.75	17.49	0.95	23.58	0.93	18.81	1.00
Adjusted R-sq.	0.049	-	0.033	-	0.017	-	0.305	-	0.290	-	0.370	-
Observations	124	-	124	-	124	-	103	-	103	-	103	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.

Table C5: Estimates of Value Added per Production Worker for Chemicals and Products

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.789	0.00	3.801	0.00	3.833	0.00	4.216	0.00	4.243	0.00	4.248	0.00
ln(EN/EP)	0.327	0.00	0.325	0.00	0.322	0.00	0.465	0.00	0.462	0.00	0.437	0.00
ln(K/EP)	0.240	0.00	0.239	0.00	0.231	0.00	0.207	0.00	0.202	0.00	0.195	0.00
Df	0.419	0.00	-	-	-	-	0.394	0.01	-	-	-	-
Dftriad	-	-	0.490	0.01	-	-	-	-	0.474	0.01	-	-
Dfeu	-	-	-	-	0.720	0.03	-	-	-	-	0.862	0.02
Dfus	-	-	-	-	0.491	0.14	-	-	-	-	0.663	0.07
Dfjp	-	-	-	-	0.439	0.03	-	-	-	-	0.327	0.15
Dfasia4	-	-	0.318	0.15	-	-	-	-	0.304	0.10	-	-
Dfsg	-	-	-	-	0.625	0.24	-	-	-	-	0.847	0.05
Dftw	-	-	-	-	0.223	0.42	-	-	-	-	0.174	0.55
Dfkr	-	-	-	-	0.675	0.24	-	-	-	-	-	-
Dfch	-	-	-	-	0.079	0.89	-	-	-	-	-0.129	0.81
Dfot	-	-	0.389	0.19	0.398	0.18	-	-	0.313	0.51	0.327	0.25
Dboi	-0.413	0.02	-0.427	0.02	-0.437	0.02	-	-	-	-	-	-
Dold	0.140	0.24	0.134	0.27	0.129	0.30	0.057	0.68	0.047	0.74	0.032	0.82
Dx	-0.009	0.94	-0.015	0.91	-0.008	0.95	0.072	0.62	0.073	0.59	0.050	0.73
Dm	0.120	0.43	0.116	0.44	0.107	0.48	0.268	0.09	0.260	0.10	0.274	0.08
Dlarge	1.117	0.00	1.094	0.00	1.110	0.00	0.537	0.15	0.524	0.12	0.564	0.14
F-test	20.01	0.00	16.01	0.00	10.71	0.00	21.02	0.00	16.31	0.00	11.69	0.00
White	18.09	1.00	22.90	1.00	34.29	1.00	14.00	0.99	71.02	0.00	77.19	0.09
Adjusted R-sq.	0.238	-	0.235	-	0.230	-	0.351	-	0.347	-	0.349	-
Observations	489	-	489	-	489	-	260	-	260	-	260	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.125	0.00	4.164	0.00	4.224	0.00	4.990	0.00	5.051	0.00	5.074	0.00
ln(EN/EP)	0.353	0.00	0.348	0.00	0.346	0.00	0.477	0.00	0.475	0.00	0.450	0.00
ln(K/EP)	0.204	0.00	0.198	0.00	0.184	0.00	0.141	0.01	0.132	0.00	0.125	0.02
Df	0.378	0.02	-	-	-	-	0.442	0.01	-	-	-	-
Dftriad	-	-	0.501	0.01	-	-	-	-	0.553	0.00	-	-
Dfeu	-	-	-	-	0.692	0.05	-	-	-	-	0.884	0.01
Dfus	-	-	-	-	0.441	0.23	-	-	-	-	0.628	0.08
Dfjp	-	-	-	-	0.482	0.04	-	-	-	-	0.462	0.04
Dfasia4	-	-	0.210	0.40	-	-	-	-	0.334	0.08	-	-
Dfsg	-	-	-	-	0.601	0.28	-	-	-	-	0.761	0.06
Dftw	-	-	-	-	0.093	0.77	-	-	-	-	0.251	0.40
Dfkr	-	-	-	-	0.603	0.36	-	-	-	-	-	-
Dfch	-	-	-	-	-0.186	0.78	-	-	-	-	-0.273	0.64
Dfot	-	-	0.294	0.34	0.301	0.33	-	-	0.295	0.55	0.312	0.26
Dboi	-0.440	0.03	-0.462	0.02	-0.471	0.02	-	-	-	-	-	-
Dold	0.192	0.19	0.180	0.22	0.177	0.24	0.000	1.00	-0.018	0.90	-0.039	0.79
Dx	-0.005	0.97	-0.014	0.93	0.000	1.00	-0.122	0.42	-0.120	0.40	-0.148	0.33
Dm	0.046	0.82	0.036	0.86	0.022	0.92	0.049	0.79	0.032	0.86	0.032	0.86
Dlarge	1.147	0.00	1.120	0.00	1.152	0.00	0.728	0.06	0.735	0.05	0.737	0.06
F-test	12.60	0.00	10.18	0.00	6.84	0.00	16.23	0.00	12.70	0.00	9.08	0.00
White	18.88	1.00	23.74	1.00	39.85	1.00	10.85	1.00	76.61	0.00	80.16	0.06
Adjusted R-sq.	0.203	-	0.201	-	0.194	-	0.351	-	0.348	-	0.348	-
Observations	366	-	366	-	366	-	198	-	198	-	198	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.

