

**Foreign Multinationals in  
Indonesian Manufacturing 1985-1998:  
Shares, Relative Size, and Relative Labor Productivity**

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Abstract

This paper examines trends in the shares of foreign multinational corporations (MNCs) in Indonesian manufacturing and then compares size and average labor productivity among locally-owned plants (establishments) and different ownership groups of foreign-owned plants (minority-foreign, majority-foreign, and heavily-foreign) in Indonesian manufacturing over the last decade. Four major patterns emerge from this investigation. First, all groups of foreign MNCs have greatly increased their shares in Indonesian manufacturing, with the most conspicuous and continuous increases observed in heavily-foreign plants. Second, all groups of foreign MNCs have tended to be larger than local plants, with majority-foreign plants tending to be the largest, followed by minority-foreign and heavily-foreign plants. Third, after controlling for the effects of industry, size, and vintage, majority-foreign plants were generally characterized by the highest levels of average labor productivity, followed by minority foreign plants. Heavily-foreign plants tended to have higher average labor productivity than local plants in the late 1980s and in 1998 but lower or equal productivity in 1990-1997. Fourth, although the results are very weak in this respect, they suggest that all groups of foreign plants generally experienced larger increases in nominal average labor productivity than local plants. Although these patterns seem to be reasonable and may well reflect the reality of Indonesia's manufacturing sector during the period under examination, the results must be interpreted with caution for a number of reasons. One of the major reasons for caution is the fact that the so-called raw data sets used in some of the analyses here are known to have a number of problems related to non-reporting and apparently incorrect entries. Cognizant of these problems, Indonesia's Biro Pusat Statistik compiles a separate backcast data set, which contains revised entries for a limited number of indicators, including estimates for some non-reporting establishments. An important secondary goal of this paper is thus to examine the differences between the raw data sets, which have been used in most analysis to date, and the backcast data set, with the aim of indicating how the original raw data sets may need to be modified to make more reliable analysis possible.

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Introduction

Following some very important policy reforms in the mid-1980s, Indonesia's economic boom of the late 1980s and early- to mid-1990s was accompanied by a conspicuous rise in flows of inward foreign direct investment (FDI) and expansion of the activities of foreign multinational corporations (MNCs). Another conspicuous change during the economic boom was the rise in the share of manufacturing. The subsequent economic crisis, which broke in 1997 and led to a large contraction of gross domestic product (GDP) in 1998, was accompanied by an equally conspicuous drop in FDI flows and the shares of manufacturing in employment and GDP.<sup>2</sup> As shown in Table 1, foreign MNCs have played an increasingly important role in several of Indonesia's manufacturing industries during this period and it is possible to obtain detailed data on foreign MNCs from Indonesia's industrial surveys and censuses. It is thus of some interest to examine how the roles and characteristics of these MNCs and have evolved over time. Accordingly, the major purpose of this paper is to examine trends in shares of foreign MNCs in Indonesia's manufacturing industries (Section 2), and then compare size (Section 3) and average labor productivity (Section 4) among locally-owned plants (establishments) and different ownership groups of foreign-owned plants (minority-foreign, majority-foreign, and heavily-foreign). Some concluding remarks are then offered (Section 5).

There are a number of related studies (e.g., Hill 1988, pp. 107-117, 1990a, 1990b; Sjöholm 1998, 1999a, 1999b, 2000) and some of these use much more sophisticated techniques than the simple methodology that will

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<sup>2</sup>The major policy reforms were the financial sector liberalization beginning in 1983 and the reduction of trade barriers beginning in 1986. The trade policy reforms are particularly important in this context and resulted in large part from fall in the price of oil, which in turn created a consensus that Indonesia needed to vigorously promote non-oil-gas exports. Accordingly, in the late 1980s, the trade regime changed rapidly from a highly protectionist one that penalized most exporters to a less protectionist regime that actively sought to encourage non-oil-gas exporters, many of which were in manufacturing industries. FDI flows rose from no more than US\$ 0.4 billion in 1987 and previous years to over US\$ 4 billion annually in 1995-1997 before plummeting to US\$ -0.4 billion in 1998. Manufacturing's share of employment rose from 8 percent of employment in 1986 to 13 percent in 1996-1997 before falling to 11 percent in 1998, while corresponding shares of gross domestic product (GDP) from 17 percent to 26-27 percent and then fell to 25 percent (data from International Centre for the Study of East Asian Development 2000, pp. 87-90).

be employed here.<sup>3</sup> However, these studies have generally focused on cross sections at one or two points in time, whereas this study aims to supplement the more sophisticated cross section analyses with some simpler comparisons of trends over time. One reason trends over time have not been examined more carefully in past research is that the Indonesian manufacturing survey and census data underlying these studies are known to have a number of problems related to non-reporting and apparently incorrect entries in the original raw data sets, which are used in the aforementioned cross section analysis. The raw data sets are single-year cross sections that include a wide range of variables (more than 300 in some recent years) and primarily cover plants reporting in the year of the survey or census, though some estimates for non-reporters are included. Cognizant of these problems, Indonesia's Biro Pusat Statistik (BPS or Central Bureau of Statistics) compiles separate backcast data sets, which contain a small number of variables taken from all available raw data sets and include more extensive estimates of missing values for non-reporters as well as revisions of entries that are discovered to have been mistaken in the raw data sets. Because the raw data sets are known to have coverage problems, the backcast sets are thus thought to be superior for examining trends over time but we are unaware of any detailed comparison of the differences among these data sets. An important secondary goal of this paper is thus to clarify some of the differences in these two data sets by examining indicators related to two variables available in both data sets, employment and value added.

In order to perform the compilations necessary to facilitate this analysis, three important modifications to the plant-level data provided by BPS were required.<sup>4</sup> First, in the 1998 backcast (which is used in this draft), there were a number of plants which had duplicate records, one of which needed to be deleted. In many cases, one record contained data for one group of years and the second record contained data for another group years, and it was thus easy to combine the records and eliminate the duplication problem. In other cases, however, there was duplication of data for some years and we were forced to choose one of the two records for use in the analysis. In several of these cases one record had more information and we generally chose records with more information and added missing information from the duplicate record when possible. However, in a few cases, both records had information for the same years so the choice of records was arbitrary. A second adjustment was necessary because the foreign ownership share is not available in the backcast data sets and the backcast data includes estimates for years excluded from raw data sets for which there are thus no estimates of foreign shares. In these cases, we estimated foreign ownership shares using information for surrounding years. A similar adjustment was necessary for the industry code. Third, there were a number of apparent mistakes in information on foreign ownership shares (e.g., foreign ownership shares of 100 percent for all but one or two random years and shares of 0 in the other years), which we attempted to correct. Generally speaking adjustments were made when foreign shares for one or two years in the middle of a series greatly differed from estimates for surrounding years. In addition to these problems, we noticed several other apparent problems in both the raw data series and the backcast series (e.g., apparently extreme values of many variables, compared to surrounding

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<sup>3</sup>In a related study using the same database, Ramstetter (1999) examined in export behavior by different ownership groups during the early part of this period.

<sup>4</sup>The methodologies underlying these adjustments are described in detail in the Appendix.

years), which we think can and should be corrected in future research. However, we have not made these adjustments in this draft.

## 2. Market Shares of Foreign Multinationals

In this section, we take up trends in two measures of market shares of foreign MNCs, shares of total employment (defined as all persons engaged) and shares of total value added in 30 individual manufacturing industries and in aggregate manufacturing for the 1985-1998 period. In this and subsequent discussions, we distinguish among three ownership groups of foreign-owned plants, which are referred to as minority-foreign plants (plants with foreign ownership shares of 10 percent or greater but no greater than 50 percent), majority-foreign plants (plants with foreign ownership shares greater than 50 percent but less than 90 percent), and heavily-foreign plants (plants with foreign ownership shares of 90 percent or more). We distinguish these groups because previous research has revealed apparently large differences in export propensities among these groups (e.g., Ramstetter 1999) and because other research has also been concerned with differences in productivity between among majority- and heavily-foreign affiliates on one hand and minority-foreign affiliates on the other (e.g., Blomström and Sjöholm 1999).

If one looks at the shares of total employment by ownership share in Tables 2a, 2b, and 2c, one immediately notices that the shares are identical for each data set in the backcast base year, 1998. Also as would be expected, samples for earlier years in particular are far larger for the backcast data set than for the raw data sets, reflecting the fact that the backcast includes estimates of missing values for a large number of plants. For example, backcast sample sizes for all ownership groups and industries were 30-39 percent larger than raw data set samples in 1985-1987 but only 2-3 percent larger in 1996-1997 (calculated from Appendix Table 1e). In terms of employment these differentials were generally much smaller in older years, for example, 15-18 percent in 1985-1987 (calculated from Appendix Table 2e). Corresponding differentials in terms of value added were also relatively small at 13 percent or less in 1985-1996 but larger at 22 percent in 1997 (calculated from Appendix 3e). This suggests that the plants omitted from the raw data sets tend to be relatively small in terms of employment and value added. Interestingly, the differentials in terms of value added were negative in a few years, 1986, 1994-1996, reflecting the fact that adjustments to the estimates were rather large on the downward side in some cases.

If shares of foreign MNC groups in employment are compared between the two data sets, differences are relatively small in the aggregate. For example, the mean share of employment in 1985-1998 for all industries was 4.08 percent (raw data) or 3.97 percent (backcast) for minority-foreign plants, 5.94 percent (raw data) or 5.77 percent (backcast) for majority plants, and 3.53 percent (raw data) or 3.66 percent (backcast) for heavily-foreign plants (calculated from Tables 1a, 1b, 1c). The corresponding mean share of value added was 9.05 percent (raw data) and 8.71 percent (backcast) for minority-foreign plants, 12.59 percent (raw data) and 11.69 percent for majority-foreign plants, and 4.33 percent (raw data) and 4.52 percent (backcast) for heavily-foreign plants (calculated from Tables 2a, 2b, and 2c). Thus, on average in 1985-1998 for all manufacturing, the backcast estimates of employment and value added both suggest a slightly larger share for heavily-foreign plants and a slightly smaller share for majority- and minority-foreign plants compared to estimates from the raw data. However, it should be stressed that the magnitude of these differences is rather small in the aggregate.

Moreover, again in the aggregate, both the raw data and the backcast data are consistent in suggesting that (1) majority-owned plants were generally the largest group of foreign plants, (2) shares of minority-foreign plants grew relatively rapidly in the late 1980s before stagnating in the 1990s, and (3) shares of majority-foreign plants grew relatively rapidly in terms of employment through 1994 before falling off, but fluctuated with no real upward or downward trend in terms of value added, and (4) shares of heavily-foreign plants tended to increase through most of this period, but that these shares increased extremely rapidly after the liberalization of the foreign investment law in 1994.<sup>5</sup>

Although examination of the shares for groups of foreign plants suggests only rather small differences between the raw data and backcast data sets in mean shares for the 1985-1998 period for all manufacturing industries combined, several much larger differences are observed when individual industries and years are examined. For example, for minority-foreign plants, shares of employment (Table 2a, 2b, 2c) are 50 percent (1.5 times) or more larger in the backcast data for tobacco in 1986, leather in 1989 and 1995, other oil and coal products in 1990-1991 and 1994, glass in 1991-1994, and transportation machinery in 1997. Backcast estimates for this group are never more 50 percent or more smaller than raw data estimates. For majority-foreign plants, the list of industries where backcast estimates of shares exceed the raw data estimates by 50 percent or more consists of leather in 1990-1991, printing and publishing in 1990, glass in 1995, and backcast estimates were more than 50 percent smaller than raw data estimates in plastics in 1985. The largest positive differences are observed in heavily-foreign plants, however, where backcast estimates of employment shares are two times (100 percent) or more larger in food in 1986, footwear in 1989, wood in 1985-1986, other oil and coal products in 1993, cement in 1997, ferrous metals in 1994, and metal products in 1991. For heavily-foreign plants there were no industry-year combinations where shares were 50 percent or more smaller in the backcast series.

In general, the differences tend to be even larger between the backcast and the raw data series when shares are measured in terms of value added (Tables 3a, 3b, 3c). For example, shares of minority-foreign firms are more than twice as large in the backcast series in beverages in 1986, in leather in 1989 and 1995, other oil and coal products in 1994, rubber in 1985-1986, glass in 1991-1994, and ferrous basic metals in 1997. For majority-foreign plants this list is quite long, consisting of leather in 1990, footwear in 1988, furniture in 1988, paper in 1987, printing and publishing in 1990, plastics in 1993, cement in 1994, and miscellaneous manufacturing in 1994. In heavily-foreign plants, the list is again long, comprising textiles in 1985 and 1987-1989, apparel in 1988, footwear in 1989, furniture in 1985-1986, industrial chemicals in 1992, oil refineries and gas in 1997, other oil and coal products in 1993, rubber in 1985-1987, plastics in 1991, cement in 1997, ferrous basic metals in 1996, transportation machinery in 1992, and precision machinery in 1996. There are no cases with equally large negative differentials between the backcast and the raw data.

It is somewhat instructive to count the number of industries in which differentials between the shares in backcast and raw data are 50 percent or greater, or -50 percent or less (Tables 2a, 2b, 2c, 3a, 3b, 3c). For employment shares of minority-foreign plants, there are 2 industries falling into this category in 1991 and 1994, and 1 each in 1986, 1989-1990, 1992-1993, 1995, and 1997. For value added shares of the same group, there were 5

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<sup>5</sup>The change in the law made it much easier to establish majority- or heavily-owned plants than was previously possible.

industries in this category in 1986, 4 each in 1985 and 1993, 3 each in 1992 and 1994, 2 each in 1987, 1991, and 1995-1997, and 1 each in 1989-1990. For employment shares of majority-foreign plants there were only 2 industries in the category in 1990 and 1 each in 1985 and 1995. However, if shares of value added are examined, 4 industries fell into this category in 1996, 3 each in 1985, 1990, and 1997, 2 each in 1988 and 1993-1994, and 1 each in 1986-1987, 1989, and 1991. By far the largest number of the large differentials were observed for value added shares of heavily-foreign plants, 5 industries each in 1985-1987, 1992, and 1997, 4 in 1988, 3 each in 1989 and 1993, 2 each in 1995-1996, and 1 each in 1990-1991. In terms of employment shares large differentials were not that common for this group, however, with 2 industries falling into this category in 1986, 1989, and 1991 and 1 each in 1985, 1987-1988, 1990, 1992-1994, and 1997. Thus, the large differences between these two data sets seem to be concentrated in the earlier years, but there are also some large differences in recent years.

The differences between these data sets highlight the need for caution when interpreting the patterns observed in these data and suggest that it is probably preferable to use the backcast estimates for examining trends over time. Correspondingly, we focus on trends in the backcast shares below to highlight three important patterns that emerge from these data.

First, as emphasized in the introduction, there were large increases in MNC shares in many industries during this period (Tables 2a, 2b, 2c, 3a, 3b, 3c), with the some of most conspicuous increases observed in shares of heavily-foreign plants both before and after the crisis broke in 1997. Prior to the crisis (in 1986-1996), for example, shares of employment increased by 10 percentage points or more in apparel, leather, electric machinery, precision machinery, and miscellaneous manufacturing. If measured in terms of value added, this list also includes beverages and paper. After the crisis broke (in 1996-1998) increases of more than 10 percentage points were observed in leather (employment only), oil refineries and gas, plastics (value added only), metal products (value added only), general machinery, electric machinery, and precision machinery. For majority-foreign plants there were similarly large increases of employment shares in 1986-1996 in footwear and precision machinery, but shares of value added decreased a lot in footwear during this period and increased by 10 percentage points or more in leather, printing and publishing, industrial chemicals, general machinery, and precision machinery. In 1996-1998, there were similarly large increases in employment shares in other oil and coal products and in value added shares in industrial chemicals, glass, clay, and other non-metallic minerals, but there were also declines in a large number of industries. For minority-owned firms shares increased 10 percentage points or more in 1986-1996 in apparel (value added only), footwear (employment only), paper (employment only), cement (value added only), clay (value added only), and transportation machinery (value added only). In 1996-1998, however, this list includes only one industry, ferrous metal products (value added only), and shares declined in a large number of industries. In short, while shares for all groups increased in a number of industries through 1996 and shares continued to grow rapidly for heavily-foreign plants after 1996, declines were rather common among majority- and minority-foreign plants after 1996.

Second, by 1998 foreign shares were relatively large in a wide variety of manufacturing industries (Tables 1, 2a, 2b, 2c, 3a, 3b, 3c). For example, the combined share of foreign plants exceeded 30 percent of employment in leather, footwear, oil refineries and gas, nonferrous metals, nonelectrical machinery, electric machinery, precision machinery, and miscellaneous machinery, while the combined share of foreign plants exceeded 50 percent of value added in footwear, industrial chemicals, glass, clay, nonferrous metals, nonelectrical

machinery, electric machinery, precision machinery, and miscellaneous manufacturing. This pattern has changed markedly over time. For example, in 1986, foreign shares were much smaller in a number of the machinery industries and in miscellaneous manufacturing. More specifically, shares of employment were relatively large (20 percent or more) in beverages, other chemicals, glass, and iron and steel and shares of value added were relatively large (30 percent or more) in beverages, footwear, other chemicals, rubber, glass, metal products, and electric machinery.

Third, as the figures cited above suggest, shares of foreign plants are often much larger if measured in terms of value added than if measured in terms of employment (Tables 2a, 2b, 2c, 3a, 3b, 3c). For example, in minority-foreign plants, shares of value added were more than 1.5 times larger than corresponding shares of employment in 48 percent of the industry-year combinations for which the comparison could be made in 1985-1998. For majority-foreign plants, this was true in 62 percent of the relevant industry-year combinations but for heavily-foreign plants this was observed in only 26 percent of relevant industry-year combinations. This pattern is important because it suggests that all groups of foreign plants tend to be characterized by relatively high average labor productivity compared to local plants, but that large productivity differences will be most common for majority-foreign plants and least common for heavily-foreign plants. This and related points will be examined in more detail in Section 4 below.

### 3. Size Differentials

This section examines size differentials between the three groups of foreign plants and local plants using two measures, the number of employees per plant (Tables 4a, 4b, 4c) and value added per plant (Tables 5a, 5b, 5c). Foreign plants are often affiliates of relatively large firms and, as might be expected, they are generally larger than local plants. Moreover, the differences are often very large. For example, in the 1985-1998 period, minority-foreign firms were at least two times (100 percent) larger in terms of employment in about one-half to three-fourths of all industries for which comparisons are possible. When measured in value added, the percentage of industries with similarly large size differentials was higher, at least two-thirds of all industries in all years and as much as 90 percent. Size differentials of at least 100 percent are also observed between majority-foreign and local plants in at least 44 percent of all industries and as much as 86 percent of all industries when size is measured in terms of employment and in at least three-fourths of all industries and as much as 93 percent of all industries in terms of value added. However, when heavily-foreign plants are compared with local plants, large differentials are less common. Heavily-foreign plants are at least 100 percent larger in as little as 23 percent of industries and a maximum of 60 percent of all industries in terms of employment and 38 percent to 76 percent in terms of value added.

By industry, large size differentials are observed in all years for a number of industries. Measured in terms of employment (Tables 4a, 4b, 4c), minority-foreign firms are always much larger (100 percent or more) than local firms in food, textiles, apparel, wood, cement, clay, and metal products. Measured in terms of value added (Tables 5a, 5b, 5c), all of the above industries except apparel fall into this category as do paper, other chemicals, plastics, porcelain, transportation machinery, and precision machinery. In terms of employment, majority-foreign plants are always much larger (100 percent or more) in food, textiles, footwear, cement, clay, metal products, and



electric machinery. In terms of value added the list includes all of the above industries, except electric machinery, as well as tobacco, furniture, other chemicals, plastics, non-electrical machinery, and miscellaneous manufacturing. Heavily-foreign plants are always much larger (100 percent or more) than local plants in only a few industries, food, textiles, and miscellaneous manufacturing in terms of employment and in food, beverages, textiles, footwear, and other oil and coal in terms of value added.

A final point is that these size comparisons reveal a number of apparent outliers (Tables 4a, 4b, 4c, 5a, 5b, 5c) that may be the result of errors in the data. For example, there are several industry-year combinations in which size differentials increase or decrease by more than 200 percentage points in a single year. In the comparison of minority-foreign and local plants for 1985-1998, these large changes in employment size differentials are observed 19 times in the raw data and 17 times in the backcast data. Moreover, changes in value-added size differentials of 1000 percentage points or more are observed 27 times in the raw data and 32 times in the backcast. When majority-foreign and local plants are compared changes in employment size differentials of 200 percentage points are observed 28 times in the raw data and 31 times in the backcast data sets, while changes in value-added size differentials of over 1000 percentage points or more were observed 48 times in the raw data and 32 times in the backcast data. For the comparison of heavily-foreign and local plants, the corresponding figures are 16 times (raw data) and 13 times (backcast) for employment size differentials and 14 times (raw data) and 8 times (backcast) for value-added size differentials. The fact that these unusually large changes in size differentials are generally less common in the backcast indicates that some of these observations in the raw data are indeed unwarranted outliers and have been eliminated in the backcast. Several of the remaining outliers may actually be valid and important observations but we think that further checking of these observations is warranted.

#### 4. Average Labor Productivity Differentials

This section examines differentials in value added per employee or average labor productivity among ownership groups in two steps. The first step is to look at some compilations of these productivity differentials in a manner similar to the examination of size differentials in the previous section. Examination of Tables 6a, 6b, and 6c, quickly reveals that most of the productivity differentials are positive, indicating higher average labor productivity in all groups of foreign plants compared to local plants. Moreover, these productivity differentials are quite large in a number of cases. For example, value added per employee is at least two times (100 percent) higher in minority-foreign plants than in local plants in 60-82 percent (raw data) or 48-75 percent (backcast) of all industries for which this comparison is possible, depending on the year. However, there are only 3 industries in which these differentials are always observed (in both data sets), food, cement, and nonelectrical machinery. When majority-foreign and local plants are compared, large productivity differentials (100 percent or more) are observed in 71-91 percent (raw data) or 68-96 percent (backcast) of the industries. In this case, the list of industries in which these large productivity differentials are present for all years in the sample is quite long comprising food, beverages, tobacco, textiles, industrial chemicals, cement, clay, metal products, and transportation machinery. On the other hand, the list of industries in which large productivity differentials are always present when heavily-foreign and local plants are compared is quite short, consisting of food and

beverages only. Moreover, the percentage of industries in which large productivity differentials are observed between heavily-foreign and local plants is also relatively small, 37-71 percent (raw data) or 24-71 percent (backcast). Thus, although large differences in average labor productivity are often observed when majority-foreign plants are compared with local plants, these large productivity differentials are less common when minority-foreign or heavily-foreign plants are compared with local plants.

As in the examination of size differentials it is also instructive to examine changes in average labor productivity differentials because unusually large changes may indicate problems in the data that we have yet to discover (Tables 6a, 6b, 6c). For example, when minority-foreign and local plants are compared, the change in these productivity differentials is 1000 percentage points or more in absolute value in 15 cases in the raw data but only in 5 cases in the backcast. When majority-foreign and local plants are compared these large changes (of 1000 percentage points or more) are far more common, occurring 33 times in the raw data and 24 times in the backcast. The comparison of heavily-foreign and local plants reveals these large changes in 11 year-industry combinations in the raw data and in 6 cases for the backcast. Thus, as in the size comparisons, the revisions in the backcast data appear to have eliminated some of the undue outliers but there are still a number of cases where unusually large changes in productivity differentials are observed. However, the period under study is indeed unusual in many respects, so what may at first glance appear to be an unusually large change or a mistake in the data, may indeed be an important observation reflecting the great changes the Indonesian manufacturing sector experienced in this period.

Comparisons of productivity differentials like those in Tables 6a, 6b, and 6c, although instructive, cannot clarify whether those productivity differentials are actually important. In order to provide more rigorous tests of whether the differentials observed above are indeed important, two additional steps must be taken. First, statistical tests that employ measures variation in addition to measures of mean differences must be calculated to test the null hypothesis that mean differences are zero. Second, it is preferable to conduct such tests after the effects of other influences that may affect productivity differentials have been accounted for. For example, we have seen above that foreign plants tend to be larger than local plants. Correspondingly, if there is a positive correlation between plant size and average labor productivity, then foreign plants may have higher average labor productivity simply because they are larger, not because of any inherent difference due to ownership. There are a number of other factors that may be important in this respect, such as vintage, capital intensity, and skill intensity. Unfortunately, among these variables, the backcast only includes measures of size and vintage. Thus, in Table 7 we report the results of estimating the following equation:

$$(1) \ln(V_t/E_t) = a_0 + a_j \cdot DI_{jt} + a_1 \cdot \ln(O_t) + a_2(AGE_t) + a_3 \cdot DF_{mint} + a_4 \cdot DF_{majt} + a_5 \cdot DF_{hvyt}$$

where variables are measured at the establishment level and

AGE=year t - year in which the plant first reported positive employment + 1 (AGE<=24)

DFhvyt=dummy variable for heavily-foreign plants in year t

DFmajt=dummy variable for majority-foreign plants in year t

DFmint=dummy variable for minority-foreign plants in year t

DIjt=a vector of dummy variables for industry j (j=ISIC code) in year t; the number of industry dummies is the

number of industries less 1

$E_t$ =employment (persons engaged) in year  $t$

$O_t$ =output in year  $t$

$V_t$ =value added in year  $t$

In other words, we ask if there are any statistically differences in average labor productivity between the 3 groups of foreign plants and local plants, after industry-specific effects and the effects of size and plant vintage have been controlled for. If the positive differences indicated in Table 6a, 6b, and 6c are statistically significant after controlling for these factors, then the coefficients on dummy variables for foreign ownership groups will be positive and significant.

The results of these regressions are summarized in Table 7. In the large samples of all establishments, the equations explain a relatively large amount of the variation in average labor productivity with adjusted R-squared often exceeding 0.6, which is relatively high for cross sections such as these. However, in the more homogeneous samples of relatively large firms the explanatory power is much smaller with adjusted R-squared usually around 0.3, which is more normal for cross sections such as these. We tend to think the smaller sample of larger firms provides a better context in which to test the hypothesis that average labor productivity differs among ownership groups because the most foreign MNCs are in this group and the larger samples of all plants contain a large number of very small local plants that we do not think can be meaningfully compared with foreign MNCs.

As speculated above, there is apparently a strong positive relationship between plant size and value added per employee in all samples (Table 7). There is also a strong negative relationship between plant age and average labor productivity in all samples. This is perhaps surprising because it might be expected that older plants would be characterized by relatively high productivity if learning by doing is important. On the other hand, in the Indonesian case, it is very likely that the changes in the policy environment, especially after 1986, created a much more competitive environment, and correspondingly, newly established plants may have been subject to greater competitive pressures and thus tend to be characterized by relatively high productivity. Another possibility is that in a rapidly growing developing economy such as Indonesia, older plants may tend to have older technology compatible with much more labor-intensive production methods, and thus be characterized by relatively low average labor productivity. In any case, the apparently strong relationships between size and vintage on the one hand, and average labor productivity on the other, indicate that it is important to account for these effects before evaluating the relationship between ownership and average labor productivity. It is also important to note that industry dummies are also significant in many cases (Appendix Table 7), indicating that it is also important to account for industry-specific differences.

After accounting for these effects, there are still a number of significant differences among ownership groups as indicated by a large number of significant coefficients on foreign ownership dummies (Table 7). In the raw data, the coefficient on the minority-foreign ownership dummy is positive and significant (at the 5 percent level or better) in 1987-1990, 1993, and 1998 in both samples and in 1994 in the sample of large plants. However, in 1997 in the sample of all plants the coefficient was negative and significant. In the backcast sample of all establishments, this coefficient is significant in only one year, 1989, but in the backcast sample of large

establishments the coefficient is positive and significant in 1987-1989, 1993, and 1998. The coefficient on the dummy variable for majority-owned affiliates is usually the largest of all coefficients on ownership dummies and is always positive and is significant in all but 2 cases, the exceptions being 1991-1992 in the backcast sample of all establishments. The coefficient on the dummy for heavily-foreign establishments is generally positive and significant in 1986-1989, the exceptions being the raw data sample of all plants in 1987 and the backcast sample of all plants in 1986 and 1988-1989. In 1990 this coefficient is insignificant in all samples and then negative in most samples in 1991-1997, the exception being the backcast sample of large plants in 1995-1996. These negative coefficients are never significant in samples of large plants but are almost always significant in the samples of all plants, the raw data sample for 1993 being the single exception. However, in 1998 this coefficient is positive and significant again. The results here are thus consistent with the patterns observed in Tables 6a, 6b, and 6c, in suggesting that average labor productivity is generally the highest in majority-foreign plants followed by minority-foreign plants. However, these results differ somewhat in suggesting that average labor productivity in heavily-foreign plants was generally the equivalent to or lower than in local plants in the 1991-1997.

In another set of regressions summarized in Table 8 (see also Appendix Table 8), the relationship between the change in average labor productivity and ownership is estimated using the following equation:

$$(2) \ln(V_t/E_t) - \ln(V_{t-1}/E_{t-1}) = b_0 + b_j * DI_{jt} + b_1 * \ln(O_{t-1}) + b_2 * \ln(AGE_t) + b_3 * DF_{mint} + b_4 * DF_{majt} + b_5 * DF_{hvyt}$$

where all variables are as defined above.

This equation has far less explanatory power than does equation (1). Adjusted R-squared is never more than 0.04, which is very low even for cross sections such as these (Table 8). Although the overall correlations are low, size in the initial year is usually significantly related to the change in average labor productivity, but in this case the relationship is negative. In other words, although larger plants tend to have higher average labor productivity, they also tend to have smaller changes in average labor productivity over from year to year. The relationship between age and the change in average labor productivity is most often insignificant, though there are few significant coefficients, some of which are positive and some of which are negative. Thus, the relationship between vintage and changes in average labor productivity seems haphazard at best. The coefficients on all of the foreign-ownership dummy variables are generally positive and quite often significant. It is particularly notable that while results in Table 7 indicate that the level of average labor productivity in heavily-foreign plants was generally lower than in local plants in 1991-1997, these results suggest that heavily-foreign plants generally had larger annual increases in average labor productivity than local plants in this period. Of course the results must be interpreted with great scepticism because the explanatory power of equation (2) is generally very low and because the regressions only explain changes in nominal productivity, not changes in real productivity.

## 5. Conclusions and Implications for Past and Future Research

This paper has examined trends in shares of foreign MNCs in Indonesian manufacturing and compared size and average labor productivity of three groups of foreign plants with local plants. Four major patterns emerge from this investigation. First, all groups of foreign MNCs have greatly increased their shares in Indonesian manufacturing, with most conspicuous and continuous increases in heavily-foreign plants. Second, all groups of foreign MNCs have tended to be larger than local plants, with majority-foreign plants tending to be the largest, followed by minority-foreign and heavily-foreign plants. Third, after controlling for the effects of industry, size, and vintage, majority-foreign plants were generally characterized by the highest levels of average labor productivity, followed by minority foreign plants. Heavily-foreign plants tended to have higher average labor productivity than local plants in the late 1980s and in 1998 but lower or equal productivity in 1990-1997. Fourth, although the results are very weak, the results here also suggest that all groups of foreign plants generally experienced larger increases in nominal average labor productivity than local plants.

Although the above patterns seem to be reasonable and may reflect the reality of Indonesia's manufacturing sector during the period under examination, the results must be interpreted with caution for a number of reasons. Conceptually there are two related problems. First, the methodology and the theoretical principles underlying the methodology need more careful consideration. Second, a number of important factors have been omitted from this analysis and more efforts are required to clarify whether the patterns observed will remain after other influences are accounted for. The results concerning average labor productivity differentials provide the clearest example in this respect. For example, several important factors known to affect average labor productivity (e.g, factor intensities) are not accounted for in this analysis and it would be interesting to see if the same patterns remained after these factors are accounted for.

There are also a number of important data problems that must be resolved before we can have more confidence in these results. First, there are some important outliers in the data and much more attention must be devoted to dealing with these outliers and the possibility that errors remain in both the raw data and backcast data sets. Second, because the backcast data includes only a very few variables, it is important to create a new backcast that includes variables such as the number of production workers, wage payments (to all employees and to production workers), fixed capital stocks, and investment in fixed assets, in addition to making further adjustments to estimates of employment, value added, and output. Likewise, the methodology for estimating (in the case of missing observations) or revising (in the case of outliers) foreign ownership shares needs to be reviewed and clarified. In other words, there is a lot of basic data work that is necessary before we can have a lot of confidence in the results of this study or others like it that have used these data.

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**Table 1: Industry Definitions by ISIC (Indonesia Standard Industrial Classification), and Employment and Value Added by Ownership and Industry**

ISIC	Definition	Employment (1,000)						Value Added (GDP, rupiah trillions)					
		All Plants			Foreign plants			All plants			Foreign plants		
		1986	1996	1998	1986	1996	1998	1986	1996	1998	1986	1996	1998
Employment and National Accounts Data													
na	Indonesia total	68,338	85,702	87,672	#N/A	#N/A	#N/A	102.47	532.568	942.844	#N/A	#N/A	#N/A
3	All manufacturing	5,606	10,773	9,934	#N/A	#N/A	#N/A	17.1	136.4	234.503	#N/A	#N/A	#N/A
Industrial Statistics/Censuses (Backcast Estimates)													
3	All manufacturing	1,980	4,235	4,124	177	783	789	10.477	84.148	154.65	1.976	24.560	54.052
311-312	Food	344	549	578	20	56	58	1.457	7.651	20.489	0.174	1.520	5.836
313	Beverages	14	26	24	3	4	3	0.128	0.782	0.712	0.085	0.438	0.279
314	Tobacco	213	224	239	4	3	3	1.633	8.906	14.420	0.080	0.479	1.320
321	Textiles	369	636	600	46	88	78	1.200	7.536	18.607	0.331	1.682	5.592
322	Apparel	101	396	401	0	91	90	0.339	3.229	6.259	0.000	1.095	1.849
323	Leather	6	26	31	0	4	11	0.024	0.289	0.459	0.000	0.069	0.162
324	Footwear	12	311	261	2	144	116	0.055	2.786	5.021	0.027	1.287	2.641
331	Wood	203	407	395	20	37	36	0.984	5.834	10.155	0.152	0.705	1.173
332	Furniture	19	160	176	1	10	11	0.043	0.935	3.929	0.003	0.124	0.495
341	Paper	33	95	127	3	21	29	0.236	2.984	8.704	0.043	1.287	2.383
342	Printing, publishing	45	71	53	1	3	1	0.230	1.689	1.304	0.007	0.218	0.023
351	Industrial chemicals	40	70	82	3	15	19	0.488	3.671	10.983	0.086	1.482	7.458
352	Other chemicals	76	117	111	17	25	25	0.477	3.213	5.729	0.208	1.581	2.762
353	Oil refineries & gas	#N/A	1	1	#N/A	0	1	#N/A	0.082	0.214	#N/A	0.000	0.040
354	Other oil & coal	#N/A	3	4	#N/A	1	1	#N/A	0.036	0.061	#N/A	0.018	0.025
355	Rubber	99	125	124	12	19	19	0.374	1.335	2.918	0.117	0.389	0.578
356	Plastics	60	172	142	1	17	16	0.155	1.584	2.869	0.012	0.331	1.286
361	Porcelain	14	42	36	1	7	7	0.039	0.507	1.248	0.006	0.136	0.406
362	Glass	11	26	27	3	6	4	0.133	0.877	1.059	0.091	0.582	0.609
363	Cement	35	51	41	3	6	5	0.271	1.659	1.677	0.064	0.577	0.602
364	Clay	27	47	42	0	1	3	0.027	0.151	0.345	0.002	0.022	0.207
369	Other nonmetallic min.	10	26	21	0	1	1	0.031	0.332	0.524	0.000	0.004	0.093
371	Iron, steel	20	33	32	4	5	5	0.728	7.525	4.015	0.093	0.364	1.592
372	Nonferrous metals	#N/A	18	15	#N/A	7	6	#N/A	1.065	1.704	#N/A	0.799	1.015
381	Metal products	70	165	122	11	40	28	0.386	3.655	4.523	0.121	1.615	1.908
382	Nonelectrical machinery	25	46	44	3	10	16	0.108	1.138	2.476	0.028	0.499	1.751
383	Electric machinery	47	167	185	9	92	120	0.262	6.879	9.943	0.110	3.142	6.587
384	Transport machinery	72	134	102	7	34	29	0.608	6.846	11.992	0.122	3.588	3.778
385	Precision machinery	3	17	15	0	8	7	0.006	0.306	0.560	0.001	0.148	0.433
390	Miscellaneous	17	75	93	1	30	39	0.056	0.667	1.753	0.014	0.381	1.170

Note:

Foreign plants are defined as plants with foreign ownership shares of 10 percent or greater.

Sources:

Employment and national accounts data from International Centre for the Study of East Asian Development (2000) or calculated from this source.

Industrial statistics from Biro Pusat Statistik (various years).

**Table 2a: Shares of Employment for Minority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (percent)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	2.94	2.93	3.19	3.34	3.27	3.50	4.01	4.48	4.54	4.80	5.01	5.50	5.01	4.56
311-312	1.24	1.50	2.27	2.26	2.18	2.54	3.10	3.43	3.33	4.05	3.40	4.79	3.50	3.90
313	7.34	6.76	6.31	13.02	9.56	12.06	8.66	17.58	15.99	16.78	7.51	5.87	7.25	3.93
314	0.63	0.46	1.61	2.66	1.54	0.79	0.12	0.07	0.15	0.17	0.09	0.00	0.00	0.00
321	1.98	1.89	1.83	1.37	1.71	1.32	2.75	2.82	2.62	2.53	2.77	3.09	3.33	2.03
322	1.66	2.20	1.78	2.73	1.52	1.80	3.54	3.66	4.66	4.80	6.76	6.86	5.91	5.83
323	0.00	0.00	0.00	0.00	1.82	2.04	3.32	7.31	4.38	5.35	1.45	2.16	4.74	4.72
324	0.00	0.00	0.00	1.81	1.29	3.63	3.31	8.42	7.88	7.69	11.20	10.63	8.81	8.79
331	8.97	7.92	6.93	5.76	5.54	5.91	5.61	5.07	4.82	4.70	5.08	4.37	3.38	2.51
332	0.00	0.00	2.33	1.36	1.30	2.06	1.40	1.03	1.80	1.59	0.28	1.42	1.87	2.24
341	3.60	5.91	5.62	7.02	8.16	13.39	9.75	11.29	9.85	9.88	14.81	14.47	17.63	15.01
342	0.37	1.19	1.28	1.02	1.17	0.36	0.78	1.47	1.18	1.08	1.06	1.75	1.41	1.37
351	5.25	4.87	5.77	5.33	5.29	6.40	6.80	6.76	6.79	6.23	5.19	6.23	5.57	5.69
352	3.77	3.49	3.42	3.04	3.30	3.68	4.79	5.13	6.24	6.27	7.32	7.52	4.22	5.03
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	5.97	5.97	10.43	35.75	2.99	9.12	4.75	1.49	0.96
355	2.26	2.53	4.30	4.93	4.80	3.43	4.51	3.16	3.17	4.82	3.57	3.85	4.50	6.72
356	0.71	0.67	1.01	1.62	1.48	1.28	1.09	2.06	2.51	2.98	2.73	3.54	2.87	2.56
361	7.16	8.27	12.05	10.69	9.87	11.81	11.78	12.38	10.55	10.41	8.75	9.95	10.82	8.78
362	16.35	17.53	0.00	0.00	0.00	0.00	0.45	1.48	1.87	1.77	10.08	21.58	16.11	8.08
363	3.21	4.21	3.88	5.71	5.75	5.03	4.03	9.03	9.15	10.31	9.10	8.99	7.57	7.05
364	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10	1.93	1.86	2.02	2.02	1.09	4.82
369	0.00	0.00	0.00	0.00	0.00	1.33	1.42	1.17	1.25	1.49	1.20	0.00	0.00	0.56
371	1.00	0.00	0.00	0.00	0.00	11.53	4.56	4.89	4.66	4.11	4.02	4.05	5.49	7.35
372	#N/A	#N/A	#N/A	#N/A	#N/A	2.32	7.29	6.22	7.04	5.77	5.07	5.25	4.62	1.48
381	5.82	7.57	7.06	8.62	8.61	5.99	5.47	5.96	6.36	6.37	6.03	7.92	6.52	3.70
382	8.10	8.15	8.82	9.51	8.37	2.90	3.07	3.67	5.12	6.74	8.00	6.47	13.64	7.68
383	3.48	2.98	2.91	3.06	4.44	7.90	9.95	10.87	10.22	10.92	10.06	7.96	7.98	6.45
384	4.36	3.44	4.71	4.02	6.61	9.11	11.27	8.64	7.63	8.67	7.88	9.72	7.14	10.88
385	5.75	5.07	14.59	3.76	2.94	10.07	7.15	3.17	2.33	0.00	0.40	2.61	2.69	3.08
390	0.55	0.24	0.22	0.00	0.00	3.64	5.31	5.68	6.91	7.32	6.53	7.87	6.38	4.46
Backcast-3	2.71	2.70	2.98	3.00	3.04	3.42	3.89	4.35	4.50	4.71	5.07	5.56	5.06	4.56
311-312	1.51	1.63	2.34	2.34	2.14	2.78	3.26	3.51	3.43	4.06	3.54	5.48	4.07	3.90
313	6.54	5.86	5.45	10.56	7.88	11.47	9.42	17.71	15.47	16.36	7.37	5.82	7.17	3.93
314	0.57	1.10	2.30	2.31	1.54	0.84	0.13	0.08	0.16	0.18	0.13	0.00	0.00	0.00
321	1.40	1.35	1.29	1.24	1.55	1.30	2.64	2.71	2.52	2.45	2.71	3.07	3.30	2.03
322	0.00	0.00	1.25	2.12	1.64	2.21	3.85	3.74	4.58	4.48	6.47	6.84	5.84	5.83
323	0.81	1.43	1.44	1.39	3.28	1.72	2.87	7.31	4.02	5.86	2.50	2.15	4.67	4.72
324	0.00	0.00	0.00	1.26	0.80	2.72	2.93	8.01	7.49	7.09	10.73	10.33	8.56	8.79
331	8.28	7.35	6.14	5.14	5.19	5.63	5.37	4.99	4.77	4.61	5.24	4.34	3.34	2.51
332	1.38	1.52	1.47	0.96	0.74	1.65	1.37	1.01	1.62	1.45	0.26	1.40	1.83	2.24
341	5.12	4.92	4.81	5.72	10.56	10.86	9.09	10.91	13.60	13.37	14.50	14.43	15.95	15.01
342	0.32	1.00	1.06	0.88	1.12	0.53	0.73	1.34	1.09	1.02	1.01	1.73	1.40	1.37
351	5.04	4.67	5.10	5.09	5.18	5.79	6.22	6.20	6.42	5.97	5.16	6.21	5.52	5.69
352	3.71	3.18	3.17	2.92	3.13	3.50	4.52	4.95	6.02	6.11	7.21	7.46	4.10	5.03
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	10.97	10.50	13.70	21.84	7.88	6.72	3.61	1.22	0.96
355	3.09	3.43	4.87	5.28	4.23	3.14	4.18	3.06	3.13	4.76	3.55	3.90	4.47	6.72
356	0.63	0.56	0.83	1.35	1.27	1.10	1.01	2.08	2.37	2.86	3.00	3.50	2.81	2.56
361	6.48	6.99	10.40	9.25	8.89	11.23	11.48	12.13	10.39	10.05	8.50	9.91	10.79	8.78
362	15.97	16.92	1.31	1.32	1.30	1.25	1.78	2.63	3.21	4.49	11.28	22.63	17.11	8.08
363	2.94	3.55	3.23	5.05	4.98	4.57	3.66	8.27	8.46	9.56	8.68	8.84	7.30	7.05
364	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	1.57	1.51	1.87	2.02	1.08	4.82
369	0.00	0.00	0.00	0.00	0.00	1.08	1.26	1.17	1.33	1.36	1.13	0.00	0.00	0.56
371	1.42	0.52	0.53	0.59	0.58	11.72	4.31	4.47	4.38	3.89	3.87	4.03	4.68	7.35
372	#N/A	#N/A	#N/A	#N/A	#N/A	1.99	6.65	5.74	6.83	5.49	4.93	5.17	4.55	1.48
381	5.84	7.12	7.63	7.16	7.14	5.21	5.01	5.69	6.00	6.06	5.83	7.83	6.43	3.70
382	7.37	5.41	5.51	6.24	5.85	2.75	2.92	3.03	4.78	6.43	7.90	6.53	13.50	7.68
383	3.04	2.82	2.67	3.14	4.18	8.75	9.85	9.96	9.65	10.41	9.79	7.95	7.81	6.45
384	4.32	3.25	4.44	3.89	6.49	8.99	10.62	8.23	7.43	8.46	7.66	9.60	11.13	10.88
385	5.07	4.34	12.21	3.35	2.44	8.34	5.84	3.15	2.25	0.00	0.36	2.37	2.41	3.08
390	0.44	0.19	0.17	0.00	0.15	4.81	4.71	5.09	6.61	6.82	6.16	7.64	6.19	4.46

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).