Table C6: Estimates of Value Added per Production Worker for Rubber Products

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.959	0.00	3.936	0.00	3.955	0.00	4.122	0.00	4.174	0.00	4.212	0.00
ln(EN/EP)	0.380	0.00	0.391	0.00	0.395	0.00	0.254	0.00	0.281	0.00	0.306	0.00
ln(K/EP)	0.219	0.01	0.234	0.00	0.226	0.00	0.276	0.00	0.270	0.00	0.270	0.00
Df	-0.283	0.21	-	-	-	-	0.237	0.19	-	-	-	-
Dftriad	-	-	-0.526	0.13	-	-	-	-	-0.045	0.86	-	-
Dfeu	-	-	-	-	0.049	0.95	-	-	-	-	0.484	0.33
Dfus	-	-	-	-	0.700	0.41	-	-	-	-	0.382	0.40
Dfjp	-	-	-	-	-0.839	0.03	-	-	-	-	-0.406	0.18
Dfasia4	-	-	0.077	0.82	-	-	-	-	0.595	0.02	-	-
Dfsg	-	-	-	-	0.366	0.51	-	-	-	-	1.178	0.16
Dftw	-	-	-	-	-0.259	0.61	-	-	-	-	0.852	0.01
Dfkr	-	-	-	-	1.238	0.39	-	-	-	-	0.487	0.56
Dfch	-	-	-	-	-0.009	0.99	-	-	-	-	-0.282	0.57
Dfot	-	-	-0.393	0.21	-0.406	0.19	-	-	0.093	0.74	0.081	0.77
Dboi	-0.078	0.73	-0.055	0.81	-0.016	0.94	-	-	-	-	-	-
Dold	0.211	0.29	0.202	0.31	0.213	0.29	-0.073	0.60	-0.099	0.47	-0.100	0.46
Dx	0.325	0.11	0.295	0.15	0.300	0.15	-0.146	0.38	-0.122	0.40	-0.107	0.46
Dm	-0.308	0.09	-0.281	0.13	-0.270	0.14	-0.324	0.02	-0.288	0.04	-0.278	0.05
Dlarge	1.297	0.00	1.310	0.00	1.270	0.00	0.240	0.38	0.401	0.12	0.474	0.07
F-test	5.70	0.00	4.77	0.00	3.52	0.00	10.09	0.00	8.40	0.00	6.16	0.00
White	40.63	0.36	48.29	0.62	54.64	0.88	56.51	0.00	56.74	0.08	59.64	0.38
Adjusted R-sq.	0.123	-	0.124	-	0.124	-	0.273	-	0.283	-	0.299	-
Observations	268	-	268	-	268	-	170	-	170	-	170	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.439	0.00	4.436	0.00	4.456	0.00	4.360	0.00	4.427	0.00	4.458	0.00
ln(EN/EP)	0.393	0.00	0.411	0.00	0.416	0.00	0.283	0.00	0.305	0.00	0.329	0.00
ln(K/EP)	0.267	0.00	0.286	0.00	0.275	0.00	0.295	0.00	0.282	0.00	0.279	0.00
Df	-0.248	0.30	-	-	-	-	0.294	0.11	-	-	-	-
Dftriad	-	-	-0.442	0.24	-	-	-	-	0.150	0.57	-	-
Dfeu	-	-	-	-	-0.022	0.98	-	-	-	-	0.533	0.29
Dfus	-	-	-	-	0.569	0.51	-	-	-	-	0.518	0.27
Dfjp	-	-	-	-	-0.714	0.09	-	-	-	-	-0.166	0.60
Dfasia4	-	-	0.236	0.52	-	-	-	-	0.575	0.03	-	-
Dfsg	-	-	-	-	0.359	0.54	-	-	-	-	1.148	0.18
Dftw	-	-	-	-	0.053	0.93	-	-	-	-	0.843	0.01
Dfkr	-	-	-	-	1.128	0.44	-	-	-	-	0.424	0.62
Dfch	-	-	-	-	0.065	0.93	-	-	-	-	-0.229	0.65
Dfot	-	-	-0.469	0.15	-0.477	0.15	-	-	0.089	0.76	0.076	0.79
Dboi	-0.243	0.33	-0.232	0.36	-0.202	0.43	-	-	-	-	-	-
Dold	-0.038	0.88	-0.050	0.84	-0.029	0.91	-0.066	0.68	-0.092	0.56	-0.096	0.54
Dx	-0.050	0.85	-0.083	0.75	-0.067	0.80	-0.368	0.06	-0.335	0.05	-0.296	0.08
Dm	-0.485	0.02	-0.477	0.03	-0.466	0.03	-0.465	0.01	-0.444	0.01	-0.433	0.01
Dlarge	1.340	0.00	1.305	0.00	1.293	0.00	0.257	0.43	0.377	0.20	0.427	0.15
F-test	5.47	0.00	4.69	0.00	3.28	0.00	9.26	0.00	7.46	0.00	5.34	0.00
White	34.52	0.63	43.61	0.79	52.50	0.92	51.20	0.01	51.65	0.15	56.83	0.41
Adjusted R-sq.	0.148	-	0.152	-	0.143	-	0.297	-	0.298	-	0.307	-
Observations	207	-	207	-	207	-	138	-	138	-	138	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.

Table C7: Estimates of Value Added per Production Worker for Plastics and Products

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.946	0.00	3.958	0.00	3.982	0.00	2.924	0.00	2.956	0.00	2.902	0.00
ln(EN/EP)	0.370	0.00	0.371	0.00	0.382	0.00	0.132	0.16	0.136	0.15	0.140	0.14
ln(K/EP)	0.127	0.00	0.124	0.00	0.125	0.00	0.277	0.00	0.271	0.00	0.289	0.00
Df	-0.097	0.45	-	-	-	-	0.298	0.17	-	-	-	-
Dftriad	-	-	-0.007	0.97	-	-	-	-	0.408	0.17	-	-
Dfeu	-	-	-	-	-0.215	0.68	-	-	-	-	0.855	0.34
Dfus	-	-	-	-	0.086	0.91	-	-	-	-	0.510	0.68
Dfjp	-	-	-	-	0.035	0.85	-	-	-	-	0.398	0.19
Dfasia4	-	-	-0.055	0.76	-	-	-	-	0.165	0.55	-	-
Dfsg	-	-	-	-	-0.424	0.32	-	-	-	-	-1.346	0.12
Dftw	-	-	-	-	-0.159	0.45	-	-	-	-	0.328	0.32
Dfkr	-	-	-	-	0.883	0.15	-	-	-	-	0.842	0.34
Dfch	-	-	-	-	0.414	0.33	-	-	-	-	0.069	0.90
Dfot	-	-	-0.424	0.12	-0.419	0.12	-	-	0.440	0.35	0.455	0.33
Dboi	-0.297	0.04	-0.324	0.02	-0.377	0.01	-	-	-	-	-	-
Dold	0.141	0.19	0.157	0.15	0.156	0.15	0.156	0.47	0.164	0.45	0.149	0.50
Dx	-0.053	0.64	-0.054	0.63	-0.057	0.61	0.331	0.16	0.318	0.18	0.245	0.31
Dm	0.280	0.01	0.275	0.01	0.270	0.01	-0.073	0.74	-0.088	0.69	-0.064	0.77
Dlarge	0.560	0.01	0.592	0.01	0.606	0.01	0.526	0.14	0.566	0.12	0.722	0.05
F-test	12.16	0.00	9.92	0.00	6.94	0.00	4.55	0.00	3.57	0.00	2.59	0.00
White	40.06	0.38	58.55	0.28	61.59	0.83	8.50	1.00	9.07	1.00	10.22	1.00
Adjusted R-sq.	0.142	-	0.142	-	0.142	-	0.129	-	0.121	-	0.117	-
Observations	539	-	539	-	539	-	169	-	169	-	169	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.796	0.00	3.837	0.00	3.883	0.00	2.876	0.00	2.940	0.00	2.864	0.00
ln(EN/EP)	0.347	0.00	0.354	0.00	0.374	0.00	0.108	0.31	0.116	0.28	0.120	0.28
ln(K/EP)	0.179	0.00	0.169	0.01	0.170	0.01	0.413	0.00	0.401	0.00	0.426	0.00
Df	-0.051	0.75	-	-	-	-	0.148	0.53	-	-	-	-
Dftriad	-	-	0.049	0.81	-	-	-	-	0.207	0.48	-	-
Dfeu	-	-	-	-	-0.320	0.61	-	-	-	-	0.318	0.77
Dfus	-	-	-	-	-0.287	0.79	-	-	-	-	0.601	0.57
Dfjp	-	-	-	-	0.115	0.59	-	-	-	-	0.245	0.41
Dfasia4	-	-	0.100	0.66	-	-	-	-	0.059	0.84	-	-
Dfsg	-	-	-	-	-0.340	0.48	-	-	-	-	-1.533	0.05
Dftw	-	-	-	-	0.020	0.95	-	-	-	-	0.326	0.39
Dfkr	-	-	-	-	0.689	0.28	-	-	-	-	0.879	0.25
Dfch	-	-	-	-	0.645	0.24	-	-	-	-	-0.054	0.92
Dfot	-	-	-0.514	0.08	-0.513	0.09	-	-	0.310	0.62	0.337	0.59
Dboi	-0.091	0.60	-0.129	0.46	-0.204	0.26	-	-	-	-	-	-
Dold	0.133	0.32	0.158	0.24	0.160	0.24	0.242	0.34	0.234	0.36	0.215	0.42
Dx	-0.073	0.61	-0.079	0.58	-0.074	0.60	0.158	0.54	0.162	0.54	0.010	0.97
Dm	0.210	0.16	0.205	0.17	0.199	0.18	-0.329	0.21	-0.340	0.20	-0.286	0.28
Dlarge	0.419	0.11	0.510	0.06	0.527	0.05	0.398	0.28	0.428	0.26	0.700	0.08
F-test	7.75	0.00	6.57	0.00	4.57	0.00	4.30	0.00	3.31	0.00	2.61	0.00
White, LM	22.58	0.98	36.29	0.96	46.30	0.98	17.53	0.95	24.71	0.95	0.14	0.71
Adjusted R-sq.	0.148	-	0.152	-	0.147	-	0.183	-	0.168	-	0.180	-
Observations	312	-	312	-	312	-	104	-	104	-	104	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.
LM-test used for equation 3, large firms in 1998 because White could not be calculated.

Table C8: Estimates of Value Added per Production Worker for Nonmetallic Mineral Products

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.585	0.00	3.604	0.00	3.604	0.00	3.805	0.00	3.795	0.00	3.791	0.00
ln(EN/EP)	0.203	0.00	0.214	0.00	0.214	0.00	0.290	0.00	0.290	0.00	0.291	0.00
ln(K/EP)	0.278	0.00	0.277	0.00	0.277	0.00	0.202	0.00	0.205	0.00	0.206	0.00
Df	0.243	0.21	-	-	-	-	0.575	0.00	-	-	-	-
Dftriad	-	-	0.077	0.79	-	-	-	-	0.963	0.00	-	-
Dfeu	-	-	-	-	0.350	0.43	-	-	-	-	1.168	0.00
Dfus	-	-	-	-	-0.987	0.09	-	-	-	-	0.860	0.09
Dfjp	-	-	-	-	0.002	1.00	-	-	-	-	0.839	0.02
Dfasia4	-	-	0.593	0.00	-	-	-	-	0.376	0.21	-	-
Dfsg	-	-	-	-	0.754	0.11	-	-	-	-	0.460	0.55
Dftw	-	-	-	-	0.643	0.01	-	-	-	-	0.349	0.35
Dfkr	-	-	-	-	0.598	0.00	-	-	-	-	-	-
Dfch	-	-	-	-	-0.262	0.22	-	-	-	-	0.383	0.55
Dfot	-	-	-0.678	0.37	-0.719	0.35	-	-	-1.372	0.03	-1.384	0.03
Dboi	-0.488	0.02	-0.461	0.02	-0.491	0.02	-	-	-	-	-	-
Dold	0.035	0.72	0.050	0.60	0.047	0.63	0.070	0.56	0.094	0.43	0.092	0.45
Dx	-0.266	0.05	-0.271	0.04	-0.237	0.08	0.152	0.35	0.135	0.41	0.141	0.39
Dm	-0.037	0.78	-0.054	0.68	-0.072	0.59	-0.030	0.83	-0.060	0.66	-0.058	0.68
Dlarge	0.626	0.12	0.666	0.11	0.749	0.08	1.166	0.00	1.196	0.00	1.215	0.00
F-test	18.75	0.00	15.57	0.00	10.58	0.00	20.24	0.00	17.72	0.00	12.19	0.00
White	101.13	0.00	123.97	0.00	139.74	0.00	11.11	1.00	11.74	1.00	13.47	1.00
Adjusted R-sq.	0.160	-	0.164	-	0.162	-	0.265	-	0.287	-	0.280	-
Observations	746	-	746	-	746	-	375	-	375	-	375	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.424	0.00	4.429	0.00	4.450	0.00	4.136	0.00	4.157	0.00	4.155	0.00
ln(EN/EP)	0.167	0.02	0.185	0.01	0.188	0.01	0.265	0.00	0.279	0.00	0.283	0.00
ln(K/EP)	0.178	0.00	0.182	0.00	0.178	0.00	0.216	0.00	0.216	0.00	0.216	0.00
Df	0.100	0.67	-	-	-	-	0.578	0.01	-	-	-	-
Dftriad	-	-	-0.051	0.88	-	-	-	-	0.817	0.00	-	-
Dfeu	-	-	-	-	0.239	0.64	-	-	-	-	1.081	0.01
Dfus	-	-	-	-	-1.140	0.13	-	-	-	-	0.692	0.17
Dfjp	-	-	-	-	-0.122	0.77	-	-	-	-	0.684	0.06
Dfasia4	-	-	0.391	0.09	-	-	-	-	0.359	0.30	-	-
Dfsg	-	-	-	-	0.281	0.55	-	-	-	-	0.119	0.87
Dftw	-	-	-	-	0.456	0.07	-	-	-	-	0.480	0.28
Dfkr	-	-	-	-	-	-	-	-	-	-	-	-
Dfch	-	-	-	-	-0.321	0.53	-	-	-	-	0.229	0.76
Dfot	-	-	-0.844	0.53	-0.870	0.54	-	-	-1.266	0.10	-1.290	0.10
Dboi	-0.361	0.14	-0.330	0.18	-0.362	0.15	-	-	-	-	-	-
Dold	-0.121	0.39	-0.089	0.53	-0.092	0.51	0.128	0.44	0.135	0.40	0.142	0.39
Dx	-0.367	0.08	-0.379	0.07	-0.325	0.12	0.016	0.94	0.042	0.84	0.046	0.83
Dm	-0.210	0.25	-0.205	0.26	-0.239	0.20	-0.183	0.30	-0.207	0.24	-0.199	0.27
Dlarge	0.664	0.22	0.660	0.23	0.759	0.19	0.739	0.07	0.813	0.05	0.843	0.05
F-test	6.86	0.00	5.76	0.00	4.28	0.00	11.23	0.00	9.95	0.00	6.84	0.00
White	87.06	0.00	109.54	0.00	128.74	0.00	16.50	0.98	16.69	1.00	18.72	1.00
Adjusted R-sq.	0.112	-	0.113	-	0.110	-	0.281	-	0.306	-	0.293	-
Observations	373	-	373	-	373	-	184	-	184	-	184	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.