**Table 2b: Shares of Employment for Majority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (percent)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	5.42	5.71	4.89	4.33	4.16	4.59	5.46	6.71	7.04	7.60	7.25	7.07	6.94	6.03
311-312	1.77	3.18	2.21	1.91	1.52	1.73	1.71	2.40	2.17	2.89	2.85	2.74	3.38	3.68
313	17.61	18.09	18.59	7.58	7.48	7.37	13.46	4.82	3.96	3.32	5.42	1.59	2.29	2.93
314	1.08	0.74	0.37	0.36	0.19	0.18	0.19	0.22	0.24	0.28	0.10	0.30	0.45	0.31
321	9.46	9.84	8.41	8.21	6.85	6.71	6.75	7.90	7.89	7.02	7.33	7.16	5.31	4.93
322	2.27	0.00	0.00	0.03	0.97	1.96	3.14	5.80	7.05	6.72	5.72	4.79	4.85	3.76
323	0.00	0.00	0.00	0.00	0.00	1.07	8.25	14.63	13.09	4.52	5.06	6.55	11.41	15.35
324	16.31	16.26	16.85	19.26	22.11	22.25	18.41	24.62	26.92	29.02	26.21	23.51	17.39	17.05
331	2.95	3.29	2.31	1.37	1.48	1.15	0.97	2.34	2.09	2.17	2.01	3.14	4.01	4.51
332	2.15	1.95	1.73	1.24	1.57	3.86	4.91	3.31	2.87	2.82	2.91	1.59	1.38	0.83
341	5.15	3.58	3.45	2.82	2.48	3.38	3.30	3.18	3.02	2.83	2.75	2.78	4.04	6.03
342	2.05	1.11	2.14	2.09	2.34	0.19	0.74	0.88	2.83	2.80	3.15	2.88	3.00	0.00
351	6.41	2.76	2.84	3.10	2.13	9.73	8.74	10.97	9.31	8.80	11.00	10.58	14.43	9.47
352	17.83	17.65	14.79	14.23	14.65	14.73	11.64	11.69	11.12	10.98	10.14	10.61	11.53	9.49
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	1.29	1.04	23.36	15.11
355	1.42	4.04	3.30	2.27	2.37	4.20	7.23	5.96	6.43	6.11	5.91	5.86	5.80	4.63
356	2.79	3.32	3.24	1.24	1.02	1.78	1.73	2.44	1.91	4.98	5.54	3.54	3.99	2.69
361	0.00	0.00	0.00	1.70	1.61	5.09	4.21	4.52	3.65	4.94	6.65	7.14	8.38	8.95
362	10.64	10.75	10.04	8.36	3.85	0.00	0.00	0.00	2.93	3.45	0.58	1.52	0.31	7.55
363	4.46	5.19	5.33	4.32	4.78	4.92	4.62	4.03	3.08	3.48	3.72	2.48	2.86	2.80
364	0.75	0.70	0.68	0.58	0.82	0.54	0.00	0.46	0.00	0.00	0.00	0.51	3.36	3.25
369	0.00	0.00	0.00	0.00	0.00	0.12	0.11	2.36	2.58	2.67	2.45	2.60	2.41	3.23
371	18.41	17.53	17.58	20.66	20.33	9.11	8.75	8.05	8.13	8.60	9.04	8.68	7.65	6.05
372	#N/A	#N/A	#N/A	#N/A	#N/A	3.85	8.05	9.15	8.78	26.52	22.45	24.20	23.77	28.52
381	10.25	9.36	9.07	8.16	8.26	9.09	9.41	12.04	9.31	14.07	13.35	11.85	10.24	9.41
382	7.25	7.56	7.57	8.63	8.18	9.20	10.68	10.43	10.99	10.24	8.67	10.41	8.96	12.27
383	14.55	16.38	17.39	16.76	17.82	15.17	17.18	14.05	17.61	18.29	14.94	16.63	16.12	13.96
384	8.06	7.38	7.27	5.82	6.39	7.88	9.85	9.06	7.53	8.65	12.16	11.56	11.70	7.70
385	0.00	0.00	0.00	0.70	0.59	0.63	0.52	22.08	9.34	11.58	26.38	21.94	25.75	9.31
390	10.05	8.33	9.25	5.46	6.86	7.02	18.97	12.44	16.43	13.34	12.31	11.47	18.98	10.67
Backcast-3	4.83	4.92	4.44	4.18	4.10	4.64	5.51	6.58	6.88	7.39	7.37	7.06	6.78	6.03
311-312	1.64	2.58	1.86	1.94	1.49	1.55	1.60	2.33	2.06	2.76	2.80	2.90	3.41	3.68
313	15.68	15.67	15.58	6.75	6.17	6.23	12.30	4.46	3.83	3.24	5.32	1.78	2.47	2.93
314	0.93	0.62	0.34	0.32	0.22	0.19	0.18	0.22	0.23	0.28	0.15	0.30	0.32	0.31
321	8.22	8.37	7.50	7.44	6.27	6.41	6.48	7.66	7.68	6.78	7.15	7.15	5.30	4.93
322	1.66	0.00	0.06	0.12	1.28	2.39	3.26	5.67	6.63	6.35	5.48	4.32	4.85	3.76
323	0.00	0.00	0.00	0.00	0.00	1.73	12.35	15.11	14.23	6.50	7.41	6.53	11.25	15.35
324	13.69	13.28	12.59	19.48	22.73	22.26	18.75	23.38	25.53	26.78	25.12	22.84	16.88	17.05
331	2.23	2.29	1.94	1.29	0.92	0.93	1.27	2.60	2.40	2.50	2.35	3.12	3.97	4.51
332	1.59	1.34	1.10	1.51	2.07	3.65	4.50	2.94	2.58	2.57	2.72	1.57	1.46	0.83
341	4.02	2.82	2.74	2.39	2.06	3.54	3.27	3.21	3.39	2.64	2.69	2.77	3.76	6.03
342	1.83	1.06	1.83	2.24	2.12	0.57	0.65	0.77	2.50	2.55	3.00	2.86	2.97	0.00
351	3.90	2.99	3.11	2.42	1.56	8.87	8.14	10.69	9.93	9.45	11.80	10.65	14.41	9.47
352	15.05	16.49	14.08	13.41	13.51	13.78	11.31	11.31	10.95	10.86	10.06	10.62	11.29	9.49
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	0.95	0.79	19.05	15.11
355	1.99	3.45	2.95	2.72	3.28	4.65	7.79	5.83	6.35	6.03	5.88	5.94	5.76	4.63
356	1.11	1.74	1.68	0.88	0.72	2.03	2.45	2.69	2.14	4.81	5.31	3.53	4.02	2.69
361	0.00	0.00	0.00	1.57	1.45	4.85	4.11	4.43	3.59	5.23	6.46	7.12	8.36	8.95
362	9.50	9.55	8.67	7.23	3.25	0.00	0.00	0.28	3.07	3.47	0.87	1.50	0.39	7.55
363	4.08	4.38	4.43	3.83	4.14	4.47	4.20	3.69	2.99	3.23	3.55	2.43	2.76	2.80
364	0.64	0.58	0.53	0.49	0.68	0.43	0.00	0.38	0.00	0.00	0.00	0.51	3.33	3.25
369	0.00	0.00	0.00	0.00	0.00	0.09	0.10	2.07	2.35	2.44	2.30	2.56	2.34	3.23
371	20.89	20.18	20.04	19.56	17.59	8.57	8.72	8.09	7.82	8.32	8.89	8.83	6.41	6.05
372	#N/A	#N/A	#N/A	#N/A	#N/A	2.61	7.34	8.43	8.75	25.24	21.86	23.85	23.38	28.52
381	9.54	8.66	8.59	7.92	7.91	8.59	8.97	12.05	9.45	13.58	13.30	11.88	10.25	9.41
382	6.48	5.51	5.69	6.02	5.62	9.38	11.41	11.08	10.83	9.78	8.62	10.52	9.25	12.27
383	16.17	16.59	17.80	17.82	19.75	17.76	16.60	14.06	16.46	17.48	14.57	16.61	15.88	13.96
384	7.87	7.10	6.82	6.01	6.90	7.91	10.16	9.47	8.03	9.55	12.77	12.07	11.23	7.70
385	0.00	0.00	4.53	0.62	0.49	0.52	0.43	21.88	9.04	11.23	23.89	19.92	23.13	9.31
390	8.31	7.29	7.22	5.40	8.99	8.13	18.72	12.29	16.43	13.90	13.21	12.26	19.65	10.67

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 2c: Shares of Employment for Heavily-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (percent)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	1.59	0.91	1.16	1.22	1.20	2.31	2.51	3.03	3.72	4.61	5.03	5.89	7.69	8.54
311-312	1.47	0.70	1.33	1.40	1.41	1.42	1.53	1.51	1.02	1.69	2.45	1.74	2.30	2.37
313	1.77	1.55	1.57	0.68	0.72	0.00	0.00	0.72	1.51	1.88	6.53	8.01	9.74	7.14
314	0.37	0.40	0.26	0.28	0.24	0.24	0.34	0.37	0.34	0.40	0.44	0.98	1.38	1.03
321	1.77	1.99	1.94	2.05	1.83	3.29	2.10	1.77	2.85	3.28	3.21	3.69	4.78	5.98
322	0.27	0.00	0.00	0.73	1.91	3.18	5.17	6.29	7.04	8.68	9.23	11.84	12.63	12.82
323	1.24	1.29	1.20	0.00	0.30	0.00	0.00	5.29	6.17	4.97	4.42	5.68	8.96	16.25
324	0.00	0.94	0.38	0.00	2.13	10.00	15.99	14.63	12.33	10.46	10.43	13.52	19.27	18.55
331	0.26	0.09	1.41	1.14	0.97	0.76	0.68	0.97	1.57	1.36	1.39	1.59	2.18	2.16
332	0.00	0.30	0.93	0.95	1.18	0.40	0.68	0.59	0.79	1.52	2.40	3.04	3.88	3.13
341	0.00	0.00	0.00	0.00	0.00	0.38	0.29	0.25	0.00	2.17	2.12	4.66	3.62	2.01
342	0.20	0.12	0.05	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.32
351	0.13	0.89	0.96	0.38	0.53	0.19	0.42	0.20	0.59	2.51	3.12	3.96	4.28	7.99
352	2.76	2.54	2.98	2.37	2.36	2.00	1.06	1.16	0.96	1.11	2.74	3.28	4.68	7.94
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	37.20	50.86
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	5.67	6.87	56.10	40.75	24.87	14.44	8.78
355	8.55	3.79	3.93	4.39	3.88	10.87	5.69	3.12	4.54	4.88	5.88	5.54	7.24	4.22
356	0.00	0.00	0.00	0.00	0.22	0.18	0.50	1.26	1.24	3.63	4.26	2.98	3.64	6.12
361	0.00	0.20	0.18	0.24	0.24	0.13	0.12	0.00	1.75	1.64	1.46	0.00	0.00	0.88
362	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.36	0.32	0.29	2.00	0.00
363	0.15	0.00	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.06	0.69	2.71
364	0.98	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	1.93	1.06	1.01	0.76	0.97
371	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.75	0.58	0.68	1.42	1.96	5.00	3.33
372	#N/A	#N/A	#N/A	#N/A	#N/A	31.29	23.74	21.59	21.62	3.31	5.63	9.06	9.69	11.29
381	0.09	0.09	0.08	0.30	0.63	0.55	0.33	0.67	2.19	3.66	3.58	4.18	6.56	9.77
382	0.48	0.00	0.00	0.00	0.00	0.26	0.20	0.74	2.54	3.16	4.61	5.71	6.40	16.15
383	10.25	0.00	0.00	0.00	0.00	0.56	3.63	11.30	16.19	22.71	26.35	30.77	38.88	44.63
384	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	1.89	2.45	3.46	3.73	6.66	10.06
385	0.00	0.00	0.00	0.00	0.00	0.00	1.57	4.14	11.23	21.30	21.33	24.58	25.91	32.39
390	2.08	0.00	0.00	0.00	0.00	5.92	9.96	14.02	18.34	22.27	21.24	20.55	18.23	27.04
Backcast-3	1.87	1.33	1.50	1.53	1.62	2.20	2.57	3.11	3.68	4.71	5.14	5.87	7.56	8.54
311-312	2.18	1.71	2.27	2.01	1.47	1.26	1.38	1.43	1.01	1.63	2.41	1.78	2.26	2.37
313	1.57	1.34	1.32	0.61	0.59	0.00	0.00	0.66	1.46	1.83	6.41	7.95	9.64	7.14
314	0.32	0.34	0.24	0.24	0.24	0.26	0.34	0.43	0.39	0.41	0.66	0.98	0.98	1.03
321	2.60	2.82	2.75	2.85	2.73	3.19	2.60	2.56	2.83	3.28	3.32	3.67	4.75	5.98
322	0.20	0.00	0.00	1.31	3.08	3.27	5.13	5.67	6.64	8.37	9.07	11.81	12.44	12.82
323	0.95	0.89	0.82	0.00	0.00	0.00	0.00	5.50	5.67	4.39	4.10	5.65	9.56	16.25
324	0.00	0.67	0.25	3.38	10.89	7.37	13.92	13.92	11.71	12.44	10.21	13.16	18.74	18.55
331	0.64	0.46	1.18	1.08	0.87	0.82	0.64	0.91	1.51	1.34	1.35	1.58	2.16	2.16
332	0.00	0.20	0.76	1.16	1.12	0.62	0.60	0.52	0.75	1.50	2.44	3.00	3.79	3.13
341	0.00	0.00	0.00	0.00	0.09	0.33	0.27	0.31	0.08	2.02	2.77	4.65	3.38	2.01
342	0.17	0.10	0.04	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.32
351	0.11	0.80	0.88	0.46	0.61	0.29	0.50	0.31	0.69	2.55	3.05	3.95	4.32	7.99
352	3.12	2.85	3.18	2.21	1.96	1.52	1.00	1.11	1.01	1.17	2.79	3.35	5.64	7.94
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	47.93	50.86
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	3.46	27.13	36.48	30.03	20.79	12.66	8.78
355	9.16	5.26	5.65	5.67	4.42	10.27	5.75	3.36	4.92	4.87	5.84	5.61	7.18	4.22
356	0.00	0.00	0.00	0.03	0.21	0.15	0.61	1.24	1.35	3.48	4.08	3.00	3.62	6.12
361	0.00	0.17	0.16	0.22	0.22	0.13	0.12	0.00	1.73	1.58	1.42	0.00	0.00	0.88
362	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.33	0.31	0.29	1.95	0.00
363	0.62	0.74	0.76	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.06	2.37	2.71
364	0.83	0.00	0.08	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
369	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.00	1.76	0.99	1.00	0.73	0.97
371	0.00	0.00	0.10	0.10	0.10	0.00	0.00	0.69	0.55	1.62	1.58	2.18	4.90	3.33
372	#N/A	#N/A	#N/A	#N/A	#N/A	27.21	21.65	19.91	20.98	4.41	5.49	8.93	9.54	11.29
381	0.08	0.08	0.07	0.26	0.60	0.52	0.87	0.73	2.22	3.72	3.62	4.22	6.58	9.77
382	0.43	0.00	0.00	0.00	0.00	0.24	0.26	0.69	2.37	2.97	4.49	5.65	6.29	16.15
383	8.97	0.00	0.00	0.00	0.00	0.49	4.78	11.89	17.06	23.16	26.46	30.64	39.75	44.63
384	0.00	0.00	0.00	0.00	0.00	0.13	0.10	0.45	2.11	2.36	3.36	3.68	6.12	10.06
385	0.00	0.00	0.00	0.00	0.00	0.00	2.90	4.11	10.86	20.67	19.31	22.32	23.27	32.39
390	1.68	0.00	0.00	0.00	0.00	5.62	10.59	15.61	17.27	20.83	20.06	19.97	17.70	27.04

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 3a: Shares of Value Added for Minority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (percent)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	6.21	5.78	7.46	7.49	10.87	10.42	8.64	8.31	10.68	11.94	10.74	11.05	8.62	8.52
311-312	3.59	4.50	8.62	9.11	9.47	6.32	8.71	7.00	6.00	7.59	5.09	9.22	6.59	8.13
313	24.57	10.93	30.24	36.92	32.59	30.76	36.17	56.05	41.81	43.94	8.46	7.55	11.54	1.74
314	0.02	0.05	0.05	0.29	0.33	0.04	0.00	0.00	0.04	0.05	0.00	0.00	0.00	0.00
321	1.94	3.68	1.66	1.14	1.85	1.58	3.32	3.82	4.89	2.65	2.79	3.50	4.02	1.83
322	0.68	0.51	0.74	1.52	0.66	1.01	4.26	4.90	5.94	9.17	15.24	13.55	8.14	7.19
323	0.00	0.00	0.00	0.00	2.05	1.22	2.08	17.08	2.01	2.67	0.07	1.72	0.46	3.38
324	0.00	0.00	0.00	2.12	1.60	4.86	5.28	11.91	5.97	4.42	8.00	9.13	7.11	11.15
331	9.73	10.66	12.24	9.61	9.95	8.44	8.94	5.55	7.75	6.40	6.98	4.58	2.58	2.34
332	0.00	0.00	1.57	1.07	0.89	1.75	1.67	0.82	2.17	2.72	0.19	1.86	8.08	6.84
341	6.72	20.10	32.93	25.08	17.28	30.94	26.68	26.51	21.96	11.95	23.71	18.66	13.70	16.79
342	0.42	1.45	1.38	1.00	1.06	0.44	0.57	1.69	0.79	0.62	1.22	1.27	1.19	1.66
351	11.46	9.80	8.33	7.50	8.68	16.55	13.73	8.80	13.71	19.91	11.63	15.72	17.63	19.64
352	13.20	15.23	9.44	6.62	6.97	6.23	5.98	11.19	9.19	8.78	12.79	13.22	8.94	8.70
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	52.04	22.63	47.15	37.76	1.07	5.99	3.79	0.27	0.23
355	4.06	4.67	17.37	9.46	8.64	8.19	12.63	13.19	10.73	8.55	1.58	2.75	5.03	3.22
356	1.18	2.15	12.41	11.70	10.02	3.00	2.41	2.06	4.22	3.85	3.19	7.14	11.83	6.77
361	4.59	16.28	30.34	21.73	19.54	21.41	19.10	24.98	14.49	14.48	18.44	21.62	26.92	25.42
362	73.34	68.08	0.00	0.00	0.00	0.00	0.16	1.03	0.98	0.79	17.82	63.50	34.36	8.40
363	9.08	8.33	7.33	8.78	9.68	6.36	4.53	21.83	25.49	26.22	23.82	25.76	9.87	27.07
364	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.10	4.22	4.77	10.00	12.09	7.02	0.97
369	0.00	0.00	0.00	0.00	0.00	1.73	1.80	0.32	0.54	1.93	1.39	0.00	0.00	0.46
371	0.38	0.00	0.00	0.00	0.00	11.03	2.34	6.57	21.70	26.56	26.97	15.10	9.07	35.57
372	#N/A	#N/A	#N/A	#N/A	#N/A	3.01	2.38	2.30	6.70	6.47	2.90	1.20	2.95	2.92
381	10.62	11.04	20.89	22.52	48.29	13.28	12.81	24.88	26.82	25.18	14.11	18.94	13.62	5.00
382	18.39	19.49	20.19	10.22	6.83	3.62	3.42	10.10	10.83	7.49	10.23	9.94	32.99	6.65
383	4.96	4.12	7.50	8.13	9.05	10.50	11.34	13.39	10.99	20.31	14.98	4.61	5.34	4.02
384	5.72	5.96	9.38	11.70	44.18	48.52	22.88	5.44	24.86	28.80	24.86	26.01	15.19	15.50
385	33.45	25.69	20.06	12.12	12.59	34.90	37.00	6.64	12.24	0.00	0.47	2.76	2.37	7.81
390	0.22	0.34	0.42	0.00	0.00	2.03	3.25	4.47	4.63	9.56	6.35	9.09	3.02	9.47
Backcast-3	6.48	5.87	6.72	6.54	9.94	9.96	8.25	7.99	9.96	11.01	9.72	10.23	10.73	8.52
311-312	3.09	3.62	6.98	7.39	6.66	9.30	11.93	10.95	10.62	7.69	5.64	9.68	6.79	8.13
313	24.28	22.60	27.48	33.48	30.27	29.95	36.52	55.89	41.25	43.67	8.44	12.73	11.48	1.74
314	0.02	0.08	0.08	0.28	0.38	0.04	0.00	0.00	0.04	0.05	0.00	0.00	0.00	0.00
321	2.48	1.01	0.96	1.11	1.71	1.69	3.17	3.66	4.70	3.21	2.69	3.86	4.00	1.83
322	0.00	0.00	0.42	1.06	0.89	0.71	2.11	2.61	5.82	8.51	14.69	13.73	8.07	7.19
323	0.48	1.12	1.24	1.24	7.49	0.93	1.95	16.35	1.91	3.11	0.73	1.72	0.46	3.38
324	0.00	0.00	0.00	1.62	1.14	4.11	4.40	11.13	5.65	4.06	7.62	8.97	6.88	11.15
331	10.17	11.83	10.62	8.20	8.84	7.06	7.35	5.27	7.53	6.23	6.87	4.87	2.57	2.34
332	0.93	0.96	0.92	0.77	0.50	1.31	1.50	0.78	1.98	2.53	0.18	1.97	8.27	6.84
341	8.23	10.83	23.92	21.94	20.90	27.76	26.13	25.95	25.11	16.63	23.57	18.95	9.51	16.79
342	0.34	1.20	1.20	0.94	1.05	0.49	0.52	1.43	0.67	0.52	1.16	1.26	1.18	1.66
351	13.22	9.90	6.87	4.98	8.42	16.10	12.97	8.22	13.08	18.61	11.48	12.46	17.45	19.64
352	6.59	5.88	8.43	5.67	6.78	5.94	5.71	10.87	9.18	8.64	17.17	13.07	8.71	8.70
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	72.50	30.34	48.12	28.20	7.14	5.74	2.90	0.25	0.23
355	14.87	10.50	13.87	8.15	7.72	7.88	11.97	12.78	10.33	8.85	1.56	2.35	5.02	3.22
356	2.09	1.79	10.66	10.40	8.50	2.54	2.16	1.89	2.80	3.70	4.49	7.47	11.57	6.77
361	4.03	14.34	27.20	20.14	18.70	20.20	18.91	24.79	14.43	14.37	18.32	23.11	26.90	25.42
362	74.26	63.69	2.79	2.62	2.19	4.33	3.41	2.19	2.74	4.68	19.22	65.44	36.67	8.40
363	10.35	8.44	9.12	7.77	8.94	6.01	3.14	20.66	24.50	23.31	23.07	25.22	9.58	27.07
364	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.73	3.52	4.05	9.51	12.85	7.14	0.97
369	0.00	0.00	0.00	0.00	0.00	1.29	1.60	0.46	0.83	1.86	1.36	0.00	0.00	0.46
371	0.47	0.08	0.05	0.05	0.06	11.00	2.35	1.54	2.70	4.17	4.19	1.80	32.79	35.57
372	#N/A	#N/A	#N/A	#N/A	#N/A	2.71	2.08	2.13	6.62	6.31	2.84	1.29	2.95	2.92
381	18.90	20.39	23.32	23.42	42.74	10.58	10.53	19.69	24.54	23.27	14.96	19.74	13.14	5.00
382	19.19	13.30	14.38	7.33	5.17	3.67	3.49	9.82	10.42	7.46	10.80	12.23	32.89	6.65
383	5.37	4.89	7.75	7.54	8.27	10.23	11.98	12.66	9.91	18.26	14.32	4.47	5.29	4.02
384	7.15	5.82	10.11	12.32	38.67	46.57	23.85	5.93	27.73	33.92	28.74	34.52	28.90	15.50
385	28.44	20.39	8.43	10.44	10.94	32.01	33.32	6.52	12.10	0.00	0.46	2.44	2.35	7.81
390	0.18	0.24	0.26	0.00	0.20	3.41	2.91	4.05	3.22	6.88	6.10	6.78	2.92	9.47

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 3b: Shares of Value Added for Majority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (percent)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	14.06	13.39	13.94	14.01	10.99	8.97	11.70	13.06	10.68	11.88	11.60	12.35	16.40	13.25
311-312	6.21	8.50	4.78	4.29	2.80	1.77	2.92	4.11	4.21	7.48	6.27	5.79	10.57	9.34
313	44.57	41.40	31.45	26.75	26.42	29.58	20.30	12.23	18.98	13.22	24.60	28.92	20.78	1.62
314	6.34	4.51	3.86	3.84	2.45	2.65	3.47	3.40	3.63	5.03	3.53	4.69	17.88	7.02
321	27.39	20.76	24.19	23.84	22.36	12.88	18.28	16.10	14.30	11.27	12.41	16.57	13.56	18.04
322	1.41	0.00	0.00	0.00	3.05	2.22	5.89	11.37	5.48	9.08	5.13	4.52	6.72	6.59
323	0.00	0.00	0.00	0.00	0.00	0.11	6.05	9.07	11.35	4.52	21.77	18.66	22.95	19.70
324	63.27	44.86	56.28	14.15	24.68	25.51	17.93	30.18	20.71	20.40	21.65	24.40	26.14	20.45
331	3.32	3.71	2.21	2.10	2.22	1.47	0.74	5.11	3.76	3.99	3.97	6.36	9.62	7.65
332	5.67	8.30	2.83	2.41	3.82	7.73	10.83	5.86	8.07	11.72	11.50	5.88	5.40	1.22
341	5.24	13.56	1.89	12.24	10.05	8.58	7.03	7.74	4.50	2.06	1.84	2.39	9.74	2.03
342	4.06	2.17	5.88	10.63	1.53	0.24	0.64	2.11	14.44	13.75	12.76	11.67	14.11	0.00
351	4.78	3.06	5.04	6.98	4.89	26.28	28.47	39.59	26.25	23.35	23.57	31.15	26.16	35.48
352	24.47	26.98	31.98	28.53	29.70	28.93	25.88	23.80	34.54	32.32	33.75	28.75	30.67	26.44
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	1.37	2.85	1.44	10.31
355	2.78	9.10	6.51	3.33	3.84	5.47	10.79	6.82	14.97	18.07	20.45	24.47	17.75	8.62
356	56.44	7.47	10.81	4.98	3.40	3.67	8.47	5.70	3.38	9.10	8.46	7.51	9.89	10.38
361	0.00	0.00	0.00	1.11	0.92	11.19	6.83	3.95	3.97	3.37	4.46	2.46	4.08	6.69
362	7.18	5.36	14.72	7.59	3.54	0.00	0.00	0.00	1.58	5.58	0.45	0.94	0.24	49.08
363	24.40	23.34	23.43	14.38	14.28	17.43	16.37	26.81	14.15	2.63	10.38	9.71	9.61	6.96
364	10.27	8.19	6.95	6.59	3.74	7.96	0.00	4.87	0.00	0.00	0.00	4.04	44.42	59.00
369	0.00	0.00	0.00	0.00	0.00	11.01	2.94	5.04	11.55	3.96	2.38	0.98	2.86	16.93
371	18.84	18.97	33.82	46.56	24.87	3.65	12.97	3.18	9.87	5.63	8.48	2.73	8.00	2.89
372	#N/A	#N/A	#N/A	#N/A	#N/A	2.27	41.79	45.12	18.54	63.56	80.12	71.10	32.32	47.86
381	16.24	13.69	19.34	16.32	14.97	17.80	19.21	25.67	20.32	20.22	21.12	23.71	20.24	21.03
382	19.71	13.95	27.86	34.44	26.04	19.08	26.64	22.15	22.33	26.84	27.68	25.19	9.93	33.78
383	23.89	35.03	34.27	25.90	29.98	29.46	25.33	13.37	18.43	22.18	12.08	11.82	13.67	9.32
384	13.98	15.00	13.25	20.88	9.08	9.68	11.94	16.82	4.83	7.61	6.66	6.85	39.55	6.04
385	0.00	0.00	0.00	12.06	6.28	4.31	1.70	26.85	13.58	21.41	32.06	27.18	50.63	4.06
390	40.47	34.04	32.21	11.24	16.64	14.43	23.63	20.57	27.18	15.92	8.29	11.22	23.67	17.01
Backcast-3	11.34	10.99	11.86	11.79	10.35	8.44	11.19	12.84	11.61	12.78	12.17	11.37	13.71	13.25
311-312	4.86	6.15	3.64	3.58	2.64	2.35	3.73	5.52	5.75	7.37	6.56	6.30	10.64	9.34
313	43.10	37.18	31.46	25.95	24.53	27.39	19.53	11.91	18.72	13.13	24.53	11.87	20.86	1.62
314	5.49	4.33	3.73	3.62	2.83	2.64	3.46	3.39	3.60	5.01	3.53	4.66	4.71	7.02
321	24.31	21.05	20.82	19.29	19.34	12.44	17.38	15.30	13.77	13.64	13.55	14.27	13.51	18.04
322	0.58	0.00	0.10	0.10	3.20	1.49	2.54	5.93	5.68	9.45	4.98	4.73	6.73	6.59
323	0.00	0.00	0.00	0.00	0.00	1.35	7.39	10.13	12.76	6.31	23.06	18.58	22.89	19.70
324	52.86	46.78	43.58	33.87	20.84	24.87	16.97	28.17	19.54	18.74	20.61	23.74	25.31	20.45
331	2.53	2.60	2.01	1.49	1.08	0.80	0.77	5.00	3.81	3.55	4.13	6.39	9.56	7.65
332	3.68	5.40	1.66	5.04	4.55	6.49	9.74	5.33	7.34	10.91	10.89	6.24	5.59	1.22
341	4.44	7.35	11.62	10.89	7.82	8.17	7.02	7.73	4.93	1.91	1.83	1.44	6.84	2.03
342	2.90	1.85	5.05	7.78	1.48	0.53	0.53	1.73	11.47	10.68	12.08	11.62	14.01	0.00
351	5.34	5.24	5.95	4.65	3.97	25.32	26.97	38.26	26.92	23.24	23.71	23.74	26.01	35.48
352	27.17	33.13	29.82	28.64	28.64	28.28	25.68	23.43	35.22	32.48	32.14	29.79	30.66	26.44
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	1.31	0.91	1.36	10.31
355	4.18	7.83	5.54	3.57	4.31	5.51	10.68	6.70	14.40	16.08	20.25	18.44	17.71	8.62
356	4.01	5.81	7.88	3.72	2.13	5.55	11.98	6.50	7.46	8.85	11.20	8.77	10.38	10.38
361	0.00	0.00	0.00	1.07	0.88	10.56	6.76	3.92	3.95	3.61	4.43	3.70	4.08	6.69
362	7.13	4.89	12.06	6.02	2.64	0.00	0.00	0.04	1.61	5.29	0.59	0.92	0.34	49.08
363	18.10	14.56	19.53	13.08	13.19	16.46	16.11	25.37	13.71	10.41	10.05	9.51	9.32	6.96
364	8.71	7.20	5.49	5.49	3.09	5.88	0.00	4.29	0.00	0.00	0.00	1.64	43.08	59.00
369	0.00	0.00	0.00	0.00	0.00	8.17	2.62	4.56	12.01	3.82	2.33	1.00	2.82	16.93
371	14.38	12.63	24.53	38.19	23.40	3.51	12.29	3.23	10.54	7.18	10.93	2.83	3.37	2.89
372	#N/A	#N/A	#N/A	#N/A	#N/A	1.89	36.45	41.94	18.40	62.00	78.63	70.91	32.28	47.86
381	13.74	10.83	14.56	11.98	14.05	16.18	16.57	21.27	19.08	20.27	22.30	19.22	21.06	21.03
382	18.69	12.56	23.77	25.43	19.24	17.77	27.31	23.17	22.65	26.24	23.53	24.92	10.09	33.78
383	26.80	37.23	35.29	26.95	31.87	30.61	24.30	12.87	18.67	19.97	11.94	11.60	13.63	9.32
384	17.20	14.25	16.25	20.18	10.02	9.04	13.85	19.02	6.04	10.08	8.40	9.83	18.09	6.04
385	0.00	0.00	47.41	10.39	5.46	3.95	1.53	26.38	13.43	21.15	31.41	19.06	50.08	4.06
390	33.54	25.25	20.44	7.62	16.15	13.57	23.18	20.09	46.37	36.70	9.04	11.96	24.09	17.01

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 3c: Shares of Value Added for Heavily-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (percent)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	1.52	1.79	1.40	1.74	1.57	2.89	2.07	3.15	2.79	4.11	6.22	6.88	11.30	13.18
311-312	1.99	1.29	1.16	1.73	4.04	1.58	1.11	1.25	0.99	1.60	3.29	3.88	4.58	11.01
313	2.09	8.68	6.82	3.40	2.41	0.00	0.00	6.19	7.37	8.56	20.21	27.49	28.38	35.88
314	0.41	0.51	0.41	0.43	0.22	0.43	0.91	0.09	0.13	0.85	0.65	0.73	3.86	2.14
321	1.99	4.72	2.51	2.15	2.36	5.68	4.53	1.13	3.97	2.39	2.55	3.60	6.63	10.19
322	0.24	0.00	0.00	0.23	2.28	4.55	4.58	9.54	4.51	14.60	13.39	15.22	16.33	15.76
323	29.88	8.35	0.39	0.00	0.08	0.00	0.00	1.67	7.07	3.40	2.24	3.50	4.39	12.16
324	0.00	1.85	1.76	0.00	3.09	6.34	16.00	14.60	10.87	12.87	12.26	13.71	15.57	21.00
331	0.14	0.07	3.85	3.89	1.06	1.34	0.43	0.52	0.93	0.86	0.74	0.83	1.36	1.56
332	0.00	0.11	0.83	2.43	1.10	0.41	1.59	0.84	1.99	3.05	2.95	4.73	6.47	4.54
341	0.00	0.00	0.00	0.00	0.00	0.15	0.03	0.03	0.00	15.06	13.26	21.63	15.86	8.56
342	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
351	0.28	5.36	1.24	2.64	3.25	0.48	1.23	0.01	0.12	4.18	3.88	5.37	8.52	12.79
352	2.24	4.50	4.66	4.32	3.13	5.95	0.79	3.20	3.21	2.42	3.72	8.37	7.44	13.07
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	5.06	18.66
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	8.31	1.66	36.14	41.87	39.70	30.37	30.37
355	3.45	4.12	2.95	7.76	6.27	10.72	6.51	3.87	7.28	8.32	8.68	6.40	8.71	7.97
356	0.00	0.00	0.00	0.00	0.65	0.16	0.09	0.92	2.57	4.29	28.65	4.13	6.08	27.67
361	0.00	0.05	0.04	0.07	0.07	0.03	0.03	0.00	0.49	0.50	0.63	0.00	0.00	0.43
362	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.05	2.18	0.00
363	0.02	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.08	1.86
364	0.86	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	1.01	0.26	0.19	0.65	0.33
371	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.04	0.07	0.09	0.20	0.10	3.00	1.19
372	#N/A	#N/A	#N/A	#N/A	#N/A	70.20	36.87	33.73	37.57	4.38	0.46	2.84	11.95	8.81
381	0.65	0.06	0.05	0.46	0.80	1.38	0.58	1.52	3.09	2.67	4.21	4.62	12.52	16.15
382	0.26	0.00	0.00	0.00	0.00	0.18	0.10	0.38	1.16	1.23	5.31	6.22	7.11	30.28
383	14.51	0.00	0.00	0.00	0.00	0.43	3.55	18.34	11.80	19.95	24.13	28.02	51.32	52.91
384	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.51	0.32	6.83	6.00	7.08	9.96
385	0.00	0.00	0.00	0.00	0.00	0.00	1.52	5.80	22.33	14.84	12.35	10.43	12.52	65.50
390	0.51	0.00	0.00	0.00	0.00	3.67	7.87	30.04	16.11	32.48	46.97	38.54	37.23	40.25
Backcast-3	2.18	2.00	2.49	2.61	2.18	2.61	2.14	3.35	3.11	4.53	5.83	7.58	9.51	13.18
311-312	2.57	2.17	2.20	2.64	4.06	2.17	1.64	1.91	1.67	1.60	3.38	3.89	4.51	11.01
313	2.07	6.68	6.80	3.30	2.23	0.00	0.00	6.03	7.27	8.50	20.15	31.33	28.24	35.88
314	0.36	0.48	0.39	0.41	0.25	0.43	0.91	0.09	0.13	0.84	0.65	0.72	1.02	2.14
321	4.32	5.54	5.64	6.56	5.73	5.36	4.96	1.86	3.83	2.96	2.51	4.19	6.59	10.19
322	0.10	0.00	0.00	0.56	2.43	1.89	2.38	4.64	4.57	14.01	13.45	15.45	16.21	15.76
323	24.89	0.71	0.25	0.00	0.00	0.00	0.00	1.86	6.73	3.14	2.15	3.48	4.48	12.16
324	0.00	2.13	1.35	1.65	6.86	5.36	13.20	13.64	10.27	15.45	11.89	13.48	15.08	21.00
331	1.33	0.99	3.45	3.71	0.89	1.15	0.35	0.49	0.89	0.91	0.73	0.83	1.36	1.56
332	0.00	0.07	0.82	2.89	1.49	0.96	1.38	0.77	1.83	3.10	2.86	5.03	6.62	4.54
341	0.00	0.00	0.00	0.00	0.05	0.13	0.03	0.04	0.03	14.00	13.26	22.72	11.26	8.56
342	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
351	0.18	2.38	1.87	2.79	3.25	0.52	1.29	0.24	0.24	4.03	3.83	4.15	8.52	12.79
352	4.26	4.58	4.90	3.56	2.44	5.10	0.75	3.05	3.30	2.51	3.59	6.34	8.46	13.07
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	#N/A	0.00	0.00	0.00	10.47	18.66
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	7.18	31.48	26.66	40.11	46.40	30.86	30.37
355	7.33	13.04	18.51	14.07	9.88	9.44	6.64	3.87	7.14	8.70	8.59	8.31	8.69	7.97
356	0.00	0.00	0.00	0.03	0.58	0.13	0.20	1.02	1.93	4.23	5.94	4.68	5.98	27.67
361	0.00	0.04	0.03	0.07	0.06	0.03	0.02	0.00	0.49	0.50	0.63	0.00	0.00	0.43
362	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.05	0.02	0.05	2.08	0.00
363	0.34	0.46	0.44	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	1.03	1.86
364	0.73	0.00	0.02	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
369	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.00	0.98	0.26	0.20	0.64	0.33
371	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.04	0.08	0.12	0.34	0.21	1.46	1.19
372	#N/A	#N/A	#N/A	#N/A	#N/A	63.41	32.17	31.35	37.15	4.86	0.45	2.82	11.94	8.81
381	0.62	0.06	0.04	0.48	0.72	1.09	0.61	1.27	3.01	3.63	4.87	5.25	12.37	16.15
382	0.27	0.00	0.00	0.00	0.00	0.16	0.15	0.37	1.11	1.20	5.52	6.71	7.06	30.28
383	15.72	0.00	0.00	0.00	0.00	0.39	5.20	20.63	15.68	19.96	24.58	29.60	51.57	52.91
384	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.05	0.64	0.38	7.90	8.06	3.32	9.96
385	0.00	0.00	0.00	0.00	0.00	0.00	1.85	5.70	22.08	14.66	12.10	26.83	12.38	65.50
390	0.42	0.00	0.00	0.00	0.00	3.29	8.90	29.80	10.91	23.37	45.15	38.41	36.11	40.25

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 4a: Percentage Differences in Mean Employment per Plant for Manufacturing Establishments Reporting Positive Employment and Value Added by Industry: Minority-Foreign less Local Plants**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	203	191	191	198	198	197	181	195	182	201	274	329	301	253
311-312	205	201	208	215	187	258	241	284	251	277	277	424	301	299
313	1,122	1,029	989	335	347	409	278	279	216	180	168	248	283	90
314	176	26	169	405	183	90	17	-36	-34	-38	-63	#N/A	#N/A	#N/A
321	312	295	314	223	305	195	260	177	155	179	226	249	243	210
322	1,004	1,322	1,088	347	556	377	372	387	326	343	689	802	653	590
323	#N/A	#N/A	#N/A	#N/A	66	169	187	289	221	298	242	174	343	372
324	#N/A	#N/A	#N/A	233	169	315	168	295	322	335	510	579	699	633
331	289	287	256	275	255	219	150	176	200	227	249	314	256	135
332	#N/A	#N/A	620	386	391	337	155	27	106	195	11	234	200	345
341	71	98	147	163	217	369	286	362	381	376	667	674	723	420
342	-11	188	209	158	197	88	91	148	106	95	30	74	93	180
351	-8	-9	-3	2	-10	13	-11	-12	-15	-1	9	4	6	-2
352	42	41	36	14	22	39	68	65	111	92	153	143	91	155
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	-75	-78	-50	212	-42	49	-18	-34	-64
355	62	44	112	154	154	143	189	157	274	288	238	163	132	242
356	103	87	93	169	149	76	94	170	58	129	130	183	127	96
361	239	76	79	96	75	106	88	49	61	78	79	85	56	100
362	706	609	#N/A	#N/A	#N/A	#N/A	-77	-25	-48	-52	45	219	58	12
363	310	439	382	628	588	785	402	701	524	515	610	712	438	467
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1,282	1,158	1,195	1,870	2,093	1,065	4,944
369	#N/A	#N/A	#N/A	#N/A	#N/A	144	172	154	188	85	243	#N/A	#N/A	-19
371	-66	#N/A	#N/A	#N/A	#N/A	2	-61	-59	-58	-55	-50	-50	-11	-37
372	#N/A	#N/A	#N/A	#N/A	#N/A	0	32	93	69	119	108	74	49	74
381	120	161	154	217	234	200	159	287	201	236	261	357	237	163
382	135	76	69	51	48	-39	-30	-29	-17	6	67	71	245	148
383	-9	-26	-13	10	68	58	82	71	68	102	123	123	182	88
384	191	124	167	76	213	310	350	200	236	230	261	305	219	256
385	138	124	276	61	28	84	34	30	63	#N/A	-51	64	212	59
390	-5	-55	-57	#N/A	#N/A	230	189	309	399	279	367	495	554	343
Backcast-3	203	196	219	205	198	197	200	216	217	239	310	336	304	253
311-312	254	253	298	281	212	280	284	338	296	315	301	478	349	299
313	1,368	1,213	521	399	345	368	321	311	246	203	177	250	287	90
314	133	169	376	441	248	88	-26	-56	-45	-48	-39	#N/A	#N/A	#N/A
321	229	223	237	218	291	207	291	190	192	218	243	252	247	210
322	#N/A	#N/A	557	302	204	286	370	408	381	403	747	816	637	590
323	-16	60	55	68	118	196	220	300	288	298	237	176	349	372
324	#N/A	#N/A	#N/A	209	33	172	104	307	324	389	565	579	702	633
331	315	304	282	233	236	229	191	191	227	271	301	323	265	135
332	436	553	594	393	343	379	123	43	156	257	20	238	205	345
341	70	65	105	145	321	337	332	412	605	563	720	689	651	420
342	-3	213	239	171	129	11	47	104	74	68	41	77	96	180
351	-1	2	14	8	2	6	-10	-12	-8	7	10	5	8	-2
352	43	44	30	17	18	46	80	71	120	101	160	145	91	155
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	-63	-57	-28	114	-8	8	-40	-49	-64
355	94	66	144	192	157	147	204	170	298	310	253	171	135	242
356	114	99	107	171	158	83	114	171	73	149	155	183	128	96
361	288	103	113	115	122	128	104	62	75	89	87	86	58	100
362	371	360	-36	-31	-30	-28	-43	-18	-30	-29	44	195	57	12
363	368	475	424	664	625	832	451	765	587	575	626	707	438	467
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1,398	1,301	1,338	1,929	2,101	1,073	4,944
369	#N/A	#N/A	#N/A	#N/A	#N/A	152	220	60	83	104	266	#N/A	#N/A	-19
371	-62	-73	-69	-62	-60	0	-54	-56	-55	-50	-49	-50	-33	-37
372	#N/A	#N/A	#N/A	#N/A	#N/A	8	55	126	87	145	119	78	55	74
381	136	172	214	231	254	210	199	326	233	271	289	363	245	163
382	154	42	38	21	19	-37	-28	-26	-3	19	67	64	230	148
383	4	-12	3	26	49	73	78	82	70	117	136	125	178	88
384	200	102	165	71	188	313	329	196	245	241	276	309	374	256
385	156	131	281	89	38	74	29	42	68	#N/A	-57	43	169	59
390	-1	-53	-56	#N/A	-49	206	243	375	371	344	412	503	571	343

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 4b: Percentage Differences in Mean Employment per Plant for Manufacturing Establishments Reporting Positive Employment and Value Added by Industry: Majority-Foreign less Local Plants**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	227	245	204	181	157	185	184	216	221	227	255	263	236	175
311-312	225	316	230	190	129	153	115	195	129	158	171	164	160	153
313	389	404	435	280	367	315	488	247	212	315	416	136	142	42
314	137	101	55	69	74	77	76	1	5	6	-18	27	97	22
321	576	585	513	506	405	334	239	254	233	197	235	224	142	168
322	656	#N/A	#N/A	-73	109	265	291	298	335	337	406	395	381	271
323	#N/A	#N/A	#N/A	#N/A	#N/A	42	138	523	476	236	297	454	700	667
324	2,141	2,100	2,201	1,080	1,434	1,173	396	477	500	532	614	589	590	611
331	63	61	25	40	49	16	-10	72	117	127	133	171	212	220
332	209	194	168	123	198	250	197	87	92	87	168	220	121	131
341	267	139	127	111	93	136	96	51	26	19	11	19	31	79
342	387	434	243	165	295	-50	20	10	271	280	543	907	1,950	#N/A
351	12	-36	-34	-53	-56	73	25	37	21	6	32	11	58	-9
352	92	102	74	71	53	71	45	44	47	35	39	56	78	36
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-58	-64	939	182
355	205	221	161	17	13	116	185	82	102	84	87	47	58	33
356	126	164	165	65	37	75	106	173	73	254	251	147	159	45
361	#N/A	#N/A	#N/A	-7	-14	78	12	27	67	68	70	66	82	16
362	75	117	79	74	60	#N/A	#N/A	#N/A	-18	-7	-58	-33	-78	145
363	469	564	429	451	471	549	475	615	321	315	273	258	204	294
364	343	295	269	215	347	200	#N/A	204	#N/A	#N/A	#N/A	457	796	1,601
369	#N/A	#N/A	#N/A	#N/A	#N/A	-79	-79	71	497	232	598	277	281	213
371	208	187	99	30	5	-6	1	1	-6	-6	12	7	9	-31
372	#N/A	#N/A	#N/A	#N/A	#N/A	-45	45	89	111	236	269	380	361	379
381	147	152	152	135	127	189	157	161	120	197	270	285	243	246
382	84	110	190	123	93	61	88	55	60	62	62	87	67	64
383	91	92	113	110	105	117	159	121	139	165	137	166	160	103
384	169	141	125	154	173	179	184	196	96	111	209	210	153	74
385	#N/A	#N/A	#N/A	-70	-74	-66	-71	353	64	97	541	590	647	220
390	334	416	350	335	245	112	245	198	246	192	231	255	445	254
Backcast-3	237	247	220	195	166	182	202	234	248	261	284	258	222	175
311-312	285	382	275	273	152	150	125	208	157	183	184	176	163	153
313	486	486	492	299	365	324	587	280	243	349	433	79	100	42
314	185	153	112	26	25	115	98	14	19	22	35	29	42	22
321	544	567	500	484	383	331	283	293	277	238	253	222	142	168
322	643	#N/A	-32	-32	51	219	243	306	398	390	444	339	381	271
323	#N/A	#N/A	#N/A	#N/A	#N/A	-1	206	588	586	341	400	459	712	667
324	1,138	1,104	1,149	700	840	586	381	547	562	610	678	588	592	611
331	59	66	53	61	11	-14	22	104	161	179	185	176	220	220
332	210	188	158	55	106	189	238	124	139	127	190	223	119	131
341	123	58	56	36	37	71	33	32	23	31	19	21	6	79
342	271	122	191	174	226	-11	30	17	302	319	600	920	1,983	#N/A
351	-29	-35	-31	-53	-55	63	17	41	28	17	35	8	54	-9
352	82	105	81	72	61	73	50	49	44	37	41	56	75	36
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-69	-73	695	182
355	125	130	103	37	38	96	166	81	115	94	95	52	60	33
356	51	105	111	76	47	142	132	171	84	260	267	135	141	45
361	#N/A	#N/A	#N/A	10	8	97	22	38	81	48	78	67	84	16
362	87	160	112	90	74	#N/A	#N/A	-82	-33	-27	-67	-32	-86	145
363	549	608	475	478	502	584	532	672	288	356	282	255	204	294
364	364	324	295	237	381	229	#N/A	230	#N/A	#N/A	#N/A	459	802	1,601
369	#N/A	#N/A	#N/A	#N/A	#N/A	-78	-76	89	545	266	646	287	310	213
371	126	78	94	79	72	-6	-7	-10	-10	-6	5	-2	-19	-31
372	#N/A	#N/A	#N/A	#N/A	#N/A	-29	71	122	79	276	287	392	379	379
381	161	148	153	115	109	147	151	186	148	229	284	277	236	246
382	74	45	78	69	64	97	110	60	79	80	64	84	63	64
383	126	122	129	129	120	130	149	124	136	171	140	163	152	103
384	198	181	196	165	145	148	186	166	109	125	213	219	146	74
385	#N/A	#N/A	183	-65	-72	-68	-72	394	68	105	467	502	544	220
390	271	266	285	232	184	94	316	244	305	256	266	263	452	254

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 4c: Percentage Differences in Mean Employment per Plant for Manufacturing Establishments Reporting Positive Employment and Value Added by Industry: Heavily-Foreign less Local Plants**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	249	133	176	160	155	273	243	216	239	259	234	240	244	194
311-312	441	251	561	421	287	421	313	238	120	215	284	154	200	132
313	47	29	36	37	35	#N/A	#N/A	55	19	57	133	138	209	131
314	223	227	120	167	118	135	218	234	196	50	-11	18	204	104
321	575	1,044	995	506	1,344	558	489	180	222	189	183	162	158	153
322	-41	#N/A	#N/A	100	229	228	320	346	335	419	384	427	445	340
323	-1	-2	-15	#N/A	-72	#N/A	#N/A	276	239	269	247	260	259	441
324	#N/A	-36	-48	#N/A	344	587	619	586	560	492	468	459	620	551
331	-36	-59	130	82	128	52	-2	43	88	62	99	77	77	74
332	#N/A	-11	45	240	347	151	23	117	26	136	91	71	75	56
341	#N/A	#N/A	#N/A	#N/A	#N/A	-21	-31	-30	#N/A	143	92	185	90	-24
342	-52	-43	-78	#N/A	#N/A	#N/A	#N/A	#N/A	-79	#N/A	#N/A	#N/A	#N/A	-1
351	-75	-45	-40	-20	-46	-40	-40	-37	-36	75	64	4	-11	19
352	21	21	28	34	19	10	-1	12	-17	-15	39	6	22	54
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	78	55
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-46	20	448	568	330	221	9
355	146	-12	-3	-7	-20	105	22	-34	-11	18	39	65	77	2
356	#N/A	#N/A	#N/A	#N/A	46	21	79	41	26	158	80	33	22	60
361	#N/A	-91	-92	-87	-87	-91	-90	#N/A	61	68	49	#N/A	#N/A	-60
362	#N/A	#N/A	#N/A	-82	#N/A	#N/A	#N/A	#N/A	#N/A	-80	-77	-74	-31	#N/A
363	-25	#N/A	#N/A	378	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-72	-58	120	154
364	479	#N/A	#N/A	-38	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-72	#N/A	380	202	47	139	181
371	#N/A	#N/A	#N/A	-96	-96	#N/A	#N/A	-43	-53	-41	-30	-36	-19	-74
372	#N/A	#N/A	#N/A	#N/A	#N/A	575	329	568	1,455	152	16	-10	-37	-12
381	-45	-42	-49	-2	39	-24	-23	-34	60	167	85	104	73	93
382	-3	#N/A	#N/A	#N/A	#N/A	-72	-54	-37	40	50	133	126	111	150
383	705	#N/A	#N/A	#N/A	#N/A	68	14	71	157	175	179	240	237	151
384	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-4	261	198	137	180	164	199
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-12	70	293	352	547	673	378
390	260	#N/A	#N/A	#N/A	#N/A	437	280	304	415	477	495	536	495	796
Backcast-3	284	196	210	208	214	259	232	232	249	286	248	237	230	194
311-312	567	485	704	608	314	376	285	248	122	226	276	167	204	132
313	76	50	50	43	34	#N/A	#N/A	69	31	70	141	139	212	131
314	288	312	200	186	168	185	87	51	35	20	20	20	120	104
321	816	800	620	631	848	477	373	249	228	193	168	164	161	153
322	-42	#N/A	#N/A	148	264	237	297	344	359	391	375	427	449	340
323	-3	-1	-11	#N/A	#N/A	#N/A	#N/A	276	310	297	269	263	245	441
324	#N/A	-39	-51	317	621	490	579	606	563	614	406	429	583	551
331	44	25	151	110	163	44	23	65	115	79	114	81	75	74
332	#N/A	-13	20	199	123	36	46	160	39	106	87	73	78	56
341	#N/A	#N/A	#N/A	#N/A	-81	-21	-23	-50	-69	167	119	191	59	-24
342	-47	-38	-76	#N/A	#N/A	#N/A	#N/A	#N/A	-77	#N/A	#N/A	#N/A	#N/A	-1
351	-73	-36	-28	-41	-48	-49	-45	-45	-35	68	70	5	-12	19
352	13	13	23	18	15	2	6	21	-17	-14	37	5	40	54
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	84	55
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-46	299	326	382	74	76	9
355	116	8	11	8	-16	91	19	-32	-4	20	45	70	79	2
356	#N/A	#N/A	#N/A	-77	-13	26	74	41	43	180	88	31	21	60
361	#N/A	-90	-90	-84	-84	-90	-90	#N/A	74	79	56	#N/A	#N/A	-60
362	#N/A	#N/A	#N/A	-80	#N/A	#N/A	#N/A	#N/A	#N/A	-79	-76	-74	-29	#N/A
363	98	378	395	401	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-71	-59	423	154
364	505	#N/A	-39	-34	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-72	-70	#N/A	430	222	51	157	181
371	#N/A	#N/A	-94	-94	-93	#N/A	#N/A	-39	-50	-17	-44	-45	-44	-74
372	#N/A	#N/A	#N/A	#N/A	#N/A	392	405	685	1,620	97	22	-8	-35	-12
381	-40	-37	-44	2	18	-14	29	-28	70	170	84	104	73	93
382	5	#N/A	#N/A	#N/A	#N/A	-68	-61	-28	64	73	143	127	113	150
383	820	#N/A	#N/A	#N/A	#N/A	84	9	90	152	180	182	220	225	151
384	#N/A	#N/A	#N/A	#N/A	#N/A	-61	-32	-2	174	222	147	182	134	199
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-4	85	305	370	473	575	418	378
390	276	#N/A	#N/A	#N/A	#N/A	436	316	316	454	549	552	545	510	796

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).