Table C9: Estimates of Value Added per Production Worker for Metal Products

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.127	0.00	4.118	0.00	4.103	0.00	3.978	0.00	3.974	0.00	3.998	0.00
ln(EN/EP)	0.300	0.00	0.289	0.00	0.283	0.00	0.356	0.00	0.352	0.00	0.345	0.00
ln(K/EP)	0.185	0.00	0.184	0.00	0.184	0.00	0.230	0.00	0.231	0.00	0.221	0.00
Df	0.338	0.01	-	-	-	-	0.225	0.20	-	-	-	-
Dftriad	-	-	0.437	0.02	-	-	-	-	0.233	0.28	-	-
Dfeu	-	-	-	-	-0.002	1.00	-	-	-	-	0.441	0.50
Dfus	-	-	-	-	0.636	0.15	-	-	-	-	-2.572	0.02
Dfjp	-	-	-	-	0.480	0.02	-	-	-	-	0.347	0.13
Dfasia4	-	-	0.164	0.32	-	-	-	-	0.267	0.31	-	-
Dfsg	-	-	-	-	-0.043	0.93	-	-	-	-	-0.287	0.57
Dftw	-	-	-	-	0.053	0.78	-	-	-	-	0.562	0.08
Dfkr	-	-	-	-	1.581	0.00	-	-	-	-	0.000	0.00
Dfch	-	-	-	-	0.064	0.88	-	-	-	-	0.040	0.95
Dfot	-	-	1.028	0.00	1.024	0.00	-	-	-0.018	0.97	0.000	1.00
Dboi	-0.274	0.10	-0.326	0.05	-0.313	0.07	-	-	-	-	-	-
Dold	-0.054	0.56	-0.059	0.52	-0.062	0.50	0.023	0.88	0.022	0.88	0.097	0.53
Dx	-0.150	0.18	-0.155	0.16	-0.167	0.13	0.269	0.10	0.258	0.12	0.217	0.19
Dm	0.112	0.21	0.106	0.23	0.121	0.17	0.111	0.44	0.110	0.45	0.076	0.60
Dlarge	0.305	0.17	0.305	0.17	0.301	0.18	0.426	0.22	0.415	0.24	0.483	0.19
F-test	16.03	0.00	13.46	0.00	9.63	0.00	11.67	0.00	9.04	0.00	7.06	0.00
White	48.11	0.13	60.61	0.22	72.96	0.70	10.42	1.00	13.45	1.00	13.08	1.00
Adjusted R-sq.	0.147	-	0.152	-	0.157	-	0.212	-	0.207	-	0.221	-
Observations	698	-	698	-	698	-	279	-	279	-	279	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.743	0.00	4.731	0.00	4.711	0.00	4.303	0.00	4.245	0.00	4.215	0.00
ln(EN/EP)	0.332	0.00	0.318	0.00	0.305	0.00	0.253	0.01	0.238	0.01	0.234	0.01
ln(K/EP)	0.211	0.00	0.210	0.00	0.206	0.00	0.246	0.00	0.257	0.00	0.258	0.00
Df	0.383	0.01	-	-	-	-	0.359	0.06	-	-	-	-
Dftriad	-	-	0.409	0.06	-	-	-	-	0.243	0.27	-	-
Dfeu	-	-	-	-	-0.056	0.94	-	-	-	-	0.794	0.42
Dfus	-	-	-	-	0.959	0.06	-	-	-	-	-	-
Dfjp	-	-	-	-	0.420	0.08	-	-	-	-	0.229	0.31
Dfasia4	-	-	0.240	0.23	-	-	-	-	0.580	0.04	-	-
Dfsg	-	-	-	-	0.249	0.45	-	-	-	-	0.079	0.89
Dftw	-	-	-	-	0.119	0.65	-	-	-	-	0.719	0.04
Dfkr	-	-	-	-	1.306	0.00	-	-	-	-	-	-
Dfch	-	-	-	-	-0.068	0.86	-	-	-	-	0.730	0.29
Dfot	-	-	0.938	0.00	0.939	0.00	-	-	0.380	0.58	0.388	0.57
Dboi	-0.422	0.03	-0.455	0.02	-0.445	0.03	-	-	-	-	-	-
Dold	-0.194	0.13	-0.201	0.12	-0.209	0.10	0.019	0.91	0.020	0.91	0.051	0.79
Dx	-0.406	0.00	-0.410	0.00	-0.423	0.00	-0.151	0.39	-0.156	0.38	-0.163	0.36
Dm	-0.161	0.19	-0.174	0.16	-0.148	0.23	0.006	0.97	-0.008	0.97	0.010	0.96
Dlarge	0.021	0.94	0.068	0.82	0.099	0.74	0.131	0.73	0.133	0.73	0.109	0.78
F-test	13.38	0.00	11.08	0.00	7.89	0.00	7.85	0.00	6.20	0.00	4.71	0.00
White	63.70	0.01	87.36	0.00	98.02	0.03	13.70	0.99	19.59	0.99	20.05	1.00
Adjusted R-sq.	0.223	-	0.226	-	0.230	-	0.241	-	0.237	-	0.228	-
Observations	347	-	347	-	347	-	152	-	152	-	152	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.