**Table 5a: Percentage Differences in Mean Value Added per Plant for Manufacturing Establishments Reporting Positive Employment and Value Added by Industry: Minority-Foreign less Local Plants**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	636	557	701	693	1,084	917	589	521	641	762	830	908	770	721
311-312	853	898	1,187	1,314	1,319	829	929	729	566	677	504	1,030	775	946
313	10,321	3,347	12,102	2,852	3,152	2,536	2,724	3,545	1,935	1,566	421	951	1,153	20
314	-92	-85	-91	-44	-38	-89	-96	-98	-81	-79	-99	#N/A	#N/A	#N/A
321	410	836	360	226	432	291	419	315	439	204	245	346	374	247
322	344	225	390	144	189	170	488	641	424	905	2,002	1,944	1,054	837
323	#N/A	#N/A	#N/A	#N/A	87	58	73	817	41	89	-80	146	-55	232
324	#N/A	#N/A	#N/A	268	251	463	338	575	171	112	291	479	586	991
331	326	440	587	580	575	373	312	212	403	361	397	348	184	124
332	#N/A	#N/A	387	294	243	284	228	3	168	476	-18	369	1,402	1,360
341	231	816	1,921	1,250	726	1,388	1,282	1,306	1,169	591	1,511	1,259	687	517
342	1	254	247	177	165	127	39	189	56	26	67	39	83	238
351	112	104	49	58	63	333	166	83	139	394	224	337	432	713
352	526	782	448	231	241	218	156	377	377	290	611	576	509	560
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	334	2	323	212	-86	-6	-15	-89	-89
355	185	190	936	443	401	525	853	1,136	1,522	789	82	140	213	73
356	664	536	2,854	2,163	1,803	328	367	178	179	216	294	532	1,058	733
361	112	280	466	351	285	361	246	252	129	151	310	339	355	597
362	13,451	7,331	#N/A	#N/A	#N/A	#N/A	-92	-48	-73	-79	179	1,927	335	131
363	1,507	1,313	1,094	1,205	1,262	1,221	552	3,180	2,429	1,794	2,364	3,092	674	2,867
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2,062	2,713	3,325	10,525	15,119	14,631	2,225
369	#N/A	#N/A	#N/A	#N/A	#N/A	260	254	-28	35	141	295	#N/A	#N/A	-23
371	-87	#N/A	#N/A	#N/A	#N/A	-9	-79	-47	147	273	345	93	51	317
372	#N/A	#N/A	#N/A	#N/A	#N/A	231	38	138	170	519	382	-2	12	399
381	364	319	955	1,032	4,200	730	664	2,642	1,995	1,842	974	1,475	906	375
382	629	433	522	140	50	-14	-3	148	118	47	196	246	1,085	367
383	64	36	205	254	337	169	140	145	72	382	231	4	135	21
384	316	339	504	584	3,797	4,237	1,007	99	1,201	1,291	1,312	1,231	1,223	428
385	1,860	1,352	452	555	552	838	952	217	1,174	#N/A	-46	48	265	883
390	-44	-12	10	#N/A	#N/A	92	78	386	274	572	609	904	384	1,536
Backcast-3	719	624	731	666	1,046	881	614	557	690	818	796	823	944	721
311-312	664	736	1,171	1,204	965	1,293	1,496	1,452	1,299	764	590	1,045	766	946
313	13,496	11,558	6,997	3,385	3,298	2,259	2,809	3,726	2,134	1,730	447	1,367	1,168	20
314	-93	-80	-83	-34	-12	-90	-97	-99	-85	-84	-99	#N/A	#N/A	#N/A
321	643	192	205	246	427	340	455	331	509	354	264	390	380	247
322	#N/A	#N/A	119	96	65	19	143	247	499	1,036	2,171	2,042	1,035	837
323	-35	24	33	50	422	57	104	799	78	101	14	148	-54	232
324	#N/A	#N/A	#N/A	381	74	324	201	556	174	143	325	488	582	991
331	428	592	615	468	496	319	303	215	436	413	442	391	193	124
332	267	328	334	318	209	293	162	13	235	609	-10	414	1,510	1,360
341	185	311	1,366	1,182	921	1,391	1,523	1,471	1,444	902	1,639	1,324	376	517
342	5	278	297	206	114	2	4	121	17	-7	80	41	86	238
351	190	139	63	11	83	332	171	82	161	406	220	181	436	713
352	220	267	383	198	236	232	179	396	427	312	953	563	514	560
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	691	60	367	250	-30	9	-27	-90	-89
355	988	549	867	424	431	560	911	1,189	1,548	866	89	94	218	73
356	644	569	3,098	2,275	1,803	347	415	154	119	244	326	588	1,068	733
361	135	352	585	429	420	396	282	287	152	176	340	393	361	597
362	8,680	3,955	44	38	17	158	11	-32	-42	-25	168	1,821	344	131
363	2,033	1,530	1,814	1,248	1,419	1,336	439	3,427	2,750	2,066	2,433	3,028	671	2,867
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2,424	3,100	3,855	11,075	15,886	14,763	2,225
369	#N/A	#N/A	#N/A	#N/A	#N/A	229	317	-36	25	183	340	#N/A	#N/A	-23
371	-88	-96	-97	-96	-96	-13	-74	-86	-72	-48	-44	-80	531	317
372	#N/A	#N/A	#N/A	#N/A	#N/A	213	6	126	203	582	372	10	19	399
381	867	852	1,196	1,331	4,105	648	641	1,981	1,998	1,968	1,234	1,492	913	375
382	818	320	416	86	22	-7	6	206	164	71	199	324	1,041	367
383	153	112	319	266	275	151	155	176	78	345	246	4	134	21
384	477	306	626	625	2,802	3,896	1,126	133	1,519	1,855	1,856	2,205	1,671	428
385	1,807	1,207	397	612	620	850	953	240	1,240	#N/A	-44	58	280	883
390	-45	-25	-18	#N/A	-26	122	116	449	247	693	674	651	385	1,536

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 5b: Percentage Differences in Mean Value Added per Plant for Manufacturing Establishments Reporting Positive Employment and Value Added by Industry: Majority-Foreign less Local Plants**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	877	827	918	980	711	540	591	600	443	489	559	641	902	652
311-312	1,134	1,127	685	627	377	171	294	434	368	632	536	524	842	707
313	3,050	2,077	2,015	3,108	3,414	3,281	1,485	2,551	3,595	3,658	3,936	9,966	4,412	11
314	1,358	1,175	1,547	1,748	2,170	2,505	3,310	1,480	1,550	1,882	2,878	1,959	9,789	2,909
321	2,373	1,658	2,063	2,032	1,913	824	1,000	698	579	397	498	745	607	1,121
322	362	#N/A	#N/A	-97	570	317	658	786	227	602	437	436	641	616
323	#N/A	#N/A	#N/A	#N/A	#N/A	-86	68	289	379	220	1,908	1,673	1,569	869
324	19,707	9,327	15,055	717	1,705	1,378	396	755	291	277	430	609	1,004	901
331	86	88	31	133	137	53	-29	287	307	331	377	465	683	457
332	747	1,232	339	343	636	629	609	242	481	786	1,069	1,172	904	265
341	287	1,136	74	1,217	861	725	446	379	123	4	-3	39	288	-36
342	883	962	882	1,376	156	-38	4	171	2,041	1,991	2,799	4,372	10,777	#N/A
351	-11	-20	24	15	11	588	506	689	375	340	276	441	354	716
352	232	341	449	354	311	354	294	288	602	473	642	571	612	467
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-57	27	-43	144
355	486	689	522	91	100	204	401	140	503	605	689	686	484	160
356	10,343	532	1,003	671	417	275	995	560	223	590	685	482	697	801
361	#N/A	#N/A	#N/A	-31	-45	382	106	30	89	17	24	-38	4	5
362	342	192	176	56	47	#N/A	#N/A	#N/A	-57	52	-65	-10	-79	3,056
363	4,219	3,862	2,952	2,038	1,909	2,616	2,254	7,955	2,708	279	1,280	1,826	1,031	1,234
364	6,628	4,921	3,941	3,722	2,004	4,641	#N/A	3,299	#N/A	#N/A	#N/A	4,982	23,204	70,853
369	#N/A	#N/A	#N/A	#N/A	#N/A	2,184	481	272	2,817	396	574	38	353	1,800
371	215	216	377	336	37	-65	53	-62	44	-21	40	-65	16	-55
372	#N/A	#N/A	#N/A	#N/A	#N/A	-17	2,325	3,012	648	1,929	5,235	3,387	635	1,067
381	353	307	655	542	844	608	561	843	694	524	645	1,012	868	932
382	583	391	1,616	1,215	663	279	478	316	303	425	616	497	164	882
383	296	445	475	295	340	439	342	145	138	310	91	52	176	40
384	409	452	366	1,122	621	580	317	479	49	135	110	125	1,570	42
385	#N/A	#N/A	#N/A	552	225	247	45	541	254	283	633	629	1,846	240
390	2,498	2,840	2,004	854	834	356	333	646	542	373	247	407	962	880
Backcast-3	797	769	887	861	690	482	589	638	563	624	622	564	694	652
311-312	1,103	1,124	688	647	389	315	493	726	719	728	620	574	849	707
313	3,922	3,097	2,609	3,277	3,573	3,495	1,844	2,890	3,956	4,027	4,139	2,180	3,354	11
314	1,654	1,711	2,249	1,332	1,522	2,903	3,836	1,733	1,817	2,228	3,238	1,985	2,121	2,909
321	2,328	1,928	1,930	1,734	1,721	825	1,118	762	655	643	614	612	604	1,121
322	158	#N/A	2	-45	280	91	153	315	317	766	484	459	643	616
323	#N/A	#N/A	#N/A	#N/A	#N/A	-24	71	364	495	307	1,706	1,687	1,604	869
324	8,648	7,042	6,744	1,579	694	690	328	806	334	332	475	613	998	901
331	86	100	71	100	36	-25	-25	303	331	307	417	485	709	457
332	628	1,104	291	445	366	430	683	317	625	990	1,173	1,295	879	265
341	156	364	849	749	537	426	274	309	112	15	5	-13	105	-36
342	493	290	734	911	125	-17	7	168	1,920	1,803	3,024	4,442	10,965	#N/A
351	8	27	41	-4	24	580	463	685	382	335	256	218	337	716
352	313	467	436	382	346	377	318	306	627	496	664	575	620	467
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-50	-54	-44	144
355	451	566	431	109	105	146	324	139	513	559	717	463	494	160
356	471	625	1,082	749	376	596	1,170	581	589	607	765	566	672	801
361	#N/A	#N/A	#N/A	-16	-26	419	127	43	107	4	33	-1	5	5
362	462	211	212	58	42	#N/A	#N/A	-97	-66	14	-75	-5	-84	3,056
363	3,630	2,711	3,177	2,169	2,140	2,852	2,668	8,562	2,453	1,834	1,319	1,787	1,026	1,234
364	6,798	5,556	4,198	3,881	2,149	4,629	#N/A	3,867	#N/A	#N/A	#N/A	1,942	22,313	70,853
369	#N/A	#N/A	#N/A	#N/A	#N/A	1,992	583	322	3,539	481	651	48	397	1,800
371	42	1	149	351	145	-64	33	-67	22	-21	31	-72	-42	-55
372	#N/A	#N/A	#N/A	#N/A	#N/A	9	1,766	2,858	532	2,135	5,119	3,532	682	1,067
381	377	279	478	329	637	452	447	613	672	613	758	732	892	932
382	595	297	967	833	559	317	523	327	365	500	487	500	152	882
383	417	592	535	318	351	392	328	144	173	262	97	52	168	40
384	657	532	749	1,087	501	431	395	484	98	241	186	307	470	42
385	#N/A	#N/A	5,484	609	259	252	45	588	272	309	651	518	1,927	240
390	1,937	1,473	1,173	380	454	231	422	718	1,629	1,562	282	397	935	880

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 5c: Percentage Differences in Mean Value Added per Plant for Manufacturing Establishments Reporting Positive Employment and Value Added by Industry: Heavily-Foreign less Local Plants**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	285	426	292	340	299	438	221	274	184	268	378	365	537	465
311-312	691	614	538	615	1,162	503	222	195	127	227	452	534	592	1,257
313	344	1,269	1,277	1,531	860	#N/A	#N/A	3,923	1,334	1,522	1,143	1,814	1,748	1,541
314	278	328	248	316	99	321	797	-19	18	234	38	-9	967	358
321	859	3,200	1,640	668	2,168	1,164	1,419	99	406	120	137	189	308	436
322	-47	#N/A	#N/A	-39	301	374	284	669	170	938	729	677	684	496
323	3,267	583	-73	#N/A	-92	#N/A	#N/A	20	273	141	107	149	82	299
324	#N/A	94	373	#N/A	577	341	637	728	393	518	500	463	519	765
331	-66	-64	584	573	163	180	-37	-20	17	6	9	-4	16	29
332	#N/A	-63	29	795	323	170	212	219	243	438	160	187	238	142
341	#N/A	#N/A	#N/A	#N/A	#N/A	-57	-92	-89	#N/A	1,930	1,477	1,700	925	243
342	-89	-75	-99	#N/A	#N/A	#N/A	#N/A	#N/A	-99	#N/A	#N/A	#N/A	#N/A	-68
351	-42	271	-19	513	267	124	163	-97	-82	356	171	133	182	356
352	24	208	193	223	109	342	-10	309	329	168	202	328	192	279
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-84	-66
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	49	-73	130	560	788	504	380
355	-3	5	-12	82	42	118	64	-5	83	160	151	144	156	102
356	#N/A	#N/A	#N/A	#N/A	391	13	-64	6	176	225	1,672	105	153	1,066
361	#N/A	-98	-98	-96	-96	-97	-98	#N/A	-53	-47	-30	#N/A	#N/A	-76
362	#N/A	#N/A	#N/A	-92	#N/A	#N/A	#N/A	#N/A	#N/A	-97	-98	-90	-4	#N/A
363	-85	#N/A	#N/A	204	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-32	-26	-71	137
364	463	#N/A	#N/A	-77	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-89	#N/A	154	-26	-73	107	12
371	#N/A	#N/A	#N/A	-100	-100	#N/A	#N/A	-97	-93	-90	-87	-97	-50	-87
372	#N/A	#N/A	#N/A	#N/A	#N/A	3,763	2,040	3,389	4,446	739	-62	-30	-9	0
381	356	-59	-59	109	303	141	74	151	273	185	177	225	373	326
382	-28	#N/A	#N/A	#N/A	#N/A	-78	-71	-60	-21	-28	273	224	234	921
383	1,343	#N/A	#N/A	#N/A	#N/A	64	29	223	79	209	154	149	455	208
384	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-94	15	-50	482	453	448	209
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	29	177	1,063	232	253	180	285	2,256
390	31	#N/A	#N/A	#N/A	#N/A	248	203	1,207	407	1,041	1,953	1,641	1,800	2,218
Backcast-3	408	399	493	505	397	384	211	306	233	331	350	401	406	465
311-312	731	693	735	908	1,154	795	420	427	318	252	469	555	604	1,257
313	479	1,622	1,655	1,617	903	#N/A	#N/A	4,438	1,475	1,681	1,206	1,706	1,770	1,541
314	355	508	397	390	185	386	418	-67	-53	162	24	-8	140	358
321	1,840	2,034	1,700	1,942	2,328	972	969	179	396	189	117	235	313	436
322	-70	#N/A	#N/A	3	188	87	74	255	209	876	732	703	696	496
323	3,268	-21	-73	#N/A	#N/A	#N/A	#N/A	28	371	171	124	151	67	299
324	#N/A	226	324	145	318	343	533	704	397	671	431	440	481	765
331	211	190	695	671	179	106	-32	-10	32	25	19	-2	15	29
332	#N/A	-67	28	681	206	116	261	289	262	383	142	214	262	142
341	#N/A	#N/A	#N/A	#N/A	-89	-57	-90	-91	-88	2,148	1,270	1,852	463	243
342	-90	-74	-99	#N/A	#N/A	#N/A	#N/A	#N/A	-99	#N/A	#N/A	#N/A	#N/A	-68
351	-53	111	63	274	205	34	106	-34	-69	302	180	46	174	356
352	95	150	164	150	87	356	-2	341	326	166	198	207	219	279
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-77	-66
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	109	486	162	659	482	327	380
355	101	241	407	212	111	86	60	-10	75	172	160	201	161	102
356	#N/A	#N/A	#N/A	-77	159	18	-35	20	118	263	206	132	149	1,066
361	#N/A	-97	-98	-95	-95	-97	-97	#N/A	-49	-42	-25	#N/A	#N/A	-76
362	#N/A	#N/A	#N/A	-91	#N/A	#N/A	#N/A	#N/A	#N/A	-96	-98	-89	1	#N/A
363	42	258	266	216	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-30	-28	149	137
364	477	#N/A	-81	-76	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-92	-87	#N/A	197	-17	-71	126	12
371	#N/A	#N/A	-100	-99	-100	#N/A	#N/A	-97	-93	-94	-88	-95	-78	-87
372	#N/A	#N/A	#N/A	#N/A	#N/A	2,345	1,547	3,216	5,005	426	-63	-28	-4	0
381	502	-45	-52	151	184	116	7	74	257	283	230	245	366	326
382	-9	#N/A	#N/A	#N/A	#N/A	-75	-73	-50	-4	-13	294	272	239	921
383	2,121	#N/A	#N/A	#N/A	#N/A	84	40	292	136	183	162	154	423	208
384	#N/A	#N/A	#N/A	#N/A	#N/A	-93	-82	-89	4	-26	706	868	83	209
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-12	197	1,123	254	262	770	301	2,256
390	28	#N/A	#N/A	#N/A	#N/A	221	255	1,055	429	1,188	2,140	1,640	1,805	2,218

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 6a: Percentage Differences in Mean Value Added per Employee for Manufacturing Establishments Reporting Positive Employment and Value Added by Industry: Minority-Foreign less Local Plants**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	508	535	541	478	612	483	399	385	716	846	1,026	1,021	427	710
311-312	161	331	499	516	501	408	485	226	253	203	161	323	346	456
313	1,258	426	2,225	1,002	1,223	624	793	852	677	745	298	339	168	45
314	-76	-20	-58	-12	703	-42	-44	-45	567	519	-85	#N/A	#N/A	#N/A
321	76	237	151	113	91	126	209	147	635	177	226	224	156	76
322	-50	-67	-43	-34	-45	5	46	92	84	132	115	125	155	108
323	#N/A	#N/A	#N/A	#N/A	25	-31	-26	98	-54	-41	-92	28	-83	66
324	#N/A	#N/A	#N/A	89	104	68	22	37	-13	-17	19	-4	97	
331	10	36	138	101	133	91	111	59	212	464	269	119	22	108
332	#N/A	#N/A	-15	10	-9	-6	52	57	141	5	-33	1	238	-6
341	152	320	964	564	177	443	670	394	239	93	274	194	124	118
342	0	78	56	80	126	80	15	102	42	21	199	121	118	174
351	263	212	102	108	157	387	254	119	257	512	246	482	884	729
352	661	1,844	584	525	276	321	219	368	285	280	364	309	223	247
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	1,773	332	550	142	-76	-42	2	-89	-76
355	23	101	761	279	309	278	337	122	224	48	-57	9	102	27
356	423	379	2,002	1,263	1,003	204	218	180	132	122	201	219	376	283
361	-22	261	336	190	267	308	149	193	103	103	214	43	52	244
362	2,590	1,580	#N/A	#N/A	#N/A	#N/A	-23	82	-7	1	188	311	176	173
363	637	635	560	638	456	540	848	544	494	429	525	490	236	726
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	206	213	236	547	920	1,765	-44
369	#N/A	#N/A	#N/A	#N/A	#N/A	36	51	-69	-44	83	73	#N/A	#N/A	103
371	74	#N/A	#N/A	#N/A	#N/A	170	100	824	2,737	4,204	6,860	5,546	280	2,851
372	#N/A	#N/A	#N/A	#N/A	#N/A	321	61	21	183	486	282	31	175	393
381	152	112	267	188	853	60	155	843	482	379	230	260	220	264
382	223	227	686	349	211	189	209	540	255	162	157	216	184	183
383	95	93	428	403	220	295	185	104	61	178	151	24	33	6
384	126	195	281	345	1,463	569	165	75	408	356	448	460	283	267
385	798	571	80	363	444	479	854	163	772	#N/A	151	162	155	149
390	-28	181	224	#N/A	#N/A	-49	24	49	-16	76	106	121	15	247
Backcast-3	269	265	417	346	454	363	271	239	277	393	384	382	976	710
311-312	102	209	357	375	281	414	528	325	297	243	296	374	404	456
313	1,408	1,464	2,052	1,204	1,249	555	706	795	647	740	305	495	166	45
314	-80	-16	-53	-5	886	-54	-69	-69	247	333	-84	#N/A	#N/A	#N/A
321	147	79	128	124	106	117	156	131	604	196	227	224	157	76
322	#N/A	#N/A	-22	-29	-11	-51	-49	-31	-2	123	115	128	148	108
323	-12	-15	-6	16	165	-33	-19	77	-50	-35	-51	28	-83	66
324	#N/A	#N/A	#N/A	109	26	46	-9	36	-7	-8	-14	20	-4	97
331	68	57	90	58	44	10	-3	0	123	299	180	148	22	108
332	-18	-25	-27	-9	-23	-17	4	35	133	4	-34	8	248	-6
341	135	225	739	558	211	442	680	371	208	104	270	158	109	118
342	-7	69	68	66	100	29	31	80	34	-29	174	119	116	174
351	222	173	55	72	154	367	162	102	224	409	208	304	827	729
352	33	164	336	260	284	311	216	374	289	287	437	295	224	247
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	1,409	284	445	128	-61	-34	-11	-89	-76
355	369	341	406	118	298	271	324	128	199	41	-56	8	104	27
356	365	335	1,880	1,174	932	199	229	56	12	126	188	185	368	283
361	-22	231	298	167	259	242	152	204	115	118	229	38	54	244
362	1,785	807	290	290	224	599	159	73	70	97	197	396	215	173
363	696	650	656	589	418	456	384	490	484	449	523	496	233	726
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	188	191	237	563	937	1,761	-44
369	#N/A	#N/A	#N/A	#N/A	#N/A	31	39	-20	20	100	84	#N/A	#N/A	103
371	22	-45	-58	-62	-61	167	149	23	59	263	377	211	5,101	2,851
372	#N/A	#N/A	#N/A	#N/A	#N/A	277	7	26	192	424	237	43	189	393
381	172	161	240	149	534	-4	27	194	302	320	241	220	212	264
382	213	193	536	285	167	215	231	681	282	185	162	233	189	183
383	174	136	437	334	174	241	190	66	19	170	154	27	32	6
384	186	169	312	336	1,089	480	154	85	428	451	504	497	684	267
385	683	494	64	367	491	503	923	173	802	#N/A	155	254	153	149
390	-37	96	142	#N/A	111	-13	27	34	-12	74	96	74	4	247

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 6b: Percentage Differences in Mean Value Added per Employee for Manufacturing Establishments Reporting Positive Employment and Value Added by Industry: Majority-Foreign less Local Plants**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	515	427	562	624	557	519	503	539	452	471	484	537	511	564
311-312	573	527	493	532	460	325	223	414	506	429	361	269	616	394
313	961	724	864	1,446	1,493	1,523	860	1,212	2,028	2,189	2,173	5,013	2,156	137
314	3,618	5,722	8,250	10,535	13,322	18,255	29,042	14,756	16,571	18,173	31,201	15,723	17,038	18,415
321	480	608	667	620	708	297	550	268	295	380	364	438	364	547
322	-28	#N/A	#N/A	-84	248	76	90	133	56	130	50	80	385	331
323	#N/A	#N/A	#N/A	#N/A	#N/A	-88	34	-18	22	20	442	334	170	102
324	660	548	710	84	216	122	20	32	9	15	16	50	187	203
331	4	16	80	96	97	72	42	161	120	197	222	215	214	308
332	311	599	155	266	306	287	832	356	679	945	899	1,170	493	13
341	201	563	64	1,166	630	1,009	485	440	129	22	34	42	204	43
342	123	213	222	557	49	84	111	414	364	326	361	488	901	#N/A
351	212	204	281	333	296	506	638	592	730	456	339	519	272	571
352	16	146	205	219	247	216	232	212	352	478	442	367	397	511
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	14	254	-96	-6
355	53	64	299	109	63	44	85	-40	153	302	139	201	132	170
356	6,232	333	519	431	474	234	306	288	84	213	232	255	308	377
361	#N/A	#N/A	#N/A	-5	-13	6,032	1,370	322	567	242	212	-46	-16	10
362	184	80	173	115	96	#N/A	#N/A	#N/A	-18	266	85	37	51	797
363	2,476	2,347	1,947	1,203	897	1,152	1,368	2,320	1,162	308	532	1,079	1,001	708
364	1,771	1,702	1,284	1,634	613	1,966	#N/A	2,088	#N/A	#N/A	#N/A	1,241	2,646	5,130
369	#N/A	#N/A	#N/A	#N/A	#N/A	9,886	3,167	122	478	11	45	-40	13	10,413
371	515	39	544	482	84	-2	81	15	156	95	218	143	52	-2
372	#N/A	#N/A	#N/A	#N/A	#N/A	128	1,311	593	258	292	558	482	136	97
381	452	262	349	418	597	334	367	1,650	516	215	387	523	672	820
382	600	163	1,081	823	482	290	444	419	259	332	479	426	101	346
383	95	230	266	201	201	261	191	100	38	74	123	102	158	86
384	125	176	246	529	353	208	188	162	265	334	226	160	553	326
385	#N/A	#N/A	#N/A	2,389	1,244	1,064	471	71	158	472	370	650	200	-1
390	1,205	1,295	823	174	344	207	102	526	143	127	41	103	76	236
Backcast-3	380	373	451	432	436	353	348	430	410	487	499	456	516	564
311-312	474	423	356	386	336	387	280	493	539	455	406	286	613	394
313	1,070	1,056	927	1,466	1,525	1,500	881	1,192	1,947	2,173	2,213	1,207	1,663	137
314	4,121	7,408	9,762	7,357	8,138	17,774	30,598	15,107	12,835	18,933	33,752	14,679	15,928	18,415
321	383	382	540	470	596	220	443	238	272	412	371	324	362	547
322	-29	#N/A	148	-23	167	-47	-42	-15	-4	161	52	128	381	331
323	#N/A	#N/A	#N/A	#N/A	#N/A	32	11	-6	32	23	353	334	175	102
324	327	236	309	109	72	75	-4	35	14	21	20	52	188	203
331	7	41	65	28	11	-15	-41	55	50	88	214	230	215	308
332	242	520	119	376	267	164	656	337	650	936	889	1,256	457	13
341	263	451	789	936	495	674	321	340	128	22	33	3	169	43
342	65	86	193	330	53	44	104	350	272	103	322	483	890	#N/A
351	313	358	313	252	325	469	414	666	703	423	303	403	249	571
352	75	192	188	180	257	236	248	233	364	497	463	374	419	511
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	30	37	-96	-6
355	55	36	128	23	45	25	60	-38	134	156	142	151	134	170
356	312	351	543	397	400	267	395	185	226	225	236	299	323	377
361	#N/A	#N/A	#N/A	-12	-15	5,046	1,392	339	606	201	227	-39	-15	10
362	231	51	151	64	56	#N/A	#N/A	-67	-21	167	57	53	108	797
363	1,137	980	1,060	1,142	829	987	1,247	2,117	956	763	530	1,091	991	708
364	1,533	1,543	1,193	1,437	545	1,534	#N/A	1,956	#N/A	#N/A	#N/A	422	2,357	5,130
369	#N/A	#N/A	#N/A	#N/A	#N/A	9,466	2,921	126	559	22	54	-37	18	10,413
371	61	31	102	223	119	-9	66	-15	99	86	184	44	28	-2
372	#N/A	#N/A	#N/A	#N/A	#N/A	176	834	625	205	251	480	463	149	97
381	209	120	185	171	297	169	153	442	345	245	432	394	748	820
382	536	240	777	730	417	265	442	395	277	350	367	296	95	346
383	125	208	239	185	201	204	165	47	10	67	126	105	154	86
384	303	178	386	459	450	197	247	191	298	439	267	202	541	326
385	#N/A	#N/A	2,075	2,410	1,361	1,113	513	77	167	472	377	484	198	-1
390	836	564	477	69	192	112	101	431	715	580	32	64	58	236

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 6c: Percentage Differences in Mean Value Added per Employee for Manufacturing Establishments Reporting Positive Employment and Value Added by Industry: Heavily-Foreign less Local Plants**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	187	438	333	423	524	342	148	175	142	183	666	258	304	426
311-312	155	474	343	539	1,192	648	177	238	279	335	302	495	481	816
313	474	1,793	2,115	2,264	1,275	#N/A	#N/A	4,754	1,889	2,307	1,322	1,359	1,322	1,717
314	760	933	1,200	1,603	835	2,140	4,147	266	508	1,459	946	555	1,478	1,977
321	138	729	200	202	200	74	152	-1	127	97	62	108	166	230
322	-8	#N/A	#N/A	-45	50	109	-2	105	11	157	100	141	99	189
323	3,960	720	-63	#N/A	-69	#N/A	#N/A	-50	19	-25	-43	-17	-30	118
324	#N/A	214	1,023	#N/A	139	-3	-4	22	148	101	105	24	62	186
331	2	222	243	300	76	381	50	40	18	55	54	43	34	95
332	#N/A	-51	-17	258	23	15	83	80	87	134	45	92	100	-31
341	#N/A	#N/A	#N/A	#N/A	#N/A	47	-71	-66	#N/A	473	424	406	538	697
342	-73	-30	-92	#N/A	#N/A	#N/A	#N/A	#N/A	-88	#N/A	#N/A	#N/A	#N/A	-42
351	425	1,163	136	1,286	798	492	792	-92	-49	92	86	96	476	327
352	-31	117	160	132	61	449	32	347	411	301	554	428	222	639
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-81	10
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	111	-75	-65	-13	50	87	145
355	-29	42	127	226	215	213	172	-23	196	326	318	168	132	101
356	#N/A	#N/A	#N/A	#N/A	312	20	-63	73	162	143	6,512	77	183	577
361	#N/A	-66	-69	-58	-59	-46	-68	#N/A	-56	-51	-31	#N/A	#N/A	-21
362	#N/A	#N/A	#N/A	9	#N/A	#N/A	#N/A	#N/A	#N/A	-69	-84	-48	64	#N/A
363	-41	#N/A	#N/A	159	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	628	375	165	740
364	20	#N/A	#N/A	-47	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-56	#N/A	-36	-63	-72	39	-28
371	#N/A	#N/A	#N/A	-65	-77	#N/A	#N/A	-79	-62	-56	-11	-63	-30	32
372	#N/A	#N/A	#N/A	#N/A	#N/A	284	315	151	347	456	-54	-21	131	16
381	1,183	20	15	308	563	345	341	283	131	104	115	122	232	280
382	25	#N/A	#N/A	#N/A	#N/A	46	0	5	7	-10	63	52	106	404
383	122	#N/A	#N/A	#N/A	#N/A	42	42	219	38	67	42	56	152	201
384	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-88	97	-33	1,092	958	140	255
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	70	316	262	162	96	22	195	140
390	-56	#N/A	#N/A	#N/A	#N/A	-25	25	323	54	149	289	211	300	453
Backcast-3	282	350	337	385	387	234	102	138	116	175	262	277	302	426
311-312	332	463	392	897	1,076	878	423	454	402	337	297	481	483	816
313	538	1,991	2,258	2,294	1,302	#N/A	#N/A	4,679	1,814	2,290	1,348	1,288	1,313	1,717
314	876	1,232	1,435	1,730	1,048	2,081	2,140	77	87	985	806	512	1,375	1,977
321	153	215	221	289	305	33	79	1	94	93	45	113	167	230
322	-9	#N/A	#N/A	-1	29	-18	-48	-5	-9	176	126	150	108	189
323	3,837	-14	-67	#N/A	#N/A	#N/A	#N/A	-46	31	-19	-41	-17	-35	118
324	#N/A	242	972	-21	20	12	-27	19	142	94	89	20	55	186
331	135	164	184	205	21	121	-30	-11	-13	25	56	51	42	95
332	#N/A	-56	22	179	32	10	58	72	61	146	27	105	106	-31
341	#N/A	#N/A	#N/A	#N/A	16	45	-70	-62	-43	473	320	422	500	697
342	-78	-38	-92	#N/A	#N/A	#N/A	#N/A	#N/A	-90	#N/A	#N/A	#N/A	#N/A	-42
351	179	505	288	708	598	254	435	115	-13	64	73	88	432	327
352	19	110	107	70	55	466	31	352	375	293	531	359	216	639
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-81	10
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	146	-24	-69	-1	274	73	145
355	102	173	220	105	201	169	149	-26	159	295	323	186	134	101
356	#N/A	#N/A	#N/A	23	161	18	-37	48	23	181	135	85	174	577
361	#N/A	-68	-72	-61	-60	-54	-68	#N/A	-54	-47	-28	#N/A	#N/A	-21
362	#N/A	#N/A	#N/A	-17	#N/A	#N/A	#N/A	#N/A	#N/A	-67	-84	-42	68	#N/A
363	51	155	112	142	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	626	380	165	740
364	5	#N/A	-64	-53	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-71	-55	#N/A	-30	-61	-71	44	-28
371	#N/A	#N/A	-72	-68	-75	#N/A	#N/A	-82	-68	-76	8	-23	-33	32
372	#N/A	#N/A	#N/A	#N/A	#N/A	187	174	162	363	234	-59	-25	143	16
381	1,230	11	4	246	229	152	48	13	67	189	143	143	226	280
382	21	#N/A	#N/A	#N/A	#N/A	45	14	18	15	-2	65	48	107	404
383	214	#N/A	#N/A	#N/A	#N/A	46	74	156	20	64	52	90	147	201
384	#N/A	#N/A	#N/A	#N/A	#N/A	-78	-51	-70	67	-16	1,214	1,129	140	255
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	17	331	274	162	99	184	193	140
390	-61	#N/A	#N/A	#N/A	#N/A	-32	20	263	46	136	271	192	262	453

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Table 7: Summary of Regressions Explaining the Relationship between Value Added per Employee (=dependent variable), Size, Vintage, and Foreign Ownership Group**

Independent Variables	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
RAW DATA (all establishments, dependent variable= $\ln(V/E)$ )													
$\ln(O_t)$	0.475	0.440	0.450	0.440	0.432	0.434	0.438	0.419	0.422	0.415	0.417	0.427	0.448
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$AGE_t$	-0.026	-0.020	-0.015	-0.017	-0.015	-0.012	-0.014	-0.013	-0.012	-0.013	-0.013	-0.014	-0.014
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$DF_{mint}$	0.029	0.301	0.209	0.286	0.176	0.033	0.026	0.135	0.096	-0.034	0.010	-0.151	0.013
significance level	0.73	0.00	0.01	0.00	0.01	0.61	0.69	0.01	0.08	0.58	0.86	0.03	0.85
$DF_{majt}$	0.232	0.462	0.481	0.494	0.347	0.167	0.116	0.238	0.244	0.135	0.168	0.181	0.155
significance level	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.00	0.00	0.01	0.00	0.00	0.01
$DF_{hyt}$	0.507	0.271	0.351	0.394	0.084	-0.405	-0.209	-0.095	-0.157	-0.141	-0.124	-0.139	0.131
significance level	0.00	0.06	0.01	0.00	0.47	0.00	0.01	0.14	0.02	0.03	0.03	0.01	0.01
Adjusted R-squared	0.643	0.638	0.645	0.638	0.611	0.628	0.603	0.651	0.600	0.582	0.615	0.594	0.589
Sample size	12718	12723	14621	14676	16529	16485	17635	18150	19005	21526	22954	22337	21379
RAW DATA (largest 25% of establishments sorted by output, dependent variable= $\ln(V/E)$ )													
$\ln(O_t)$	0.458	0.439	0.412	0.424	0.410	0.418	0.457	0.437	0.452	0.450	0.436	0.467	0.464
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$AGE_t$	-0.051	-0.045	-0.034	-0.036	-0.027	-0.020	-0.028	-0.024	-0.022	-0.021	-0.021	-0.027	-0.028
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$DF_{mint}$	0.125	0.411	0.296	0.346	0.172	0.094	0.132	0.226	0.162	0.100	0.096	-0.090	0.157
significance level	0.18	0.00	0.00	0.00	0.02	0.19	0.06	0.00	0.01	0.10	0.09	0.23	0.04
$DF_{majt}$	0.352	0.541	0.579	0.595	0.430	0.299	0.279	0.369	0.350	0.290	0.254	0.272	0.262
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$DF_{hyt}$	0.745	0.447	0.452	0.490	0.216	-0.210	-0.097	0.054	-0.011	0.035	0.024	-0.028	0.234
significance level	0.00	0.00	0.00	0.00	0.10	0.17	0.35	0.48	0.89	0.64	0.71	0.64	0.00
Adjusted R-squared	0.277	0.322	0.320	0.308	0.310	0.317	0.297	0.343	0.330	0.326	0.326	0.295	0.283
Sample size	3179	3180	3655	3669	4132	4121	4407	4537	4751	5381	5738	5584	5342
BACKCAST DATA (all establishments, dependent variable= $\ln(V/E)$ )													
$\ln(O_t)$	0.493	0.476	0.479	0.473	0.460	0.465	0.463	0.450	0.446	0.429	0.417	0.434	0.448
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$AGE_t$	-0.029	-0.026	-0.023	-0.021	-0.019	-0.016	-0.019	-0.018	-0.015	-0.014	-0.013	-0.014	-0.014
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$DF_{mint}$	-0.047	0.148	0.085	0.173	0.053	-0.064	-0.055	0.019	0.009	-0.087	0.001	-0.130	0.013
significance level	0.52	0.06	0.22	0.01	0.42	0.29	0.36	0.71	0.87	0.14	0.99	0.07	0.85
$DF_{majt}$	0.157	0.313	0.258	0.317	0.205	0.065	0.053	0.159	0.170	0.103	0.157	0.183	0.155
significance level	0.01	0.00	0.00	0.00	0.00	0.28	0.35	0.00	0.00	0.04	0.00	0.00	0.01
$DF_{hyt}$	0.211	0.227	0.184	0.203	-0.009	-0.396	-0.221	-0.147	-0.171	-0.167	-0.118	-0.141	0.131
significance level	0.07	0.04	0.10	0.07	0.94	0.00	0.01	0.01	0.01	0.01	0.05	0.01	0.01
Adjusted R-squared	0.644	0.646	0.637	0.633	0.610	0.624	0.609	0.646	0.611	0.594	0.605	0.598	0.589
Sample size	17115	17807	18145	18661	20171	20548	21323	21800	22588	23701	23433	23083	21379
BACKCAST DATA (largest 25% of establishments sorted by output, dependent variable= $\ln(V/E)$ )													
$\ln(O_t)$	0.403	0.426	0.414	0.443	0.434	0.429	0.458	0.439	0.439	0.432	0.420	0.474	0.464
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$AGE_t$	-0.055	-0.053	-0.045	-0.043	-0.033	-0.027	-0.035	-0.032	-0.026	-0.024	-0.021	-0.029	-0.028
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$DF_{mint}$	0.114	0.282	0.236	0.297	0.119	0.050	0.057	0.122	0.095	0.060	0.104	-0.067	0.157
significance level	0.19	0.00	0.00	0.00	0.09	0.45	0.37	0.03	0.09	0.32	0.06	0.38	0.04
$DF_{majt}$	0.376	0.477	0.451	0.491	0.352	0.245	0.177	0.305	0.291	0.259	0.254	0.267	0.262
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$DF_{hyt}$	0.434	0.404	0.324	0.375	0.170	-0.203	-0.109	0.011	-0.028	0.029	0.027	-0.048	0.234
significance level	0.00	0.00	0.02	0.00	0.16	0.11	0.25	0.88	0.69	0.68	0.71	0.42	0.00
Adjusted R-squared	0.256	0.309	0.298	0.312	0.311	0.302	0.295	0.331	0.327	0.311	0.313	0.308	0.283
Sample size	4278	4451	4536	4665	5042	5137	5330	5450	5647	5925	5858	5770	5342

Notes: Constants, coefficients on industry dummies, F-tests, and chi-squared tests for heteroscedasticity are shown in Appendix Table 7. White's heteroscedasticity-consistent variance-covariance matrix is used to calculate test statistics when heteroscedasticity is indicated.

**Table 8: Summary of Regressions Explaining the Relationship between Changes in Value Added per Employee (=dependent variable), Initial Size, Vintage, and Foreign Ownership Group-a**

Independent Variables	1986	1987	1988	1989	1991	1992	1993	1994	1995	1996	1997	1998
RAW DATA (all establishments, dependent variable= $\ln(Vt/Et)-\ln(Vt-1/Et-1)$ )												
ln(Ot-1)	-0.078	-0.062	-0.037	-0.056	-0.027	-0.069	-0.068	-0.046	-0.050	-0.037	-0.039	-0.022
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AGE	0.001	0.009	0.001	-0.004	0.001	-0.003	-0.001	0.001	0.000	0.000	-0.001	0.000
significance level	0.64	0.00	0.60	0.01	0.68	0.03	0.65	0.26	0.76	0.67	0.33	0.83
DFmin	0.205	0.362	0.061	0.300	0.052	0.323	0.262	0.165	0.081	0.168	0.055	0.313
significance level	0.02	0.00	0.46	0.00	0.45	0.00	0.00	0.00	0.13	0.00	0.41	0.00
DFmaj	0.277	0.356	0.110	0.294	0.025	0.276	0.307	0.190	0.057	0.198	0.248	0.167
significance level	0.00	0.00	0.11	0.00	0.73	0.00	0.00	0.00	0.21	0.00	0.00	0.01
DFhvy	0.601	-0.133	0.236	0.280	-0.068	0.472	0.360	0.168	0.116	0.215	0.208	0.502
significance level	0.00	0.43	0.10	0.02	0.54	0.00	0.00	0.00	0.15	0.00	0.00	0.00
Adjusted R-squared	0.031	0.029	0.022	0.021	0.029	0.031	0.031	0.017	0.023	0.012	0.011	0.014
Sample size	11910	12091	10408	13458	13269	14372	15493	16505	17424	19024	19991	18592
RAW DATA (largest 25% of establishments sorted by output, dependent variable= $\ln(Vt/Et)-\ln(Vt-1/Et-1)$ )												
ln(Ot-1)	-0.010	-0.060	-0.051	-0.028	-0.022	-0.065	-0.093	-0.030	-0.020	-0.027	-0.029	-0.046
significance level	0.62	0.00	0.00	0.05	0.15	0.00	0.00	0.06	0.10	0.01	0.05	0.00
AGE	0.005	0.011	0.009	0.006	0.002	-0.003	0.008	0.006	0.003	0.004	-0.004	0.002
significance level	0.52	0.05	0.10	0.12	0.53	0.38	0.01	0.03	0.15	0.06	0.13	0.55
DFmin	0.128	0.260	0.065	0.239	0.009	0.291	0.184	0.089	0.048	0.054	-0.015	0.340
significance level	0.19	0.01	0.47	0.00	0.91	0.00	0.00	0.09	0.41	0.31	0.84	0.00
DFmaj	0.142	0.291	0.093	0.145	-0.033	0.233	0.170	0.120	0.017	0.059	0.196	0.135
significance level	0.10	0.00	0.22	0.04	0.63	0.00	0.00	0.01	0.73	0.27	0.00	0.05
DFhvy	0.538	-0.102	0.182	0.191	-0.193	0.298	0.285	0.082	0.041	0.131	0.140	0.423
significance level	0.01	0.55	0.28	0.15	0.10	0.11	0.00	0.20	0.51	0.03	0.08	0.00
Adjusted R-squared	0.037	0.032	0.013	0.008	0.007	0.015	0.026	0.011	0.009	0.003	0.008	0.023
Sample size	2977	3022	2602	3364	3317	3593	3873	4126	4356	4756	4997	4648
BACKCAST DATA (all establishments, dependent variable= $\ln(Vt/Et)-\ln(Vt-1/Et-1)$ )												
ln(Ot-1)	-0.070	-0.040	-0.033	-0.054	-0.034	-0.071	-0.068	-0.057	-0.061	-0.048	-0.034	-0.027
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AGE	0.001	0.004	0.000	0.000	-0.001	-0.003	0.002	0.004	0.003	0.000	-0.002	0.000
significance level	0.71	0.00	0.76	0.77	0.29	0.01	0.11	0.00	0.00	0.90	0.07	0.67
DFmin	0.171	0.332	0.034	0.343	0.100	0.322	0.268	0.193	0.128	0.188	0.084	0.313
significance level	0.01	0.00	0.59	0.00	0.07	0.00	0.00	0.00	0.01	0.00	0.21	0.00
DFmaj	0.294	0.270	0.057	0.328	0.094	0.295	0.284	0.211	0.111	0.158	0.248	0.154
significance level	0.00	0.00	0.21	0.00	0.11	0.00	0.00	0.00	0.01	0.00	0.00	0.02
DFhvy	0.252	0.089	0.186	0.263	-0.018	0.453	0.331	0.191	0.108	0.189	0.232	0.468
significance level	0.03	0.32	0.03	0.01	0.84	0.00	0.00	0.00	0.10	0.00	0.00	0.00
Adjusted R-squared	0.024	0.017	0.017	0.019	0.030	0.033	0.031	0.024	0.031	0.017	0.010	0.014
Sample size	16057	16627	16067	17024	17795	18389	19228	20141	21009	21196	20479	19338
BACKCAST DATA (largest 25% of establishments sorted by output, dependent variable= $\ln(Vt/Et)-\ln(Vt-1/Et-1)$ )												
ln(Ot-1)	-0.025	-0.013	-0.033	-0.010	-0.030	-0.064	-0.083	-0.025	-0.032	-0.030	-0.018	-0.042
significance level	0.08	0.32	0.00	0.43	0.01	0.00	0.00	0.08	0.00	0.00	0.22	0.01
AGE	0.004	0.006	0.004	0.004	0.002	-0.004	0.010	0.012	0.007	0.005	-0.004	0.003
significance level	0.36	0.13	0.19	0.21	0.42	0.20	0.00	0.00	0.00	0.01	0.13	0.23
DFmin	0.098	0.225	0.008	0.252	0.053	0.261	0.212	0.107	0.088	0.079	0.002	0.321
significance level	0.26	0.00	0.91	0.00	0.41	0.00	0.00	0.04	0.09	0.14	0.98	0.00
DFmaj	0.202	0.205	0.033	0.158	0.014	0.214	0.216	0.153	0.061	0.051	0.178	0.108
significance level	0.00	0.00	0.56	0.01	0.80	0.00	0.00	0.00	0.15	0.30	0.00	0.11
DFhvy	0.240	0.086	0.180	0.233	-0.120	0.286	0.249	0.124	0.032	0.110	0.157	0.380
significance level	0.07	0.46	0.07	0.03	0.22	0.04	0.00	0.04	0.66	0.03	0.06	0.00
Adjusted R-squared	0.011	0.011	0.015	0.017	0.005	0.018	0.025	0.017	0.011	0.006	0.009	0.023
Sample size	4014	4156	4016	4256	4448	4597	4807	5035	5250	5299	5119	4834

Notes: Constants, coefficients on industry dummies, F-tests, and chi-squared tests for heteroscedasticity are shown in Appendix Table 8. White's heteroscedasticity-consistent variance-covariance matrix is used to calculate test statistics when heteroscedasticity is indicated.



## Appendix: Adjustments Made to the Data Supplied by Biro Pusat Statistik

As reported in the text, we had to make three adjustments to the data supplied by Biro Pusat Statistik in order to complete the calculations presented in this paper. This appendix details those adjustments.

First, there are 449 records for which the establishment code is repeated in the 1998 backcast data. These plants fall into three categories, which were adjusted as follows:

Group 1: One record has data for some years in 1990-1998 and the second record has data for some years in 1985-1989. The two records were combined into one.

Group 2: Both records have data for some years in 1985-1989. If one record has data for more years than the other record, the record with the longer series was chosen. For records that have data for identical years, the first record appearing in our version of the database was chosen because the second record often appears to be a straight linear extrapolation from a given year.

Group 3: One record has data for some years in 1985-1998 and the second record has data for some years in 1985-1989. If one record has data for more years in 1985-1989 than the other record, the record with the longer series was chosen. For records that have data for identical years in 1985-1989, the second record appearing in our version of the database was chosen as the first record often appears to be a straight linear extrapolation from a given year.

Second, because the backcast does not include estimates of the foreign ownership share ( $=F$ ) and contains observations not available in the original raw data sets, it is first necessary to estimate missing values of  $F$  for 2493 observations in 990 records. To understand how we estimated these missing values, first define  $F_t$  the value of  $F$  in year  $t$ ,  $F_{t+1}$  as the value of  $F$  in year  $t+1$ , and so on. If  $F_t$  is a missing value, we estimated  $F_t$  as equal to  $F_{t+1}$ . If  $F_{t+1}$  is also missing we then estimated  $F_t$  as equal to  $F_{t+2}$ . If  $F_{t+1}$  and  $F_{t+2}$  are missing values, we estimate  $F_t$  as equal to  $F_{t+3}$ , and so on. All but 7 of the missing values were replaced by values from year  $t+1$ . Similar estimates were made for missing industry codes. For 1990-1998, the process was the same as for  $F$ . For 1985-1989, the same principle was applied when possible but missing values had to be replaced with past values in some cases because the industrial classification changed in 1990.

Third, there are several records where entries of the foreign ownership shares are inconsistent over time. Some of these inconsistencies reflect real changes in ownership but most are probably the result of incorrect data entry. Here we adjusted the data in the following steps. These adjustments affected a total of 839 observations in 651 records and 11 records contained observations that were adjusted more than once.

Step 1. We checked for the records where  $F_t > 0$ ,  $F_{t+1} = 0$ ,  $F_{t+2} = 0$ ,  $F_{t+3} > 0$ ,  $F_{t+4} > 0$ . In this case we replaced  $F_{t+1}$  with  $F_t$  and  $F_{t+2}$  with  $F_{t+3}$ .

Step 2. We checked for the records where  $F_t > 0$ ,  $F_{t+1} > 0$ ,  $F_{t+2} = 0$ ,  $F_{t+3} = 0$ ,  $F_{t+4} > 0$ . In this case we replaced  $F_{t+2}$  with  $F_{t+1}$  and  $F_{t+3}$  with  $F_{t+4}$ .

Step 3. We checked for records where (1)  $F_t = F_{t+5} > 0$  and  $F_{t+1} = F_{t+2} = F_{t+3} = F_{t+4} = 0$ , (2)  $F_t = F_{t+4} > 0$  and  $F_{t+1} = F_{t+2} = F_{t+3} = 0$ , (3) or  $F_t = F_{t+3} > 0$  and  $F_{t+1} = F_{t+2} = 0$ . In these cases, the zeros in the intervening years were replaced with the values from the years on either end of these series.

Step 4. We checked for the records where  $F_t > 0$ ,  $F_{t+1} = 0$ ,  $F_{t+2} > 0$ . In this case we replaced  $F_{t+1}$  with  $F_{t+2}$ .

Step 5. We checked for the records where (1)  $F_t = 0$ ,  $F_{t+1} = 0$ ,  $F_{t+2} > 0$ ,  $F_{t+3} > 0$ ,  $F_{t+4} = 0$  or (2)  $F_t = 0$ ,  $F_{t+1} > 0$ ,  $F_{t+2} = 0$ . In these cases we estimate  $F_t$  as zero in all years.

Step 6. Define  $A$  and  $B$  as range two variables which take the values 10-50, 51-89, 90-100 and  $A < B$ . We checked for patters where  $F_t = A$ ,  $F_{t+1} = B$ , and  $F_{t+2} = A$ . In these cases we replaced  $F_{t+1}$  with  $F_t$ , beginning with  $t=1996$ , then  $t=1995$ , and so on.

Step 7. Define  $A$  and  $B$  as range two variables which take the values 10-50, 51-89, 90-100 and  $A < B$ . We checked for patters where  $F_t = A$ ,  $F_{t+1} = B$ ,  $F_{t+2} = B$ , and  $F_{t+3} = A$ . In these cases we replaced  $F_{t+1}$  with  $F_t$  and  $F_{t+2}$  with  $F_{t+3}$ , beginning with  $t=1994$ , then  $t=1993$ , and so on.

**Appendix Table 1a: Number of Minority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	134	137	149	174	170	210	255	297	326	344	329	341	326	317
311-312	12	15	22	24	25	26	32	34	37	44	41	44	41	45
313	1	1	1	6	4	4	4	10	12	15	8	5	6	6
314	2	3	5	5	5	4	1	1	2	2	2	0	0	0
321	11	11	10	10	10	9	15	21	22	20	21	22	23	15
322	1	1	1	5	2	7	14	16	23	24	22	22	21	20
323	0	0	0	0	1	1	2	4	3	3	1	2	3	3
324	0	0	0	1	1	3	5	11	10	10	12	11	7	8
331	23	19	19	22	22	26	29	27	25	24	27	20	17	19
332	0	0	1	1	1	3	4	6	7	5	3	6	9	7
341	3	4	3	4	4	6	6	7	6	7	7	8	9	12
342	2	2	2	2	2	1	2	3	3	3	5	7	5	3
351	11	10	11	11	12	18	22	24	26	22	20	25	23	25
352	14	13	13	15	15	16	16	18	18	20	19	21	15	13
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	0	0
354	#N/A	#N/A	#N/A	#N/A	#N/A	1	2	2	2	1	2	2	1	1
355	6	7	8	9	9	8	8	6	4	6	5	7	9	9
356	2	2	3	4	4	5	4	6	13	12	12	14	14	12
361	1	2	3	3	3	4	5	7	6	6	5	5	6	4
362	1	1	0	0	0	0	1	1	2	2	5	6	7	7
363	4	4	4	4	4	3	4	6	8	10	9	8	9	7
364	0	0	0	0	0	0	0	1	1	1	1	1	1	1
369	0	0	0	0	0	1	1	1	1	2	1	0	0	2
371	1	0	0	0	0	7	8	9	9	8	8	8	7	12
372	#N/A	#N/A	#N/A	#N/A	#N/A	1	3	2	3	2	2	3	3	1
381	16	18	17	18	17	14	15	12	17	18	19	22	22	15
382	7	9	10	13	12	10	10	13	17	18	17	15	17	12
383	9	8	7	7	7	15	19	25	28	32	30	28	27	28
384	5	5	6	9	9	11	13	16	13	16	15	18	16	20
385	1	1	2	1	1	3	3	2	1	0	1	2	1	2
390	1	1	1	0	0	3	7	6	7	11	9	9	7	8
Backcast-3	160	166	177	190	202	250	290	326	347	358	337	346	336	317
311-312	17	19	25	26	29	33	38	37	40	47	44	47	44	45
313	1	1	2	5	4	5	5	11	12	15	8	5	6	6
314	3	5	6	5	5	5	2	2	3	3	2	0	0	0
321	12	12	11	11	11	10	16	23	22	20	21	22	23	15
322	0	0	2	6	7	13	19	19	25	24	22	22	22	20
323	1	1	1	1	2	1	2	5	3	4	2	2	3	3
324	0	0	0	1	2	4	7	12	11	10	12	11	7	8
331	27	25	24	27	28	30	32	31	27	25	27	20	17	19
332	1	1	1	1	1	3	6	7	7	5	3	6	9	7
341	5	5	4	4	5	6	6	7	7	8	7	8	9	12
342	2	2	2	2	3	3	3	4	4	4	5	7	5	3
351	12	11	11	12	13	19	23	25	26	22	21	25	23	25
352	16	14	16	16	17	16	16	19	18	20	19	21	15	13
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	0	0
354	#N/A	#N/A	#N/A	#N/A	#N/A	3	3	3	3	2	2	2	1	1
355	9	11	11	10	9	8	8	6	4	6	5	7	9	9
356	2	2	3	4	4	5	4	7	13	12	13	14	14	12
361	1	2	3	3	3	4	5	7	6	6	5	5	6	4
362	2	2	1	1	1	1	2	2	3	4	6	7	8	7
363	4	4	4	4	4	3	4	6	8	10	9	8	9	7
364	0	0	0	0	0	0	0	1	1	1	1	1	1	1
369	0	0	0	0	0	1	1	2	2	2	1	0	0	2
371	2	1	1	1	1	9	8	9	9	8	8	8	8	12
372	#N/A	#N/A	#N/A	#N/A	#N/A	1	3	2	3	2	2	3	3	1
381	19	21	20	17	16	14	15	13	18	19	19	22	22	15
382	7	9	10	13	13	12	12	13	17	19	18	16	18	12
383	9	9	8	8	10	19	24	27	31	32	30	28	28	28
384	6	7	8	11	12	13	16	18	14	17	15	18	18	20
385	1	1	2	1	1	3	3	2	1	0	1	2	1	2
390	1	1	1	0	1	6	7	6	9	11	9	9	7	8

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 1b: Number of Majority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	229	225	219	239	251	287	344	414	445	501	502	518	538	538
311-312	16	23	20	22	22	25	28	31	37	46	48	50	61	67
313	6	6	6	4	3	3	4	3	3	2	3	2	3	6
314	4	3	2	2	1	1	1	2	2	2	1	2	2	2
321	32	33	31	32	32	31	39	46	51	52	54	55	52	42
322	2	0	0	1	4	10	15	31	34	34	29	28	27	24
323	0	0	0	0	0	1	6	5	5	3	3	3	4	6
324	1	1	1	3	3	6	15	22	24	26	24	24	16	16
331	18	19	18	14	14	14	14	20	15	16	16	22	23	25
332	2	2	2	2	2	7	12	13	12	14	13	7	9	5
341	2	2	2	2	2	3	4	6	7	8	9	10	13	14
342	2	1	3	4	3	2	3	4	4	4	3	2	1	0
351	11	8	8	14	10	18	20	25	25	29	35	40	40	45
352	49	46	44	47	53	52	45	47	46	50	48	46	44	46
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	0	0
354	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	1	1	1	2
355	2	5	5	9	10	11	13	16	15	16	15	19	17	16
356	7	7	7	5	5	7	6	7	9	13	16	16	17	17
361	0	0	0	1	1	2	3	3	2	3	4	4	4	7
362	3	2	2	2	1	0	0	0	2	2	1	2	1	3
363	4	4	5	4	4	4	4	3	4	5	7	5	6	4
364	1	1	1	1	1	1	0	1	0	0	0	1	4	2
369	0	0	0	0	0	1	1	3	1	2	1	2	2	3
371	2	2	3	6	8	6	6	6	7	8	8	8	8	9
372	#N/A	#N/A	#N/A	#N/A	#N/A	3	3	3	3	6	5	5	5	7
381	25	23	22	23	24	22	26	36	34	45	41	39	34	29
382	8	7	5	8	9	12	13	17	19	18	19	22	23	29
383	18	17	17	20	23	21	23	25	34	41	42	49	59	56
384	10	10	11	9	10	14	18	17	22	25	27	28	33	29
385	0	0	0	1	1	1	1	4	4	5	5	4	4	3
390	4	3	4	3	5	9	21	18	24	26	24	22	25	24
Backcast-3	256	259	263	273	305	357	408	466	482	527	524	535	565	538
311-312	17	22	21	22	25	28	32	35	37	47	49	52	63	67
313	6	6	6	4	3	3	4	3	3	2	3	3	4	6
314	4	3	2	3	2	1	1	2	2	2	1	2	2	2
321	36	36	36	36	36	35	40	48	52	52	54	56	53	42
322	2	0	1	2	11	17	22	36	35	35	29	29	28	24
323	0	0	0	0	0	3	9	6	6	4	4	3	4	6
324	2	2	2	6	8	13	19	22	24	26	24	24	16	16
331	19	19	19	14	15	19	18	23	17	18	17	22	23	25
332	2	2	2	5	6	11	13	13	12	14	13	7	10	5
341	3	3	3	3	3	5	7	8	10	8	9	10	15	14
342	3	3	4	5	4	4	3	4	4	4	3	2	1	0
351	13	11	11	13	9	19	23	27	29	32	39	42	42	45
352	51	51	51	50	54	53	48	50	50	52	49	47	45	46
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	0	0
354	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	1	1	1	2
355	5	8	8	11	13	15	17	17	15	16	15	19	17	16
356	5	6	6	4	4	7	9	9	11	14	16	17	19	17
361	0	0	0	1	1	2	3	3	2	4	4	4	4	7
362	3	2	2	2	1	0	0	1	3	3	2	2	2	3
363	4	4	5	4	4	4	4	3	5	5	7	5	6	4
364	1	1	1	1	1	1	0	1	0	0	0	1	4	2
369	0	0	0	0	0	1	1	3	1	2	1	2	2	3
371	5	6	6	7	7	7	8	8	8	9	9	9	9	9
372	#N/A	#N/A	#N/A	#N/A	#N/A	2	3	3	4	6	5	5	5	7
381	28	28	28	29	30	29	32	41	38	48	44	41	36	29
382	9	9	8	9	9	13	16	22	21	19	20	23	25	29
383	22	21	24	25	32	29	29	31	38	43	44	50	63	56
384	11	11	11	11	15	19	23	23	25	29	30	29	35	29
385	0	0	1	1	1	1	1	4	4	5	5	4	4	3
390	5	5	5	5	11	16	23	20	26	28	27	24	27	24

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 1c: Number of Heavily-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	63	53	57	73	73	110	131	187	222	277	371	460	583	712
311-312	8	6	6	9	12	10	13	17	18	22	29	33	36	47
313	2	2	2	1	1	0	0	1	3	3	8	10	10	9
314	1	1	1	1	1	1	1	1	1	2	4	7	4	4
321	6	4	4	8	3	10	7	13	19	25	28	35	44	54
322	3	0	0	3	5	18	23	30	34	37	49	65	62	69
323	1	1	1	0	1	0	0	3	4	3	3	4	7	9
324	0	2	1	0	1	5	9	11	10	10	12	17	17	19
331	4	2	6	9	6	7	9	10	13	14	13	17	22	22
332	0	1	2	1	1	1	4	2	5	6	15	25	32	28
341	0	0	0	0	0	1	1	1	0	3	4	7	8	11
342	2	1	1	0	0	0	0	0	1	0	0	0	0	2
351	1	3	3	1	2	1	2	1	3	5	8	16	21	29
352	12	11	12	10	11	11	6	6	7	8	13	21	26	34
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	2	4
354	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	1	1	2	2	2	2	3
355	15	17	16	22	23	30	24	23	24	20	20	16	19	19
356	0	0	0	0	1	1	2	7	8	13	24	25	33	35
361	0	1	1	1	1	1	1	0	1	1	1	0	0	2
362	0	0	0	1	0	0	0	0	0	1	1	1	2	0
363	1	0	0	1	0	0	0	0	0	0	1	1	2	6
364	1	0	0	2	0	0	0	0	0	0	0	0	0	0
369	0	0	0	0	0	0	0	1	0	1	1	2	1	1
371	0	0	0	1	1	0	0	1	1	1	2	3	7	13
372	#N/A	#N/A	#N/A	#N/A	#N/A	2	3	2	1	1	4	10	15	15
381	1	1	1	2	3	5	3	8	11	13	22	26	43	54
382	1	0	0	0	0	2	1	3	5	6	7	10	13	25
383	3	0	0	0	0	1	11	26	29	49	63	71	110	145
384	0	0	0	0	0	0	0	2	3	5	10	10	18	22
385	0	0	0	0	0	0	1	2	2	4	4	4	5	7
390	1	0	0	0	0	3	10	15	18	22	23	22	22	24
Backcast-3	87	82	92	96	102	133	173	221	257	314	403	473	614	712
311-312	13	12	12	12	15	12	16	19	21	24	32	33	36	47
313	2	2	2	1	1	0	0	1	3	3	8	10	10	9
314	1	1	1	1	1	1	2	3	3	3	5	7	4	4
321	8	9	11	11	8	13	13	18	22	29	33	35	44	54
322	3	0	0	6	11	22	30	33	38	46	55	66	63	69
323	1	1	1	0	0	0	0	4	4	3	3	4	8	9
324	0	2	1	2	5	5	10	12	11	12	15	18	18	19
331	6	5	7	9	6	10	9	10	13	15	13	17	23	22
332	0	1	3	2	3	4	4	2	6	9	18	25	32	28
341	0	0	0	0	1	1	1	2	1	3	5	7	9	11
342	2	1	1	0	0	0	0	0	1	0	0	0	0	2
351	1	3	3	2	3	2	3	2	4	6	8	16	22	29
352	17	16	17	12	11	10	6	6	8	9	14	22	28	34
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	3	4
354	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	1	2	2	2	4	3	3
355	24	26	28	29	29	34	28	26	26	21	20	16	19	19
356	0	0	0	1	2	1	3	8	9	13	24	26	34	35
361	0	1	1	1	1	1	1	0	1	1	1	0	0	2
362	0	0	0	1	0	0	0	0	0	1	1	1	2	0
363	2	1	1	1	0	0	0	0	0	0	1	1	3	6
364	1	0	1	2	0	0	0	0	0	0	0	0	0	0
369	0	0	0	0	0	0	1	1	0	1	1	2	1	1
371	0	0	1	1	1	0	0	1	1	2	3	4	10	13
372	#N/A	#N/A	#N/A	#N/A	#N/A	3	3	2	1	2	4	10	15	15
381	1	1	1	2	4	5	6	10	13	16	25	27	45	54
382	1	0	0	0	0	2	2	3	5	6	7	10	13	25
383	3	0	0	0	0	1	19	31	37	55	68	76	122	145
384	0	0	0	0	0	2	1	3	5	5	10	10	20	22
385	0	0	0	0	0	0	2	2	2	4	4	4	5	7
390	1	0	0	0	0	4	13	21	20	23	23	22	22	24

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 1d: Number of Local Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	12,435	12,308	12,345	14,135	14,182	15,927	15,764	16,750	17,170	17,895	20,349	21,672	20,931	19,856
311-312	2,806	2,848	2,809	3,162	3,134	3,451	3,299	3,528	3,647	3,751	4,154	4,371	4,257	4,142
313	122	123	127	158	154	136	136	166	186	195	230	251	256	250
314	858	805	817	918	898	954	940	898	875	742	808	830	866	779
321	1,984	1,980	1,986	2,086	2,115	1,777	1,733	1,801	1,861	1,920	2,139	2,142	2,054	1,989
322	639	632	655	789	826	1,731	1,647	1,793	1,707	1,767	2,010	2,214	2,049	1,837
323	79	75	70	84	89	128	153	155	168	190	210	217	210	191
324	115	112	113	145	155	220	252	270	283	299	341	368	346	371
331	875	823	871	1,314	1,295	1,293	1,201	1,348	1,421	1,535	1,698	1,723	1,618	1,611
332	282	294	294	346	363	595	675	701	758	873	1,128	1,325	1,339	1,306
341	130	121	120	135	139	174	206	244	255	287	291	334	314	320
342	463	471	465	491	489	515	481	493	503	521	586	667	653	601
351	170	170	168	192	188	267	241	257	271	287	340	332	331	332
352	399	401	407	453	442	481	462	474	496	501	525	533	541	511
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	2	0	1	4	8	6	6
354	#N/A	#N/A	#N/A	#N/A	#N/A	4	7	8	10	8	16	24	27	28
355	378	356	349	410	424	462	423	428	405	406	401	405	383	387
356	549	535	548	645	653	666	690	740	771	816	886	1,006	989	814
361	44	39	39	48	47	58	67	70	77	85	85	77	70	74
362	36	29	32	38	40	44	51	50	53	51	64	68	56	82
363	471	464	451	454	428	475	455	463	479	514	612	639	568	492
364	582	563	541	541	541	548	612	642	639	684	956	1,056	1,019	963
369	98	98	97	155	155	181	188	209	222	233	272	280	306	277
371	27	27	28	30	33	49	60	65	70	76	85	84	93	85
372	#N/A	#N/A	#N/A	#N/A	#N/A	27	33	39	45	49	55	61	60	69
381	506	514	513	549	544	591	603	634	661	721	876	965	872	823
382	171	164	160	169	177	184	197	215	225	227	279	306	305	247
383	169	161	166	201	206	229	240	251	258	285	324	350	353	285
384	292	291	299	355	371	411	410	455	475	489	525	563	532	467
385	39	42	44	41	42	49	51	58	54	57	63	64	53	57
390	151	170	176	226	234	227	251	293	295	325	386	409	405	460
Backcast-3	16,196	16,608	17,275	17,586	18,052	19,443	19,691	20,329	20,734	21,407	22,467	22,119	21,610	19,856
311-312	3,767	3,859	3,969	3,963	4,016	4,260	4,203	4,280	4,318	4,399	4,543	4,458	4,383	4,142
313	171	173	177	194	193	168	175	197	213	218	243	254	261	250
314	1,203	1,193	1,207	1,137	1,108	1,102	1,088	1,045	1,024	875	906	847	888	779
321	2,477	2,511	2,548	2,500	2,482	2,095	2,088	2,142	2,217	2,271	2,312	2,171	2,095	1,989
322	877	938	1,040	1,094	1,220	2,087	2,036	2,191	2,158	2,180	2,274	2,269	2,135	1,837
323	101	109	105	119	129	166	189	197	220	226	232	220	215	191
324	156	156	173	187	217	271	314	333	344	370	401	388	366	371
331	1,204	1,236	1,355	1,620	1,684	1,621	1,606	1,653	1,688	1,840	1,878	1,771	1,682	1,611
332	378	417	456	494	574	820	913	947	1,054	1,168	1,308	1,357	1,394	1,306
341	151	155	158	157	174	206	249	281	301	325	317	342	326	320
342	593	612	619	593	595	619	593	598	619	633	673	681	670	601
351	214	219	223	235	238	296	282	295	310	324	357	336	339	332
352	481	492	521	523	523	542	530	543	540	538	549	541	551	511
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	2	0	1	5	8	6	6
354	#N/A	#N/A	#N/A	#N/A	#N/A	9	11	13	15	13	20	25	28	28
355	485	467	476	477	483	517	478	464	435	435	421	411	391	387
356	668	691	733	784	795	806	817	854	893	930	968	1,020	1,018	814
361	56	54	55	62	67	68	75	78	85	94	92	78	71	74
362	44	40	44	48	51	57	63	61	61	58	67	69	59	82
363	587	591	595	546	529	556	555	553	575	616	660	647	580	492
364	717	729	739	685	706	757	834	859	876	936	1,063	1,064	1,036	963
369	133	140	156	193	206	232	250	264	264	284	310	291	340	277
371	42	42	46	51	56	61	74	77	80	88	91	85	96	85
372	#N/A	#N/A	#N/A	#N/A	#N/A	37	45	52	52	58	60	64	64	69
381	649	674	690	666	669	714	763	794	821	892	980	990	906	823
382	207	211	222	222	233	239	252	270	284	283	300	311	312	247
383	221	226	246	254	271	274	299	317	310	326	356	355	365	285
384	366	390	423	437	462	495	512	530	536	545	561	572	548	467
385	48	51	52	54	55	57	60	64	58	62	67	67	57	57
390	200	232	247	291	316	311	337	375	383	419	453	427	428	460

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 1e: Number of All Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	12,861	12,723	12,770	14,621	14,676	16,534	16,494	17,648	18,163	19,017	21,551	22,991	22,378	21,423
311-312	2,842	2,892	2,857	3,217	3,193	3,512	3,372	3,610	3,739	3,863	4,272	4,498	4,395	4,301
313	131	132	136	169	162	143	144	180	204	215	249	268	275	271
314	865	812	825	926	905	960	943	902	880	748	815	839	872	785
321	2,033	2,028	2,031	2,136	2,160	1,827	1,794	1,881	1,953	2,017	2,242	2,254	2,173	2,100
322	645	633	656	798	837	1,766	1,699	1,870	1,798	1,862	2,110	2,329	2,159	1,950
323	80	76	71	84	91	130	161	167	180	199	217	226	224	209
324	116	115	115	149	160	234	281	314	327	345	389	420	386	414
331	920	863	914	1,359	1,337	1,340	1,253	1,405	1,474	1,589	1,754	1,782	1,680	1,677
332	284	297	299	350	367	606	695	722	782	898	1,159	1,363	1,389	1,346
341	135	127	125	141	145	184	217	258	268	305	311	359	344	357
342	469	475	471	497	494	518	486	500	511	528	594	676	659	606
351	193	191	190	218	212	304	285	307	325	343	403	413	415	431
352	474	471	476	525	521	560	529	545	567	579	605	621	626	604
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	2	0	1	4	8	8	10
354	#N/A	#N/A	#N/A	#N/A	#N/A	5	9	11	13	11	21	29	31	34
355	401	385	378	450	466	511	468	473	448	448	441	447	428	431
356	558	544	558	654	663	679	702	760	801	854	938	1,061	1,053	878
361	45	42	43	53	52	65	76	80	86	95	95	86	80	87
362	40	32	34	41	41	44	52	51	57	56	71	77	66	92
363	480	472	460	463	436	482	463	472	491	529	629	653	585	509
364	584	564	542	544	542	549	612	644	640	685	957	1,058	1,024	966
369	98	98	97	155	155	183	190	214	224	238	275	284	309	283
371	30	29	31	37	42	62	74	81	87	93	103	103	115	119
372	#N/A	#N/A	#N/A	#N/A	#N/A	33	42	46	52	58	66	79	83	92
381	548	556	553	592	588	632	647	690	723	797	958	1,052	971	921
382	187	180	175	190	198	208	221	248	266	269	322	353	358	313
383	199	186	190	228	236	266	293	327	349	407	459	498	549	514
384	307	306	316	373	390	436	441	490	513	535	577	619	599	538
385	40	43	46	43	44	53	56	66	61	66	73	74	63	69
390	157	174	181	229	239	242	289	332	344	384	442	462	459	516
Backcast-3	16,699	17,115	17,807	18,145	18,661	20,183	20,562	21,342	21,820	22,606	23,731	23,473	23,125	21,423
311-312	3,814	3,912	4,027	4,023	4,085	4,333	4,289	4,371	4,416	4,517	4,668	4,590	4,526	4,301
313	180	182	187	204	201	176	184	212	231	238	262	272	281	271
314	1,211	1,202	1,216	1,146	1,116	1,109	1,093	1,052	1,032	883	914	856	894	785
321	2,533	2,568	2,606	2,558	2,537	2,153	2,157	2,231	2,313	2,372	2,420	2,284	2,215	2,100
322	882	938	1,043	1,108	1,249	2,139	2,107	2,279	2,256	2,285	2,380	2,386	2,248	1,950
323	103	111	107	120	131	170	200	212	233	237	241	229	230	209
324	158	160	176	196	232	293	350	379	390	418	452	441	407	414
331	1,256	1,285	1,405	1,670	1,733	1,680	1,665	1,717	1,745	1,898	1,935	1,830	1,745	1,677
332	381	421	462	502	584	838	936	969	1,079	1,196	1,342	1,395	1,445	1,346
341	159	163	165	164	183	218	263	298	319	344	338	367	359	357
342	600	618	626	600	602	626	599	606	628	641	681	690	676	606
351	240	244	248	262	263	336	331	349	369	384	425	419	426	431
352	565	573	605	601	605	621	600	618	616	619	631	631	639	604
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	2	0	1	5	8	9	10
354	#N/A	#N/A	#N/A	#N/A	#N/A	12	14	17	20	17	25	32	33	34
355	523	512	523	527	534	574	531	513	480	478	461	453	436	431
356	675	699	742	793	805	819	833	878	926	969	1,021	1,077	1,085	878
361	57	57	59	67	72	75	84	88	94	105	102	87	81	87
362	49	44	47	52	53	58	65	64	67	66	76	79	71	92
363	597	600	605	555	537	563	563	562	588	631	677	661	598	509
364	719	730	741	688	707	758	834	861	877	937	1,064	1,066	1,041	966
369	133	140	156	193	206	234	253	270	267	289	313	295	343	283
371	49	49	54	60	65	77	90	95	98	107	111	106	123	119
372	#N/A	#N/A	#N/A	#N/A	#N/A	43	54	59	60	68	71	82	87	92
381	697	724	739	714	719	762	816	858	890	975	1,068	1,080	1,009	921
382	224	229	240	244	255	266	282	308	327	327	345	360	368	313
383	255	256	278	287	313	323	371	406	416	456	498	509	578	514
384	383	408	442	459	489	529	552	574	580	596	616	629	621	538
385	49	52	55	56	57	61	66	72	65	71	77	77	67	69
390	207	238	253	296	328	337	380	422	438	481	512	482	484	516

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 2a: Employment of Minority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (thousands)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	48.82	48.99	57.00	68.29	73.82	93.24	119.94	148.51	162.20	183.09	208.94	232.00	203.74	187.88
311-312	3.78	4.64	7.47	8.13	7.88	10.07	13.69	16.11	17.21	20.26	17.83	26.85	18.71	22.54
313	0.84	0.80	0.74	1.72	1.19	1.53	1.44	2.97	3.41	3.75	1.86	1.50	1.86	0.96
314	1.15	0.83	3.22	4.89	3.31	1.62	0.23	0.13	0.28	0.36	0.31	0.00	0.00	0.00
321	5.93	5.87	5.97	4.86	6.82	5.49	13.19	15.38	15.23	15.49	17.34	19.50	20.81	12.20
322	1.15	1.45	1.42	2.94	1.97	4.37	9.82	11.69	16.40	17.20	25.24	27.09	23.37	23.38
323	0.00	0.00	0.00	0.00	0.13	0.26	0.69	1.62	1.03	1.10	0.32	0.57	1.23	1.45
324	0.00	0.00	0.00	0.29	0.33	2.16	4.30	16.28	18.21	20.41	32.68	32.07	25.13	22.96
331	15.19	13.36	13.61	15.95	17.60	19.30	19.20	18.79	18.28	18.52	20.03	17.70	13.52	9.94
332	0.00	0.00	0.34	0.30	0.35	1.65	1.44	1.07	2.23	2.11	0.40	2.24	2.95	3.93
341	0.78	1.49	1.49	2.14	2.78	5.79	5.76	8.34	7.31	7.77	13.16	13.66	16.75	19.04
342	0.13	0.45	0.46	0.39	0.46	0.16	0.34	0.66	0.58	0.58	0.64	1.24	0.89	0.72
351	1.94	1.77	2.09	2.11	2.19	3.22	3.44	3.66	4.09	3.94	3.66	4.37	3.93	4.66
352	2.57	2.38	2.37	2.28	2.53	3.11	4.16	4.85	6.27	6.66	8.34	8.73	4.90	5.57
353	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
354	0.00	0.00	0.00	0.00	0.00	0.04	0.09	0.09	0.28	0.04	0.15	0.09	0.04	0.04
355	2.13	2.29	4.14	5.91	6.15	5.69	6.08	4.69	3.86	6.33	4.55	4.88	5.20	8.31
356	0.35	0.34	0.54	1.02	1.05	1.05	1.13	1.93	3.01	4.23	4.31	6.01	4.71	3.63
361	0.88	0.98	1.52	1.73	1.75	2.81	3.65	4.10	4.09	4.32	4.02	4.14	4.14	3.20
362	1.72	1.77	0.00	0.00	0.00	0.00	0.09	0.28	0.38	0.35	2.15	5.50	3.85	2.17
363	1.11	1.24	1.22	1.93	1.98	1.78	1.53	3.50	3.90	4.61	4.49	4.54	3.69	2.92
364	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.58	0.58	0.81	0.95	0.50	2.03
369	0.00	0.00	0.00	0.00	0.00	0.24	0.27	0.21	0.23	0.29	0.28	0.00	0.00	0.12
371	0.16	0.00	0.00	0.00	0.00	2.93	1.26	1.45	1.47	1.39	1.31	1.33	1.61	2.37
372	0.00	0.00	0.00	0.00	0.00	0.17	0.73	0.65	0.85	0.74	0.77	0.92	0.82	0.22
381	3.46	4.48	4.33	5.86	6.27	4.84	5.23	7.00	7.51	8.32	8.92	12.94	9.25	4.50
382	1.35	1.33	1.37	1.60	1.65	0.89	1.02	1.29	1.86	2.51	3.51	2.94	6.93	3.38
383	1.50	1.15	1.16	1.39	2.35	4.73	7.31	9.34	10.96	15.74	16.55	13.25	14.85	11.96
384	2.52	2.24	3.13	2.77	5.01	7.89	11.16	8.42	7.67	10.01	10.15	12.90	8.19	11.06
385	0.12	0.12	0.40	0.11	0.10	0.34	0.27	0.24	0.15	0.00	0.06	0.41	0.45	0.48
390	0.07	0.03	0.03	0.00	0.00	1.11	2.43	3.17	4.89	5.46	5.10	5.71	5.49	4.16
Backcast-3	51.86	53.43	62.92	69.08	80.20	102.12	127.50	154.51	170.33	189.53	212.89	235.65	213.81	187.88
311-312	5.07	5.61	8.40	8.81	9.13	12.74	16.36	17.76	18.63	21.40	19.11	30.09	22.18	22.54
313	0.84	0.80	0.77	1.57	1.19	1.72	1.71	3.23	3.41	3.75	1.86	1.50	1.86	0.96
314	1.22	2.35	5.02	4.89	3.31	1.65	0.26	0.16	0.31	0.39	0.31	0.00	0.00	0.00
321	5.01	4.98	5.05	5.13	7.17	5.92	13.33	15.64	15.23	15.49	17.34	19.50	20.81	12.20
322	0.00	0.00	1.50	3.16	3.05	6.39	11.91	12.99	17.35	17.20	25.24	27.09	23.43	23.38
323	0.05	0.08	0.09	0.11	0.29	0.26	0.69	1.78	1.03	1.37	0.60	0.57	1.23	1.45
324	0.00	0.00	0.00	0.29	0.35	2.20	4.38	16.33	18.25	20.41	32.68	32.07	25.13	22.96
331	15.75	14.90	14.46	15.10	18.36	20.18	19.51	19.66	18.83	18.96	21.36	17.70	13.52	9.94
332	0.23	0.29	0.34	0.30	0.35	1.65	1.60	1.18	2.23	2.11	0.40	2.24	2.95	3.93
341	1.45	1.62	1.66	2.14	4.54	5.41	5.76	8.34	11.17	11.29	13.16	13.66	16.75	19.04
342	0.13	0.45	0.46	0.39	0.50	0.26	0.36	0.69	0.60	0.61	0.64	1.24	0.89	0.72
351	2.04	1.87	2.03	2.23	2.33	3.15	3.47	3.70	4.09	3.94	3.73	4.37	3.93	4.66
352	2.73	2.41	2.49	2.33	2.59	3.11	4.16	4.90	6.27	6.66	8.34	8.73	4.90	5.57
353	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
354	0.00	0.00	0.00	0.00	0.00	0.18	0.19	0.20	0.38	0.15	0.15	0.09	0.04	0.04
355	3.06	3.39	5.01	5.98	6.15	5.69	6.08	4.69	3.86	6.33	4.55	4.88	5.20	8.31
356	0.35	0.34	0.54	0.99	1.05	1.05	1.13	2.07	3.01	4.23	4.94	6.01	4.71	3.63
361	0.88	0.98	1.52	1.62	1.75	2.81	3.65	4.10	4.09	4.32	4.02	4.14	4.14	3.20
362	1.88	1.92	0.16	0.18	0.19	0.22	0.38	0.57	0.69	0.97	2.47	5.86	4.20	2.17
363	1.11	1.24	1.22	1.93	1.98	1.78	1.53	3.50	3.90	4.61	4.49	4.54	3.69	2.92
364	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.58	0.58	0.81	0.95	0.50	2.03
369	0.00	0.00	0.00	0.00	0.00	0.24	0.27	0.24	0.27	0.29	0.28	0.00	0.00	0.12
371	0.26	0.10	0.11	0.13	0.14	3.23	1.26	1.45	1.47	1.39	1.31	1.33	1.69	2.37
372	0.00	0.00	0.00	0.00	0.00	0.17	0.73	0.65	0.85	0.74	0.77	0.92	0.82	0.22
381	4.05	4.99	5.72	5.57	6.07	4.77	5.28	7.19	7.61	8.45	8.92	12.94	9.25	4.50
382	1.35	1.33	1.37	1.60	1.67	0.94	1.08	1.15	1.86	2.55	3.57	2.99	6.98	3.38
383	1.51	1.31	1.33	1.68	2.63	6.00	8.33	9.77	11.39	15.74	16.55	13.25	14.87	11.96
384	2.71	2.33	3.27	2.86	5.26	8.23	11.39	8.59	7.79	10.15	10.15	12.90	14.23	11.06
385	0.12	0.12	0.40	0.11	0.10	0.34	0.27	0.24	0.15	0.00	0.06	0.41	0.45	0.48
390	0.07	0.03	0.03	0.00	0.04	1.85	2.43	3.17	5.03	5.46	5.10	5.71	5.49	4.16

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 2b: Employment of Majority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (thousands)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	90.11	95.46	87.30	88.50	94.03	122.25	163.41	222.17	251.66	289.90	302.76	297.78	282.00	248.61
311-312	5.37	9.82	7.28	6.86	5.51	6.85	7.55	11.28	11.21	14.49	14.98	15.37	18.07	21.28
313	2.01	2.14	2.19	1.00	0.93	0.93	2.23	0.81	0.84	0.74	1.35	0.41	0.59	0.72
314	1.98	1.33	0.74	0.66	0.41	0.38	0.34	0.41	0.44	0.61	0.35	0.68	0.71	0.74
321	28.24	30.54	27.42	29.18	27.23	27.83	32.32	43.07	45.96	42.90	45.83	45.21	33.16	29.58
322	1.58	0.00	0.00	0.04	1.25	4.77	8.70	18.50	24.80	24.05	21.35	18.91	19.18	15.11
323	0.00	0.00	0.00	0.00	0.00	0.14	1.72	3.23	3.07	0.93	1.12	1.72	2.97	4.70
324	1.45	1.41	1.47	3.05	5.58	13.25	23.90	47.63	62.23	77.07	76.46	70.94	49.58	44.52
331	4.99	5.55	4.53	3.79	4.70	3.77	3.33	8.67	7.94	8.55	7.92	12.72	16.07	17.81
332	0.27	0.25	0.25	0.27	0.42	3.08	5.05	3.43	3.57	3.75	4.22	2.50	2.17	1.46
341	1.11	0.90	0.91	0.86	0.85	1.46	1.95	2.35	2.24	2.23	2.45	2.63	3.84	7.64
342	0.72	0.41	0.76	0.79	0.91	0.08	0.32	0.39	1.39	1.51	1.90	2.04	1.89	0.00
351	2.37	1.00	1.03	1.23	0.88	4.90	4.42	5.93	5.61	5.56	7.76	7.43	10.18	7.76
352	12.15	12.04	10.26	10.68	11.24	12.46	10.12	11.05	11.17	11.67	11.56	12.32	13.38	10.51
353	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.56	0.57
355	1.33	3.66	3.18	2.72	3.04	6.97	9.74	8.84	7.82	8.01	7.54	7.43	6.69	5.73
356	1.38	1.67	1.72	0.78	0.72	1.46	1.81	2.29	2.29	7.07	8.75	6.01	6.54	3.81
361	0.00	0.00	0.00	0.28	0.29	1.21	1.31	1.50	1.41	2.05	3.05	2.97	3.21	3.26
362	1.12	1.08	1.08	0.98	0.48	0.00	0.00	0.00	0.59	0.68	0.12	0.39	0.08	2.03
363	1.54	1.53	1.67	1.46	1.65	1.74	1.76	1.56	1.31	1.56	1.84	1.25	1.39	1.16
364	0.18	0.16	0.14	0.13	0.18	0.12	0.00	0.13	0.00	0.00	0.00	0.24	1.54	1.37
369	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.43	0.48	0.53	0.56	0.67	0.65	0.67
371	2.88	2.95	2.93	4.02	4.32	2.32	2.41	2.38	2.56	2.92	2.94	2.85	2.24	1.95
372	#N/A	#N/A	#N/A	#N/A	#N/A	0.28	0.80	0.96	1.06	3.41	3.40	4.25	4.23	4.31
381	6.09	5.53	5.56	5.55	6.01	7.34	9.00	14.15	10.99	18.38	19.73	19.37	14.52	11.46
382	1.20	1.23	1.17	1.45	1.61	2.81	3.54	3.65	3.99	3.81	3.81	4.72	4.55	5.40
383	6.30	6.34	6.94	7.62	9.44	9.08	12.62	12.07	18.89	26.38	24.57	27.66	29.99	25.86
384	4.65	4.80	4.83	4.01	4.84	6.83	9.76	8.84	7.57	9.99	15.67	15.34	13.41	7.83
385	0.00	0.00	0.00	0.02	0.02	0.02	0.02	1.69	0.59	1.11	3.88	3.41	4.27	1.44
390	1.21	1.11	1.26	1.08	1.53	2.14	8.68	6.94	11.64	9.95	9.62	8.32	16.32	9.96
Backcast-3	92.33	97.48	93.82	96.14	108.18	138.47	180.36	233.63	260.16	297.20	309.48	299.19	286.53	248.61
311-312	5.51	8.88	6.65	7.30	6.36	7.12	8.06	11.81	11.20	14.58	15.10	15.91	18.60	21.28
313	2.01	2.14	2.19	1.00	0.93	0.93	2.23	0.81	0.84	0.74	1.35	0.46	0.64	0.72
314	1.98	1.33	0.74	0.69	0.48	0.38	0.34	0.41	0.44	0.61	0.35	0.68	0.71	0.74
321	29.37	30.87	29.46	30.81	28.96	29.10	32.66	44.22	46.40	42.90	45.83	45.44	33.37	29.58
322	1.58	0.00	0.08	0.18	2.38	6.90	10.08	19.67	25.15	24.41	21.35	17.13	19.46	15.11
323	0.00	0.00	0.00	0.00	0.00	0.27	2.97	3.67	3.63	1.52	1.77	1.72	2.97	4.70
324	1.65	1.62	1.68	4.45	9.99	18.00	28.02	47.63	62.23	77.07	76.46	70.94	49.58	44.52
331	4.25	4.64	4.58	3.79	3.24	3.34	4.61	10.22	9.48	10.29	9.56	12.72	16.07	17.81
332	0.27	0.25	0.25	0.47	0.97	3.64	5.25	3.43	3.57	3.75	4.22	2.50	2.35	1.46
341	1.14	0.93	0.94	0.89	0.88	1.77	2.07	2.46	2.78	2.23	2.45	2.63	3.95	7.64
342	0.75	0.47	0.79	0.98	0.95	0.28	0.32	0.39	1.39	1.51	1.90	2.04	1.89	0.00
351	1.57	1.20	1.24	1.06	0.70	4.82	4.54	6.38	6.34	6.23	8.52	7.50	10.25	7.76
352	11.09	12.47	11.03	10.71	11.18	12.25	10.42	11.21	11.40	11.84	11.65	12.42	13.48	10.51
353	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.56	0.57
355	1.97	3.41	3.04	3.08	4.78	8.43	11.32	8.94	7.82	8.01	7.54	7.43	6.69	5.73
356	0.62	1.04	1.09	0.64	0.60	1.94	2.75	2.67	2.71	7.12	8.75	6.06	6.74	3.81
361	0.00	0.00	0.00	0.28	0.29	1.21	1.31	1.50	1.41	2.25	3.05	2.97	3.21	3.26
362	1.12	1.08	1.08	0.98	0.48	0.00	0.00	0.06	0.66	0.75	0.19	0.39	0.10	2.03
363	1.54	1.53	1.67	1.46	1.65	1.74	1.76	1.56	1.38	1.56	1.84	1.25	1.39	1.16
364	0.18	0.16	0.14	0.13	0.18	0.12	0.00	0.13	0.00	0.00	0.00	0.24	1.54	1.37
369	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.43	0.48	0.53	0.56	0.67	0.65	0.67
371	3.76	3.98	3.98	4.34	4.26	2.36	2.54	2.62	2.62	2.98	3.00	2.92	2.31	1.95
372	#N/A	#N/A	#N/A	#N/A	#N/A	0.22	0.80	0.96	1.09	3.41	3.40	4.25	4.23	4.31
381	6.61	6.07	6.45	6.16	6.73	7.86	9.46	15.24	11.99	18.94	20.35	19.63	14.74	11.46
382	1.18	1.35	1.41	1.54	1.61	3.19	4.20	4.20	4.21	3.88	3.89	4.82	4.78	5.40
383	8.00	7.74	8.87	9.52	12.44	12.18	14.05	13.80	19.44	26.44	24.64	27.69	30.23	25.86
384	4.94	5.09	5.02	4.43	5.59	7.24	10.91	9.87	8.42	11.45	16.93	16.22	14.36	7.83
385	0.00	0.00	0.15	0.02	0.02	0.02	0.02	1.69	0.59	1.11	3.88	3.41	4.27	1.44
390	1.23	1.24	1.31	1.22	2.55	3.12	9.66	7.65	12.50	11.13	10.93	9.15	17.41	9.96

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).