Table C10: Estimates of Value Added per Production Worker for General Machinery

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.714	0.00	3.718	0.00	3.711	0.00	3.381	0.00	3.342	0.00	3.330	0.00
ln(EN/EP)	0.246	0.00	0.250	0.00	0.241	0.00	0.290	0.00	0.288	0.00	0.273	0.00
ln(K/EP)	0.296	0.00	0.296	0.00	0.294	0.00	0.386	0.00	0.394	0.00	0.390	0.00
Df	0.149	0.30	-	-	-	-	0.221	0.19	-	-	-	-
Dftriad	-	-	0.039	0.82	-	-	-	-	0.170	0.37	-	-
Dfeu	-	-	-	-	1.219	0.00	-	-	-	-	0.467	0.21
Dfus	-	-	-	-	0.137	0.84	-	-	-	-	-0.903	0.15
Dfjp	-	-	-	-	-0.088	0.62	-	-	-	-	0.187	0.37
Dfasia4	-	-	0.272	0.17	-	-	-	-	0.397	0.15	-	-
Dfsg	-	-	-	-	0.563	0.26	-	-	-	-	0.508	0.42
Dftw	-	-	-	-	0.406	0.09	-	-	-	-	0.247	0.50
Dfkr	-	-	-	-	0.640	0.27	-	-	-	-	0.485	0.46
Dfch	-	-	-	-	-0.901	0.07	-	-	-	-	0.633	0.32
Dfot	-	-	0.389	0.29	0.401	0.27	-	-	0.181	0.56	0.185	0.55
Dboi	-0.057	0.73	-0.031	0.86	-0.021	0.90	-	-	-	-	-	-
Dold	0.065	0.54	0.070	0.51	0.098	0.36	-0.170	0.21	-0.166	0.22	-0.184	0.18
Dx	0.010	0.93	0.007	0.95	0.004	0.97	0.387	0.01	0.381	0.01	0.389	0.01
Dm	0.034	0.75	0.032	0.76	0.017	0.87	0.033	0.82	0.041	0.79	0.049	0.75
Dlarge	0.089	0.75	0.131	0.64	0.183	0.51	0.668	0.02	0.684	0.02	0.660	0.03
F-test	14.30	0.00	11.60	0.00	9.07	0.00	31.80	0.00	24.64	0.00	16.06	0.00
White	25.78	0.92	35.07	0.96	31.89	1.00	12.16	0.99	18.57	1.00	19.31	1.00
Adjusted R-sq.	0.197	-	0.196	-	0.218	-	0.513	-	0.509	-	0.507	-
Observations	436	-	436	-	436	-	206	-	206	-	206	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.911	0.00	3.901	0.00	3.877	0.00	4.080	0.00	4.014	0.00	4.053	0.00
ln(EN/EP)	0.188	0.00	0.201	0.00	0.179	0.01	0.294	0.00	0.293	0.00	0.274	0.00
ln(K/EP)	0.349	0.00	0.357	0.00	0.356	0.00	0.336	0.00	0.350	0.00	0.332	0.00
Df	0.177	0.31	-	-	-	-	-0.055	0.75	-	-	-	-
Dftriad	-	-	0.020	0.92	-	-	-	-	-0.110	0.55	-	-
Dfeu	-	-	-	-	1.268	0.01	-	-	-	-	0.078	0.81
Dfus	-	-	-	-	0.016	0.98	-	-	-	-	-1.310	0.02
Dfjp	-	-	-	-	-0.130	0.54	-	-	-	-	-0.058	0.77
Dfasia4	-	-	0.446	0.08	-	-	-	-	0.327	0.27	-	-
Dfsg	-	-	-	-	0.461	0.38	-	-	-	-	0.134	0.80
Dftw	-	-	-	-	0.451	0.16	-	-	-	-	0.171	0.70
Dfkr	-	-	-	-	0.509	0.40	-	-	-	-	0.517	0.35
Dfch	-	-	-	-	-0.305	0.76	-	-	-	-	0.731	0.34
Dfot	-	-	0.386	0.34	0.386	0.34	-	-	-0.199	0.52	-0.196	0.52
Dboi	-0.250	0.21	-0.214	0.29	-0.194	0.35	-	-	-	-	-	-
Dold	0.103	0.46	0.122	0.39	0.117	0.41	-0.224	0.15	-0.210	0.18	-0.235	0.14
Dx	-0.090	0.55	-0.094	0.53	-0.097	0.52	0.325	0.05	0.307	0.07	0.316	0.06
Dm	-0.241	0.14	-0.248	0.13	-0.261	0.11	-0.008	0.97	0.006	0.98	0.022	0.92
Dlarge	-0.027	0.93	-0.018	0.96	0.075	0.81	0.556	0.09	0.596	0.07	0.563	0.09
F-test	7.88	0.00	6.62	0.00	5.11	0.00	14.74	0.00	11.80	0.00	8.13	0.00
White	42.07	0.22	47.26	0.58	45.32	0.96	21.44	0.77	34.92	0.61	44.72	0.53
Adjusted R-sq.	0.182	-	0.185	-	0.199	-	0.439	-	0.441	-	0.448	-
Observations	249	-	249	-	249	-	124	-	124	-	124	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.