**Appendix Table 2c: Employment of Heavily-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (thousands)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	26.46	15.18	20.68	24.97	27.11	61.36	75.13	100.28	132.81	175.70	210.14	248.02	312.44	352.06
311-312	4.47	2.16	4.37	5.04	5.09	5.64	6.74	7.09	5.26	8.44	12.84	9.76	12.29	13.72
313	0.20	0.18	0.19	0.09	0.09	0.00	0.00	0.12	0.32	0.42	1.62	2.05	2.50	1.74
314	0.68	0.72	0.53	0.52	0.51	0.50	0.62	0.68	0.62	0.87	1.52	2.20	2.21	2.47
321	5.29	6.18	6.32	7.29	7.30	13.63	10.08	9.64	16.58	20.05	20.10	23.31	29.91	35.88
322	0.19	0.00	0.00	0.79	2.47	7.73	14.34	20.07	24.79	31.09	34.45	46.77	49.91	51.44
323	0.05	0.05	0.05	0.00	0.02	0.00	0.00	1.17	1.45	1.02	0.98	1.49	2.34	4.97
324	0.00	0.08	0.03	0.00	0.54	5.96	20.77	28.30	28.51	27.78	30.42	40.80	54.95	48.45
331	0.43	0.15	2.78	3.17	3.09	2.47	2.33	3.60	5.96	5.34	5.49	6.42	8.74	8.53
332	0.00	0.04	0.14	0.21	0.32	0.32	0.70	0.61	0.98	2.02	3.48	4.78	6.10	5.50
341	0.00	0.00	0.00	0.00	0.00	0.16	0.17	0.18	0.00	1.70	1.88	4.40	3.44	2.55
342	0.07	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.17
351	0.05	0.33	0.35	0.15	0.22	0.10	0.21	0.11	0.36	1.59	2.20	2.78	3.02	6.55
352	1.88	1.73	2.07	1.78	1.81	1.69	0.92	1.10	0.96	1.18	3.13	3.80	5.44	8.79
353	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.54
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.05	0.05	0.68	0.66	0.48	0.35	0.33
355	8.06	3.43	3.78	5.26	4.98	18.04	7.67	4.62	5.53	6.40	7.50	7.02	8.35	5.21
356	0.00	0.00	0.00	0.00	0.15	0.14	0.52	1.18	1.49	5.15	6.73	5.06	5.97	8.67
361	0.00	0.02	0.02	0.04	0.04	0.03	0.04	0.00	0.68	0.68	0.67	0.00	0.00	0.32
362	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.48	0.00
363	0.05	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.34	1.12
364	0.23	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.38	0.24	0.26	0.21	0.20
371	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.22	0.18	0.23	0.46	0.64	1.47	1.08
372	#N/A	#N/A	#N/A	#N/A	#N/A	2.28	2.36	2.26	2.61	0.43	0.85	1.59	1.73	1.71
381	0.05	0.06	0.05	0.20	0.46	0.44	0.31	0.79	2.59	4.78	5.29	6.83	9.30	11.90
382	0.08	0.00	0.00	0.00	0.00	0.08	0.07	0.26	0.92	1.18	2.02	2.59	3.25	7.11
383	4.44	0.00	0.00	0.00	0.00	0.34	2.67	9.71	17.37	32.76	43.33	51.21	72.35	82.68
384	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	1.90	2.83	4.45	4.95	7.63	10.23
385	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.32	0.71	2.04	3.14	3.82	4.29	4.99
390	0.25	0.00	0.00	0.00	0.00	1.81	4.56	7.82	12.98	16.60	16.60	14.91	15.68	25.23
Backcast-3	35.71	26.33	31.76	35.29	42.74	65.70	84.01	110.35	139.11	189.51	215.90	248.46	319.33	352.06
311-312	7.30	5.88	8.15	7.55	6.26	5.80	6.91	7.25	5.48	8.57	13.03	9.76	12.29	13.72
313	0.20	0.18	0.19	0.09	0.09	0.00	0.00	0.12	0.32	0.42	1.62	2.05	2.50	1.74
314	0.68	0.72	0.53	0.52	0.51	0.50	0.65	0.82	0.75	0.90	1.55	2.20	2.21	2.47
321	9.28	10.41	10.80	11.79	12.62	14.49	13.12	14.76	17.12	20.74	21.31	23.31	29.91	35.88
322	0.19	0.00	0.00	1.95	5.74	9.44	15.89	19.69	25.18	32.15	35.37	46.80	49.95	51.44
323	0.05	0.05	0.05	0.00	0.00	0.00	0.00	1.34	1.45	1.02	0.98	1.49	2.52	4.97
324	0.00	0.08	0.03	0.77	4.79	5.96	20.80	28.35	28.56	35.80	31.09	40.88	55.02	48.45
331	1.21	0.93	2.78	3.16	3.09	2.94	2.33	3.60	5.96	5.51	5.49	6.42	8.76	8.53
332	0.00	0.04	0.17	0.36	0.52	0.62	0.70	0.61	1.04	2.19	3.78	4.78	6.10	5.50
341	0.00	0.00	0.00	0.00	0.04	0.16	0.17	0.24	0.07	1.70	2.51	4.40	3.55	2.55
342	0.07	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.17
351	0.05	0.32	0.35	0.20	0.27	0.16	0.28	0.19	0.44	1.68	2.20	2.78	3.08	6.55
352	2.30	2.16	2.49	1.77	1.62	1.36	0.92	1.10	1.05	1.28	3.23	3.92	6.73	8.79
353	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.54
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.05	0.48	0.68	0.66	0.52	0.37	0.33
355	9.10	5.19	5.81	6.42	6.44	18.61	8.37	5.15	6.06	6.47	7.50	7.02	8.35	5.21
356	0.00	0.00	0.00	0.02	0.18	0.14	0.69	1.23	1.72	5.15	6.73	5.15	6.06	8.67
361	0.00	0.02	0.02	0.04	0.04	0.03	0.04	0.00	0.68	0.68	0.67	0.00	0.00	0.32
362	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.07	0.48	0.00
363	0.24	0.26	0.29	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	1.20	1.12
364	0.23	0.00	0.02	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
369	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.38	0.24	0.26	0.21	0.20
371	0.00	0.00	0.02	0.02	0.02	0.00	0.00	0.22	0.18	0.58	0.53	0.72	1.77	1.08
372	#N/A	#N/A	#N/A	#N/A	#N/A	2.31	2.36	2.26	2.61	0.60	0.85	1.59	1.73	1.71
381	0.05	0.06	0.05	0.20	0.51	0.47	0.91	0.93	2.81	5.18	5.54	6.97	9.46	11.90
382	0.08	0.00	0.00	0.00	0.00	0.08	0.10	0.26	0.92	1.18	2.02	2.59	3.25	7.11
383	4.44	0.00	0.00	0.00	0.00	0.34	4.05	11.66	20.15	35.03	44.73	51.06	75.70	82.68
384	0.00	0.00	0.00	0.00	0.00	0.12	0.11	0.47	2.21	2.83	4.45	4.95	7.82	10.23
385	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.32	0.71	2.04	3.14	3.82	4.29	4.99
390	0.25	0.00	0.00	0.00	0.00	2.16	5.46	9.72	13.14	16.68	16.60	14.91	15.68	25.23

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 2d: Employment of Local Manufacturing Establishments Reporting Positive Employment and Value Added by Industry**  
(thousands)

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	1,497	1,513	1,620	1,862	2,064	2,384	2,635	2,842	3,028	3,165	3,452	3,437	3,264	3,335
311-312	289.79	292.65	309.50	339.96	343.45	373.93	413.85	435.76	483.07	457.54	479.29	508.99	485.01	520.15
313	8.38	8.71	8.65	10.41	10.27	10.20	12.92	12.98	16.76	17.46	19.98	21.58	20.73	20.98
314	179.10	177.02	195.39	177.49	210.11	203.46	183.41	182.87	184.27	214.19	343.83	220.43	156.99	235.64
321	259.19	267.65	286.49	313.84	356.34	367.94	423.43	476.90	504.42	532.86	542.37	543.62	541.12	522.70
322	66.77	64.64	78.26	103.72	123.80	226.28	244.62	268.77	285.97	285.78	292.27	302.25	302.78	311.28
323	4.30	3.98	4.27	5.75	6.77	12.55	18.40	16.09	17.92	17.54	19.71	22.48	19.51	19.49
324	7.46	7.20	7.20	12.50	18.78	38.18	80.90	101.23	122.20	140.28	152.13	157.94	155.44	145.25
331	148.64	149.54	175.49	253.92	291.99	300.76	317.48	339.92	346.75	361.77	360.51	367.92	362.05	359.00
332	12.36	12.57	13.73	21.14	25.67	74.84	95.68	98.67	117.35	125.03	136.90	147.96	146.20	164.62
341	19.69	22.79	24.07	27.48	30.44	35.85	51.17	63.00	64.63	66.96	71.33	73.74	70.98	97.61
342	34.18	36.45	34.26	36.74	37.58	43.39	42.72	43.97	47.07	51.71	57.66	67.68	60.17	51.64
351	32.58	33.22	32.74	36.01	38.02	42.16	42.47	44.39	50.18	52.09	56.96	55.59	53.44	62.94
352	51.54	52.05	54.64	60.32	61.17	67.32	71.69	77.53	82.04	86.81	90.95	91.27	92.39	85.83
353	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.55	0.00	0.34	0.58	0.71	0.39	0.52
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.69	1.45	0.74	0.44	0.49	0.79	1.33	1.46	2.82
355	82.66	81.25	85.03	105.94	114.10	135.25	111.24	130.22	104.43	110.40	107.97	107.48	95.15	104.36
356	47.67	48.27	50.84	60.88	68.77	79.48	100.64	88.38	113.29	125.42	138.22	152.71	146.79	125.63
361	11.45	10.88	11.05	14.14	15.66	19.74	25.97	27.52	32.57	34.46	38.19	34.50	30.89	29.60
362	7.69	7.23	9.70	10.72	11.87	14.13	19.10	18.79	19.17	18.73	18.97	19.54	19.48	22.63
363	31.93	26.69	28.54	30.12	30.87	31.88	34.76	33.68	37.38	38.53	43.04	44.64	43.35	36.23
364	23.24	22.25	20.07	21.79	21.69	22.46	23.12	27.03	29.57	30.64	39.51	45.70	43.73	38.82
369	7.77	7.16	7.48	13.31	22.43	17.97	18.31	17.42	17.68	18.44	21.82	24.92	26.24	19.74
371	12.61	13.88	13.75	15.42	16.89	20.19	23.90	25.52	27.28	29.38	27.80	28.03	24.00	26.86
372	#N/A	#N/A	#N/A	#N/A	#N/A	4.56	6.06	6.60	7.55	8.28	10.12	10.80	11.02	8.86
381	49.81	49.06	51.33	56.38	60.02	68.10	81.10	95.57	97.02	99.16	113.88	124.33	108.67	93.91
382	13.98	13.75	12.96	13.74	16.40	26.79	28.54	29.81	29.56	29.75	34.58	35.12	36.07	28.13
383	31.04	31.23	31.80	36.46	41.19	45.70	50.85	54.82	60.04	69.33	80.00	74.27	68.90	64.77
384	50.46	57.99	58.40	62.22	65.85	71.89	78.16	79.95	83.42	92.64	98.54	99.48	85.39	72.57
385	2.03	2.27	2.34	2.75	3.41	3.00	3.48	5.41	4.87	6.44	7.64	7.91	7.57	8.51
390	10.49	12.15	12.34	18.73	20.71	25.49	30.09	37.84	41.29	42.54	46.81	43.60	48.53	53.98
Backcast-3	1,733	1,803	1,923	2,099	2,409	2,677	2,882	3,053	3,211	3,344	3,459	3,452	3,403	3,335
311-312	317.03	323.23	335.02	352.57	404.53	433.29	471.31	469.20	508.40	482.66	492.54	493.56	491.72	520.15
313	9.79	10.54	10.90	12.18	12.92	12.32	14.22	14.07	17.48	18.03	20.45	21.72	20.95	20.98
314	209.33	208.12	211.94	205.37	210.91	193.63	189.23	188.80	190.06	218.78	233.64	221.47	223.06	235.64
321	313.81	322.68	347.45	366.33	413.20	404.45	445.11	502.75	525.34	553.68	556.43	547.34	545.68	522.70
322	93.13	100.95	118.91	143.48	175.08	265.66	271.60	294.68	311.44	310.40	307.97	305.20	308.55	311.28
323	5.61	5.74	6.17	7.92	8.62	14.83	20.39	17.50	19.42	19.40	20.50	22.59	19.68	19.49
324	10.41	10.47	11.65	17.34	28.82	54.70	96.24	111.39	134.74	154.52	164.21	166.68	163.92	145.25
331	169.06	182.28	213.83	271.79	328.86	331.81	336.71	360.17	360.28	376.58	370.97	370.47	366.73	359.00
332	16.50	18.19	22.07	29.78	44.93	94.05	108.90	111.41	131.21	137.92	146.72	150.03	149.54	164.62
341	25.73	30.45	31.88	34.32	37.53	42.47	55.34	65.41	68.09	69.19	72.65	73.98	80.74	97.61
342	40.06	43.61	41.96	42.28	43.19	48.24	48.46	50.16	53.45	57.03	60.80	68.20	60.76	51.64
351	36.75	36.71	36.24	40.29	41.58	46.19	47.54	49.40	52.93	54.08	57.79	55.75	53.88	62.94
352	57.56	58.60	62.31	65.04	67.33	72.22	76.58	81.88	85.44	89.26	92.56	91.87	94.27	85.83
353	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.55	0.00	0.34	0.61	0.71	0.39	0.52
354	#N/A	#N/A	#N/A	#N/A	#N/A	1.44	1.63	1.20	0.90	1.03	1.37	1.89	1.98	2.82
355	85.11	86.65	88.98	97.80	128.21	148.48	119.64	134.51	105.38	111.99	108.78	105.84	95.99	104.36
356	55.07	58.59	63.37	71.72	80.86	92.43	107.77	93.52	119.59	131.45	144.35	154.45	150.03	125.63
361	12.74	13.06	13.05	15.56	17.63	20.96	26.78	28.20	33.15	35.75	39.54	34.63	31.00	29.60
362	8.79	8.34	11.24	12.38	13.94	17.18	21.16	21.08	20.08	19.74	19.14	19.56	19.78	22.63
363	34.90	31.89	34.65	34.54	36.18	35.41	38.58	37.25	40.81	42.07	45.41	45.48	44.29	36.23
364	27.38	26.80	25.65	25.80	26.26	28.29	29.46	33.36	36.40	37.75	42.64	45.88	44.16	38.82
369	9.97	9.51	10.73	13.54	23.27	22.24	20.71	19.92	19.45	20.36	23.28	25.25	27.08	19.74
371	13.98	15.65	15.74	17.70	19.77	21.96	25.36	28.11	29.21	30.87	28.93	28.07	30.29	26.86
372	#N/A	#N/A	#N/A	#N/A	#N/A	5.80	7.02	7.49	7.89	8.76	10.53	11.06	11.31	8.86
381	58.61	59.00	62.79	65.92	71.78	78.44	89.82	103.15	104.41	106.85	118.15	125.65	110.35	93.91
382	15.64	21.89	22.03	22.43	25.31	29.83	31.42	32.30	31.91	32.10	35.63	35.40	36.70	28.13
383	35.51	37.61	39.60	42.25	47.92	50.10	58.21	62.88	67.09	74.06	83.14	74.65	69.63	64.77
384	55.16	64.25	65.27	66.43	70.21	75.99	84.93	85.39	86.45	95.55	101.04	100.25	91.44	72.57
385	2.32	2.67	2.72	3.09	4.14	3.70	4.26	5.47	5.08	6.73	9.18	9.49	9.44	8.51
390	13.30	15.67	16.74	21.44	25.73	31.30	34.05	41.69	45.44	46.81	50.11	44.89	50.02	53.98

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 2e: Employment of All Manufacturing Establishments Reporting Positive Employment and Value Added by Industry**  
(thousands)

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	1,662	1,672	1,785	2,044	2,259	2,661	2,994	3,313	3,575	3,814	4,174	4,214	4,063	4,124
311-312	303.39	309.27	328.62	359.98	361.92	396.49	441.84	470.24	516.74	500.73	524.94	560.96	534.08	577.68
313	11.44	11.84	11.77	13.23	12.48	12.66	16.59	16.88	21.33	22.38	24.81	25.53	25.68	24.40
314	182.91	179.90	199.88	183.54	214.33	205.96	184.60	184.09	185.61	216.03	346.01	223.31	159.91	238.85
321	298.65	310.25	326.20	355.16	397.69	414.90	479.03	544.98	582.20	611.29	625.65	631.65	624.99	600.36
322	69.69	66.10	79.68	107.48	129.48	243.14	277.47	319.03	351.96	358.12	373.31	395.02	395.24	401.20
323	4.36	4.03	4.32	5.75	6.91	12.95	20.80	22.11	23.47	20.59	22.13	26.26	26.05	30.60
324	8.91	8.70	8.70	15.83	25.22	59.55	129.86	193.45	231.14	265.54	291.69	301.75	285.10	261.18
331	169.25	168.60	196.41	276.82	317.37	326.30	342.34	370.98	378.92	394.18	393.94	404.75	400.37	395.27
332	12.63	12.86	14.45	21.92	26.76	79.89	102.87	103.78	124.13	132.91	145.00	157.48	157.41	175.51
341	21.58	25.18	26.47	30.47	34.07	43.27	59.05	73.87	74.17	78.66	88.82	94.43	95.00	126.84
342	35.10	37.35	35.49	37.92	38.95	43.64	43.38	45.02	49.06	53.80	60.20	70.96	62.95	52.53
351	36.93	36.32	36.20	39.50	41.31	50.38	50.54	54.09	60.24	63.17	70.58	70.18	70.57	81.91
352	68.13	68.19	69.33	75.07	76.75	84.59	86.89	94.53	100.43	106.32	113.98	116.12	116.10	110.70
353	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.55	0.00	0.34	0.58	0.71	0.62	1.05
354	#N/A	#N/A	#N/A	#N/A	#N/A	0.74	1.54	0.88	0.77	1.21	1.62	1.91	2.41	3.76
355	94.18	90.63	96.12	119.83	128.27	165.94	134.72	148.38	121.63	131.14	127.57	126.82	115.38	123.61
356	49.39	50.28	53.10	62.68	70.69	82.13	104.09	93.78	120.08	141.87	158.01	169.78	164.01	141.75
361	12.33	11.88	12.59	16.19	17.74	23.79	30.96	33.12	38.75	41.51	45.94	41.61	38.23	36.37
362	10.53	10.08	10.78	11.75	12.34	14.13	19.18	19.07	20.14	19.84	21.31	25.50	23.89	26.82
363	34.63	29.46	31.44	33.83	34.51	35.40	38.05	38.74	42.59	44.69	49.39	50.45	48.77	41.44
364	23.64	22.41	20.20	21.97	21.87	22.59	23.12	27.74	30.15	31.22	40.32	46.89	45.77	42.22
369	7.77	7.16	7.48	13.31	22.43	18.24	18.60	18.08	18.38	19.64	22.89	25.85	27.10	20.73
371	15.65	16.83	16.68	19.46	21.22	25.44	27.57	29.57	31.48	33.93	32.51	32.86	29.32	32.26
372	#N/A	#N/A	#N/A	#N/A	#N/A	7.29	9.95	10.48	12.06	12.85	15.14	17.56	17.80	15.10
381	59.41	59.13	61.27	68.00	72.76	80.71	95.64	117.51	118.11	130.64	147.81	163.46	141.74	121.76
382	16.60	16.31	15.50	16.78	19.65	30.57	33.17	35.00	36.34	37.25	43.92	45.37	50.81	44.02
383	43.28	38.72	39.90	45.48	52.99	59.84	73.46	85.95	107.26	144.22	164.46	166.40	186.07	185.27
384	57.62	65.03	66.35	69.01	75.70	86.61	99.09	97.55	100.56	115.48	128.81	132.66	114.62	101.69
385	2.16	2.39	2.74	2.87	3.53	3.36	3.83	7.66	6.31	9.59	14.72	15.55	16.57	15.41
390	12.02	13.29	13.63	19.82	22.23	30.56	45.75	55.77	70.80	74.55	78.12	72.54	86.02	93.34
Backcast-3	1,913	1,980	2,111	2,300	2,640	2,984	3,274	3,551	3,781	4,020	4,197	4,235	4,223	4,124
311-312	334.91	343.60	358.22	376.23	426.28	458.95	502.65	506.02	543.71	527.21	539.78	549.32	544.79	577.68
313	12.84	13.66	14.04	14.84	15.14	14.97	18.17	18.24	22.06	22.95	25.28	25.72	25.95	24.40
314	213.20	212.51	218.23	211.46	215.21	196.16	190.48	190.19	191.56	220.67	235.85	224.34	225.98	238.85
321	357.47	368.93	392.75	414.05	461.95	453.96	504.22	577.37	604.09	632.81	640.91	635.59	629.76	600.36
322	94.89	100.95	120.49	148.78	186.26	288.39	309.48	347.03	379.12	384.16	389.94	396.21	401.39	401.20
323	5.71	5.88	6.31	8.04	8.91	15.36	24.05	24.28	25.52	23.30	23.84	26.37	26.40	30.60
324	12.06	12.16	13.37	22.86	43.95	80.85	149.44	203.69	243.78	287.80	304.44	310.56	293.66	261.18
331	190.27	202.74	235.64	293.84	353.55	358.28	363.16	393.65	394.55	411.34	407.38	407.30	405.08	395.27
332	17.00	18.77	22.83	30.91	46.77	99.97	116.44	116.63	138.05	145.97	155.13	159.55	160.94	175.51
341	28.32	33.00	34.48	37.35	42.99	49.81	63.34	76.44	82.11	84.40	90.76	94.68	104.99	126.84
342	41.01	44.57	43.22	43.65	44.64	48.77	49.14	51.24	55.46	59.14	63.34	71.48	63.54	52.53
351	40.41	40.10	39.86	43.78	44.88	54.31	55.83	59.66	63.80	65.93	72.24	70.40	71.13	81.91
352	73.67	75.63	78.32	79.85	82.73	88.94	92.08	99.10	104.17	109.03	115.79	116.94	119.37	110.70
353	#N/A	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.55	0.00	0.34	0.61	0.71	0.75	1.05
354	#N/A	#N/A	#N/A	#N/A	#N/A	1.61	1.82	1.45	1.76	1.85	2.20	2.52	2.96	3.76
355	99.24	98.63	102.83	113.29	145.57	181.21	145.40	153.30	123.12	132.80	128.37	125.17	116.23	123.61
356	56.04	59.97	65.00	73.38	82.69	95.57	112.34	99.50	127.03	147.95	164.76	171.67	167.54	141.75
361	13.62	14.06	14.60	17.50	19.71	25.01	31.77	33.80	39.33	43.00	47.28	41.74	38.34	36.37
362	11.79	11.34	12.48	13.59	14.60	17.40	21.54	21.71	21.42	21.53	21.86	25.88	24.55	26.82
363	37.79	34.92	37.83	38.25	39.81	38.94	41.87	42.31	46.09	48.23	51.76	51.30	50.57	41.44
364	27.79	26.95	25.81	25.97	26.43	28.41	29.46	34.07	36.98	38.33	43.45	47.07	46.19	42.22
369	9.97	9.51	10.73	13.54	23.27	22.50	21.02	20.61	20.20	21.56	24.35	26.18	27.93	20.73
371	17.99	19.74	19.84	22.19	24.19	27.55	29.16	32.40	33.47	35.83	33.77	33.04	36.05	32.26
372	#N/A	#N/A	#N/A	#N/A	#N/A	8.50	10.91	11.36	12.43	13.50	15.55	17.83	18.09	15.10
381	69.33	70.12	75.01	77.86	85.09	91.54	105.47	126.51	126.82	139.41	152.94	165.19	143.79	121.76
382	18.24	24.57	24.80	25.56	28.59	34.04	36.79	37.90	38.91	39.71	45.10	45.80	51.71	44.02
383	49.44	46.67	49.80	53.45	62.99	68.62	84.64	98.11	118.07	151.27	169.05	166.65	190.44	185.27
384	62.82	71.66	73.56	73.73	81.06	91.58	107.34	104.32	104.87	119.99	132.58	134.31	127.85	101.69
385	2.45	2.79	3.27	3.22	4.26	4.06	4.69	7.72	6.53	9.88	16.26	17.13	18.45	15.41
390	14.85	16.93	18.07	22.66	28.32	38.43	51.60	62.23	76.11	80.08	82.74	74.66	88.60	93.34

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 3a: Value Added of Minority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (billions of rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	504	644	843	1,039	2,060	2,623	2,586	3,442	5,321	7,146	7,941	10,316	7,250	13,179
311-312	38	49	105	150	196	222	376	405	398	402	337	725	775	1,665
313	27	11	44	64	62	63	95	222	172	273	65	67	115	12
314	0	1	1	5	9	1	0	0	2	3	0	0	0	0
321	15	81	19	15	41	38	97	156	214	213	228	336	407	340
322	1	1	1	4	3	8	40	75	205	209	397	443	286	450
323	0	0	0	0	1	1	4	30	4	5	0	5	2	16
324	0	0	0	2	2	17	24	128	107	100	173	250	194	560
331	70	123	163	167	220	215	279	215	318	298	370	269	164	237
332	0	0	1	1	1	4	6	4	11	16	1	18	99	269
341	9	25	77	101	81	272	350	383	310	229	577	585	409	1,462
342	0	3	3	2	3	1	2	9	5	5	14	21	16	22
351	57	48	49	59	70	209	253	229	329	563	427	826	1,013	2,157
352	61	73	53	44	53	61	90	136	182	228	340	420	374	499
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	0	0
354	#N/A	#N/A	#N/A	#N/A	#N/A	7	7	12	8	0	2	1	0	0
355	16	13	64	57	71	75	117	162	106	100	21	48	95	94
356	2	3	23	26	26	13	13	19	48	43	61	132	247	194
361	1	6	11	12	16	30	45	58	65	86	91	165	225	317
362	82	82	0	0	0	0	0	4	4	2	85	547	162	89
363	25	23	26	30	33	36	34	166	258	326	313	418	233	454
364	0	0	0	0	0	0	0	3	3	3	10	19	18	3
369	0	0	0	0	0	2	2	0	1	3	4	0	0	2
371	2	0	0	0	0	212	32	124	652	920	1,252	1,314	174	1,428
372	#N/A	#N/A	#N/A	#N/A	#N/A	10	8	16	28	47	27	14	33	50
381	35	40	95	166	562	98	120	376	484	524	388	746	417	226
382	16	14	21	14	13	11	19	54	57	59	102	136	668	165
383	16	12	23	27	46	78	111	256	191	486	636	312	381	400
384	28	35	63	93	551	927	448	178	1,132	1,957	1,985	2,427	707	1,859
385	2	1	1	1	2	6	9	4	5	0	1	7	10	44
390	0	0	0	0	0	2	5	18	21	42	35	62	28	166
Backcast-3	559	615	856	993	2,095	2,807	2,688	3,486	4,980	6,489	7,004	8,608	10,958	13,179
311-312	42	53	110	144	150	282	441	497	517	416	366	740	809	1,665
313	27	29	40	60	62	67	99	227	172	273	65	100	115	12
314	0	1	2	5	9	1	0	0	2	3	0	0	0	0
321	22	12	14	18	45	44	97	159	214	213	228	291	407	340
322	0	0	2	5	6	16	49	79	213	209	394	443	286	450
323	0	0	0	0	4	1	4	30	4	6	2	5	2	16
324	0	0	0	2	2	17	24	128	107	100	173	250	194	560
331	73	116	158	148	233	219	281	220	324	301	370	284	164	237
332	0	0	1	1	1	4	6	4	11	16	1	18	99	269
341	13	26	77	101	127	272	350	383	391	344	577	565	409	1,462
342	1	3	3	2	3	2	2	10	6	6	14	21	16	22
351	57	48	42	39	71	209	253	230	329	563	428	457	1,013	2,157
352	27	28	49	36	55	61	90	139	182	228	486	420	374	499
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	0	0
354	#N/A	#N/A	#N/A	#N/A	#N/A	34	9	14	11	2	2	1	0	0
355	51	39	68	58	71	75	117	162	106	100	21	31	95	94
356	2	3	23	26	26	13	13	19	48	43	64	118	247	194
361	1	6	11	11	16	30	45	58	65	86	91	117	225	317
362	84	84	3	3	3	7	8	9	13	14	94	574	181	89
363	25	23	26	30	33	36	24	166	258	326	313	418	233	454
364	0	0	0	0	0	0	0	3	3	3	10	19	18	3
369	0	0	0	0	0	2	2	1	1	3	4	0	0	2
371	3	1	1	1	1	221	34	30	76	114	152	135	1,498	1,428
372	#N/A	#N/A	#N/A	#N/A	#N/A	10	8	16	28	47	27	14	33	50
381	66	79	117	165	560	99	118	377	485	524	388	721	417	226
382	16	14	21	14	13	13	21	54	57	61	104	139	671	165
383	16	13	24	29	49	82	125	269	199	486	610	307	381	400
384	30	35	64	96	553	979	450	181	1,133	1,960	1,985	2,363	3,034	1,859
385	2	1	1	1	2	6	9	4	5	0	1	7	10	44
390	0	0	0	0	0	5	5	18	21	42	35	45	28	166

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 3b: Value Added of Majority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (billions of rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	1,141	1,491	1,576	1,946	2,082	2,258	3,500	5,411	5,320	7,110	8,577	11,525	13,788	20,495
311-312	66	91	58	71	58	62	126	238	280	396	415	455	1,242	1,914
313	48	41	46	46	50	61	53	48	78	82	189	258	206	12
314	74	71	70	72	69	84	111	143	183	311	322	415	468	1,012
321	217	456	284	315	494	311	534	659	625	908	1,017	1,593	1,371	3,357
322	2	0	0	0	13	19	55	174	189	207	134	148	236	413
323	0	0	0	0	0	0	11	16	22	8	48	54	97	90
324	23	29	26	11	38	89	81	325	372	462	468	668	712	1,027
331	24	43	29	36	49	37	23	197	154	186	211	374	610	777
332	1	2	1	1	3	17	40	27	43	69	87	58	66	48
341	7	17	4	49	47	75	92	112	63	39	45	75	291	176
342	4	4	11	23	4	1	2	12	99	118	145	196	190	0
351	24	15	30	55	39	333	525	1,031	630	660	866	1,637	1,503	3,896
352	113	129	179	190	225	285	390	289	682	839	896	913	1,282	1,515
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	0	0
354	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	1	1	6
355	11	26	24	20	32	50	100	84	148	212	276	425	334	252
356	115	10	20	11	9	15	45	52	38	102	161	139	207	298
361	0	0	0	1	1	16	16	9	18	20	22	19	34	84
362	8	6	11	6	3	0	0	0	7	15	2	8	1	520
363	67	64	84	49	49	99	122	204	143	33	136	158	227	117
364	2	2	1	2	1	2	0	4	0	0	0	6	117	204
369	0	0	0	0	0	10	4	7	21	6	7	3	13	89
371	108	222	370	560	392	70	177	60	296	195	394	238	153	116
372	#N/A	#N/A	#N/A	#N/A	#N/A	8	143	305	76	466	733	816	356	815
381	54	49	88	120	174	132	179	388	367	421	581	934	620	951
382	18	10	29	46	48	60	150	119	117	213	276	346	201	836
383	75	101	105	86	153	219	248	256	320	531	513	799	976	927
384	68	89	89	166	113	185	234	551	220	517	532	639	1,842	724
385	0	0	0	1	1	1	0	17	6	25	56	73	215	23
390	13	13	15	7	17	16	40	84	121	71	45	77	218	298
Backcast-3	979	1,151	1,510	1,788	2,182	2,378	3,647	5,601	5,805	7,535	8,771	9,571	14,005	20,495
311-312	66	90	57	70	60	71	138	250	280	398	426	482	1,269	1,914
313	47	48	46	46	50	61	53	48	78	82	189	93	208	12
314	74	71	70	71	69	84	111	143	183	311	322	415	468	1,012
321	220	253	295	316	508	323	535	666	627	908	1,152	1,076	1,376	3,357
322	2	0	0	0	21	34	59	178	207	232	134	153	239	413
323	0	0	0	0	0	1	14	19	26	12	53	54	97	90
324	24	26	27	34	45	102	93	325	372	462	468	661	712	1,027
331	18	26	30	27	29	25	29	209	164	172	222	373	610	777
332	1	2	1	4	6	19	41	27	43	69	87	58	67	48
341	7	17	37	50	48	80	94	114	77	39	45	43	294	176
342	5	4	11	18	4	2	2	12	99	118	145	196	190	0
351	23	26	37	36	33	328	526	1,070	678	703	884	872	1,510	3,896
352	112	158	174	184	231	292	406	298	696	857	911	957	1,315	1,515
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	0	0
354	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	1	6
355	14	29	27	25	40	52	104	85	148	183	276	246	334	252
356	5	9	17	9	6	28	71	67	127	103	161	139	222	298
361	0	0	0	1	1	16	16	9	18	22	22	19	34	84
362	8	6	11	6	3	0	0	0	7	15	3	8	2	520
363	44	39	56	50	49	99	122	204	145	146	136	158	227	117
364	2	2	1	2	1	2	0	4	0	0	0	2	112	204
369	0	0	0	0	0	10	4	7	21	6	7	3	13	89
371	80	92	269	439	392	71	178	63	297	196	395	213	154	116
372	#N/A	#N/A	#N/A	#N/A	#N/A	7	143	305	77	466	733	755	356	815
381	48	42	73	84	184	151	186	407	377	457	578	702	668	951
382	16	14	35	47	48	63	162	128	124	213	226	284	206	836
383	78	98	110	102	188	246	253	273	374	532	509	798	982	927
384	72	87	102	157	143	190	262	582	247	583	580	673	1,899	724
385	0	0	7	1	1	1	0	17	6	25	56	58	215	23
390	13	14	15	7	22	20	44	91	308	226	51	80	228	298

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 3c: Value Added of Heavily-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (billions of rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	124	199	158	242	298	727	620	1,306	1,388	2,461	4,597	6,424	9,497	20,378
311-312	21	14	14	28	84	56	48	72	66	85	218	305	538	2,257
313	2	9	10	6	5	0	0	24	30	53	155	245	282	256
314	5	8	7	8	6	14	29	4	7	52	60	64	101	308
321	16	104	29	28	52	137	132	46	174	193	209	346	671	1,895
322	0	0	0	1	10	38	43	146	156	333	348	498	574	987
323	5	3	0	0	0	0	0	3	14	6	5	10	18	56
324	0	1	1	0	5	22	72	157	195	291	265	375	424	1,055
331	1	1	51	67	23	34	13	20	38	40	39	49	86	159
332	0	0	0	1	1	1	6	4	11	18	22	47	79	178
341	0	0	0	0	0	1	0	0	0	289	323	678	473	745
342	0	0	0	0	0	0	0	0	0	0	0	0	0	1
351	1	26	7	21	26	6	23	0	3	118	143	282	489	1,405
352	10	22	26	29	24	59	12	39	63	63	99	266	311	749
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	23	40
354	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	2	0	8	15	13	15	19
355	14	12	11	47	52	98	60	48	72	98	117	111	164	232
356	0	0	0	0	2	1	0	8	29	48	545	76	127	794
361	0	0	0	0	0	0	0	0	2	3	3	0	0	5
362	0	0	0	0	0	0	0	0	0	0	0	0	10	0
363	0	0	0	2	0	0	0	0	0	0	1	1	2	31
364	0	0	0	0	0	0	0	0	0	0	0	0	0	0
369	0	0	0	0	0	0	0	0	0	2	1	1	3	2
371	0	0	0	0	0	0	0	1	2	3	9	8	57	48
372	#N/A	#N/A	#N/A	#N/A	#N/A	243	126	228	155	32	4	33	132	150
381	2	0	0	3	9	10	5	23	56	55	116	182	383	731
382	0	0	0	0	0	1	1	2	6	10	53	85	144	750
383	46	0	0	0	0	3	35	351	205	478	1,024	1,896	3,664	5,260
384	0	0	0	0	0	0	0	1	23	22	545	560	330	1,195
385	0	0	0	0	0	0	0	4	9	17	22	28	53	367
390	0	0	0	0	0	4	13	123	72	144	257	263	342	705
Backcast-3	188	209	317	396	459	736	699	1,461	1,554	2,668	4,204	6,381	9,710	20,378
311-312	35	32	35	51	92	66	60	87	81	86	220	297	538	2,257
313	2	9	10	6	5	0	0	24	30	53	155	245	282	256
314	5	8	7	8	6	14	29	4	7	52	60	64	101	308
321	39	66	80	108	151	139	153	81	174	197	214	316	671	1,895
322	0	0	0	2	16	43	56	140	167	344	361	499	575	987
323	5	0	0	0	0	0	0	3	14	6	5	10	19	56
324	0	1	1	2	15	22	72	157	195	380	270	376	424	1,055
331	10	10	51	67	23	36	13	20	38	44	39	48	87	159
332	0	0	0	2	2	3	6	4	11	20	23	47	79	178
341	0	0	0	0	0	1	0	1	0	289	325	678	485	745
342	0	0	0	0	0	0	0	0	0	0	0	0	0	1
351	1	12	12	22	27	7	25	7	6	122	143	153	495	1,405
352	18	22	29	23	20	53	12	39	65	66	102	204	363	749
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	0	0	0	0	0	51	40
354	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	2	12	8	15	17	16	19
355	25	49	91	100	91	89	65	49	74	99	117	111	164	232
356	0	0	0	0	2	1	1	10	33	49	85	74	128	794
361	0	0	0	0	0	0	0	0	2	3	3	0	0	5
362	0	0	0	0	0	0	0	0	0	0	0	0	10	0
363	1	1	1	2	0	0	0	0	0	0	1	1	25	31
364	0	0	0	0	0	0	0	0	0	0	0	0	0	0
369	0	0	0	0	0	0	0	0	0	2	1	1	3	2
371	0	0	0	0	0	0	0	1	2	3	12	16	67	48
372	#N/A	#N/A	#N/A	#N/A	#N/A	244	126	228	155	37	4	30	132	150
381	2	0	0	3	9	10	7	24	60	82	126	192	393	731
382	0	0	0	0	0	1	1	2	6	10	53	76	144	750
383	46	0	0	0	0	3	54	438	314	532	1,048	2,036	3,716	5,260
384	0	0	0	0	0	0	0	1	26	22	545	552	349	1,195
385	0	0	0	0	0	0	0	4	9	17	22	82	53	367
390	0	0	0	0	0	5	17	135	73	144	257	256	342	705

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 3d: Value Added of Local Manufacturing Establishments Reporting Positive Employment and Value Added by Industry**  
(billions of rupiah)

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	6,347	8,801	8,722	10,655	14,506	19,566	23,220	31,278	37,793	43,140	52,794	65,068	53,529	100,600
311-312	932	923	1,043	1,399	1,728	3,179	3,768	5,068	5,894	4,411	5,653	6,377	9,199	14,654
313	31	38	46	57	73	82	114	101	131	213	358	322	390	433
314	1,093	1,488	1,743	1,782	2,740	3,092	3,053	4,070	4,856	5,827	8,730	8,361	2,050	13,100
321	544	1,556	840	964	1,623	1,926	2,157	3,231	3,361	6,741	6,742	7,337	7,666	13,014
322	117	209	189	271	414	778	799	1,133	2,901	1,531	1,724	2,182	2,418	4,409
323	11	36	15	26	25	78	159	127	152	157	169	219	304	297
324	14	34	20	65	108	220	275	467	1,121	1,409	1,256	1,444	1,394	2,379
331	620	990	1,085	1,463	1,920	2,260	2,803	3,434	3,589	4,139	4,679	5,180	5,481	8,982
332	20	25	31	52	76	195	314	432	464	482	649	869	979	3,434
341	116	83	152	253	340	530	871	951	1,037	1,362	1,489	1,797	1,812	6,321
342	103	176	170	193	247	274	332	525	584	732	975	1,463	1,138	1,281
351	413	398	502	650	670	718	1,043	1,344	1,438	1,486	2,239	2,510	2,740	3,525
352	278	256	302	404	455	581	1,015	751	1,048	1,465	1,320	1,577	2,214	2,967
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	15	0	62	63	144	436	174
354	#N/A	#N/A	#N/A	#N/A	#N/A	7	25	11	13	14	18	18	33	36
355	351	234	268	481	671	689	649	935	664	764	937	1,152	1,288	2,340
356	86	117	142	182	221	392	475	831	1,013	929	1,135	1,499	1,507	1,583
361	28	29	26	42	64	96	173	164	363	483	376	580	576	842
362	22	32	66	71	85	119	213	347	432	258	391	306	298	450
363	183	188	248	259	262	434	587	390	612	884	863	1,047	1,899	1,075
364	17	22	20	24	28	29	38	76	58	65	89	134	128	138
369	19	26	30	35	41	77	128	139	157	142	269	336	440	432
371	463	950	724	643	1,185	1,642	1,155	1,702	2,052	2,345	2,988	7,143	1,530	2,423
372	#N/A	#N/A	#N/A	#N/A	#N/A	85	65	127	153	188	151	286	581	689
381	239	271	271	447	418	501	630	724	899	1,080	1,665	2,077	1,642	2,615
382	55	49	54	75	123	243	393	362	345	510	566	805	1,011	726
383	178	176	179	219	311	443	585	1,052	1,021	899	2,072	3,759	2,118	3,356
384	391	467	520	537	583	798	1,276	2,548	3,179	4,300	4,921	5,704	1,777	8,214
385	3	3	5	7	11	11	14	38	22	74	97	161	147	127
390	18	26	31	52	85	90	110	184	232	186	210	281	332	583
Backcast-3	6,907	8,501	10,050	11,991	16,340	22,258	25,548	33,092	37,665	42,252	52,111	59,588	67,476	100,600
311-312	1,216	1,283	1,374	1,679	1,956	2,610	3,056	3,702	3,989	4,505	5,479	6,131	9,306	14,654
313	34	43	50	66	88	95	120	106	137	217	361	345	393	433
314	1,274	1,553	1,805	1,873	2,366	3,098	3,062	4,082	4,892	5,851	8,732	8,427	9,362	13,100
321	623	869	1,027	1,198	1,925	2,091	2,293	3,445	3,538	5,339	6,910	5,853	7,728	13,014
322	287	339	374	439	610	2,179	2,175	2,614	3,065	1,672	1,793	2,134	2,447	4,409
323	14	23	23	40	43	101	168	133	158	166	172	220	305	297
324	21	28	34	64	153	270	359	543	1,228	1,521	1,360	1,499	1,483	2,379
331	620	833	1,246	1,562	2,356	2,828	3,503	3,732	3,771	4,314	4,748	5,129	5,518	8,982
332	31	40	53	70	133	262	367	478	517	525	692	811	951	3,434
341	143	193	208	310	434	626	896	980	1,089	1,393	1,502	1,697	3,115	6,321
342	151	223	203	211	274	316	399	644	761	977	1,039	1,471	1,148	1,281
351	348	403	526	685	710	752	1,147	1,490	1,505	1,638	2,273	2,190	2,787	3,525
352	255	269	331	399	502	627	1,071	798	1,034	1,487	1,335	1,632	2,238	2,967
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	15	0	62	63	82	436	174
354	#N/A	#N/A	#N/A	#N/A	#N/A	13	21	13	15	20	19	18	35	36
355	254	256	306	526	720	730	691	972	702	754	950	947	1,293	2,340
356	108	143	175	211	270	455	510	929	1,494	972	1,125	1,253	1,539	1,583
361	32	34	31	44	67	104	175	166	365	486	380	371	577	842
362	21	42	81	89	113	154	231	382	436	263	391	294	300	450
363	172	207	205	300	291	467	609	433	651	927	905	1,081	1,948	1,075
364	20	25	26	29	34	40	50	87	70	77	94	129	129	138
369	24	31	39	38	60	108	145	154	149	147	275	328	446	432
371	476	636	826	710	1,281	1,721	1,239	1,856	2,445	2,413	3,053	7,161	2,851	2,423
372	#N/A	#N/A	#N/A	#N/A	#N/A	123	115	179	158	202	169	266	582	689
381	232	265	311	451	557	675	813	1,106	1,054	1,190	1,500	2,039	1,696	2,615
382	53	80	91	125	188	277	409	368	359	529	577	639	1,019	726
383	151	152	178	248	353	472	609	1,143	1,117	1,113	2,095	3,738	2,127	3,356
384	318	486	463	527	733	933	1,176	2,294	2,680	3,214	3,795	3,258	5,217	8,214
385	4	4	7	9	13	13	17	39	22	75	100	158	151	127
390	25	42	57	88	111	118	122	208	263	204	226	286	350	583

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 3e: Value Added of All Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (billions of rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	8,116	11,135	11,299	13,882	18,946	25,175	29,926	41,438	49,821	59,856	73,909	93,332	84,064	154,651
311-312	1,056	1,077	1,220	1,648	2,066	3,519	4,317	5,783	6,638	5,293	6,623	7,863	11,755	20,489
313	109	98	147	173	189	206	262	395	412	622	767	892	992	712
314	1,173	1,567	1,822	1,867	2,825	3,191	3,193	4,217	5,048	6,195	9,111	8,840	2,619	14,420
321	792	2,196	1,173	1,323	2,210	2,411	2,919	4,092	4,374	8,055	8,196	9,612	10,114	18,607
322	119	210	190	276	440	843	937	1,528	3,450	2,280	2,603	3,272	3,514	6,259
323	16	40	16	26	26	79	174	176	191	176	222	288	421	459
324	37	64	47	77	152	348	452	1,078	1,795	2,262	2,162	2,738	2,723	5,021
331	714	1,157	1,328	1,733	2,212	2,546	3,118	3,867	4,100	4,663	5,299	5,871	6,341	10,155
332	21	28	32	55	81	216	366	467	529	585	760	993	1,224	3,929
341	132	125	233	404	467	879	1,314	1,447	1,409	1,920	2,433	3,135	2,985	8,704
342	108	182	183	219	253	276	336	546	688	855	1,133	1,681	1,344	1,304
351	495	487	588	784	805	1,266	1,843	2,604	2,401	2,828	3,676	5,256	5,745	10,983
352	463	480	560	667	756	987	1,507	1,215	1,975	2,595	2,655	3,176	4,181	5,729
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	15	0	62	63	144	459	214
354	#N/A	#N/A	#N/A	#N/A	#N/A	14	33	25	22	22	35	34	49	61
355	392	285	366	605	825	911	927	1,229	990	1,175	1,352	1,735	1,880	2,918
356	204	129	184	219	258	421	534	910	1,128	1,122	1,901	1,846	2,088	2,869
361	29	35	38	54	80	142	234	231	448	591	492	763	835	1,248
362	112	121	78	77	89	119	213	351	444	276	478	861	471	1,059
363	276	275	359	340	345	569	743	760	1,013	1,243	1,313	1,624	2,361	1,677
364	19	23	21	26	29	31	38	82	61	68	99	160	263	345
369	19	26	30	35	41	89	134	147	178	152	280	340	456	524
371	573	1,173	1,094	1,203	1,577	1,925	1,364	1,887	3,002	3,463	4,644	8,703	1,914	4,015
372	#N/A	#N/A	#N/A	#N/A	#N/A	347	343	675	412	734	915	1,148	1,101	1,704
381	330	361	453	737	1,164	741	934	1,510	1,807	2,080	2,749	3,939	3,063	4,523
382	90	74	105	135	184	315	563	537	525	792	998	1,372	2,024	2,476
383	315	289	307	332	511	743	978	1,916	1,738	2,394	4,246	6,766	7,139	9,943
384	487	590	672	797	1,247	1,910	1,958	3,279	4,554	6,797	7,983	9,331	4,656	11,992
385	5	4	7	10	13	18	24	62	42	115	175	269	425	560
390	31	39	45	59	102	113	168	409	446	443	547	682	920	1,753
Backcast-3	8,633	10,477	12,734	15,169	21,075	28,179	32,582	43,640	50,003	58,945	72,090	84,148	102,149	154,651
311-312	1,359	1,457	1,576	1,943	2,258	3,028	3,695	4,535	4,866	5,406	6,491	7,651	11,923	20,489
313	110	128	147	178	204	223	272	406	418	626	769	782	997	712
314	1,354	1,633	1,884	1,957	2,450	3,197	3,202	4,229	5,084	6,219	9,113	8,906	9,931	14,420
321	905	1,200	1,415	1,640	2,629	2,597	3,077	4,350	4,554	6,658	8,505	7,536	10,182	18,607
322	289	339	376	447	652	2,272	2,339	3,011	3,652	2,457	2,681	3,229	3,546	6,259
323	19	24	24	40	47	104	185	185	201	190	232	289	422	459
324	45	55	61	101	214	411	549	1,155	1,903	2,463	2,271	2,786	2,812	5,021
331	721	984	1,485	1,804	2,641	3,108	3,827	4,182	4,297	4,831	5,379	5,834	6,379	10,155
332	32	43	55	77	142	288	420	513	582	629	804	935	1,196	3,929
341	163	236	322	462	610	980	1,341	1,478	1,557	2,065	2,448	2,984	4,303	8,704
342	156	230	217	231	281	319	403	665	867	1,100	1,197	1,689	1,354	1,304
351	428	488	616	782	842	1,295	1,952	2,796	2,518	3,026	3,728	3,671	5,804	10,983
352	411	477	582	643	807	1,034	1,579	1,274	1,978	2,639	2,833	3,213	4,290	5,729
353	#N/A	#N/A	#N/A	#N/A	#N/A	0	0	15	0	62	63	82	487	214
354	#N/A	#N/A	#N/A	#N/A	#N/A	47	30	29	37	30	36	36	52	61
355	345	374	493	708	923	947	978	1,269	1,030	1,136	1,365	1,335	1,885	2,918
356	115	155	215	246	304	496	595	1,025	1,701	1,168	1,436	1,584	2,135	2,869
361	33	39	42	56	84	151	236	233	450	596	495	507	836	1,248
362	113	133	95	98	119	161	239	391	456	293	488	877	493	1,059
363	242	271	289	382	374	603	755	803	1,054	1,398	1,355	1,659	2,432	1,677
364	23	27	27	31	35	42	50	94	72	80	104	151	259	345
369	24	31	39	38	60	120	151	163	171	158	286	332	462	524
371	559	728	1,096	1,150	1,674	2,013	1,452	1,950	2,821	2,726	3,612	7,525	4,569	4,015
372	#N/A	#N/A	#N/A	#N/A	#N/A	385	393	727	417	752	932	1,065	1,103	1,704
381	348	386	501	703	1,311	935	1,125	1,914	1,975	2,253	2,592	3,655	3,174	4,523
382	86	108	147	186	249	353	592	552	546	813	959	1,138	2,040	2,476
383	290	262	313	378	590	804	1,041	2,122	2,003	2,662	4,262	6,879	7,206	9,943
384	420	608	629	781	1,429	2,102	1,889	3,059	4,087	5,778	6,906	6,846	10,499	11,992
385	6	6	16	11	15	20	27	63	42	117	179	306	430	560
390	38	56	72	95	133	147	188	452	665	616	569	667	948	1,753

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).



**Appendix Table 4a: Mean Employment per Establishment in Minority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	364	358	383	392	434	444	470	500	498	532	635	680	625	593
311-312	315	309	340	339	315	387	428	474	465	460	435	610	456	501
313	840	800	742	287	298	382	359	297	284	250	233	300	310	160
314	576	276	644	977	662	406	228	131	140	180	157	#N/A	#N/A	#N/A
321	539	533	597	486	682	610	879	733	692	775	826	886	905	813
322	1,154	1,454	1,419	587	983	624	701	730	713	717	1,147	1,231	1,113	1,169
323	#N/A	#N/A	#N/A	#N/A	126	264	345	404	342	367	321	284	411	482
324	#N/A	#N/A	#N/A	287	326	721	860	1,480	1,821	2,041	2,723	2,915	3,590	2,870
331	660	703	716	725	800	742	662	696	731	772	742	885	796	523
332	#N/A	#N/A	336	297	347	550	361	179	319	422	134	373	327	561
341	259	372	496	535	695	966	960	1,192	1,218	1,110	1,880	1,708	1,861	1,587
342	66	223	228	193	229	158	170	221	193	194	128	177	178	240
351	176	177	190	191	182	179	156	152	157	179	183	175	171	187
352	184	183	183	152	169	195	260	270	348	333	439	416	326	429
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	44	46	46	138	36	74	46	36	36
355	355	328	517	656	683	711	760	782	965	1,054	911	697	577	923
356	177	169	179	254	262	210	283	322	232	352	359	429	336	303
361	883	492	506	577	584	702	729	586	681	720	804	828	690	799
362	1,722	1,766	#N/A	#N/A	#N/A	#N/A	87	283	188	176	429	917	550	309
363	278	310	305	483	496	594	383	583	487	461	499	567	410	417
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	582	582	580	814	949	500	2,033
369	#N/A	#N/A	#N/A	#N/A	#N/A	242	265	212	229	147	275	#N/A	#N/A	58
371	157	#N/A	#N/A	#N/A	#N/A	419	157	161	163	174	164	166	230	198
372	#N/A	#N/A	#N/A	#N/A	#N/A	169	242	326	283	371	384	307	274	223
381	216	249	255	326	369	345	349	583	442	462	469	588	420	300
382	192	148	137	123	137	89	102	99	109	139	207	196	408	282
383	167	144	166	199	336	315	385	374	392	492	552	473	550	427
384	503	447	521	308	556	717	859	527	590	626	677	716	512	553
385	124	121	200	108	104	113	91	122	147	#N/A	59	203	445	238
390	66	32	30	#N/A	#N/A	371	347	528	699	496	566	634	784	520
Backcast-3	324	322	355	364	397	408	440	474	491	529	632	681	636	593
311-312	298	295	336	339	315	386	431	480	466	455	434	640	504	501
313	840	800	383	313	298	343	342	294	284	250	233	300	310	160
314	405	469	836	977	662	330	128	80	103	130	157	#N/A	#N/A	#N/A
321	417	415	459	466	652	592	833	680	692	775	826	886	905	813
322	#N/A	#N/A	751	527	436	491	627	684	694	717	1,147	1,231	1,065	1,169
323	47	84	91	112	146	264	345	355	342	341	298	284	411	482
324	#N/A	#N/A	#N/A	287	176	549	625	1,360	1,659	2,041	2,723	2,915	3,590	2,870
331	583	596	603	559	656	673	610	634	697	758	791	885	796	523
332	234	285	336	297	347	550	266	168	319	422	134	373	327	561
341	290	324	415	535	908	902	960	1,192	1,596	1,411	1,880	1,708	1,861	1,587
342	66	223	230	193	166	86	120	171	151	152	128	177	178	240
351	170	170	185	186	179	166	151	148	157	179	178	175	171	187
352	171	172	155	146	152	195	260	258	348	333	439	416	326	429
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	59	64	66	128	73	74	46	36	36
355	340	308	455	598	683	711	760	782	965	1,054	911	697	577	923
356	177	169	179	248	262	210	283	296	232	352	380	429	336	303
361	883	492	506	539	584	702	729	586	681	720	804	828	690	799
362	942	959	164	179	190	217	192	285	229	242	411	837	525	309
363	278	310	305	483	496	594	383	583	487	461	499	567	410	417
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	582	582	580	814	949	500	2,033
369	#N/A	#N/A	#N/A	#N/A	#N/A	242	265	121	135	147	275	#N/A	#N/A	58
371	128	102	105	131	140	359	157	161	163	174	164	166	211	198
372	#N/A	#N/A	#N/A	#N/A	#N/A	169	242	326	283	371	384	307	274	223
381	213	238	286	328	380	340	352	553	423	445	469	588	420	300
382	192	148	137	123	129	78	90	88	109	134	198	187	388	282
383	167	146	166	210	263	316	347	362	367	492	552	473	531	427
384	452	332	408	260	438	633	712	477	557	597	677	716	791	553
385	124	121	200	108	104	113	91	122	147	#N/A	59	203	445	238
390	66	32	30	#N/A	42	308	347	528	559	496	566	634	784	520

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 4b: Mean Employment per Establishment of Majority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	394	424	399	370	375	426	475	537	566	579	603	575	524	462
311-312	335	427	364	312	251	274	270	364	303	315	312	307	296	318
313	336	357	365	251	311	311	559	271	281	372	449	203	196	119
314	496	442	372	328	406	378	344	206	222	305	349	338	357	370
321	883	926	885	912	851	898	829	936	901	825	849	822	638	704
322	790	#N/A	#N/A	36	313	477	580	597	730	707	736	675	710	629
323	#N/A	#N/A	#N/A	#N/A	#N/A	139	286	647	614	310	373	574	743	783
324	1,453	1,414	1,467	1,017	1,859	2,209	1,593	2,165	2,593	2,964	3,186	2,956	3,099	2,783
331	277	292	252	271	336	269	238	433	529	534	495	578	699	712
332	136	126	125	136	211	441	421	264	297	268	325	357	241	292
341	556	451	456	430	423	487	487	391	320	278	272	263	296	546
342	360	413	253	199	303	42	106	99	347	377	633	1,022	1,889	#N/A
351	215	125	128	88	88	272	221	237	224	192	222	186	255	172
352	248	262	233	227	212	240	225	235	243	233	241	268	304	228
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	21	20	563	284
355	667	732	635	302	304	633	749	553	521	501	503	391	394	358
356	197	238	245	156	144	209	301	327	254	543	547	376	385	224
361	#N/A	#N/A	#N/A	275	285	606	435	499	707	683	763	743	801	465
362	373	542	541	491	475	#N/A	#N/A	#N/A	296	342	123	194	75	675
363	386	382	335	366	412	436	440	520	328	311	263	250	232	291
364	177	156	137	127	179	123	#N/A	128	#N/A	#N/A	#N/A	241	385	686
369	#N/A	#N/A	#N/A	#N/A	#N/A	21	20	142	475	263	560	336	327	223
371	1,440	1,476	978	670	539	386	402	397	366	365	367	357	280	217
372	#N/A	#N/A	#N/A	#N/A	#N/A	94	267	319	353	568	680	850	846	615
381	243	241	253	241	251	334	346	393	323	408	481	497	427	395
382	151	176	235	181	179	234	272	215	210	212	200	215	198	186
383	350	373	408	381	411	432	549	483	556	644	585	565	508	462
384	465	480	439	446	484	488	542	520	344	400	580	548	406	270
385	#N/A	#N/A	#N/A	20	21	21	20	423	148	222	777	853	1,067	478
390	302	369	315	361	305	238	413	386	485	383	401	378	653	415
Backcast-3	361	376	357	352	355	388	442	501	540	564	591	559	507	462
311-312	324	404	317	332	254	254	252	337	303	310	308	306	295	318
313	336	357	365	251	311	311	559	271	281	372	449	153	161	119
314	496	442	372	228	238	378	344	206	222	305	349	338	357	370
321	816	857	818	856	804	832	816	921	892	825	849	811	630	704
322	790	#N/A	78	90	216	406	458	546	719	697	736	591	695	629
323	#N/A	#N/A	#N/A	#N/A	#N/A	88	330	612	605	379	442	574	743	783
324	826	808	842	742	1,249	1,385	1,475	2,165	2,593	2,964	3,186	2,956	3,099	2,783
331	224	244	241	271	216	176	256	444	558	572	563	578	699	712
332	136	126	125	94	162	331	403	264	297	268	325	357	235	292
341	380	311	315	298	295	353	296	307	278	278	272	263	263	546
342	250	158	198	196	237	70	106	99	347	377	633	1,022	1,889	#N/A
351	121	109	113	81	78	254	197	236	218	195	219	179	244	172
352	217	244	216	214	207	231	217	224	228	228	238	264	300	228
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	21	20	563	284
355	394	426	379	280	368	562	666	526	521	501	503	391	394	358
356	124	174	182	161	150	277	305	297	247	509	547	356	355	224
361	#N/A	#N/A	#N/A	275	285	606	435	499	707	562	763	743	801	465
362	373	542	541	491	475	#N/A	#N/A	61	219	249	96	194	48	675
363	386	382	335	366	412	436	440	520	276	311	263	250	232	291
364	177	156	137	127	179	123	#N/A	128	#N/A	#N/A	#N/A	241	385	686
369	#N/A	#N/A	#N/A	#N/A	#N/A	21	20	142	475	263	560	336	327	223
371	752	664	663	620	608	337	318	328	327	331	333	324	257	217
372	#N/A	#N/A	#N/A	#N/A	#N/A	111	267	319	272	568	680	850	846	615
381	236	217	230	213	224	271	296	372	315	395	462	479	409	395
382	131	150	177	171	179	246	262	191	201	204	194	209	191	186
383	364	369	369	381	389	420	484	445	512	615	560	554	480	462
384	449	462	456	403	373	381	474	429	337	395	564	559	410	270
385	#N/A	#N/A	148	20	21	21	20	423	148	222	777	853	1,067	478
390	247	247	261	245	231	195	420	382	481	397	405	381	645	415

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 4c: Mean Employment per Establishment of Heavily-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	420	286	363	342	371	558	574	536	598	634	566	539	536	494
311-312	558	360	728	560	424	564	519	417	292	384	443	296	341	292
313	101	92	93	90	90	#N/A	#N/A	121	107	140	203	205	250	194
314	675	719	526	516	511	501	621	681	624	434	380	314	552	618
321	882	1,546	1,580	911	2,432	1,363	1,440	741	873	802	718	666	680	664
322	62	#N/A	#N/A	262	494	429	623	669	729	840	703	719	805	745
323	54	52	52	#N/A	21	#N/A	#N/A	390	362	341	326	373	334	552
324	#N/A	41	33	#N/A	538	1,191	2,308	2,573	2,851	2,778	2,535	2,400	3,232	2,550
331	109	75	463	352	515	353	258	360	459	382	422	378	397	388
332	#N/A	38	68	208	316	316	174	306	196	337	232	191	191	197
341	#N/A	#N/A	#N/A	#N/A	#N/A	163	172	182	#N/A	568	470	629	430	231
342	36	44	16	#N/A	#N/A	#N/A	#N/A	#N/A	20	#N/A	#N/A	#N/A	#N/A	85
351	47	108	116	150	110	95	106	109	118	318	276	174	144	226
352	157	158	172	178	165	154	154	183	137	147	241	181	209	259
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	116	134
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	50	53	338	331	238	174	110
355	537	202	236	239	216	601	320	201	230	320	375	439	439	274
356	#N/A	#N/A	#N/A	#N/A	154	144	261	169	186	396	280	202	181	248
361	#N/A	24	23	39	43	32	37	#N/A	680	680	670	#N/A	#N/A	160
362	#N/A	#N/A	#N/A	52	#N/A	#N/A	#N/A	#N/A	#N/A	72	68	74	239	#N/A
363	51	#N/A	#N/A	317	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	20	29	168	187
364	231	#N/A	#N/A	25	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	23	#N/A	380	242	131	205	200
371	#N/A	#N/A	#N/A	22	23	#N/A	#N/A	222	183	230	231	214	209	83
372	#N/A	#N/A	#N/A	#N/A	#N/A	1,141	788	1,131	2,608	425	213	159	115	114
381	54	55	51	101	153	88	104	99	235	368	240	263	216	220
382	79	#N/A	#N/A	#N/A	#N/A	41	67	87	185	197	289	259	250	284
383	1,479	#N/A	#N/A	#N/A	#N/A	336	242	374	599	669	688	721	658	570
384	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	170	634	565	445	495	424	465
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	60	159	355	511	785	956	859	713
390	250	#N/A	#N/A	#N/A	#N/A	603	456	521	721	755	722	678	713	1,051
Backcast-3	410	321	345	368	419	494	486	499	541	604	536	525	520	494
311-312	562	490	679	630	417	484	432	382	261	357	407	296	341	292
313	101	92	93	90	90	#N/A	#N/A	121	107	140	203	205	250	194
314	675	719	526	516	511	501	326	273	250	300	310	314	552	618
321	1,161	1,156	981	1,072	1,578	1,114	1,009	820	778	715	646	666	680	664
322	62	#N/A	#N/A	325	522	429	530	597	663	699	643	709	793	745
323	54	52	52	#N/A	#N/A	#N/A	#N/A	334	362	341	326	373	316	552
324	#N/A	41	33	387	958	1,191	2,080	2,362	2,596	2,983	2,073	2,271	3,057	2,550
331	202	185	397	352	515	294	258	360	459	367	422	378	381	388
332	#N/A	38	58	180	175	156	174	306	173	243	210	191	191	197
341	#N/A	#N/A	#N/A	#N/A	40	163	172	118	69	568	502	629	394	231
342	36	44	16	#N/A	#N/A	#N/A	#N/A	#N/A	20	#N/A	#N/A	#N/A	#N/A	85
351	46	107	116	102	91	79	92	93	111	281	276	174	140	226
352	135	135	147	147	147	136	154	183	132	142	231	178	240	259
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	120	134
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	50	239	338	331	131	125	110
355	379	200	208	221	222	547	299	198	233	308	375	439	439	274
356	#N/A	#N/A	#N/A	21	89	144	229	154	191	396	280	198	178	248
361	#N/A	24	23	39	43	32	37	#N/A	680	680	670	#N/A	#N/A	160
362	#N/A	#N/A	#N/A	52	#N/A	#N/A	#N/A	#N/A	#N/A	72	68	74	239	#N/A
363	118	258	288	317	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	20	29	400	187
364	231	#N/A	21	25	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	23	23	#N/A	380	242	131	205	200
371	#N/A	#N/A	20	22	23	#N/A	#N/A	222	183	290	178	180	177	83
372	#N/A	#N/A	#N/A	#N/A	#N/A	771	788	1,131	2,608	298	213	159	115	114
381	54	55	51	101	127	95	152	93	216	324	221	258	210	220
382	79	#N/A	#N/A	#N/A	#N/A	41	49	87	185	197	289	259	250	284
383	1,479	#N/A	#N/A	#N/A	#N/A	336	213	376	545	637	658	672	620	570
384	#N/A	#N/A	#N/A	#N/A	#N/A	59	112	157	443	565	445	495	391	465
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	68	159	355	511	785	956	859	713
390	250	#N/A	#N/A	#N/A	#N/A	540	420	463	657	725	722	678	713	1,051

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 4d: Mean Employment per Establishment of Local Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	120	123	131	132	146	150	167	170	176	177	170	159	156	168
311-312	103	103	110	108	110	108	125	124	132	122	115	116	114	126
313	69	71	68	66	67	75	95	78	90	90	87	86	81	84
314	209	220	239	193	234	213	195	204	211	289	426	266	181	302
321	131	135	144	150	168	207	244	265	271	278	254	254	263	263
322	104	102	119	131	150	131	149	150	168	162	145	137	148	169
323	54	53	61	69	76	98	120	104	107	92	94	104	93	102
324	65	64	64	86	121	174	321	375	432	469	446	429	449	392
331	170	182	201	193	225	233	264	252	244	236	212	214	224	223
332	44	43	47	61	71	126	142	141	155	143	121	112	109	126
341	151	188	201	204	219	206	248	258	253	233	245	221	226	305
342	74	77	74	75	77	84	89	89	94	99	98	101	92	86
351	192	195	195	188	202	158	176	173	185	181	168	167	161	190
352	129	130	134	133	138	140	155	164	165	173	173	171	171	168
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	276	#N/A	340	145	89	65	86
354	#N/A	#N/A	#N/A	#N/A	#N/A	173	207	93	44	62	50	55	54	101
355	219	228	244	258	269	293	263	304	258	272	269	265	248	270
356	87	90	93	94	105	119	146	119	147	154	156	152	148	154
361	260	279	283	295	333	340	388	393	423	405	449	448	441	400
362	214	249	303	282	297	321	374	376	362	367	296	287	348	276
363	68	58	63	66	72	67	76	73	78	75	70	70	76	74
364	40	40	37	40	40	41	38	42	46	45	41	43	43	40
369	79	73	77	86	145	99	97	83	80	79	80	89	86	71
371	467	514	491	514	512	412	398	393	390	387	327	334	258	316
372	#N/A	#N/A	#N/A	#N/A	#N/A	169	184	169	168	169	184	177	184	128
381	98	95	100	103	110	115	134	151	147	138	130	129	125	114
382	82	84	81	81	93	146	145	139	131	131	124	115	118	114
383	184	194	192	181	200	200	212	218	233	243	247	212	195	227
384	173	199	195	175	178	175	191	176	176	189	188	177	161	155
385	52	54	53	67	81	61	68	93	90	113	121	124	143	149
390	69	71	70	83	88	112	120	129	140	131	121	107	120	117
Backcast-3	107	109	111	119	133	138	146	150	155	156	154	156	157	168
311-312	84	84	84	89	101	102	112	110	118	110	108	111	112	126
313	57	61	62	63	67	73	81	71	82	83	84	86	80	84
314	174	174	176	181	190	176	174	181	186	250	258	261	251	302
321	127	129	136	147	166	193	213	235	237	244	241	252	260	263
322	106	108	114	131	144	127	133	134	144	142	135	135	145	169
323	56	53	59	67	67	89	108	89	88	86	88	103	92	102
324	67	67	67	93	133	202	307	335	392	418	409	430	448	392
331	140	147	158	168	195	205	210	218	213	205	198	209	218	223
332	44	44	48	60	78	115	119	118	124	118	112	111	107	126
341	170	196	202	219	216	206	222	233	226	213	229	216	248	305
342	68	71	68	71	73	78	82	84	86	90	90	100	91	86
351	172	168	163	171	175	156	169	167	171	167	162	166	159	190
352	120	119	120	124	129	133	144	151	158	166	169	170	171	168
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	276	#N/A	340	121	89	65	86
354	#N/A	#N/A	#N/A	#N/A	#N/A	160	148	92	60	79	69	75	71	101
355	175	186	187	205	265	287	250	290	242	257	258	258	246	270
356	82	85	86	91	102	115	132	110	134	141	149	151	147	154
361	228	242	237	251	263	308	357	362	390	380	430	444	437	400
362	200	208	255	258	273	301	336	346	329	340	286	284	335	276
363	59	54	58	63	68	64	70	67	71	68	69	70	76	74
364	38	37	35	38	37	37	35	39	42	40	40	43	43	40
369	75	68	69	70	113	96	83	75	74	72	75	87	80	71
371	333	373	342	347	353	360	343	365	365	351	318	330	316	316
372	#N/A	#N/A	#N/A	#N/A	#N/A	157	156	144	152	151	175	173	177	128
381	90	88	91	99	107	110	118	130	127	120	121	127	122	114
382	76	104	99	101	109	125	125	120	112	113	119	114	118	114
383	161	166	161	166	177	183	195	198	216	227	234	210	191	227
384	151	165	154	152	152	154	166	161	161	175	180	175	167	155
385	48	52	52	57	75	65	71	86	88	109	137	142	166	149
390	66	68	68	74	81	101	101	111	119	112	111	105	117	117

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 4e: Mean Employment per Establishment of All Establishments Reporting Positive Employment and Value Added by Industry (number)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	129	131	140	140	154	161	182	188	197	201	194	183	182	192
311-312	107	107	115	112	113	113	131	130	138	130	123	125	122	134
313	87	90	87	78	77	88	115	94	105	104	100	95	93	90
314	211	222	242	198	237	215	196	204	211	289	425	266	183	304
321	147	153	161	166	184	227	267	290	298	303	279	280	288	286
322	108	104	121	135	155	138	163	171	196	192	177	170	183	206
323	54	53	61	69	76	100	129	132	130	103	102	116	116	146
324	77	76	76	106	158	254	462	616	707	770	750	718	739	631
331	184	195	215	204	237	244	273	264	257	248	225	227	238	236
332	44	43	48	63	73	132	148	144	159	148	125	116	113	130
341	160	198	212	216	235	235	272	286	277	258	286	263	276	355
342	75	79	75	76	79	84	89	90	96	102	101	105	96	87
351	191	190	191	181	195	166	177	176	185	184	175	170	170	190
352	144	145	146	143	147	151	164	173	177	184	188	187	185	183
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	276	#N/A	340	145	89	78	105
354	#N/A	#N/A	#N/A	#N/A	#N/A	147	171	80	59	110	77	66	78	111
355	235	235	254	266	275	325	288	314	272	293	289	284	270	287
356	89	92	95	96	107	121	148	123	150	166	168	160	156	161
361	274	283	293	305	341	366	407	414	451	437	484	484	478	418
362	263	315	317	287	301	321	369	374	353	354	300	331	362	292
363	72	62	68	73	79	73	82	82	87	84	79	77	83	81
364	40	40	37	40	40	41	38	43	47	46	42	44	45	44
369	79	73	77	86	145	100	98	84	82	83	83	91	88	73
371	522	580	538	526	505	410	373	365	362	365	316	319	255	271
372	#N/A	#N/A	#N/A	#N/A	#N/A	221	237	228	232	222	229	222	214	164
381	108	106	111	115	124	128	148	170	163	164	154	155	146	132
382	89	91	89	88	99	147	150	141	137	138	136	129	142	141
383	217	208	210	199	225	225	251	263	307	354	358	334	339	360
384	188	213	210	185	194	199	225	199	196	216	223	214	191	189
385	54	56	59	67	80	63	68	116	104	145	202	210	263	223
390	77	76	75	87	93	126	158	168	206	194	177	157	187	181
Backcast-3	115	116	119	127	141	148	159	166	173	178	177	180	183	192
311-312	88	88	89	94	104	106	117	116	123	117	116	120	120	134
313	71	75	75	73	75	85	99	86	95	96	96	95	92	90
314	176	177	179	185	193	177	174	181	186	250	258	262	253	304
321	141	144	151	162	182	211	234	259	261	267	265	278	284	286
322	108	108	116	134	149	135	147	152	168	168	164	166	179	206
323	55	53	59	67	68	90	120	115	110	98	99	115	115	146
324	76	76	76	117	189	276	427	537	625	689	674	704	722	631
331	151	158	168	176	204	213	218	229	226	217	211	223	232	236
332	45	45	49	62	80	119	124	120	128	122	116	114	111	130
341	178	202	209	228	235	228	241	257	257	245	269	258	292	355
342	68	72	69	73	74	78	82	85	88	92	93	104	94	87
351	168	164	161	167	171	162	169	171	173	172	170	168	167	190
352	130	132	129	133	137	143	153	160	169	176	183	185	187	183
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	276	#N/A	340	121	89	83	105
354	#N/A	#N/A	#N/A	#N/A	#N/A	134	130	85	88	109	88	79	90	111
355	190	193	197	215	273	316	274	299	257	278	278	276	267	287
356	83	86	88	93	103	117	135	113	137	153	161	159	154	161
361	239	247	247	261	274	333	378	384	418	409	464	480	473	418
362	241	258	266	261	276	300	331	339	320	326	288	328	346	292
363	63	58	63	69	74	69	74	75	78	76	76	78	85	81
364	39	37	35	38	37	37	35	40	42	41	41	44	44	44
369	75	68	69	70	113	96	83	76	76	75	78	89	81	73
371	367	403	367	370	372	358	324	341	342	335	304	312	293	271
372	#N/A	#N/A	#N/A	#N/A	#N/A	198	202	193	207	199	219	217	208	164
381	99	97	102	109	118	120	129	147	142	143	143	153	143	132
382	81	107	103	105	112	128	130	123	119	121	131	127	141	141
383	194	182	179	186	201	212	228	242	284	332	339	327	329	360
384	164	176	166	161	166	173	194	182	181	201	215	214	206	189
385	50	54	59	58	75	66	71	107	100	139	211	222	275	223
390	72	71	71	77	86	114	136	147	174	166	162	155	183	181

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 5a: Mean Value Added per Establishment in Minority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (billion rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	3.76	4.70	5.66	5.97	12.11	12.49	10.14	11.59	16.32	20.77	24.14	30.25	22.24	41.57
311-312	3.16	3.23	4.78	6.26	7.83	8.56	11.75	11.91	10.77	9.13	8.22	16.48	18.91	36.99
313	26.66	10.76	44.38	10.65	15.41	15.85	23.70	22.16	14.36	18.23	8.11	13.47	19.09	2.07
314	0.10	0.29	0.19	1.08	1.88	0.36	0.14	0.11	1.07	1.63	0.10	#N/A	#N/A	#N/A
321	1.40	7.35	1.95	1.51	4.08	4.23	6.45	7.44	9.73	10.67	10.88	15.29	17.69	22.69
322	0.81	1.07	1.41	0.84	1.45	1.21	2.85	4.68	8.91	8.71	18.04	20.15	13.62	22.50
323	#N/A	#N/A	#N/A	#N/A	0.53	0.96	1.81	7.52	1.28	1.57	0.16	2.48	0.65	5.17
324	#N/A	#N/A	#N/A	1.64	2.44	5.64	4.78	11.67	10.72	10.00	14.41	22.73	27.64	69.99
331	3.02	6.49	8.56	7.57	10.00	8.27	9.61	7.95	12.72	12.43	13.70	13.46	9.63	12.49
332	#N/A	#N/A	0.51	0.59	0.72	1.26	1.53	0.64	1.64	3.18	0.47	3.07	10.99	38.39
341	2.96	6.28	25.54	25.31	20.18	45.33	58.41	54.78	51.58	32.78	82.41	73.14	45.45	121.82
342	0.22	1.32	1.27	1.09	1.34	1.21	0.96	3.08	1.81	1.78	2.77	3.05	3.19	7.19
351	5.15	4.77	4.45	5.35	5.82	11.64	11.50	9.55	12.66	25.60	21.37	33.05	44.05	86.27
352	4.36	5.62	4.07	2.95	3.51	3.84	5.63	7.55	10.09	11.39	17.88	20.00	24.92	38.35
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	7.47	3.72	5.99	4.17	0.24	1.04	0.63	0.13	0.14
355	2.65	1.91	7.95	6.36	7.92	9.33	14.63	27.01	26.58	16.74	4.26	6.82	10.51	10.46
356	1.20	1.39	7.63	6.39	6.45	2.52	3.21	3.12	3.66	3.60	5.05	9.41	17.65	16.20
361	1.33	2.81	3.81	3.91	5.22	7.61	8.92	8.24	10.83	14.26	18.15	33.01	37.47	79.33
362	82.46	82.43	#N/A	#N/A	#N/A	#N/A	0.34	3.61	2.17	1.08	17.04	91.12	23.12	12.71
363	6.25	5.72	6.58	7.46	8.35	12.06	8.41	27.65	32.28	32.59	34.74	52.28	25.89	64.86
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.55	2.55	3.24	9.93	19.35	18.49	3.34
369	#N/A	#N/A	#N/A	#N/A	#N/A	1.54	2.41	0.48	0.95	1.47	3.90	#N/A	#N/A	1.19
371	2.19	#N/A	#N/A	#N/A	#N/A	30.34	3.98	13.77	72.40	114.96	156.55	164.29	24.81	119.02
372	#N/A	#N/A	#N/A	#N/A	#N/A	10.42	2.72	7.75	9.20	23.72	13.25	4.58	10.84	49.76
381	2.19	2.21	5.57	9.22	33.07	7.03	7.98	31.31	28.50	29.10	20.41	33.90	18.95	15.08
382	2.36	1.59	2.12	1.06	1.05	1.14	1.93	4.17	3.35	3.29	6.00	9.09	39.29	13.72
383	1.73	1.49	3.29	3.86	6.60	5.20	5.83	10.26	6.82	15.19	21.20	11.14	14.12	14.28
384	5.58	7.04	10.51	10.35	61.19	84.24	34.46	11.14	87.09	122.33	132.33	134.83	44.21	92.93
385	1.71	1.15	0.66	1.19	1.68	2.13	2.95	2.05	5.11	#N/A	0.83	3.72	10.09	21.85
390	0.07	0.13	0.19	#N/A	#N/A	0.76	0.78	3.05	2.95	3.85	3.86	6.89	3.96	20.74
Backcast-3	3.49	3.71	4.84	5.22	10.37	11.23	9.27	10.69	14.35	18.13	20.78	24.88	32.61	41.57
311-312	2.47	2.78	4.40	5.52	5.19	8.54	11.60	13.42	12.92	8.85	8.32	15.75	18.40	36.99
313	26.66	28.93	20.25	11.94	15.41	13.34	19.90	20.62	14.36	18.23	8.11	19.92	19.09	2.07
314	0.07	0.26	0.26	1.08	1.88	0.29	0.07	0.05	0.72	1.09	0.10	#N/A	#N/A	#N/A
321	1.87	1.01	1.23	1.66	4.09	4.39	6.09	6.92	9.73	10.67	10.88	13.21	17.69	22.69
322	#N/A	#N/A	0.79	0.79	0.83	1.25	2.60	4.14	8.51	8.71	17.90	20.15	13.00	22.50
323	0.09	0.27	0.30	0.50	1.76	0.96	1.81	6.05	1.28	1.48	0.84	2.48	0.65	5.17
324	#N/A	#N/A	#N/A	1.64	1.23	4.23	3.45	10.71	9.77	10.00	14.41	22.73	27.64	69.99
331	2.72	4.66	6.57	5.48	8.33	7.31	8.79	7.11	11.98	12.04	13.70	14.21	9.63	12.49
332	0.30	0.41	0.51	0.59	0.72	1.26	1.05	0.57	1.64	3.18	0.47	3.07	10.99	38.39
341	2.69	5.11	19.28	25.31	25.49	45.33	58.41	54.78	55.86	42.94	82.41	70.68	45.45	121.82
342	0.27	1.37	1.30	1.09	0.99	0.52	0.70	2.38	1.44	1.44	2.77	3.05	3.19	7.19
351	4.72	4.39	3.84	3.25	5.45	10.97	11.01	9.20	12.66	25.60	20.38	18.29	44.05	86.27
352	1.69	2.01	3.07	2.28	3.22	3.84	5.63	7.29	10.09	11.39	25.60	20.00	24.92	38.35
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	11.24	3.08	4.72	3.51	1.07	1.04	0.52	0.13	0.14
355	5.70	3.57	6.21	5.77	7.92	9.33	14.63	27.01	26.58	16.74	4.26	4.48	10.51	10.46
356	1.20	1.39	7.63	6.39	6.45	2.52	3.21	2.76	3.66	3.60	4.96	8.45	17.65	16.20
361	1.33	2.81	3.81	3.76	5.22	7.61	8.92	8.24	10.83	14.26	18.15	23.45	37.47	79.33
362	42.02	42.24	2.64	2.56	2.59	6.96	4.07	4.29	4.17	3.42	15.63	81.96	22.61	12.71
363	6.25	5.72	6.58	7.42	8.35	12.06	5.92	27.65	32.28	32.59	34.74	52.28	25.89	64.86
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.55	2.55	3.24	9.93	19.35	18.49	3.34
369	#N/A	#N/A	#N/A	#N/A	#N/A	1.54	2.41	0.38	0.71	1.47	3.90	#N/A	#N/A	1.19
371	1.31	0.57	0.55	0.62	1.02	24.61	4.27	3.35	8.45	14.19	18.94	16.90	187.26	119.02
372	#N/A	#N/A	#N/A	#N/A	#N/A	10.42	2.72	7.75	9.20	23.72	13.25	4.58	10.84	49.76
381	3.46	3.75	5.84	9.69	35.03	7.07	7.89	28.99	26.93	27.59	20.41	32.79	18.95	15.08
382	2.36	1.59	2.12	1.05	0.99	1.08	1.72	4.17	3.35	3.19	5.75	8.70	37.28	13.72
383	1.73	1.42	3.03	3.57	4.88	4.33	5.20	9.95	6.41	15.19	20.34	10.98	13.62	14.28
384	5.01	5.05	7.95	8.74	46.04	75.30	28.16	10.08	80.95	115.28	132.33	131.30	168.56	92.93
385	1.71	1.15	0.66	1.19	1.68	2.13	2.95	2.05	5.11	#N/A	0.83	3.72	10.09	21.85
390	0.07	0.13	0.19	#N/A	0.26	0.84	0.78	3.05	2.38	3.85	3.86	5.03	3.96	20.74

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 5b: Mean Value Added per Establishment of Majority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (million rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	4.98	6.63	7.19	8.14	8.30	7.87	10.17	13.07	11.96	14.19	17.09	22.25	25.63	38.09
311-312	4.10	3.98	2.91	3.21	2.63	2.50	4.50	7.67	7.56	8.61	8.65	9.11	20.36	28.57
313	8.06	6.80	7.69	11.57	16.65	20.33	13.30	16.12	26.06	41.13	62.90	128.96	68.75	1.93
314	18.58	23.56	35.13	35.88	69.26	84.43	110.77	71.61	91.59	155.69	321.72	207.43	234.12	505.94
321	6.78	13.81	9.15	9.85	15.44	10.02	13.68	14.32	12.26	17.46	18.83	28.96	26.37	79.92
322	0.84	#N/A	#N/A	0.01	3.36	1.87	3.68	5.60	5.56	6.09	4.60	5.28	8.74	17.20
323	#N/A	#N/A	#N/A	#N/A	#N/A	0.09	1.75	3.19	4.34	2.65	16.12	17.89	24.16	15.06
324	23.27	28.58	26.42	3.64	12.53	14.79	5.41	14.79	15.49	17.75	19.50	27.84	44.48	64.18
331	1.32	2.26	1.63	2.59	3.51	2.67	1.65	9.87	10.27	11.63	13.16	16.98	26.53	31.07
332	0.59	1.15	0.46	0.67	1.54	2.39	3.30	2.10	3.56	4.90	6.73	8.34	7.34	9.59
341	3.46	8.47	2.20	24.70	23.48	25.14	23.09	18.67	9.05	4.94	4.97	7.49	22.37	12.59
342	2.20	3.96	3.59	5.81	1.29	0.33	0.72	2.88	24.84	29.38	48.21	98.11	189.63	#N/A
351	2.15	1.87	3.71	3.91	3.94	18.48	26.23	41.23	25.21	22.78	24.75	40.93	37.58	86.58
352	2.31	2.81	4.07	4.05	4.24	5.49	8.67	6.15	14.83	16.77	18.67	19.85	29.14	32.93
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.48	0.95	0.71	3.15
355	5.45	5.19	4.77	2.24	3.17	4.53	7.69	5.24	9.88	13.26	18.43	22.35	19.63	15.72
356	16.43	1.38	2.85	2.18	1.75	2.21	7.53	7.41	4.24	7.85	10.05	8.67	12.15	17.52
361	#N/A	#N/A	#N/A	0.60	0.74	7.96	5.32	3.04	8.90	6.64	5.49	4.70	8.53	11.94
362	2.69	3.24	5.71	2.94	3.13	#N/A	#N/A	#N/A	3.50	7.70	2.13	4.05	1.13	173.30
363	16.81	16.02	16.81	12.21	12.32	24.80	30.39	67.90	35.85	6.53	19.46	31.55	37.80	29.17
364	1.96	1.92	1.49	1.71	1.07	2.48	#N/A	4.02	#N/A	#N/A	#N/A	6.46	29.25	101.88
369	#N/A	#N/A	#N/A	#N/A	#N/A	9.78	3.95	2.47	20.56	3.01	6.66	1.66	6.52	29.60
371	53.93	111.24	123.28	93.33	49.03	11.73	29.48	9.99	42.34	24.38	49.23	29.73	19.15	12.90
372	#N/A	#N/A	#N/A	#N/A	#N/A	2.62	47.76	101.57	25.44	77.71	146.58	163.27	71.18	116.48
381	2.14	2.15	3.98	5.23	7.26	6.00	6.90	10.77	10.80	9.35	14.16	23.94	18.23	32.80
382	2.21	1.47	5.84	5.81	5.32	5.00	11.53	6.99	6.17	11.81	14.53	15.71	8.74	28.84
383	4.18	5.96	6.19	4.30	6.66	10.42	10.77	10.25	9.42	12.95	12.21	16.32	16.54	16.54
384	6.82	8.85	8.10	18.49	11.32	13.20	12.99	32.43	9.99	20.69	19.70	22.84	55.80	24.97
385	#N/A	#N/A	#N/A	1.18	0.84	0.79	0.41	4.15	1.42	4.94	11.23	18.31	53.82	7.57
390	3.17	4.48	3.65	2.21	3.39	1.81	1.89	4.67	5.05	2.72	1.89	3.48	8.71	12.42
Backcast-3	3.82	4.45	5.74	6.55	7.15	6.66	8.94	12.02	12.04	14.30	16.74	17.89	24.79	38.09
311-312	3.88	4.07	2.73	3.16	2.38	2.54	4.31	7.15	7.56	8.48	8.69	9.27	20.14	28.57
313	7.89	7.93	7.73	11.57	16.65	20.33	13.30	16.12	26.06	41.13	62.90	30.95	52.02	1.93
314	18.58	23.56	35.13	23.59	34.63	84.43	110.77	71.61	91.59	155.69	321.72	207.43	234.12	505.94
321	6.11	7.02	8.18	8.79	14.12	9.23	13.37	13.87	12.06	17.46	21.34	19.21	25.95	79.92
322	0.84	#N/A	0.37	0.22	1.90	1.99	2.70	4.96	5.93	6.64	4.60	5.26	8.52	17.20
323	#N/A	#N/A	#N/A	#N/A	#N/A	0.47	1.52	3.12	4.27	2.99	13.35	17.89	24.16	15.06
324	12.02	12.91	13.32	5.72	5.58	7.87	4.90	14.79	15.49	17.75	19.50	27.55	44.48	64.18
331	0.96	1.35	1.57	1.92	1.91	1.31	1.63	9.10	9.64	9.53	13.07	16.94	26.53	31.07
332	0.59	1.15	0.46	0.78	1.08	1.70	3.15	2.10	3.56	4.90	6.73	8.34	6.68	9.59
341	2.42	5.78	12.49	16.76	15.89	16.01	13.46	14.27	7.68	4.94	4.97	4.30	19.61	12.59
342	1.51	1.42	2.74	3.60	1.04	0.42	0.72	2.88	24.84	29.38	48.21	98.11	189.63	#N/A
351	1.76	2.33	3.33	2.80	3.71	17.26	22.89	39.63	23.37	21.97	22.67	20.75	35.95	86.58
352	2.19	3.10	3.40	3.68	4.28	5.52	8.45	5.97	13.93	16.48	18.58	20.36	29.23	32.93
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.48	0.32	0.71	3.15
355	2.89	3.66	3.41	2.30	3.06	3.48	6.14	5.00	9.88	11.41	18.43	12.96	19.63	15.72
356	0.92	1.50	2.82	2.28	1.61	3.93	7.93	7.40	11.53	7.39	10.05	8.18	11.67	17.52
361	#N/A	#N/A	#N/A	0.60	0.74	7.96	5.32	3.04	8.90	5.38	5.49	4.70	8.53	11.94
362	2.69	3.24	5.71	2.94	3.13	#N/A	#N/A	0.17	2.44	5.17	1.44	4.05	0.83	173.30
363	10.94	9.86	11.27	12.48	12.32	24.80	30.39	67.90	28.91	29.10	19.46	31.55	37.80	29.17
364	1.96	1.92	1.49	1.71	1.07	2.48	#N/A	4.02	#N/A	#N/A	#N/A	2.47	27.88	101.88
369	#N/A	#N/A	#N/A	#N/A	#N/A	9.78	3.95	2.47	20.56	3.01	6.66	1.66	6.52	29.60
371	16.07	15.33	44.82	62.76	55.95	10.08	22.30	7.86	37.18	21.74	43.87	23.64	17.12	12.90
372	#N/A	#N/A	#N/A	#N/A	#N/A	3.64	47.76	101.57	19.19	77.71	146.58	151.07	71.18	116.48
381	1.71	1.49	2.60	2.90	6.14	5.22	5.82	9.93	9.92	9.52	13.14	17.13	18.56	32.80
382	1.78	1.51	4.37	5.25	5.32	4.83	10.11	5.81	5.89	11.23	11.28	12.33	8.24	28.84
383	3.54	4.65	4.60	4.08	5.88	8.48	8.73	8.81	9.84	12.36	11.57	15.96	15.59	16.54
384	6.57	7.87	9.29	14.32	9.54	10.00	11.37	25.29	9.88	20.09	19.34	23.21	54.26	24.97
385	#N/A	#N/A	7.46	1.18	0.84	0.79	0.41	4.15	1.42	4.94	11.23	14.57	53.82	7.57
390	2.54	2.82	2.96	1.45	1.96	1.25	1.89	4.54	11.86	8.08	1.91	3.33	8.46	12.42

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 5c: Mean Value Added per Establishment of Heavily-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (million rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	1.96	3.76	2.77	3.32	4.08	6.61	4.73	6.99	6.25	8.88	12.39	13.96	16.29	28.62
311-312	2.63	2.31	2.37	3.16	6.96	5.56	3.68	4.24	3.66	3.84	7.51	9.26	14.95	48.02
313	1.14	4.27	5.01	5.88	4.55	#N/A	#N/A	24.46	10.12	17.75	19.38	24.52	28.16	28.39
314	4.81	7.92	7.43	8.08	6.08	13.66	29.14	3.66	6.54	26.24	14.92	9.19	25.26	77.01
321	2.63	25.93	7.37	3.55	17.40	13.70	18.90	3.57	9.14	7.71	7.46	9.88	15.24	35.10
322	0.10	#N/A	#N/A	0.21	2.01	2.13	1.86	4.86	4.58	8.99	7.11	7.66	9.25	14.30
323	4.76	3.32	0.06	#N/A	0.02	#N/A	#N/A	0.98	3.38	1.99	1.66	2.51	2.64	6.20
324	#N/A	0.59	0.82	#N/A	4.70	4.41	8.04	14.31	19.52	29.11	22.09	22.09	24.93	55.50
331	0.24	0.43	8.52	7.49	3.90	4.89	1.48	2.03	2.94	2.87	3.00	2.87	3.92	7.21
332	#N/A	0.03	0.13	1.35	0.88	0.88	1.45	1.96	2.10	2.97	1.49	1.88	2.47	6.36
341	#N/A	#N/A	#N/A	#N/A	#N/A	1.32	0.35	0.43	#N/A	96.36	80.67	96.87	59.18	67.73
342	0.03	0.09	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	0.01	#N/A	#N/A	#N/A	#N/A	0.67
351	1.41	8.70	2.43	20.74	13.07	6.02	11.36	0.16	0.98	23.64	17.85	17.63	23.31	48.44
352	0.86	1.96	2.18	2.88	2.15	5.34	1.97	6.48	9.07	7.85	7.59	12.66	11.96	22.03
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	11.62	10.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.11	0.37	3.99	7.29	6.65	7.44	6.18
355	0.90	0.69	0.68	2.14	2.25	3.26	2.51	2.07	3.00	4.89	5.86	6.94	8.62	12.24
356	#N/A	#N/A	#N/A	#N/A	1.67	0.67	0.25	1.19	3.62	3.70	22.69	3.05	3.85	22.68
361	#N/A	0.02	0.01	0.04	0.05	0.05	0.06	#N/A	2.21	2.98	3.10	#N/A	#N/A	2.71
362	#N/A	#N/A	#N/A	0.16	#N/A	#N/A	#N/A	#N/A	#N/A	0.16	0.10	0.46	5.13	#N/A
363	0.06	#N/A	#N/A	1.74	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.96	1.20	0.97	5.19
364	0.16	#N/A	#N/A	0.01	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.07	#N/A	1.54	0.73	0.33	2.97	1.74
371	#N/A	#N/A	#N/A	0.09	0.11	#N/A	#N/A	0.79	2.13	3.14	4.59	2.77	8.20	3.68
372	#N/A	#N/A	#N/A	#N/A	#N/A	121.62	42.14	113.88	154.67	32.15	1.05	3.26	8.78	10.00
381	2.15	0.22	0.22	1.70	3.10	2.04	1.81	2.87	5.07	4.26	5.26	7.00	8.91	13.53
382	0.23	#N/A	#N/A	#N/A	#N/A	0.28	0.58	0.68	1.22	1.62	7.57	8.53	11.08	29.99
383	15.21	#N/A	#N/A	#N/A	#N/A	3.17	3.15	13.52	7.07	9.75	16.26	26.70	33.31	36.28
384	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.34	7.70	4.36	54.54	56.01	18.32	54.31
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.36	1.79	4.67	4.28	5.41	7.03	10.64
390	0.16	#N/A	#N/A	#N/A	#N/A	1.38	1.32	8.19	3.99	6.55	11.17	11.95	15.56	29.39
Backcast-3	2.17	2.55	3.45	4.12	4.50	5.54	4.04	6.61	6.05	8.50	10.43	13.49	15.81	28.62
311-312	2.68	2.64	2.89	4.27	6.11	5.48	3.78	4.56	3.86	3.60	6.86	9.01	14.95	48.02
313	1.14	4.27	5.01	5.88	4.55	#N/A	#N/A	24.46	10.12	17.75	19.38	24.52	28.16	28.39
314	4.81	7.92	7.43	8.08	6.08	13.66	14.57	1.30	2.24	17.50	11.93	9.19	25.26	77.01
321	4.88	7.38	7.25	9.78	18.83	10.70	11.73	4.49	7.92	6.81	6.48	9.03	15.24	35.10
322	0.10	#N/A	#N/A	0.41	1.44	1.96	1.86	4.23	4.39	7.48	6.56	7.56	9.12	14.30
323	4.76	0.17	0.06	#N/A	#N/A	#N/A	#N/A	0.86	3.38	1.99	1.66	2.51	2.36	6.20
324	#N/A	0.59	0.82	0.83	2.94	4.41	7.24	13.12	17.76	31.70	18.00	20.87	23.55	55.50
331	1.60	1.95	7.31	7.44	3.90	3.59	1.48	2.03	2.94	2.94	3.00	2.85	3.78	7.21
332	#N/A	0.03	0.15	1.11	0.71	0.69	1.45	1.96	1.77	2.17	1.28	1.88	2.47	6.36
341	#N/A	#N/A	#N/A	#N/A	0.28	1.32	0.35	0.30	0.43	96.36	64.91	96.87	53.84	67.73
342	0.03	0.09	0.00	#N/A	#N/A	#N/A	#N/A	#N/A	0.01	#N/A	#N/A	#N/A	#N/A	0.67
351	0.76	3.88	3.84	10.90	9.11	3.39	8.38	3.32	1.52	20.34	17.85	9.53	22.48	48.44
352	1.03	1.37	1.68	1.91	1.79	5.28	1.97	6.48	8.17	7.36	7.26	9.26	12.96	22.03
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	16.99	10.00
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.11	5.87	3.99	7.29	4.13	5.34	6.18
355	1.05	1.87	3.26	3.44	3.14	2.63	2.32	1.89	2.83	4.71	5.86	6.94	8.62	12.24
356	#N/A	#N/A	#N/A	0.06	0.88	0.67	0.41	1.30	3.64	3.80	3.55	2.85	3.76	22.68
361	#N/A	0.02	0.01	0.04	0.05	0.05	0.06	#N/A	2.21	2.98	3.10	#N/A	#N/A	2.71
362	#N/A	#N/A	#N/A	0.16	#N/A	#N/A	#N/A	#N/A	#N/A	0.16	0.10	0.46	5.13	#N/A
363	0.41	1.26	1.26	1.74	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.96	1.20	8.37	5.19
364	0.16	#N/A	0.01	0.01	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.04	0.07	#N/A	1.54	0.73	0.33	2.97	1.74
371	#N/A	#N/A	0.07	0.09	0.11	#N/A	#N/A	0.79	2.13	1.68	4.14	3.98	6.67	3.68
372	#N/A	#N/A	#N/A	#N/A	#N/A	81.39	42.14	113.88	154.90	18.29	1.05	3.00	8.78	10.00
381	2.15	0.22	0.22	1.70	2.36	2.04	1.14	2.43	4.58	5.12	5.05	7.10	8.73	13.53
382	0.23	#N/A	#N/A	#N/A	#N/A	0.28	0.43	0.68	1.22	1.62	7.57	7.63	11.08	29.99
383	15.21	#N/A	#N/A	#N/A	#N/A	3.17	2.85	14.13	8.49	9.66	15.41	26.79	30.46	36.28
384	#N/A	#N/A	#N/A	#N/A	#N/A	0.13	0.42	0.47	5.20	4.36	54.54	55.16	17.44	54.31
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.25	1.79	4.67	4.28	5.41	10.64	52.37
390	0.16	#N/A	#N/A	#N/A	#N/A	1.21	1.28	6.41	3.63	6.26	11.17	11.65	15.56	29.39

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).