Table C11: Estimates of Value Added per Production Worker for Electric Machinery

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.915	0.00	3.891	0.00	3.922	0.00	3.880	0.00	3.863	0.00	3.894	0.00
ln(EN/EP)	0.314	0.00	0.310	0.00	0.314	0.00	0.301	0.00	0.293	0.00	0.303	0.00
ln(K/EP)	0.258	0.00	0.263	0.00	0.249	0.00	0.216	0.00	0.218	0.00	0.214	0.00
Df	-0.013	0.93	-	-	-	-	0.228	0.20	-	-	-	-
Dftriad	-	-	-0.078	0.66	-	-	-	-	0.174	0.38	-	-
Dfeu	-	-	-	-	-0.065	0.91	-	-	-	-	0.070	0.91
Dfus	-	-	-	-	-0.425	0.21	-	-	-	-	-0.555	0.12
Dfjp	-	-	-	-	-0.025	0.88	-	-	-	-	0.280	0.17
Dfasia4	-	-	0.070	0.65	-	-	-	-	0.233	0.27	-	-
Dfsg	-	-	-	-	-0.187	0.61	-	-	-	-	-0.104	0.81
Dftw	-	-	-	-	0.003	0.99	-	-	-	-	0.375	0.10
Dfkr	-	-	-	-	0.612	0.03	-	-	-	-	-0.167	0.84
Dfch	-	-	-	-	0.436	0.29	-	-	-	-	-0.699	0.35
Dfot	-	-	-0.018	0.94	-0.012	0.96	-	-	0.543	0.11	0.545	0.10
Dboi	-0.387	0.01	-0.369	0.01	-0.369	0.01	-	-	-	-	-	-
Dold	0.122	0.35	0.125	0.28	0.140	0.23	0.005	0.98	0.007	0.97	0.033	0.84
Dx	-0.073	0.61	-0.078	0.60	-0.067	0.66	0.016	0.93	0.013	0.94	0.008	0.96
Dm	0.223	0.15	0.228	0.10	0.236	0.08	0.369	0.09	0.364	0.10	0.356	0.10
Dlarge	0.704	0.00	0.728	0.00	0.804	0.00	0.450	0.08	0.474	0.07	0.605	0.03
F-test	18.54	0.00	14.88	0.00	10.27	0.00	11.91	0.00	9.39	0.00	6.79	0.00
White	41.27	0.29	74.16	0.02	173.27	0.00	11.26	1.00	25.80	0.96	38.33	0.98
Adjusted R-sq.	0.221	-	0.219	-	0.220	-	0.237	-	0.235	-	0.248	-
Observations	495	-	495	-	495	-	247	-	247	-	247	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.077	0.00	4.051	0.00	4.112	0.00	4.575	0.00	4.559	0.00	4.649	0.00
ln(EN/EP)	0.271	0.00	0.269	0.00	0.282	0.00	0.310	0.00	0.304	0.00	0.322	0.00
ln(K/EP)	0.342	0.00	0.347	0.00	0.328	0.00	0.215	0.00	0.218	0.00	0.213	0.00
Df	-0.201	0.24	-	-	-	-	0.258	0.16	-	-	-	-
Dftriad	-	-	-0.234	0.21	-	-	-	-	0.226	0.27	-	-
Dfeu	-	-	-	-	-0.325	0.61	-	-	-	-	0.256	0.73
Dfus	-	-	-	-	-0.584	0.11	-	-	-	-	-0.579	0.09
Dfjp	-	-	-	-	-0.150	0.40	-	-	-	-	0.360	0.08
Dfasia4	-	-	-0.133	0.51	-	-	-	-	0.245	0.25	-	-
Dfsg	-	-	-	-	-0.484	0.26	-	-	-	-	-0.341	0.43
Dftw	-	-	-	-	-0.156	0.47	-	-	-	-	0.371	0.10
Dfkr	-	-	-	-	0.309	0.29	-	-	-	-	-0.061	0.94
Dfch	-	-	-	-	0.103	0.82	-	-	-	-	0.451	0.65
Dfot	-	-	-0.280	0.37	-0.266	0.32	-	-	0.530	0.11	0.549	0.09
Dboi	-0.309	0.05	-0.302	0.06	-0.312	0.05	-	-	-	-	-	-
Dold	-0.055	0.73	-0.052	0.75	-0.035	0.82	0.082	0.64	0.091	0.61	0.152	0.39
Dx	-0.339	0.06	-0.344	0.06	-0.328	0.08	-0.175	0.38	-0.180	0.37	-0.167	0.40
Dm	0.114	0.61	0.121	0.59	0.134	0.50	-0.067	0.82	-0.076	0.79	-0.166	0.57
Dlarge	0.568	0.01	0.583	0.01	0.671	0.01	0.300	0.23	0.317	0.21	0.483	0.07
F-test	15.43	0.00	12.33	0.00	8.51	0.00	10.19	0.00	7.99	0.00	6.10	0.00
White	26.86	0.89	50.52	0.53	158.47	0.00	11.95	0.99	28.99	0.90	38.96	0.96
Adjusted R-sq.	0.243	-	0.239	-	0.238	-	0.246	-	0.242	-	0.266	-
Observations	361	-	361	-	361	-	198	-	198	-	198	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.

Table C12: Estimates of Value Added per Production Worker for Motor Vehicles

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.000	0.00	4.021	0.00	3.980	0.00	4.631	0.00	4.668	0.00	4.702	0.00
ln(EN/EP)	0.220	0.00	0.218	0.00	0.211	0.00	0.454	0.00	0.454	0.00	0.467	0.00
ln(K/EP)	0.208	0.00	0.202	0.00	0.209	0.00	0.101	0.15	0.090	0.22	0.087	0.25
Df	0.091	0.62	-	-	-	-	0.794	0.00	-	-	-	-
Dftriad	-	-	0.318	0.12	-	-	-	-	0.845	0.00	-	-
Dfeu	-	-	-	-	-0.392	0.58	-	-	-	-	0.277	0.79
Dfus	-	-	-	-	1.170	0.04	-	-	-	-	1.136	0.29
Dfjp	-	-	-	-	0.224	0.29	-	-	-	-	0.865	0.00
Dfasia4	-	-	-0.527	0.20	-	-	-	-	0.616	0.26	-	-
Dfsg	-	-	-	-	-	-	-	-	-	-	0.756	0.48
Dftw	-	-	-	-	0.180	0.72	-	-	-	-	0.862	0.28
Dfkr	-	-	-	-	-2.990	0.00	-	-	-	-	-	-
Dfch	-	-	-	-	-0.969	0.32	-	-	-	-	0.059	0.96
Dfot	-	-	-0.333	0.39	-0.329	0.39	-	-	0.422	0.58	0.445	0.56
Dboi	0.437	0.02	0.329	0.09	0.454	0.02	-	-	-	-	-	-
Dold	0.165	0.14	0.158	0.15	0.160	0.14	-0.060	0.77	-0.041	0.84	-0.060	0.78
Dx	0.080	0.58	0.077	0.59	0.003	0.98	0.181	0.45	0.190	0.44	0.154	0.54
Dm	-0.032	0.77	-0.028	0.80	-0.008	0.94	-0.102	0.62	-0.109	0.60	-0.088	0.68
Dlarge	1.499	0.00	1.379	0.00	1.399	0.00	1.583	0.01	1.557	0.01	1.554	0.02
F-test	24.76	0.00	20.52	0.00	15.77	0.00	14.70	0.00	11.34	0.00	7.71	0.00
White	28.89	0.79	49.15	0.47	48.72	0.68	15.45	0.95	17.49	0.98	17.53	0.99
Adjusted R-sq.	0.319	-	0.325	-	0.338	-	0.419	-	0.412	-	0.396	-
Observations	406	-	406	-	406	-	134	-	134	-	134	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.921	0.00	3.865	0.00	3.766	0.00	5.711	0.00	5.962	0.00	6.160	0.00
ln(EN/EP)	0.175	0.08	0.141	0.16	0.116	0.24	0.476	0.00	0.506	0.00	0.540	0.00
ln(K/EP)	0.338	0.00	0.340	0.00	0.354	0.00	-0.009	0.91	-0.061	0.48	-0.091	0.32
Df	-0.071	0.75	-	-	-	-	0.479	0.05	-	-	-	-
Dftriad	-	-	0.073	0.76	-	-	-	-	0.615	0.02	-	-
Dfeu	-	-	-	-	-0.796	0.27	-	-	-	-	0.083	0.92
Dfus	-	-	-	-	0.942	0.12	-	-	-	-	0.625	0.45
Dfjp	-	-	-	-	-0.025	0.92	-	-	-	-	0.681	0.01
Dfasia4	-	-	-1.179	0.01	-	-	-	-	0.095	0.83	-	-
Dfsg	-	-	-	-	-	-	-	-	-	-	0.460	0.58
Dftw	-	-	-	-	-0.240	0.69	-	-	-	-	0.519	0.41
Dfkr	-	-	-	-	-3.835	0.00	-	-	-	-	-	-
Dfch	-	-	-	-	-1.491	0.14	-	-	-	-	-0.977	0.25
Dfot	-	-	0.251	0.64	0.313	0.55	-	-	-0.382	0.65	-0.385	0.65
Dboi	0.326	0.15	0.234	0.31	0.399	0.08	-	-	-	-	-	-
Dold	0.137	0.42	0.102	0.55	0.117	0.48	0.016	0.94	0.108	0.62	0.049	0.83
Dx	-0.120	0.51	-0.169	0.36	-0.290	0.12	-0.078	0.72	-0.067	0.76	-0.163	0.48
Dm	-0.064	0.74	-0.023	0.90	0.013	0.95	-0.012	0.96	-0.048	0.84	0.009	0.97
Dlarge	1.577	0.00	1.534	0.00	1.530	0.00	1.735	0.00	1.684	0.00	1.707	0.00
F-test	13.68	0.00	11.91	0.00	9.86	0.00	9.15	0.00	7.42	0.00	5.26	0.00
White, LM	40.29	0.21	55.53	0.10	52.32	0.35	27.12	0.40	34.29	0.36	0.36	0.55
Adjusted R-sq.	0.353	-	0.370	-	0.400	-	0.422	-	0.426	-	0.415	-
Observations	187	-	187	-	187	-	79	-	79	-	79	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.
LM-test used for equation 3, large firms in 1998 because White could not be calculated.

Table C13: Estimates of Value Added per Production Worker for Furniture

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.878	0.00	3.874	0.00	3.886	0.00	3.728	0.00	3.705	0.00	3.733	0.00
ln(EN/EP)	0.218	0.00	0.220	0.00	0.227	0.00	0.589	0.00	0.587	0.00	0.597	0.00
ln(K/EP)	0.262	0.00	0.264	0.00	0.263	0.00	0.366	0.00	0.367	0.00	0.371	0.00
Df	-0.088	0.64	-	-	-	-	-0.200	0.58	-	-	-	-
Dftriad	-	-	0.032	0.91	-	-	-	-	-0.181	0.69	-	-
Dfeu	-	-	-	-	0.181	0.81	-	-	-	-	-0.948	0.47
Dfus	-	-	-	-	-0.395	0.60	-	-	-	-	-0.048	0.97
Dfjp	-	-	-	-	0.053	0.86	-	-	-	-	-0.069	0.90
Dfasia4	-	-	0.008	0.98	-	-	-	-	-0.063	0.92	-	-
Dfsg	-	-	-	-	1.147	0.28	-	-	-	-	-	-
Dftw	-	-	-	-	-0.259	0.44	-	-	-	-	-0.054	0.93
Dfkr	-	-	-	-	0.497	0.52	-	-	-	-	-	-
Dfch	-	-	-	-	0.157	0.77	-	-	-	-	-	-
Dfot	-	-	-0.639	0.12	-0.653	0.11	-	-	-0.656	0.49	-0.628	0.51
Dboi	-0.367	0.06	-0.365	0.06	-0.365	0.06	-	-	-	-	-	-
Dold	-0.015	0.91	-0.011	0.93	-0.027	0.83	-0.575	0.02	-0.541	0.04	-0.550	0.04
Dx	-0.403	0.00	-0.404	0.00	-0.378	0.01	0.734	0.01	0.745	0.01	0.719	0.01
Dm	0.016	0.89	0.016	0.89	0.022	0.85	-0.092	0.72	-0.094	0.71	-0.112	0.67
Dlarge	0.959	0.00	0.954	0.00	0.939	0.00	0.270	0.51	0.250	0.55	0.268	0.52
F-test	13.68	0.00	11.19	0.00	7.59	0.00	12.17	0.00	9.36	0.00	7.59	0.00
White	42.81	0.27	56.06	0.36	58.42	0.64	30.37	0.45	31.19	0.70	31.08	0.74
Adjusted R-sq.	0.216	-	0.217	-	0.212	-	0.381	-	0.372	-	0.363	-
Observations	369	-	369	-	369	-	128	-	128	-	128	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.711	0.00	4.723	0.00	4.770	0.00	4.473	0.00	4.388	0.00	4.437	0.00
ln(EN/EP)	0.245	0.00	0.254	0.00	0.266	0.00	0.262	0.06	0.251	0.07	0.265	0.06
ln(K/EP)	0.214	0.00	0.217	0.00	0.208	0.00	0.206	0.07	0.223	0.05	0.228	0.05
Df	-0.074	0.73	-	-	-	-	-0.629	0.02	-	-	-	-
Dftriad	-	-	0.117	0.68	-	-	-	-	-0.681	0.04	-	-
Dfeu	-	-	-	-	-0.003	1.00	-	-	-	-	-1.234	0.17
Dfus	-	-	-	-	-0.473	0.52	-	-	-	-	-0.673	0.45
Dfjp	-	-	-	-	0.251	0.45	-	-	-	-	-0.573	0.13
Dfasia4	-	-	-0.146	0.64	-	-	-	-	-0.318	0.47	-	-
Dfsg	-	-	-	-	-	-	-	-	-	-	-	-
Dftw	-	-	-	-	-0.379	0.30	-	-	-	-	-0.312	0.48
Dfkr	-	-	-	-	0.494	0.53	-	-	-	-	-	-
Dfch	-	-	-	-	0.374	0.61	-	-	-	-	-	-
Dfot	-	-	-0.465	0.32	-0.465	0.32	-	-	-1.428	0.10	-1.416	0.11
Dboi	-0.404	0.06	-0.424	0.05	-0.458	0.04	-	-	-	-	-	-
Dold	0.128	0.45	0.128	0.45	0.126	0.46	-0.369	0.08	-0.308	0.15	-0.325	0.14
Dx	-0.783	0.00	-0.777	0.00	-0.754	0.00	-0.079	0.75	-0.077	0.76	-0.107	0.67
Dm	-0.137	0.40	-0.148	0.36	-0.149	0.37	-0.104	0.62	-0.127	0.55	-0.149	0.51
Dlarge	0.657	0.03	0.679	0.03	0.647	0.06	0.339	0.27	0.312	0.32	0.329	0.30
F-test	10.91	0.00	8.84	0.00	6.46	0.00	3.95	0.00	3.20	0.00	2.60	0.01
White, LM	29.70	0.83	38.44	0.88	38.14	0.97	23.16	0.81	27.89	0.76	0.79	0.38
Adjusted R-sq.	0.301	-	0.299	-	0.294	-	0.218	-	0.211	-	0.192	-
Observations	185	-	185	-	185	-	75	-	75	-	75	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.
LM-test used for equation 3, large firms in 1998 because White could not be calculated.