**Appendix Table 5d: Mean Value Added per Establishment of Local Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (million rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	0.51	0.72	0.71	0.75	1.02	1.23	1.47	1.87	2.20	2.41	2.59	3.00	2.56	5.07
311-312	0.33	0.32	0.37	0.44	0.55	0.92	1.14	1.44	1.62	1.18	1.36	1.46	2.16	3.54
313	0.26	0.31	0.36	0.36	0.47	0.60	0.84	0.61	0.71	1.09	1.56	1.28	1.52	1.73
314	1.27	1.85	2.13	1.94	3.05	3.24	3.25	4.53	5.55	7.85	10.80	10.07	2.37	16.82
321	0.27	0.79	0.42	0.46	0.77	1.08	1.24	1.79	1.81	3.51	3.15	3.43	3.73	6.54
322	0.18	0.33	0.29	0.34	0.50	0.45	0.49	0.63	1.70	0.87	0.86	0.99	1.18	2.40
323	0.14	0.49	0.22	0.31	0.28	0.61	1.04	0.82	0.90	0.83	0.80	1.01	1.45	1.56
324	0.12	0.30	0.17	0.45	0.69	1.00	1.09	1.73	3.96	4.71	3.68	3.92	4.03	6.41
331	0.71	1.20	1.25	1.11	1.48	1.75	2.33	2.55	2.53	2.70	2.76	3.01	3.39	5.58
332	0.07	0.09	0.10	0.15	0.21	0.33	0.47	0.62	0.61	0.55	0.58	0.66	0.73	2.63
341	0.89	0.69	1.26	1.88	2.44	3.05	4.23	3.90	4.07	4.75	5.12	5.38	5.77	19.75
342	0.22	0.37	0.37	0.39	0.50	0.53	0.69	1.07	1.16	1.41	1.66	2.19	1.74	2.13
351	2.43	2.34	2.99	3.38	3.56	2.69	4.33	5.23	5.31	5.18	6.59	7.56	8.28	10.62
352	0.70	0.64	0.74	0.89	1.03	1.21	2.20	1.58	2.11	2.93	2.52	2.96	4.09	5.81
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7.56	#N/A	61.58	15.73	18.00	72.63	29.07
354	#N/A	#N/A	#N/A	#N/A	#N/A	1.72	3.63	1.41	1.34	1.73	1.11	0.75	1.23	1.29
355	0.93	0.66	0.77	1.17	1.58	1.49	1.54	2.19	1.64	1.88	2.34	2.84	3.36	6.05
356	0.16	0.22	0.26	0.28	0.34	0.59	0.69	1.12	1.31	1.14	1.28	1.49	1.52	1.95
361	0.63	0.74	0.67	0.87	1.35	1.65	2.58	2.35	4.72	5.68	4.43	7.53	8.23	11.38
362	0.61	1.11	2.07	1.88	2.14	2.70	4.17	6.94	8.16	5.06	6.11	4.49	5.32	5.49
363	0.39	0.40	0.55	0.57	0.61	0.91	1.29	0.84	1.28	1.72	1.41	1.64	3.34	2.19
364	0.03	0.04	0.04	0.04	0.05	0.05	0.06	0.12	0.09	0.09	0.09	0.13	0.13	0.14
369	0.20	0.27	0.31	0.23	0.27	0.43	0.68	0.66	0.71	0.61	0.99	1.20	1.44	1.56
371	17.13	35.19	25.85	21.42	35.90	33.52	19.26	26.18	29.32	30.85	35.16	85.03	16.45	28.51
372	#N/A	#N/A	#N/A	#N/A	#N/A	3.15	1.97	3.26	3.40	3.83	2.75	4.68	9.69	9.98
381	0.47	0.53	0.53	0.81	0.77	0.85	1.04	1.14	1.36	1.50	1.90	2.15	1.88	3.18
382	0.32	0.30	0.34	0.44	0.70	1.32	1.99	1.68	1.53	2.25	2.03	2.63	3.32	2.94
383	1.05	1.09	1.08	1.09	1.51	1.93	2.44	4.19	3.96	3.15	6.40	10.74	6.00	11.78
384	1.34	1.60	1.74	1.51	1.57	1.94	3.11	5.60	6.69	8.79	9.37	10.13	3.34	17.59
385	0.09	0.08	0.12	0.18	0.26	0.23	0.28	0.65	0.40	1.29	1.53	2.51	2.77	2.22
390	0.12	0.15	0.17	0.23	0.36	0.40	0.44	0.63	0.79	0.57	0.54	0.69	0.82	1.27
Backcast-3	0.43	0.51	0.58	0.68	0.91	1.14	1.30	1.63	1.82	1.97	2.32	2.69	3.12	5.07
311-312	0.32	0.33	0.35	0.42	0.49	0.61	0.73	0.86	0.92	1.02	1.21	1.38	2.12	3.54
313	0.20	0.25	0.29	0.34	0.45	0.57	0.68	0.54	0.64	1.00	1.48	1.36	1.51	1.73
314	1.06	1.30	1.50	1.65	2.14	2.81	2.81	3.91	4.78	6.69	9.64	9.95	10.54	16.82
321	0.25	0.35	0.40	0.48	0.78	1.00	1.10	1.61	1.60	2.35	2.99	2.70	3.69	6.54
322	0.33	0.36	0.36	0.40	0.50	1.04	1.07	1.19	1.42	0.77	0.79	0.94	1.15	2.40
323	0.14	0.21	0.22	0.33	0.34	0.61	0.89	0.67	0.72	0.73	0.74	1.00	1.42	1.56
324	0.14	0.18	0.19	0.34	0.70	1.00	1.14	1.63	3.57	4.11	3.39	3.86	4.05	6.41
331	0.51	0.67	0.92	0.96	1.40	1.74	2.18	2.26	2.23	2.34	2.53	2.90	3.28	5.58
332	0.08	0.10	0.12	0.14	0.23	0.32	0.40	0.50	0.49	0.45	0.53	0.60	0.68	2.63
341	0.94	1.24	1.32	1.97	2.50	3.04	3.60	3.49	3.62	4.29	4.74	4.96	9.56	19.75
342	0.25	0.36	0.33	0.36	0.46	0.51	0.67	1.08	1.23	1.54	1.54	2.16	1.71	2.13
351	1.63	1.84	2.36	2.92	2.98	2.54	4.07	5.05	4.85	5.06	6.37	6.52	8.22	10.62
352	0.53	0.55	0.64	0.76	0.96	1.16	2.02	1.47	1.92	2.76	2.43	3.02	4.06	5.81
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7.56	#N/A	61.58	12.59	10.23	72.63	29.07
354	#N/A	#N/A	#N/A	#N/A	#N/A	1.42	1.93	1.01	1.00	1.53	0.96	0.71	1.25	1.29
355	0.52	0.55	0.64	1.10	1.49	1.41	1.45	2.10	1.61	1.73	2.26	2.30	3.31	6.05
356	0.16	0.21	0.24	0.27	0.34	0.56	0.62	1.09	1.67	1.05	1.16	1.23	1.51	1.95
361	0.56	0.62	0.56	0.71	1.00	1.53	2.34	2.13	4.30	5.17	4.13	4.76	8.13	11.38
362	0.48	1.04	1.83	1.85	2.21	2.70	3.66	6.27	7.15	4.54	5.84	4.27	5.09	5.49
363	0.29	0.35	0.34	0.55	0.55	0.84	1.10	0.78	1.13	1.50	1.37	1.67	3.36	2.19
364	0.03	0.03	0.03	0.04	0.05	0.05	0.06	0.10	0.08	0.08	0.09	0.12	0.12	0.14
369	0.18	0.22	0.25	0.20	0.29	0.47	0.58	0.58	0.57	0.52	0.89	1.13	1.31	1.56
371	11.33	15.13	17.97	13.93	22.87	28.22	16.74	24.11	30.57	27.43	33.55	84.24	29.69	28.51
372	#N/A	#N/A	#N/A	#N/A	#N/A	3.33	2.56	3.43	3.03	3.48	2.81	4.16	9.10	9.98
381	0.36	0.39	0.45	0.68	0.83	0.94	1.07	1.39	1.28	1.33	1.53	2.06	1.87	3.18
382	0.26	0.38	0.41	0.56	0.81	1.16	1.62	1.36	1.27	1.87	1.92	2.05	3.27	2.94
383	0.68	0.67	0.72	0.98	1.30	1.72	2.04	3.60	3.60	3.41	5.89	10.53	5.83	11.78
384	0.87	1.25	1.09	1.21	1.59	1.88	2.30	4.33	5.00	5.90	6.76	5.70	9.52	17.59
385	0.09	0.09	0.13	0.17	0.23	0.22	0.28	0.60	0.38	1.21	1.49	2.36	2.65	2.22
390	0.12	0.18	0.23	0.30	0.35	0.38	0.36	0.56	0.69	0.49	0.50	0.67	0.82	1.27

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 5e: Mean Value Added per Establishment of All Establishments Reporting Positive Employment and Value Added by Industry (million rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	0.63	0.88	0.88	0.95	1.29	1.52	1.81	2.35	2.74	3.15	3.43	4.06	3.76	7.22
311-312	0.37	0.37	0.43	0.51	0.65	1.00	1.28	1.60	1.78	1.37	1.55	1.75	2.67	4.76
313	0.83	0.75	1.08	1.02	1.17	1.44	1.82	2.20	2.02	2.89	3.08	3.33	3.61	2.63
314	1.36	1.93	2.21	2.02	3.12	3.32	3.39	4.67	5.74	8.28	11.18	10.54	3.00	18.37
321	0.39	1.08	0.58	0.62	1.02	1.32	1.63	2.18	2.24	3.99	3.66	4.26	4.65	8.86
322	0.19	0.33	0.29	0.35	0.53	0.48	0.55	0.82	1.92	1.22	1.23	1.40	1.63	3.21
323	0.20	0.52	0.22	0.31	0.28	0.61	1.08	1.05	1.06	0.88	1.02	1.27	1.88	2.20
324	0.32	0.55	0.41	0.52	0.95	1.49	1.61	3.43	5.49	6.56	5.56	6.52	7.05	12.13
331	0.78	1.34	1.45	1.28	1.65	1.90	2.49	2.75	2.78	2.93	3.02	3.29	3.77	6.06
332	0.07	0.09	0.11	0.16	0.22	0.36	0.53	0.65	0.68	0.65	0.66	0.73	0.88	2.92
341	0.98	0.98	1.86	2.86	3.22	4.78	6.05	5.61	5.26	6.30	7.82	8.73	8.68	24.38
342	0.23	0.38	0.39	0.44	0.51	0.53	0.69	1.09	1.35	1.62	1.91	2.49	2.04	2.15
351	2.56	2.55	3.09	3.60	3.80	4.16	6.47	8.48	7.39	8.25	9.12	12.73	13.84	25.48
352	0.98	1.02	1.18	1.27	1.45	1.76	2.85	2.23	3.48	4.48	4.39	5.11	6.68	9.49
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7.56	#N/A	61.58	15.73	18.00	57.37	21.44
354	#N/A	#N/A	#N/A	#N/A	#N/A	2.87	3.65	2.31	1.70	2.01	1.66	1.16	1.58	1.80
355	0.98	0.74	0.97	1.34	1.77	1.78	1.98	2.60	2.21	2.62	3.07	3.88	4.39	6.77
356	0.37	0.24	0.33	0.33	0.39	0.62	0.76	1.20	1.41	1.31	2.03	1.74	1.98	3.27
361	0.64	0.82	0.88	1.02	1.54	2.19	3.07	2.89	5.21	6.22	5.18	8.88	10.44	14.35
362	2.81	3.78	2.28	1.89	2.16	2.70	4.10	6.88	7.79	4.93	6.73	11.18	7.14	11.51
363	0.57	0.58	0.78	0.73	0.79	1.18	1.60	1.61	2.06	2.35	2.09	2.49	4.04	3.30
364	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.13	0.09	0.10	0.10	0.15	0.26	0.36
369	0.20	0.27	0.31	0.23	0.27	0.49	0.71	0.69	0.79	0.64	1.02	1.20	1.48	1.85
371	19.09	40.44	35.28	32.51	37.55	31.05	18.43	23.29	34.51	37.23	45.08	84.50	16.64	33.74
372	#N/A	#N/A	#N/A	#N/A	#N/A	10.50	8.16	14.68	7.92	12.65	13.86	14.53	13.27	18.52
381	0.60	0.65	0.82	1.24	1.98	1.17	1.44	2.19	2.50	2.61	2.87	3.74	3.15	4.91
382	0.48	0.41	0.60	0.71	0.93	1.51	2.55	2.16	1.97	2.94	3.10	3.89	5.65	7.91
383	1.58	1.55	1.62	1.46	2.16	2.79	3.34	5.86	4.98	5.88	9.25	13.59	13.00	19.34
384	1.59	1.93	2.13	2.14	3.20	4.38	4.44	6.69	8.88	12.70	13.84	15.07	7.77	22.29
385	0.13	0.10	0.14	0.23	0.30	0.34	0.43	0.94	0.69	1.75	2.40	3.64	6.75	8.11
390	0.20	0.23	0.25	0.26	0.43	0.47	0.58	1.23	1.30	1.15	1.24	1.48	2.00	3.40
Backcast-3	0.52	0.61	0.72	0.84	1.13	1.40	1.58	2.04	2.29	2.61	3.04	3.58	4.42	7.22
311-312	0.36	0.37	0.39	0.48	0.55	0.70	0.86	1.04	1.10	1.20	1.39	1.67	2.63	4.76
313	0.61	0.70	0.79	0.87	1.01	1.27	1.48	1.91	1.81	2.63	2.94	2.88	3.55	2.63
314	1.12	1.36	1.55	1.71	2.20	2.88	2.93	4.02	4.93	7.04	9.97	10.40	11.11	18.37
321	0.36	0.47	0.54	0.64	1.04	1.21	1.43	1.95	1.97	2.81	3.51	3.30	4.60	8.86
322	0.33	0.36	0.36	0.40	0.52	1.06	1.11	1.32	1.62	1.08	1.13	1.35	1.58	3.21
323	0.19	0.21	0.22	0.33	0.36	0.61	0.92	0.87	0.86	0.80	0.96	1.26	1.84	2.20
324	0.29	0.34	0.35	0.52	0.92	1.40	1.57	3.05	4.88	5.89	5.02	6.32	6.91	12.13
331	0.57	0.77	1.06	1.08	1.52	1.85	2.30	2.44	2.46	2.55	2.78	3.19	3.66	6.06
332	0.08	0.10	0.12	0.15	0.24	0.34	0.45	0.53	0.54	0.53	0.60	0.67	0.83	2.92
341	1.03	1.45	1.95	2.81	3.33	4.49	5.10	4.96	4.88	6.00	7.24	8.13	11.99	24.38
342	0.26	0.37	0.35	0.39	0.47	0.51	0.67	1.10	1.38	1.72	1.76	2.45	2.00	2.15
351	1.79	2.00	2.48	2.99	3.20	3.85	5.90	8.01	6.82	7.88	8.77	8.76	13.62	25.48
352	0.73	0.83	0.96	1.07	1.33	1.66	2.63	2.06	3.21	4.26	4.49	5.09	6.71	9.49
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7.56	#N/A	61.58	12.59	10.23	54.08	21.44
354	#N/A	#N/A	#N/A	#N/A	#N/A	3.88	2.18	1.73	1.87	1.76	1.45	1.11	1.57	1.80
355	0.66	0.73	0.94	1.34	1.73	1.65	1.84	2.47	2.14	2.38	2.96	2.95	4.32	6.77
356	0.17	0.22	0.29	0.31	0.38	0.61	0.71	1.17	1.84	1.21	1.41	1.47	1.97	3.27
361	0.58	0.69	0.71	0.84	1.16	2.01	2.81	2.65	4.79	5.67	4.86	5.83	10.32	14.35
362	2.31	3.01	2.02	1.88	2.24	2.77	3.67	6.11	6.81	4.44	6.42	11.10	6.95	11.51
363	0.40	0.45	0.48	0.69	0.70	1.07	1.34	1.43	1.79	2.22	2.00	2.51	4.07	3.30
364	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.11	0.08	0.09	0.10	0.14	0.25	0.36
369	0.18	0.22	0.25	0.20	0.29	0.51	0.60	0.60	0.64	0.55	0.91	1.12	1.35	1.85
371	11.40	14.86	20.30	19.17	25.75	26.15	16.13	20.53	28.79	25.48	32.54	70.99	37.15	33.74
372	#N/A	#N/A	#N/A	#N/A	#N/A	8.95	7.28	12.31	6.95	11.06	13.13	12.99	12.67	18.52
381	0.50	0.53	0.68	0.99	1.82	1.23	1.38	2.23	2.22	2.31	2.43	3.38	3.15	4.91
382	0.38	0.47	0.61	0.76	0.98	1.33	2.10	1.79	1.67	2.49	2.78	3.16	5.54	7.91
383	1.14	1.02	1.12	1.32	1.89	2.49	2.81	5.23	4.82	5.84	8.56	13.52	12.47	19.34
384	1.10	1.49	1.42	1.70	2.92	3.97	3.42	5.33	7.05	9.69	11.21	10.88	16.91	22.29
385	0.12	0.11	0.29	0.20	0.27	0.33	0.40	0.87	0.65	1.65	2.32	3.97	6.42	8.11
390	0.18	0.23	0.29	0.32	0.41	0.44	0.49	1.07	1.52	1.28	1.11	1.38	1.96	3.40

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 6a: Mean Value Added per Employee in Minority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (million rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	15.74	17.83	16.53	17.48	25.69	24.09	23.16	29.62	51.46	62.84	78.82	92.20	52.26	131.64
311-312	6.71	10.09	14.72	19.22	22.54	23.81	32.43	23.20	22.48	20.55	19.54	35.84	48.45	105.31
313	31.74	13.45	59.81	30.48	48.64	29.16	41.59	39.67	32.13	48.35	25.43	32.87	27.96	17.42
314	0.20	0.86	0.45	0.81	10.21	0.70	0.61	0.81	11.50	15.11	0.44	#N/A	#N/A	#N/A
321	2.44	8.55	3.76	3.45	4.29	6.20	8.22	10.11	29.82	13.80	17.11	20.21	20.74	25.70
322	0.70	0.74	1.00	1.37	1.44	2.46	3.63	6.23	9.57	8.91	9.48	10.50	12.94	16.51
323	#N/A	#N/A	#N/A	#N/A	4.20	3.64	5.39	12.35	2.94	4.17	0.50	8.66	1.96	16.61
324	#N/A	#N/A	#N/A	5.71	7.48	6.54	3.85	6.12	4.74	5.83	4.76	7.57	7.04	19.34
331	3.76	7.48	10.12	8.56	10.89	9.25	11.40	9.62	21.97	35.53	23.26	16.01	10.72	26.44
332	#N/A	#N/A	1.51	2.00	2.06	2.27	4.28	5.44	9.00	3.86	2.87	5.09	18.48	28.86
341	5.92	10.81	37.86	27.66	17.12	29.95	52.85	34.14	36.50	22.20	40.10	36.00	33.45	53.30
342	2.67	5.46	5.28	5.70	7.87	7.63	5.72	12.70	8.70	8.77	24.17	22.08	21.87	39.36
351	20.70	16.90	15.55	20.75	27.96	52.07	42.85	41.71	55.95	108.44	72.07	143.96	272.59	334.84
352	78.07	97.14	32.65	36.34	25.95	30.79	30.59	46.68	43.49	49.64	61.53	62.02	74.84	98.44
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	169.70	80.81	130.15	66.45	6.57	11.54	13.81	3.61	3.87
355	6.90	6.46	23.69	19.10	25.90	20.98	26.19	38.04	20.94	10.58	4.12	10.83	23.30	24.10
356	7.43	8.96	42.86	31.16	28.99	11.77	12.79	16.41	17.94	12.97	20.49	25.34	41.32	43.45
361	1.50	7.57	8.44	6.70	10.99	11.56	12.53	12.58	15.11	18.14	21.01	31.67	43.96	80.09
362	47.89	46.68	#N/A	#N/A	#N/A	#N/A	3.86	12.75	8.61	7.27	26.99	48.77	27.51	32.95
363	13.95	14.33	15.54	15.62	13.85	23.80	39.81	30.78	33.52	35.15	41.19	51.62	33.15	74.58
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	4.39	4.39	5.59	12.20	20.39	36.98	1.64
369	#N/A	#N/A	#N/A	#N/A	#N/A	6.36	9.10	2.25	4.16	11.56	14.18	#N/A	#N/A	24.67
371	13.95	#N/A	#N/A	#N/A	#N/A	62.66	45.03	158.48	877.12	1,335.59	2,054.03	2,249.49	153.84	1,516.40
372	#N/A	#N/A	#N/A	#N/A	#N/A	61.64	12.23	25.69	37.54	79.76	54.30	24.93	67.00	223.16
381	7.85	6.95	13.68	14.62	49.96	8.84	16.10	61.14	42.28	42.40	29.74	41.31	32.49	59.88
382	7.64	9.52	18.35	16.03	16.91	20.09	26.76	57.34	32.94	30.53	26.98	42.43	49.13	55.38
383	9.88	8.51	22.41	23.32	19.23	26.24	21.46	20.55	17.45	27.27	35.24	24.53	23.00	35.40
384	15.99	15.52	22.20	26.08	89.91	50.84	22.33	22.72	64.65	70.54	67.79	79.88	51.66	83.07
385	13.78	9.53	3.81	11.00	16.17	18.65	34.06	15.02	34.79	#N/A	14.06	20.65	22.68	49.38
390	1.04	4.19	6.36	#N/A	#N/A	1.51	3.48	4.58	3.60	7.02	8.08	11.37	6.73	31.53
Backcast-3	9.00	9.78	14.48	14.95	22.10	23.36	21.48	24.80	28.05	33.76	33.02	37.99	107.85	131.64
311-312	5.80	9.02	13.73	16.34	14.81	21.35	30.15	24.42	23.99	22.09	27.89	40.08	54.56	105.31
313	31.74	36.16	52.00	35.58	48.64	26.75	36.71	37.87	32.13	48.35	25.43	46.83	27.96	17.42
314	0.15	0.69	0.43	0.81	10.21	0.57	0.32	0.45	7.72	10.15	0.44	#N/A	#N/A	#N/A
321	3.81	3.59	3.82	4.16	4.98	6.95	7.99	9.99	29.82	13.80	17.11	18.20	20.74	25.70
322	#N/A	#N/A	1.47	1.53	2.34	3.57	3.89	5.72	9.50	8.91	9.29	10.50	12.38	16.51
323	1.98	3.17	3.25	4.46	11.10	3.64	5.39	10.06	2.94	4.28	3.01	8.66	1.96	16.61
324	#N/A	#N/A	#N/A	5.71	4.01	4.94	3.55	5.90	4.82	5.83	4.76	7.57	7.04	19.34
331	5.01	6.12	8.66	7.88	9.77	8.62	11.24	9.43	21.33	34.34	17.44	17.04	10.72	26.44
332	1.27	1.44	1.51	2.00	2.06	2.27	3.38	4.92	9.00	3.86	2.87	5.09	18.48	28.86
341	5.50	9.30	29.16	27.66	19.01	30.27	52.85	34.14	34.30	23.48	40.10	30.71	33.45	53.30
342	3.06	5.89	5.48	5.70	7.54	5.76	6.72	12.92	10.28	10.81	24.17	22.08	21.87	39.36
351	19.10	15.87	11.96	16.84	26.37	49.96	41.16	40.66	55.95	108.44	69.16	85.16	272.59	334.84
352	9.61	12.40	21.59	21.29	26.41	30.79	30.59	46.81	43.49	49.64	70.25	62.02	74.84	98.44
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	163.67	60.00	93.60	51.02	11.93	11.54	10.52	3.61	3.87
355	19.61	17.16	20.29	17.78	25.90	20.98	26.19	38.04	20.94	10.58	4.12	10.03	23.30	24.10
356	7.43	8.96	42.86	31.24	28.99	11.77	12.79	14.66	17.94	12.97	19.39	19.23	41.32	43.45
361	1.50	7.57	8.44	6.64	10.99	11.56	12.53	12.58	15.11	18.14	21.01	26.85	43.96	80.09
362	28.83	30.05	16.10	14.31	13.66	32.07	15.11	15.05	14.47	13.30	26.97	52.73	30.85	32.95
363	13.95	14.33	15.54	15.59	13.85	23.80	22.16	30.78	33.52	35.15	41.19	51.62	33.15	74.58
364	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	4.39	4.39	5.59	12.20	20.39	36.98	1.64
369	#N/A	#N/A	#N/A	#N/A	#N/A	6.36	9.10	5.72	7.85	11.56	14.18	#N/A	#N/A	24.67
371	9.18	5.57	5.24	4.71	7.31	59.37	50.69	24.81	57.27	106.74	142.75	143.97	2,284.63	1,516.40
372	#N/A	#N/A	#N/A	#N/A	#N/A	61.64	12.23	25.69	37.54	79.76	54.30	24.93	67.00	223.16
381	8.15	9.24	13.92	14.87	51.63	9.16	13.35	56.90	40.12	40.35	29.74	35.41	32.49	59.88
382	7.64	9.52	18.35	15.45	16.37	22.12	26.28	62.13	32.94	30.55	27.14	43.04	49.79	55.38
383	9.87	8.19	20.52	20.31	15.61	21.97	19.95	21.21	17.12	27.27	34.51	23.88	22.39	35.40
384	12.11	13.22	18.82	23.48	68.94	46.10	19.64	22.14	60.70	67.39	67.79	72.54	127.29	83.07
385	13.78	9.53	3.81	11.00	16.17	18.65	34.06	15.02	34.79	#N/A	14.06	20.65	22.68	49.38
390	1.04	4.19	6.36	#N/A	6.32	2.77	3.48	4.58	3.82	7.02	8.08	9.36	6.73	31.53

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 6b: Mean Value Added per Employee of Majority-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (million rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	15.92	14.80	17.06	21.89	23.68	25.58	27.99	39.02	34.82	37.89	40.90	52.41	60.63	107.86
311-312	17.29	14.69	14.55	19.74	20.98	19.91	17.88	36.57	38.59	35.88	34.46	31.30	77.82	93.47
313	24.82	21.06	24.79	42.74	58.57	65.34	44.69	54.65	88.05	130.91	145.12	383.06	235.44	28.54
314	30.85	62.08	90.74	97.75	170.59	223.36	322.01	218.39	287.49	445.96	921.84	488.88	533.49	1,168.76
321	8.03	17.95	11.52	11.69	18.13	10.88	17.26	15.04	16.02	23.90	24.34	33.57	37.59	94.42
322	1.02	#N/A	#N/A	0.33	9.19	4.13	4.73	7.57	8.11	8.83	6.59	8.41	24.60	34.22
323	#N/A	#N/A	#N/A	#N/A	#N/A	0.61	9.81	5.13	7.87	8.49	34.53	29.43	31.59	20.17
324	16.01	20.21	18.01	5.57	11.58	8.66	3.80	5.86	5.91	7.63	6.66	9.54	21.08	29.66
331	3.55	6.37	7.67	8.35	9.21	8.30	7.65	15.77	15.54	18.69	20.32	23.02	27.68	52.02
332	5.30	11.81	4.54	6.64	9.24	9.36	26.22	15.85	29.01	38.43	43.09	64.09	32.38	34.82
341	7.06	17.07	5.84	52.76	45.12	61.20	40.18	37.29	24.73	14.03	14.39	17.38	45.31	34.99
342	5.95	9.58	10.91	20.85	5.20	7.83	10.51	32.29	28.50	30.83	37.24	58.64	100.39	#N/A
351	17.82	16.45	29.30	43.14	43.02	64.90	89.36	131.76	130.07	98.62	91.45	153.01	103.04	271.09
352	11.89	12.28	14.56	18.56	23.98	23.16	31.86	31.11	51.13	75.54	71.90	70.72	115.20	173.13
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	22.73	47.73	1.25	14.93
355	8.61	5.25	10.98	10.53	10.33	7.98	11.09	10.32	16.37	28.62	22.72	29.83	26.72	51.17
356	89.93	8.11	12.61	12.14	15.07	12.94	16.35	22.73	14.17	18.29	22.66	28.17	35.44	54.16
361	#N/A	#N/A	#N/A	2.18	2.60	173.72	74.02	18.15	49.74	30.61	20.88	11.90	24.29	25.72
362	5.06	5.01	10.35	6.01	6.60	#N/A	#N/A	#N/A	7.62	26.36	17.32	16.20	15.07	108.32
363	48.74	47.68	48.19	27.58	24.85	46.57	61.67	115.75	71.18	27.06	41.64	103.18	108.53	72.96
364	11.09	12.30	10.88	13.44	6.00	20.14	#N/A	31.37	#N/A	#N/A	#N/A	26.82	54.46	154.35
369	#N/A	#N/A	#N/A	#N/A	#N/A	465.60	197.61	16.18	43.29	7.04	11.89	5.16	11.82	1,275.82
371	49.24	50.78	64.33	65.72	37.51	22.80	40.77	19.78	79.20	60.37	93.70	96.72	61.47	50.27
372	#N/A	#N/A	#N/A	#N/A	#N/A	33.35	106.91	147.41	47.42	53.43	93.57	110.58	57.68	89.08
381	17.17	11.90	16.72	26.33	36.54	23.99	29.47	113.46	44.70	27.84	43.90	71.42	78.46	151.27
382	16.59	7.65	27.60	33.01	31.68	27.14	47.07	46.46	33.26	50.35	60.83	70.63	34.75	87.22
383	9.92	14.60	15.54	13.98	18.05	24.01	21.91	20.09	14.96	17.07	31.32	39.86	44.55	62.01
384	15.93	14.57	20.18	36.87	26.04	23.42	24.26	34.07	46.37	67.14	40.30	37.06	88.08	96.26
385	#N/A	#N/A	#N/A	59.09	39.93	37.51	20.39	9.74	10.29	27.57	26.34	59.10	26.66	19.57
390	18.91	20.80	18.12	5.81	11.95	9.05	5.67	19.20	10.33	9.08	5.54	10.42	10.30	30.49
Backcast-3	11.70	12.68	15.43	17.81	21.41	22.83	25.92	38.77	37.90	40.17	40.86	43.83	61.78	107.86
311-312	16.46	15.30	13.71	16.71	16.93	20.25	18.25	34.06	38.60	35.70	35.62	32.65	77.23	93.47
313	24.62	26.73	24.82	42.74	58.57	65.34	44.69	54.65	88.05	130.91	145.12	102.97	185.13	28.54
314	30.85	62.08	90.74	63.76	85.33	223.36	322.01	218.39	287.49	445.96	921.84	488.88	533.49	1,168.76
321	7.46	9.67	10.74	10.56	16.87	10.24	16.91	14.64	15.78	23.90	24.69	23.78	37.30	94.42
322	1.02	#N/A	4.69	1.66	7.01	3.88	4.42	7.05	9.30	10.44	6.59	10.52	24.04	34.22
323	#N/A	#N/A	#N/A	#N/A	#N/A	7.15	7.37	5.34	7.73	8.09	27.84	29.43	31.59	20.17
324	8.67	9.64	9.54	5.71	5.45	5.93	3.76	5.86	5.91	7.63	6.66	9.60	21.08	29.66
331	3.18	5.52	7.50	6.38	7.55	6.66	6.81	14.63	14.36	16.21	19.54	22.66	27.68	52.02
332	5.30	11.81	4.54	10.44	9.83	7.16	24.61	15.85	29.01	38.43	43.09	64.09	29.56	34.82
341	8.52	15.77	30.90	43.59	36.35	43.22	28.54	31.90	25.40	14.03	14.39	12.24	42.92	34.99
342	5.42	6.48	9.59	14.77	5.76	6.44	10.51	32.29	28.50	30.83	37.24	58.64	100.39	#N/A
351	24.54	26.68	31.83	34.48	44.12	60.88	80.72	153.93	138.47	111.43	90.28	105.99	102.76	271.09
352	12.62	13.70	14.28	16.52	24.59	25.16	33.72	32.82	51.79	76.61	73.62	74.48	119.93	173.13
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	22.73	16.18	1.25	14.93
355	6.47	5.28	9.15	9.99	9.43	7.09	9.87	10.37	16.37	19.18	22.72	23.31	26.72	51.17
356	6.59	9.30	13.91	12.19	14.05	14.46	19.25	26.79	52.32	18.66	22.66	26.89	37.35	54.16
361	#N/A	#N/A	#N/A	2.18	2.60	173.72	74.02	18.15	49.74	24.98	20.88	11.90	24.29	25.72
362	5.06	5.01	10.35	6.01	6.60	#N/A	#N/A	2.84	6.72	18.09	14.25	16.20	20.31	108.32
363	21.68	20.64	23.86	28.10	24.85	46.57	61.67	115.75	60.55	55.24	41.64	103.18	108.53	72.96
364	11.09	12.30	10.88	13.44	6.00	20.14	#N/A	31.37	#N/A	#N/A	#N/A	10.26	48.81	154.35
369	#N/A	#N/A	#N/A	#N/A	#N/A	465.60	197.61	16.18	43.29	7.04	11.89	5.16	11.82	1,275.82
371	12.18	13.31	24.93	39.74	41.48	20.21	33.79	17.25	71.61	54.81	85.05	66.58	56.13	50.27
372	#N/A	#N/A	#N/A	#N/A	#N/A	45.17	106.91	147.41	39.16	53.43	93.57	98.16	57.68	89.08
381	9.28	7.78	11.68	16.17	32.35	25.81	26.65	104.74	44.38	33.19	46.34	54.59	88.28	151.27
382	15.53	11.06	25.30	33.30	31.68	25.61	42.95	39.39	32.52	48.30	48.43	51.09	33.51	87.22
383	8.08	10.68	12.95	13.35	17.14	19.60	18.21	18.77	15.91	16.92	30.71	38.50	43.23	62.01
384	17.05	13.68	22.22	30.11	31.91	23.62	26.87	34.92	45.76	65.96	41.27	36.65	104.01	96.26
385	#N/A	#N/A	50.38	59.09	39.93	37.51	20.39	9.74	10.29	27.57	26.34	34.01	26.66	19.57
390	15.40	14.20	15.19	5.07	8.72	6.72	5.50	18.17	35.60	27.44	5.43	8.81	10.23	30.49

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 6c: Mean Value Added per Employee of Heavily-Foreign Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (million rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	7.42	15.11	11.17	15.81	22.51	18.27	11.49	16.80	15.28	18.80	53.61	29.48	40.12	85.47
311-312	6.56	13.44	10.88	19.96	48.41	35.06	15.37	24.07	24.11	29.50	30.04	50.46	63.10	173.40
313	13.42	48.37	56.98	65.34	50.54	#N/A	#N/A	202.17	82.30	137.65	90.83	109.30	148.36	218.99
314	7.13	11.01	14.13	15.65	11.89	27.26	46.92	5.37	10.49	38.04	30.82	20.25	49.11	131.12
321	3.29	21.00	4.50	4.91	6.72	4.77	6.68	4.06	9.22	9.81	8.48	12.97	21.56	48.24
322	1.31	#N/A	#N/A	1.14	3.96	4.90	2.44	6.65	5.77	9.90	8.82	11.25	10.08	22.95
323	88.19	63.87	1.16	#N/A	1.03	#N/A	#N/A	3.10	7.67	5.31	3.61	5.63	8.23	21.73
324	#N/A	9.79	24.98	#N/A	8.74	3.80	3.04	5.41	13.49	13.36	11.78	7.88	11.92	28.00
331	3.49	17.72	14.58	17.05	8.25	23.25	8.11	8.44	8.34	9.78	9.72	10.47	11.77	24.79
332	#N/A	0.83	1.49	6.48	2.79	2.79	5.13	6.25	6.98	8.61	6.27	9.68	10.93	21.14
341	#N/A	#N/A	#N/A	#N/A	#N/A	8.10	2.02	2.35	#N/A	66.02	56.23	62.02	95.13	195.25
342	0.73	2.15	0.26	#N/A	#N/A	#N/A	#N/A	#N/A	0.73	#N/A	#N/A	#N/A	#N/A	8.39
351	29.93	68.31	18.18	138.24	97.66	63.32	108.01	1.44	8.02	33.94	38.87	48.45	159.53	172.59
352	7.07	10.84	12.41	13.48	11.11	40.20	12.68	44.59	57.72	52.50	86.73	79.95	74.72	209.33
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	216.38	127.77
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	42.23	6.92	9.72	17.33	20.27	63.95	38.74
355	4.00	4.57	6.24	16.45	19.96	17.34	16.31	13.20	19.16	30.34	39.70	26.57	26.72	38.08
356	#N/A	#N/A	#N/A	#N/A	10.82	4.64	1.47	10.10	20.20	14.17	450.72	14.04	24.62	76.83
361	#N/A	0.72	0.60	0.97	1.24	1.54	1.59	#N/A	3.24	4.39	4.62	#N/A	#N/A	18.34
362	#N/A	#N/A	#N/A	3.05	#N/A	#N/A	#N/A	#N/A	#N/A	2.23	1.49	6.16	16.40	#N/A
363	1.11	#N/A	#N/A	5.48	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	48.01	41.54	26.13	75.86
364	0.71	#N/A	#N/A	0.41	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	3.23	#N/A	4.05	3.04	2.38	14.49	8.72
371	#N/A	#N/A	#N/A	3.99	4.78	#N/A	#N/A	3.58	11.64	13.67	26.18	14.63	28.44	68.07
372	#N/A	#N/A	#N/A	#N/A	#N/A	56.23	31.41	53.37	59.31	75.65	6.56	15.03	56.40	52.70
381	39.91	3.94	4.28	20.70	34.75	24.55	27.81	24.85	16.78	18.08	19.43	25.43	33.68	62.38
382	2.97	#N/A	#N/A	#N/A	#N/A	10.18	8.67	9.42	9.96	10.51	17.12	20.44	35.61	98.54
383	11.29	#N/A	#N/A	#N/A	#N/A	9.43	10.67	32.07	14.91	16.40	20.02	30.73	43.44	100.14
384	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.59	25.10	10.31	147.57	150.93	32.36	80.23
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	6.06	23.75	14.43	12.62	10.96	9.63	26.24	47.62
390	0.64	#N/A	#N/A	#N/A	#N/A	2.21	3.51	12.98	6.58	9.94	15.25	15.98	23.43	50.23
Backcast-3	9.33	12.05	12.23	16.25	19.42	16.84	11.69	17.42	16.09	18.85	24.65	29.71	40.34	85.47
311-312	12.39	16.47	14.77	34.27	45.65	40.64	25.11	31.84	30.33	28.15	27.96	49.10	63.10	173.40
313	13.42	48.37	56.98	65.34	50.54	#N/A	#N/A	202.17	82.30	137.65	90.83	109.30	148.36	218.99
314	7.13	11.01	14.13	15.65	11.89	27.26	23.50	2.54	4.15	25.43	24.68	20.25	49.11	131.12
321	3.91	6.31	5.39	7.21	9.83	4.26	5.57	4.39	8.22	9.02	7.62	11.97	21.56	48.24
322	1.31	#N/A	#N/A	2.12	3.40	5.93	3.95	7.89	8.76	11.04	9.79	11.52	10.41	22.95
323	88.19	3.24	1.16	#N/A	#N/A	#N/A	#N/A	3.07	7.67	5.31	3.61	5.63	7.49	21.73
324	#N/A	9.79	24.98	2.16	3.81	3.80	2.84	5.14	12.52	12.24	10.49	7.58	11.37	28.00
331	7.01	10.31	12.96	15.20	8.25	17.33	8.11	8.44	8.34	10.72	9.72	10.39	12.46	24.79
332	#N/A	0.83	2.54	6.11	3.53	2.99	5.13	6.25	6.21	9.12	5.55	9.68	10.93	21.14
341	#N/A	#N/A	#N/A	#N/A	7.07	8.10	2.02	2.79	6.30	66.02	45.58	62.02	95.93	195.25
342	0.73	2.15	0.26	#N/A	#N/A	#N/A	#N/A	#N/A	0.73	#N/A	#N/A	#N/A	#N/A	8.39
351	16.58	35.21	29.86	79.19	72.47	37.80	84.12	43.31	15.00	35.01	38.87	39.69	156.41	172.59
352	8.61	9.86	10.25	10.05	10.70	42.46	12.68	44.59	53.04	50.48	82.54	72.20	72.86	209.33
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	216.48	127.77
354	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	42.23	16.87	9.72	17.33	44.28	57.12	38.74
355	8.46	10.61	12.82	16.72	19.59	15.19	15.37	12.30	18.13	29.58	39.70	26.57	26.72	38.08
356	#N/A	#N/A	#N/A	3.01	7.32	4.64	2.43	13.89	19.77	16.15	15.81	12.49	24.16	76.83
361	#N/A	0.72	0.60	0.97	1.24	1.54	1.59	#N/A	3.24	4.39	4.62	#N/A	#N/A	18.34
362	#N/A	#N/A	#N/A	3.05	#N/A	#N/A	#N/A	#N/A	#N/A	2.23	1.49	6.16	16.40	#N/A
363	2.64	4.87	4.37	5.48	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	48.01	41.54	26.37	75.86
364	0.71	#N/A	0.31	0.41	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
369	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.91	3.23	#N/A	4.05	3.04	2.38	14.49	8.72
371	#N/A	#N/A	3.40	3.99	4.78	#N/A	#N/A	3.58	11.64	7.13	32.28	35.62	29.62	68.07
372	#N/A	#N/A	#N/A	#N/A	#N/A	46.99	31.41	53.37	59.39	50.84	6.56	13.09	56.40	52.70
381	39.91	3.94	4.28	20.70	26.80	24.14	15.64	21.83	16.72	27.82	21.17	26.90	33.92	62.38
382	2.97	#N/A	#N/A	#N/A	#N/A	10.18	9.07	9.42	9.96	10.51	17.12	19.17	35.61	98.54
383	11.29	#N/A	#N/A	#N/A	#N/A	9.43	11.99	32.68	17.41	16.55	20.63	35.66	42.07	100.14
384	#N/A	#N/A	#N/A	#N/A	#N/A	1.78	3.79	3.63	19.20	10.31	147.57	149.32	38.96	80.23
385	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	3.88	23.75	14.43	12.62	10.96	16.57	26.24	47.62
390	0.64	#N/A	#N/A	#N/A	#N/A	2.17	3.29	12.42	6.39	9.53	15.25	15.68	23.43	50.23

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 6d: Mean Value Added per Employee of Local Manufacturing Establishments Reporting Positive Employment and Value Added by Industry (million rupiah)**