Table C14: Estimates of Value Added per Production Worker for Jewelry

	1996						1998					
	Equation 1		Equation 2		Equation 3		Equation 1		Equation 2		Equation 3	
Independent Variables, Indicator	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance	Coeffi-cients, etc.	Sig-nifi-cance
ALL PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	3.931	0.00	3.936	0.00	3.944	0.00	4.616	0.00	5.107	0.00	5.252	0.00
ln(EN/EP)	0.301	0.00	0.301	0.00	0.298	0.00	0.383	0.21	0.515	0.15	0.530	0.15
ln(K/EP)	0.251	0.00	0.250	0.00	0.247	0.00	-0.035	0.86	-0.173	0.47	-0.247	0.35
Df	0.276	0.14	-	-	-	-	0.960	0.08	-	-	-	-
Dftriad	-	-	0.291	0.20	-	-	-	-	1.103	0.06	-	-
Dfeu	-	-	-	-	0.218	0.43	-	-	-	-	1.093	0.08
Dfus	-	-	-	-	0.301	0.36	-	-	-	-	1.017	0.12
Dfjp	-	-	-	-	0.502	0.21	-	-	-	-	1.824	0.03
Dfasia4	-	-	0.248	0.50	-	-	-	-	0.187	0.83	-	-
Dfsg	-	-	-	-	0.353	0.50	-	-	-	-	0.000	0.00
Dftw	-	-	-	-	-0.088	0.88	-	-	-	-	0.000	0.00
Dfkr	-	-	-	-	0.886	0.38	-	-	-	-	0.000	0.00
Dfch	-	-	-	-	0.203	0.84	-	-	-	-	0.131	0.89
Dfot	-	-	0.267	0.28	0.270	0.28	-	-	1.777	0.01	1.889	0.00
Dboi	-0.114	0.57	-0.116	0.56	-0.120	0.56	-	-	-	-	-	-
Dold	-0.006	0.98	-0.004	0.99	0.001	1.00	0.596	0.22	0.741	0.17	0.829	0.15
Dx	0.032	0.88	0.033	0.89	0.031	0.89	0.014	0.99	0.123	0.90	0.137	0.89
Dm	0.305	0.13	0.300	0.16	0.285	0.19	-0.116	0.84	-0.176	0.80	-0.156	0.83
Dlarge	1.827	0.00	1.829	0.00	1.847	0.00	1.217	0.09	0.757	0.18	0.750	0.20
F-test	11.91	0.00	9.40	0.00	6.18	0.00	2.59	0.04	2.25	0.05	1.79	0.12
White	31.69	0.72	57.55	0.25	63.35	0.50	4.25	0.04	5.72	0.02	5.58	0.02
Adjusted R-sq.	0.365	-	0.356	-	0.338	-	0.253	-	0.254	-	0.209	-
Observations	153	-	153	-	153	-	34	-	34	-	34	-
LARGE PLANTS, DEPENDENT VARIABLE=ln(V/EP)												
Constant	4.746	0.00	4.637	0.00	4.707	0.00	6.643	0.00	7.906	0.00	8.227	0.00
ln(EN/EP)	0.199	0.05	0.187	0.06	0.173	0.09	0.640	0.06	0.899	0.02	0.926	0.03
ln(K/EP)	0.229	0.00	0.260	0.00	0.254	0.00	-0.223	0.30	-0.420	0.10	-0.504	0.10
Df	0.003	0.99	-	-	-	-	0.117	0.79	-	-	-	-
Dftriad	-	-	-0.096	0.69	-	-	-	-	0.166	0.73	-	-
Dfeu	-	-	-	-	-0.206	0.50	-	-	-	-	0.102	0.89
Dfus	-	-	-	-	0.011	0.97	-	-	-	-	0.134	0.81
Dfjp	-	-	-	-	0.002	1.00	-	-	-	-	0.773	0.42
Dfasia4	-	-	-0.362	0.36	-	-	-	-	-0.706	0.37	-	-
Dfsg	-	-	-	-	-0.246	0.72	-	-	-	-	-	-
Dftw	-	-	-	-	-0.811	0.17	-	-	-	-	-	-
Dfkr	-	-	-	-	0.683	0.47	-	-	-	-	-	-
Dfch	-	-	-	-	-0.524	0.59	-	-	-	-	-0.759	0.37
Dfot	-	-	0.299	0.28	0.298	0.29	-	-	1.014	0.16	1.165	0.15
Dboi	0.075	0.73	0.073	0.74	0.095	0.67	-	-	-	-	-	-
Dold	0.211	0.37	0.164	0.49	0.170	0.49	-0.151	0.75	-0.149	0.74	-0.035	0.95
Dx	-0.297	0.37	-0.187	0.58	-0.201	0.55	-0.160	0.90	-0.291	0.81	-0.400	0.76
Dm	-0.051	0.85	-0.145	0.61	-0.238	0.43	0.347	0.65	0.220	0.77	0.210	0.80
Dlarge	1.787	0.00	1.764	0.00	1.790	0.00	0.960	0.20	0.436	0.58	0.410	0.63
F-test	6.62	0.00	5.66	0.00	3.81	0.00	1.69	0.19	1.77	0.18	1.34	0.33
White	18.11	0.99	22.07	1.00	0.00	1.00	0.35	0.55	0.43	0.51	0.14	0.70
Adjusted R-sq.	0.319	-	0.327	-	0.305	-	0.188	-	0.248	-	0.151	-
Observations	97	-	97	-	97	-	22	-	22	-	22	-

Note: Heteroscedasticity-consistent standard errors used if White is significant at 0.05 or less.
LM-test used for all 1998 equations because White could not be calculated.