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	2.59	2.81	2.58	3.02	3.61	4.13	4.64	6.11	6.30	6.64	7.00	8.22	9.92	16.26
311-312	2.57	2.34	2.45	3.12	3.75	4.69	5.54	7.12	6.37	6.78	7.48	8.48	10.87	18.92
313	2.34	2.55	2.57	2.76	3.68	4.03	4.66	4.17	4.14	5.72	6.39	7.49	10.44	12.05
314	0.83	1.07	1.09	0.92	1.27	1.22	1.10	1.47	1.72	2.44	2.95	3.09	3.11	6.31
321	1.38	2.53	1.50	1.62	2.24	2.74	2.66	4.08	4.06	4.98	5.24	6.24	8.10	14.60
322	1.42	2.23	1.75	2.07	2.64	2.35	2.49	3.24	5.20	3.85	4.40	4.67	5.07	7.93
323	2.17	7.79	3.16	3.39	3.37	5.30	7.32	6.23	6.47	7.09	6.37	6.78	11.69	9.99
324	2.11	3.12	2.22	3.03	3.66	3.90	3.16	4.45	5.44	6.66	5.75	6.35	7.34	9.80
331	3.43	5.51	4.25	4.26	4.68	4.84	5.40	6.04	7.05	6.30	6.30	7.31	8.81	12.74
332	1.29	1.69	1.78	1.81	2.28	2.42	2.81	3.47	3.73	3.68	4.31	5.05	5.46	30.75
341	2.35	2.58	3.56	4.17	6.18	5.52	6.87	6.91	10.78	11.52	10.73	12.26	14.90	24.49
342	2.67	3.06	3.39	3.17	3.48	4.25	4.99	6.29	6.14	7.24	8.08	9.98	10.03	14.35
351	5.71	5.41	7.70	9.97	10.87	10.70	12.11	19.05	15.67	17.72	20.85	24.73	27.70	40.38
352	10.26	5.00	4.77	5.81	6.91	7.32	9.60	9.98	11.30	13.08	13.27	15.15	23.18	28.34
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	33.37	#N/A	181.11	46.19	91.05	1,123.73	116.47
354	#N/A	#N/A	#N/A	#N/A	#N/A	9.06	18.73	20.04	27.50	27.73	19.92	13.50	34.19	15.84
355	5.63	3.21	2.75	5.04	6.34	5.54	5.99	17.15	6.47	7.13	9.50	9.91	11.52	18.96
356	1.42	1.87	2.04	2.29	2.63	3.88	4.02	5.85	7.72	5.83	6.82	7.93	8.68	11.35
361	1.93	2.10	1.94	2.31	3.00	2.83	5.03	4.30	7.45	8.94	6.69	22.17	28.96	23.31
362	1.78	2.78	3.80	2.79	3.36	4.11	4.99	7.01	9.26	7.20	9.38	11.86	9.97	12.07
363	1.89	1.95	2.35	2.12	2.49	3.72	4.20	4.78	5.64	6.64	6.59	8.75	9.85	9.03
364	0.59	0.68	0.79	0.77	0.84	0.97	1.12	1.43	1.40	1.66	1.89	2.00	1.98	2.95
369	2.39	3.39	4.44	3.01	3.60	4.66	6.05	7.27	7.48	6.32	8.20	8.66	10.46	12.14
371	8.00	36.65	9.99	11.29	20.43	23.21	22.49	17.15	30.92	31.03	29.51	39.84	40.49	51.39
372	#N/A	#N/A	#N/A	#N/A	#N/A	14.64	7.58	21.29	13.26	13.62	14.21	19.01	24.40	45.25
381	3.11	3.28	3.72	5.08	5.24	5.52	6.31	6.48	7.26	8.85	9.02	11.47	10.16	16.44
382	2.37	2.91	2.34	3.57	5.44	6.96	8.65	8.96	9.27	11.65	10.51	13.43	17.29	19.55
383	5.07	4.42	4.24	4.64	6.00	6.65	7.53	10.05	10.81	9.82	14.07	19.71	17.25	33.28
384	7.08	5.27	5.83	5.86	5.75	7.60	8.42	12.99	12.72	15.48	12.38	14.26	13.49	22.62
385	1.53	1.42	2.12	2.37	2.97	3.22	3.57	5.71	3.99	4.82	5.61	7.89	8.89	19.80
390	1.45	1.49	1.96	2.12	2.69	2.94	2.81	3.07	4.26	4.00	3.92	5.15	5.86	9.08
Backcast-3	2.44	2.68	2.80	3.35	3.99	5.04	5.79	7.32	7.44	6.85	6.82	7.88	10.02	16.26
311-312	2.87	2.92	3.01	3.44	3.88	4.16	4.80	5.75	6.04	6.44	7.04	8.45	10.82	18.92
313	2.10	2.31	2.42	2.73	3.61	4.08	4.55	4.23	4.30	5.76	6.27	7.88	10.50	12.05
314	0.73	0.83	0.92	0.86	1.04	1.25	1.05	1.44	2.22	2.34	2.72	3.31	3.33	6.31
321	1.54	2.00	1.68	1.85	2.42	3.20	3.12	4.33	4.24	4.67	5.24	5.61	8.08	14.60
322	1.44	1.96	1.89	2.15	2.63	7.26	7.58	8.27	9.66	4.00	4.33	4.61	5.00	7.93
323	2.24	3.75	3.47	3.85	4.19	5.42	6.63	5.67	5.85	6.57	6.14	6.78	11.50	9.99
324	2.03	2.87	2.33	2.73	3.17	3.38	3.90	4.33	5.17	6.30	5.55	6.30	7.32	9.80
331	2.98	3.90	4.56	4.98	6.80	7.85	11.63	9.45	9.58	8.61	6.22	6.87	8.78	12.74
332	1.55	1.90	2.08	2.19	2.68	2.72	3.25	3.63	3.87	3.71	4.36	4.73	5.31	30.75
341	2.34	2.86	3.48	4.21	6.11	5.58	6.78	7.25	11.12	11.53	10.84	11.89	15.98	24.49
342	3.29	3.48	3.27	3.44	3.77	4.46	5.14	7.17	7.65	15.16	8.82	10.07	10.14	14.35
351	5.94	5.82	7.70	9.81	10.38	10.69	15.71	20.10	17.24	21.29	22.42	21.09	29.41	40.38
352	7.21	4.69	4.96	5.91	6.89	7.50	9.69	9.87	11.17	12.84	13.08	15.72	23.09	28.34
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	33.37	#N/A	181.11	37.03	70.11	1,123.73	116.47
354	#N/A	#N/A	#N/A	#N/A	#N/A	10.85	15.62	17.18	22.35	30.96	17.49	11.83	33.09	15.84
355	4.18	3.89	4.01	8.15	6.51	5.65	6.17	16.72	6.99	7.48	9.38	9.30	11.40	18.96
356	1.60	2.06	2.16	2.45	2.81	3.94	3.89	9.40	16.07	5.74	6.74	6.74	8.83	11.35
361	1.93	2.29	2.12	2.49	3.06	3.38	4.96	4.13	7.04	8.31	6.40	19.44	28.62	23.31
362	1.53	3.31	4.12	3.67	4.22	4.59	5.84	8.69	8.49	6.77	9.08	10.62	9.78	12.07
363	1.75	1.91	2.06	2.26	2.68	4.28	4.58	5.22	5.74	6.40	6.61	8.66	9.95	9.03
364	0.68	0.75	0.84	0.87	0.93	1.23	1.36	1.53	1.51	1.66	1.84	1.97	1.99	2.95
369	2.33	2.97	3.61	2.85	3.30	4.87	6.54	7.16	6.57	5.79	7.71	8.26	10.04	12.14
371	7.55	10.13	12.35	12.30	18.92	22.23	20.37	20.24	35.96	29.41	29.92	46.24	43.93	51.39
372	#N/A	#N/A	#N/A	#N/A	#N/A	16.35	11.45	20.34	12.84	15.21	16.13	17.42	23.17	45.25
381	3.00	3.54	4.10	5.97	8.14	9.58	10.55	19.34	9.98	9.61	8.71	11.05	10.42	16.44
382	2.44	3.25	2.89	4.01	6.12	7.02	7.93	7.96	8.63	10.72	10.37	12.91	17.22	19.55
383	3.60	3.47	3.82	4.68	5.70	6.44	6.87	12.77	14.45	10.11	13.57	18.79	17.03	33.28
384	4.23	4.91	4.57	5.38	5.80	7.95	7.75	11.99	11.49	12.24	11.23	12.15	16.24	22.62
385	1.76	1.60	2.32	2.35	2.73	3.09	3.33	5.51	3.86	4.82	5.52	5.83	8.95	19.80
390	1.65	2.14	2.63	3.01	2.99	3.17	2.74	3.42	4.37	4.03	4.11	5.37	6.47	9.08

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 6e: Mean Value Added per Employee of All Establishments Reporting Positive Employment and Value Added by Industry**  
(million rupiah)

Industry	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Raw Data-3	2.99	3.23	3.03	3.57	4.30	4.85	5.47	7.39	7.92	8.66	9.69	10.89	12.55	22.56
311-312	2.68	2.50	2.65	3.40	4.18	5.02	5.94	7.60	6.93	7.41	8.05	9.31	12.57	22.68
313	3.76	4.17	4.77	5.07	6.09	6.02	6.79	8.08	8.17	11.70	11.38	14.57	18.29	19.41
314	0.97	1.30	1.32	1.14	1.52	1.47	1.49	1.95	2.41	3.76	4.20	4.39	4.54	9.91
321	1.50	2.85	1.67	1.80	2.49	2.91	3.04	4.42	4.71	5.62	5.86	7.14	9.21	17.14
322	1.42	2.22	1.74	2.06	2.68	2.39	2.52	3.40	5.33	4.12	4.59	4.95	5.54	8.87
323	3.25	8.53	3.13	3.39	3.35	5.25	7.39	6.28	6.48	7.04	6.70	7.08	11.80	10.88
324	2.23	3.38	2.56	3.10	3.86	4.05	3.20	4.64	5.70	6.91	5.96	6.63	8.10	11.59
331	3.44	5.60	4.51	4.46	4.84	5.06	5.59	6.27	7.40	6.90	6.72	7.63	9.13	13.64
332	1.32	1.76	1.80	1.85	2.32	2.50	3.24	3.72	4.18	4.25	4.77	5.44	5.85	30.56
341	2.50	3.06	4.42	5.52	7.02	7.24	8.73	8.34	11.72	12.37	12.08	13.91	18.40	31.13
342	2.68	3.09	3.44	3.32	3.51	4.27	5.03	6.53	6.32	7.43	8.36	10.25	10.25	14.46
351	7.38	7.46	9.23	13.24	14.17	16.53	20.58	29.94	27.62	30.62	29.88	45.29	55.20	90.44
352	12.35	8.39	6.63	7.97	9.28	10.11	12.17	13.39	16.13	20.28	21.02	23.04	33.03	51.06
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	33.37	#N/A	181.11	46.19	91.05	896.89	120.99
354	#N/A	#N/A	#N/A	#N/A	#N/A	41.19	32.52	42.07	31.91	22.53	19.01	15.17	34.06	17.46
355	5.60	3.35	3.45	5.99	7.47	6.53	7.01	17.00	7.61	8.98	11.26	11.37	13.05	21.11
356	2.55	1.98	2.39	2.54	2.89	4.03	4.17	6.13	8.08	6.25	18.62	8.61	10.05	15.23
361	1.92	2.33	2.36	2.53	3.42	8.61	8.20	5.54	8.92	10.16	8.02	22.25	29.85	26.00
362	3.18	4.29	4.18	2.96	3.44	4.11	4.97	7.12	9.18	7.79	10.62	14.78	12.10	16.80
363	2.38	2.44	2.97	2.46	2.80	4.20	5.00	5.82	6.63	7.37	7.54	10.05	11.28	11.22
364	0.61	0.70	0.81	0.80	0.85	1.01	1.12	1.48	1.41	1.67	1.90	2.04	2.22	3.26
369	2.39	3.39	4.44	3.01	3.60	7.19	7.07	7.36	7.63	6.36	8.22	8.59	10.48	25.61
371	10.95	37.63	15.25	19.92	23.31	27.63	26.41	32.88	122.12	145.59	191.68	215.15	48.12	200.86
372	#N/A	#N/A	#N/A	#N/A	#N/A	20.29	16.71	31.10	17.52	21.09	20.98	24.52	33.73	51.74
381	3.96	3.76	4.55	6.25	7.96	6.39	7.57	13.23	9.99	10.83	11.16	14.66	14.10	24.08
382	3.18	3.43	3.97	5.67	7.33	8.78	11.73	14.07	12.51	15.47	14.49	18.42	20.59	33.50
383	5.82	5.53	5.92	6.03	7.57	9.13	9.68	13.37	12.09	12.71	17.85	23.54	25.72	55.39
384	7.51	5.74	6.64	7.10	8.22	9.20	9.48	13.99	15.55	19.49	17.47	19.41	19.18	31.19
385	1.84	1.61	2.19	3.89	4.11	4.74	5.55	6.78	5.25	7.01	7.44	11.09	11.61	23.47
390	1.89	1.84	2.35	2.17	2.89	3.14	3.06	4.42	4.79	4.77	4.68	6.03	6.96	12.34
Backcast-3	2.68	2.95	3.15	3.76	4.56	5.66	6.46	8.37	8.54	8.22	8.24	9.59	13.51	22.56
311-312	2.97	3.06	3.16	3.69	4.19	4.49	5.20	6.25	6.59	7.02	7.68	9.34	12.59	22.68
313	3.15	3.81	4.25	4.63	5.56	5.77	6.30	7.62	7.85	11.16	11.03	13.37	18.26	19.41
314	0.83	0.99	1.08	1.03	1.24	1.47	1.38	1.85	2.80	3.45	3.84	4.58	4.72	9.91
321	1.65	2.13	1.83	2.01	2.66	3.34	3.42	4.62	4.78	5.22	5.81	6.28	9.18	17.14
322	1.44	1.96	1.89	2.15	2.67	7.19	7.47	8.22	9.63	4.29	4.53	4.93	5.46	8.87
323	3.07	3.74	3.45	3.86	4.29	5.44	6.65	5.71	5.89	6.54	6.45	7.07	11.59	10.88
324	2.12	3.04	2.54	2.83	3.27	3.52	3.86	4.49	5.41	6.54	5.75	6.56	8.03	11.59
331	3.05	4.00	4.71	5.09	6.85	7.91	11.55	9.51	9.80	9.04	6.52	7.20	9.10	13.64
332	1.57	1.95	2.09	2.29	2.76	2.77	3.56	3.81	4.19	4.16	4.75	5.11	5.68	30.56
341	2.56	3.30	4.60	5.50	6.97	7.14	8.39	8.51	12.06	12.34	12.06	13.26	19.55	31.13
342	3.29	3.50	3.31	3.54	3.80	4.48	5.18	7.37	7.79	15.23	9.06	10.33	10.36	14.46
351	7.65	7.58	9.23	11.88	13.03	15.91	22.62	32.06	29.47	34.01	31.27	34.14	56.33	90.44
352	7.81	5.82	6.33	7.28	9.08	10.17	12.20	13.20	15.95	19.93	21.04	23.60	33.30	51.06
353	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	33.37	#N/A	181.11	37.03	70.11	821.31	120.99
354	#N/A	#N/A	#N/A	#N/A	#N/A	49.05	25.13	32.14	26.10	26.22	17.21	15.94	33.41	17.46
355	4.67	4.54	4.91	8.85	7.62	6.47	7.08	16.53	8.01	8.88	11.07	10.51	12.91	21.11
356	1.65	2.14	2.42	2.65	3.01	4.08	4.09	9.66	16.56	6.16	7.36	7.36	10.22	15.23
361	1.92	2.44	2.42	2.65	3.36	8.33	7.84	5.28	8.43	9.47	7.66	19.52	29.55	26.00
362	2.86	4.61	4.64	3.96	4.44	5.06	6.12	8.79	8.68	7.61	10.53	14.44	12.64	16.80
363	1.97	2.12	2.33	2.55	2.92	4.69	5.11	6.08	6.58	7.24	7.50	9.95	11.37	11.22
364	0.69	0.76	0.85	0.89	0.94	1.26	1.36	1.56	1.51	1.66	1.85	1.99	2.20	3.26
369	2.33	2.97	3.61	2.85	3.30	6.84	7.29	7.23	6.71	5.83	7.72	8.20	10.06	25.61
371	8.09	10.43	13.45	15.24	20.95	26.39	24.26	20.24	40.58	36.92	42.58	54.94	189.39	200.86
372	#N/A	#N/A	#N/A	#N/A	#N/A	20.88	17.90	28.10	16.60	21.53	22.12	22.09	32.39	51.74
381	3.45	3.87	4.65	6.64	10.23	10.29	11.27	24.02	12.16	11.67	10.93	13.60	14.72	24.08
382	3.13	3.81	4.28	5.70	7.55	8.63	10.71	12.50	11.45	14.05	13.59	16.87	20.57	33.50
383	4.30	4.22	5.09	5.87	7.18	8.54	8.87	15.31	15.04	12.73	17.31	23.52	25.43	55.39
384	4.72	5.29	5.27	6.41	8.15	9.43	8.88	13.18	14.22	16.41	16.28	17.19	25.13	31.19
385	2.01	1.76	3.24	3.52	3.62	4.42	5.00	6.51	5.06	6.86	7.26	8.24	11.51	23.47
390	1.97	2.40	2.89	3.04	3.19	3.32	2.94	4.59	6.30	5.73	4.75	6.08	7.45	12.34

Note: see Table 1 for industry definitions; Source: Authors' calculations from Biro Pusat Statistik (various years).

**Appendix Table 7: Additional Details from Regressions Explaining the Relationship between Value Added per Employee (=dependent variable), Size, Vintage, and Foreign Ownership Group**

Independent Variables	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
RAW DATA (all establishments, dependent variable= $\ln(Vt/Et)$ )													
Constant	1.887	1.789	1.955	1.718	2.452	2.413	2.125	2.442	2.449	3.082	3.032	2.670	2.556
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI311-312t	-0.450	-	-0.303	0.198	-0.405	-0.334	0.043	0.039	0.010	-0.424	-0.302	-	-
significance level	0.00	-	0.00	0.10	0.00	0.00	0.05	0.63	0.82	0.00	0.00	-	-
DI313t	-0.161	0.316	0.075	0.553	-	-	0.299	0.269	0.387	-0.153	0.054	0.293	0.224
significance level	0.06	0.00	0.42	0.00	-	-	0.00	0.00	0.00	0.01	0.26	0.00	0.00
DI314t	-1.291	-1.027	-1.120	-0.593	-1.013	-1.303	-0.973	-0.977	-0.745	-1.420	-1.240	-1.022	-0.937
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI321t	-0.50	-0.21	-0.47	0.06	-0.57	-0.59	-0.23	-0.19	-0.20	-0.64	-0.48	-0.21	-0.21
significance level	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
DI322t	-0.298	0.035	-0.184	0.291	-0.361	-0.387	-	0.030	0.017	-0.386	-0.255	0.004	0.000
significance level	0.00	0.29	0.02	0.02	0.00	0.00	-	0.72	0.71	0.00	0.00	0.85	0.99
DI323t	0.074	0.244	-	0.405	-0.183	-0.005	0.195	0.184	0.187	-0.288	-0.169	0.015	-0.044
significance level	0.55	0.01	-	0.00	0.03	0.95	0.00	0.05	0.01	0.00	0.00	0.80	0.48
DI324t	-0.033	0.236	0.009	0.482	-0.258	-0.690	-0.247	-0.193	-0.164	-0.639	-0.478	-0.237	-0.259
significance level	0.74	0.01	0.93	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.00	0.00	0.00
DI331t	-0.164	0.267	-0.077	0.355	-0.161	-0.111	0.101	0.147	0.099	-0.340	-0.224	0.025	0.006
significance level	0.03	0.00	0.33	0.00	0.00	0.09	0.00	0.08	0.03	0.00	0.00	0.31	0.81
DI332t	0.001	0.442	0.052	0.474	-0.334	-0.289	0.046	0.033	-0.042	-0.386	-0.271	-0.002	-0.030
significance level	0.99	0.00	0.52	0.00	0.00	0.00	0.14	0.69	0.41	0.00	0.00	0.92	0.24
DI341t	-0.664	-0.094	-0.250	0.164	-0.289	-0.259	-0.057	0.145	0.199	-0.385	-0.190	0.076	-0.017
significance level	0.00	0.22	0.01	0.22	0.00	0.00	0.49	0.13	0.00	0.00	0.00	0.19	0.77
DI342t	0.031	0.368	0.176	0.535	0.040	0.138	0.502	0.480	0.450	-	0.135	0.390	0.325
significance level	0.67	0.00	0.03	0.00	0.48	0.04	0.00	0.00	0.00	-	0.00	0.00	0.00
DI351t	-0.152	0.374	0.299	0.732	0.079	0.255	0.596	0.537	0.612	0.063	0.246	0.459	0.397
significance level	0.11	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00
DI352t	-0.169	0.289	0.014	0.540	-0.020	0.048	0.346	0.423	0.440	-0.038	0.090	0.415	0.345
significance level	0.03	0.00	0.87	0.00	0.74	0.51	0.00	0.00	0.00	0.45	0.04	0.00	0.00
DI355t	-0.731	-0.203	-0.272	0.306	-0.310	-0.278	-0.020	0.045	-	-0.383	-0.304	0.065	-0.018
significance level	0.00	0.00	0.00	0.02	0.00	0.00	0.70	0.62	-	0.00	0.00	0.10	0.70
DI356t	-0.541	-0.074	-0.391	0.119	-0.387	-0.427	0.058	0.032	0.012	-0.425	-0.318	-0.004	-0.094
significance level	0.00	0.03	0.00	0.33	0.00	0.00	0.07	0.71	0.82	0.00	0.00	0.87	0.00
DI361t	-0.698	-0.195	-0.430	0.111	-0.586	-0.334	-0.088	-	0.043	-0.477	-0.339	0.045	-0.005
significance level	0.00	0.11	0.00	0.48	0.00	0.00	0.33	-	0.63	0.00	0.00	0.67	0.96
DI362t	-0.671	-0.081	-0.465	-	-0.445	-0.484	-0.079	0.049	-0.060	-0.391	-0.147	-0.172	-0.039
significance level	0.00	0.57	0.00	-	0.00	0.00	0.37	0.68	0.54	0.00	0.09	0.28	0.61
DI363t	-0.173	0.364	-0.094	0.398	-0.108	-0.083	0.294	0.276	0.305	-0.125	-	0.2474	0.11999
significance level	0.02	0.00	0.25	0.00	0.06	0.22	0.00	0.00	0.00	0.00	-	0	0.00131
DI364t	-0.460	0.072	-0.268	0.194	-0.327	-0.256	0.071	-0.010	0.048	-0.428	-0.373	-0.097	-0.055
significance level	0.00	0.01	0.00	0.11	0.00	0.00	0.00	0.90	0.30	0.00	0.00	0.00	0.01
DI369t	-	0.493	-0.095	0.414	-0.069	-0.007	0.344	0.371	0.157	-0.166	-0.090	0.170	0.166
significance level	-	0.00	0.36	0.00	0.41	0.94	0.00	0.00	0.03	0.01	0.08	0.00	0.00
DI371t	0.145	0.125	-0.053	0.596	0.024	-0.009	0.105	0.568	0.385	-0.015	0.099	0.455	0.267
significance level	0.58	0.33	0.74	0.00	0.86	0.94	0.37	0.00	0.00	0.90	0.36	0.00	0.01
DI372t	-	-	-	-	0.192	-0.092	0.379	0.378	0.307	-0.312	-0.021	0.389	0.442
significance level	-	-	-	-	0.20	0.57	0.01	0.00	0.01	0.01	0.84	0.00	0.00
DI381t	-0.293	0.241	-0.012	0.505	-0.146	-0.104	0.233	0.297	0.253	-0.226	-0.056	0.156	0.212
significance level	0.00	0.00	0.89	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.12	0.00	0.00
DI382t	-0.161	0.436	0.228	0.740	0.081	0.178	0.488	0.452	0.558	0.085	0.190	0.449	0.426
significance level	0.07	0.00	0.01	0.00	0.27	0.05	0.00	0.00	0.00	0.10	0.00	0.00	0.00
DI383t	-0.358	0.138	-0.171	0.368	-0.217	-0.136	0.209	0.184	0.119	-0.252	-0.055	0.189	0.019
significance level	0.00	0.02	0.07	0.00	0.00	0.08	0.00	0.05	0.05	0.00	0.25	0.00	0.72
DI384t	-0.210	0.368	0.091	0.540	-0.059	0.037	0.376	0.478	0.449	-0.045	0.072	0.329	0.308
significance level	0.01	0.00	0.28	0.00	0.33	0.60	0.00	0.00	0.00	0.31	0.07	0.00	0.00
DI385t	-0.242	0.447	0.198	0.620	-0.009	0.053	0.261	0.227	0.073	-0.265	-0.158	0.125	0.106
significance level	0.03	0.00	0.12	0.00	0.94	0.64	0.02	0.05	0.58	0.01	0.11	0.24	0.28
DI390t	-0.406	0.265	-0.157	0.337	-0.444	-0.420	-0.067	-0.062	-0.050	-0.491	-0.296	-0.022	-0.069
significance level	0.00	0.00	0.08	0.01	0.00	0.00	0.14	0.50	0.39	0.00	0.00	0.59	0.09
F-statistic	741	723	859	836	814	871	839	1058	890	939	1147	1022	959
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ChiSq, heteroscedasticity	907	691	1096	1245	1432	2209	917	2385	1223	1189	1544	1492	1453
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Appendix Table 7 (continued)

Independent Variables	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
RAW DATA (largest 25% of establishments sorted by output, dependent variable= $\ln(Vt/Et)$ )													
Constant	2.385	2.009	2.772	1.968	3.035	2.735	1.400	2.043	1.963	2.573	3.165	2.231	2.541
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI311-312t	-0.534	-	-0.324	0.443	-0.404	-0.195	0.673	0.309	0.164	-0.351	-0.634	-	-
significance level	0.01	-	0.02	0.03	0.00	0.26	0.00	0.02	0.05	0.00	0.00	-	-
DI313t	-0.186	0.465	0.157	1.035	-	-	0.883	0.418	0.588	-0.139	-0.193	0.352	0.061
significance level	0.41	0.01	0.39	0.00	-	-	0.00	0.02	0.00	0.37	0.21	0.02	0.73
DI314t	-1.094	-0.454	-0.797	-0.064	-0.916	-0.494	0.294	0.006	-0.183	-0.698	-0.903	-0.336	-0.304
significance level	0.00	0.00	0.00	0.78	0.00	0.01	0.02	0.97	0.17	0.00	0.00	0.00	0.00
DI321t	-0.66	-0.51	-0.92	-0.06	-1.00	-0.93	0.01	-0.20	-0.30	-0.91	-1.11	-0.58	-0.56
significance level	0.00	0.00	0.00	0.78	0.00	0.00	0.86	0.13	0.00	0.00	0.00	0.00	0.00
DI322t	-0.667	-0.453	-0.888	-0.033	-0.962	-0.929	-	-0.240	-0.379	-0.930	-1.195	-0.673	-0.689
significance level	0.00	0.00	0.00	0.88	0.00	0.00	-	0.07	0.00	0.00	0.00	0.00	0.00
DI323t	0.494	0.645	-	0.461	-0.079	0.091	0.640	0.346	0.158	-0.401	-0.647	-0.472	-0.662
significance level	0.19	0.01	-	0.08	0.72	0.68	0.00	0.07	0.43	0.01	0.00	0.01	0.00
DI324t	0.234	0.457	-0.590	0.007	-1.024	-1.284	-0.397	-0.668	-0.666	-1.324	-1.561	-0.943	-0.957
significance level	0.47	0.06	0.05	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI331t	-0.403	0.106	-0.296	0.408	-0.449	-0.362	0.364	0.110	-0.044	-0.611	-0.865	-0.317	-0.310
significance level	0.04	0.10	0.03	0.05	0.00	0.04	0.00	0.41	0.60	0.00	0.00	0.00	0.00
DI332t	-0.271	0.121	-0.399	0.358	-0.914	-0.677	0.277	-0.213	-0.410	-0.776	-0.968	-0.427	-0.461
significance level	0.27	0.54	0.04	0.13	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00
DI341t	-0.807	-0.152	-0.314	0.339	-0.450	-0.184	0.535	0.386	0.279	-0.490	-0.742	-0.106	-0.139
significance level	0.00	0.27	0.06	0.15	0.01	0.34	0.00	0.01	0.01	0.00	0.00	0.26	0.15
DI342t	-0.027	0.441	0.114	0.683	-0.098	0.061	1.133	0.662	0.546	-	-0.313	0.254	0.344
significance level	0.90	0.00	0.46	0.00	0.53	0.75	0.00	0.00	0.00	-	0.01	0.02	0.00
DI351t	-0.266	0.370	0.395	1.051	0.163	0.447	1.321	0.952	0.917	0.251	0.041	0.528	0.563
significance level	0.22	0.00	0.01	0.00	0.30	0.02	0.00	0.00	0.00	0.03	0.74	0.00	0.00
DI352t	-0.139	0.398	0.057	0.799	0.002	0.221	0.986	0.820	0.752	0.135	-0.159	0.495	0.416
significance level	0.50	0.00	0.70	0.00	0.99	0.22	0.00	0.00	0.00	0.19	0.17	0.00	0.00
DI355t	-0.987	-0.402	-0.465	0.487	-0.557	-0.332	0.478	0.154	-	-0.463	-0.738	-0.074	-0.247
significance level	0.00	0.00	0.00	0.03	0.00	0.07	0.00	0.29	-	0.00	0.00	0.29	0.00
DI356t	-0.783	-0.143	-0.465	0.199	-0.512	-0.416	0.712	0.331	0.063	-0.444	-0.734	-0.124	-0.276
significance level	0.00	0.12	0.00	0.35	0.00	0.03	0.00	0.02	0.50	0.00	0.00	0.08	0.00
DI361t	-0.985	-0.423	-0.928	-0.076	-0.987	-0.532	0.137	-	0.046	-0.717	-0.837	-0.170	-0.160
significance level	0.00	0.05	0.00	0.76	0.00	0.02	0.35	-	0.75	0.00	0.00	0.33	0.25
DI362t	-0.823	0.081	-0.596	-	-0.765	-0.627	0.609	0.386	0.044	-0.292	-0.407	-0.490	-0.205
significance level	0.04	0.76	0.00	-	0.00	0.01	0.00	0.03	0.78	0.12	0.01	0.17	0.13
DI363t	-0.175	0.401	-0.060	0.654	0.101	0.288	1.266	0.906	0.808	0.193	-	0.59119	0.16042
significance level	0.48	0.01	0.78	0.01	0.57	0.14	0.00	0.00	0.00	0.14	-	8.3E-08	0.35459
DI364t	-0.296	0.349	-0.207	0.517	-0.224	-0.211	0.802	0.202	0.019	-0.415	-0.783	-0.138	-0.222
significance level	0.29	0.23	0.45	0.03	0.50	0.43	0.00	0.57	0.95	0.06	0.00	0.46	0.64
DI369t	-	0.682	0.150	0.720	-0.084	0.326	1.268	0.840	0.368	0.090	-0.295	0.389	0.418
significance level	-	0.00	0.50	0.05	0.71	0.16	0.00	0.00	0.09	0.60	0.07	0.04	0.08
DI371t	0.032	0.167	-0.101	0.682	-0.069	0.061	0.715	0.853	0.613	0.027	-0.202	0.565	0.356
significance level	0.92	0.41	0.62	0.01	0.71	0.78	0.00	0.00	0.00	0.87	0.23	0.00	0.02
DI372t	-	-	-	-	0.299	-0.071	1.019	0.764	0.567	-0.238	-0.436	0.468	0.492
significance level	-	-	-	-	0.18	0.77	0.00	0.00	0.00	0.25	0.02	0.00	0.00
DI381t	-0.443	0.296	-0.050	0.712	-0.254	-0.056	0.866	0.511	0.318	-0.242	-0.347	0.066	0.173
significance level	0.03	0.00	0.73	0.00	0.08	0.76	0.00	0.00	0.00	0.01	0.00	0.38	0.03
DI382t	-0.225	0.421	0.290	0.993	0.001	0.399	1.157	0.748	0.794	0.183	-0.069	0.433	0.488
significance level	0.35	0.01	0.09	0.00	0.99	0.05	0.00	0.00	0.00	0.14	0.63	0.00	0.00
DI383t	-0.454	0.120	-0.211	0.449	-0.358	-0.180	0.655	0.227	0.065	-0.387	-0.517	-0.010	-0.201
significance level	0.03	0.26	0.18	0.04	0.02	0.34	0.00	0.12	0.52	0.00	0.00	0.90	0.03
DI384t	-0.337	0.389	0.101	0.760	-0.037	0.107	1.100	0.827	0.574	0.010	-0.287	0.238	0.178
significance level	0.10	0.00	0.51	0.00	0.80	0.56	0.00	0.00	0.00	0.92	0.02	0.01	0.05
DI385t	-0.717	-0.171	-0.094	0.720	-0.017	0.209	0.660	0.142	0.163	-0.350	-0.742	-0.184	-0.243
significance level	0.08	0.67	0.83	0.14	0.96	0.55	0.04	0.53	0.53	0.14	0.02	0.51	0.41
DI390t	-0.503	0.216	-0.434	0.497	-0.821	-0.565	0.161	-0.227	-0.266	-0.885	-0.902	-0.540	-0.300
significance level	0.04	0.22	0.02	0.03	0.00	0.01	0.18	0.17	0.03	0.00	0.00	0.00	0.02
Adjusted R-squared	0.277	0.322	0.320	0.308	0.310	0.317	0.297	0.343	0.330	0.326	0.326	0.295	0.283
F-statistic	40	50	56	54	59	61	59	75	74	82	88	74	67
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ChiSq, heteroscedasticity	184	143	228	281	304	1943	232	384	316	302	372	249	331
significance level	0.01	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix Table 7 (continued)

Independent Variables	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
BACKCAST DATA (all establishments, dependent variable= $\ln(Vt/Et)$ )													
Constant	1.581	1.432	1.712	1.352	2.176	2.108	1.880	2.083	2.168	2.919	3.038	2.580	2.556
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI311-312t	-0.319	-	-0.297	0.190	-0.420	-0.354	0.020	0.056	0.023	-0.434	-0.305	-	-
significance level	0.00	-	0.00	0.07	0.00	0.00	0.31	0.47	0.59	0.00	0.00	-	-
DI313t	0.003	0.338	0.065	0.547	-	-	0.298	0.302	0.409	-0.169	0.073	0.305	0.224
significance level	0.96	0.00	0.42	0.00	-	-	0.00	0.00	0.00	0.00	0.12	0.00	0.00
DI314t	-1.139	-0.930	-1.062	-0.546	-1.032	-1.290	-0.921	-0.884	-0.705	-1.439	-1.239	-0.994	-0.937
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI321t	-0.45	-0.21	-0.48	0.04	-0.62	-0.62	-0.23	-0.17	-0.18	-0.66	-0.52	-0.20	-0.21
significance level	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
DI322t	-0.264	0.011	-0.253	0.207	-0.408	-0.401	-	0.099	0.055	-0.391	-0.260	0.000	0.000
significance level	0.00	0.69	0.00	0.05	0.00	0.00	-	0.21	0.20	0.00	0.00	1.00	0.99
DI323t	0.067	0.259	-	0.506	-0.184	-0.102	0.130	0.173	0.173	-0.304	-0.162	0.014	-0.044
significance level	0.43	0.00	-	0.00	0.02	0.18	0.01	0.05	0.01	0.00	0.00	0.80	0.48
DI324t	0.015	0.210	-0.143	0.165	-0.472	-0.678	-0.264	-0.216	-0.124	-0.622	-0.474	-0.224	-0.259
significance level	0.85	0.00	0.12	0.19	0.00	0.00	0.00	0.02	0.05	0.00	0.00	0.00	0.00
DI331t	-0.054	0.268	-0.068	0.351	-0.205	-0.153	0.085	0.154	0.102	-0.351	-0.242	0.032	0.006
significance level	0.38	0.00	0.34	0.00	0.00	0.01	0.00	0.05	0.02	0.00	0.00	0.18	0.81
DI332t	0.061	0.390	-0.016	0.396	-0.389	-0.290	0.033	0.045	-0.026	-0.384	-0.289	-0.005	-0.030
significance level	0.34	0.00	0.83	0.00	0.00	0.00	0.25	0.58	0.58	0.00	0.00	0.83	0.24
DI341t	-0.480	-0.075	-0.253	0.196	-0.318	-0.308	-0.069	0.169	0.202	-0.388	-0.213	0.105	-0.017
significance level	0.00	0.25	0.00	0.10	0.00	0.00	0.35	0.06	0.00	0.00	0.00	0.07	0.77
DI342t	0.148	0.397	0.164	0.577	0.051	0.120	0.517	0.513	0.499	-	0.139	0.401	0.325
significance level	0.02	0.00	0.03	0.00	0.33	0.05	0.00	0.00	0.00	-	0.00	0.00	0.00
DI351t	0.013	0.387	0.260	0.698	-0.014	0.154	0.512	0.512	0.598	0.043	0.196	0.480	0.397
significance level	0.88	0.00	0.00	0.00	0.85	0.04	0.00	0.00	0.00	0.45	0.00	0.00	0.00
DI352t	-0.050	0.257	-0.005	0.522	-0.057	0.004	0.282	0.409	0.435	-0.058	0.094	0.417	0.345
significance level	0.46	0.00	0.95	0.00	0.32	0.95	0.00	0.00	0.00	0.23	0.03	0.00	0.00
DI355t	-0.406	-0.012	-0.179	0.282	-0.359	-0.315	-0.051	0.059	-	-0.408	-0.321	0.057	-0.018
significance level	0.00	0.80	0.04	0.01	0.00	0.00	0.31	0.49	-	0.00	0.00	0.15	0.70
DI356t	-0.435	-0.122	-0.386	0.093	-0.444	-0.455	0.024	0.052	0.006	-0.451	-0.352	-0.002	-0.094
significance level	0.00	0.00	0.00	0.39	0.00	0.00	0.42	0.52	0.91	0.00	0.00	0.95	0.00
DI361t	-0.519	-0.142	-0.405	0.135	-0.555	-0.377	-0.129	-	-0.019	-0.496	-0.413	0.043	-0.005
significance level	0.00	0.19	0.00	0.34	0.00	0.00	0.14	-	0.84	0.00	0.00	0.68	0.96
DI362t	-0.469	-0.096	-0.450	-	-0.519	-0.484	-0.069	0.012	-0.118	-0.405	-0.194	-0.118	-0.039
significance level	0.00	0.43	0.00	-	0.00	0.00	0.47	0.91	0.21	0.00	0.03	0.43	0.61
DI363t	-0.104	0.294	-0.098	0.397	-0.138	-0.104	0.259	0.292	0.320	-0.137	-	0.2619	0.11999
significance level	0.10	0.00	0.19	0.00	0.01	0.09	0.00	0.00	0.00	0.00	-	0	0.00131
DI364t	-0.276	0.133	-0.196	0.285	-0.290	-0.233	0.069	0.038	0.072	-0.432	-0.372	-0.077	-0.055
significance level	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.63	0.10	0.00	0.00	0.00	0.01
DI369t	-	0.350	-0.139	0.344	-0.146	-0.001	0.290	0.293	0.154	-0.206	-0.092	0.207	0.166
significance level	-	0.00	0.13	0.00	0.05	0.99	0.00	0.00	0.02	0.00	0.07	0.00	0.00
DI371t	-0.257	0.267	-0.098	0.599	-0.024	-0.132	0.035	0.515	0.350	-0.041	0.065	0.506	0.267
significance level	0.04	0.02	0.46	0.00	0.84	0.25	0.73	0.00	0.00	0.68	0.54	0.00	0.01
DI372t	-	-	-	-	0.130	-0.095	0.346	0.355	0.356	-0.324	-0.101	0.362	0.442
significance level	-	-	-	-	0.38	0.50	0.00	0.00	0.00	0.00	0.32	0.00	0.00
DI381t	-0.189	0.200	-0.061	0.474	-0.168	-0.139	0.249	0.315	0.262	-0.232	-0.063	0.178	0.212
significance level	0.00	0.00	0.42	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.07	0.00	0.00
DI382t	0.012	0.431	0.177	0.697	0.026	0.113	0.430	0.448	0.542	0.059	0.176	0.452	0.426
significance level	0.88	0.00	0.03	0.00	0.71	0.15	0.00	0.00	0.00	0.22	0.00	0.00	0.00
DI383t	-0.289	0.087	-0.179	0.341	-0.258	-0.243	0.118	0.121	0.097	-0.279	-0.067	0.179	0.019
significance level	0.00	0.10	0.03	0.00	0.00	0.00	0.02	0.17	0.09	0.00	0.16	0.00	0.72
DI384t	-0.075	0.342	0.081	0.550	-0.056	-0.019	0.346	0.465	0.425	-0.076	0.052	0.345	0.308
significance level	0.28	0.00	0.29	0.00	0.33	0.77	0.00	0.00	0.00	0.08	0.18	0.00	0.00
DI385t	-0.075	0.458	0.100	0.473	-0.113	-0.068	0.213	0.199	0.097	-0.290	-0.210	0.112	0.106
significance level	0.46	0.00	0.39	0.00	0.25	0.51	0.05	0.07	0.43	0.00	0.02	0.31	0.28
DI390t	-0.278	0.213	-0.125	0.343	-0.399	-0.442	-0.050	-0.018	-0.006	-0.489	-0.304	-0.019	-0.069
significance level	0.00	0.00	0.13	0.00	0.00	0.00	0.24	0.83	0.91	0.00	0.00	0.63	0.09
Adjusted R-squared	0.644	0.646	0.637	0.633	0.610	0.624	0.609	0.646	0.611	0.594	0.605	0.598	0.589
F-statistic	1000	1050	1030	1039	985	1065	1039	1246	1110	1085	1124	1076	959
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ChiSq, heteroscedasticity	591	1336	1702	1934	1602	2081	1181	2614	1367	1198	1413	1495	1453
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix Table 7 (continued)

Independent Variables	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
BACKCAST DATA (largest 25% of establishments sorted by output, dependent variable= $\ln(V_t/E_t)$ )													
Constant	3.199	2.439	3.000	1.927	2.719	2.645	1.541	2.097	2.291	2.997	3.408	2.158	2.541
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI311-312t	-0.352	-	-0.383	0.286	-0.370	-0.163	0.657	0.415	0.181	-0.419	-0.597	-	-
significance level	0.08	-	0.01	0.10	0.00	0.31	0.00	0.00	0.02	0.00	0.00	-	-
DI313t	-0.125	0.277	0.077	0.742	-	-	0.809	0.502	0.527	-0.229	-0.058	0.378	0.061
significance level	0.61	0.02	0.66	0.00	-	-	0.00	0.00	0.00	0.12	0.69	0.01	0.73
DI314t	-1.011	-0.525	-0.919	-0.231	-0.832	-0.497	0.275	0.176	-0.136	-0.753	-0.870	-0.324	-0.304
significance level	0.00	0.00	0.00	0.25	0.00	0.01	0.02	0.27	0.28	0.00	0.00	0.00	0.00
DI321t	-0.87	-0.63	-1.00	-0.21	-0.96	-0.86	0.03	-0.16	-0.31	-0.95	-1.14	-0.57	-0.56
significance level	0.00	0.00	0.00	0.23	0.00	0.00	0.68	0.20	0.00	0.00	0.00	0.00	0.00
DI322t	-0.756	-0.505	-0.981	-0.221	-0.924	-0.831	-	-0.132	-0.365	-0.975	-1.159	-0.691	-0.689
significance level	0.00	0.00	0.00	0.22	0.00	0.00	-	0.30	0.00	0.00	0.00	0.00	0.00
DI323t	-0.040	0.407	-	0.534	-0.054	0.012	0.634	0.387	0.143	-0.624	-0.618	-0.479	-0.662
significance level	0.88	0.03	-	0.02	0.78	0.96	0.00	0.02	0.40	0.00	0.00	0.01	0.00
DI324t	-0.208	0.196	-0.780	-0.404	-1.154	-1.188	-0.427	-0.595	-0.698	-1.385	-1.519	-0.955	-0.957
significance level	0.44	0.32	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI331t	-0.377	0.018	-0.412	0.235	-0.423	-0.250	0.383	0.198	-0.031	-0.670	-0.863	-0.308	-0.310
significance level	0.06	0.74	0.00	0.18	0.00	0.12	0.00	0.12	0.69	0.00	0.00	0.00	0.00
DI332t	-0.179	0.141	-0.356	0.209	-0.820	-0.609	0.269	-0.152	-0.400	-0.849	-0.983	-0.451	-0.461
significance level	0.48	0.28	0.06	0.30	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00
DI341t	-0.689	-0.206	-0.424	0.208	-0.384	-0.148	0.517	0.436	0.253	-0.535	-0.742	-0.068	-0.139
significance level	0.00	0.05	0.01	0.30	0.01	0.41	0.00	0.00	0.01	0.00	0.00	0.47	0.15
DI342t	-0.002	0.266	-0.038	0.523	0.029	0.141	1.115	0.818	0.653	-	-0.236	0.283	0.344
significance level	0.99	0.00	0.81	0.01	0.83	0.41	0.00	0.00	0.00	-	0.05	0.01	0.00
DI351t	-0.108	0.363	0.185	0.863	0.164	0.429	1.288	0.987	0.922	0.192	0.003	0.555	0.563
significance level	0.62	0.00	0.26	0.00	0.24	0.01	0.00	0.00	0.00	0.08	0.98	0.00	0.00
DI352t	-0.107	0.256	-0.092	0.662	0.058	0.270	0.999	0.845	0.698	0.055	-0.107	0.498	0.416
significance level	0.60	0.00	0.55	0.00	0.65	0.10	0.00	0.00	0.00	0.59	0.34	0.00	0.00
DI355t	-0.561	-0.176	-0.274	0.301	-0.519	-0.289	0.481	0.258	-	-0.512	-0.733	-0.082	-0.247
significance level	0.01	0.05	0.09	0.11	0.00	0.09	0.00	0.06	-	0.00	0.00	0.24	0.00
DI356t	-0.717	-0.291	-0.596	0.048	-0.462	-0.408	0.714	0.364	0.006	-0.552	-0.777	-0.124	-0.276
significance level	0.00	0.00	0.00	0.79	0.00	0.02	0.00	0.01	0.94	0.00	0.00	0.07	0.00
DI361t	-0.869	-0.521	-1.092	-0.260	-0.907	-0.542	0.050	-	-0.088	-0.828	-0.917	-0.183	-0.160
significance level	0.00	0.00	0.00	0.25	0.00	0.01	0.71	-	0.52	0.00	0.00	0.30	0.25
DI362t	-0.597	-0.052	-0.497	-	-0.615	-0.424	0.655	0.386	0.046	-0.365	-0.426	-0.370	-0.205
significance level	0.06	0.76	0.01	-	0.00	0.07	0.00	0.02	0.75	0.04	0.01	0.26	0.13
DI363t	-0.181	0.225	-0.182	0.503	0.177	0.300	1.206	0.957	0.756	0.101	-	0.56882	0.16042
significance level	0.45	0.13	0.37	0.02	0.27	0.10	0.00	0.00	0.00	0.42	-	1.1E-07	0.35459
DI364t	-0.162	0.109	-0.414	0.029	0.110	0.266	0.849	0.467	0.356	-0.508	-0.825	-0.181	-0.222
significance level	0.63	0.74	0.26	0.93	0.78	0.51	0.00	0.19	0.32	0.02	0.00	0.32	0.64
DI369t	-	0.379	-0.107	0.591	-0.129	0.376	1.156	0.763	0.269	-0.015	-0.283	0.370	0.418
significance level	-	0.03	0.64	0.02	0.52	0.08	0.00	0.00	0.14	0.92	0.08	0.04	0.08
DI371t	-0.347	0.163	-0.240	0.662	0.001	0.112	0.667	0.915	0.623	-0.024	-0.170	0.622	0.356
significance level	0.18	0.25	0.21	0.00	1.00	0.58	0.00	0.00	0.00	0.87	0.29	0.00	0.02
DI372t	-	-	-	-	0.264	0.106	1.108	0.820	0.566	-0.253	-0.463	0.460	0.492
significance level	-	-	-	-	0.21	0.64	0.00	0.00	0.00	0.20	0.01	0.00	0.00
DI381t	-0.343	0.180	-0.171	0.588	-0.158	-0.005	0.885	0.610	0.361	-0.315	-0.339	0.095	0.173
significance level	0.10	0.01	0.26	0.00	0.22	0.98	0.00	0.00	0.00	0.00	0.00	0.20	0.03
DI382t	-0.126	0.382	0.101	0.826	0.104	0.362	1.132	0.738	0.807	0.093	-0.060	0.441	0.488
significance level	0.60	0.00	0.56	0.00	0.51	0.05	0.00	0.00	0.00	0.43	0.67	0.00	0.00
DI383t	-0.488	-0.044	-0.382	0.287	-0.368	-0.275	0.614	0.281	0.058	-0.450	-0.479	-0.008	-0.201
significance level	0.02	0.60	0.02	0.13	0.01	0.11	0.00	0.04	0.53	0.00	0.00	0.92	0.03
DI384t	-0.221	0.253	-0.062	0.599	0.016	0.106	1.047	0.814	0.513	-0.101	-0.288	0.289	0.178
significance level	0.30	0.00	0.69	0.00	0.90	0.53	0.00	0.00	0.00	0.33	0.01	0.00	0.05
DI385t	-0.492	0.221	-0.137	0.589	0.025	-0.064	0.264	0.135	0.099	-0.496	-0.626	-0.310	-0.243
significance level	0.21	0.43	0.68	0.15	0.93	0.83	0.38	0.49	0.70	0.04	0.00	0.27	0.41
DI390t	-0.432	-0.035	-0.495	0.281	-0.662	-0.600	0.107	-0.155	-0.291	-0.946	-0.855	-0.503	-0.300
significance level	0.10	0.80	0.01	0.17	0.00	0.00	0.31	0.33	0.01	0.00	0.00	0.00	0.02
Adjusted R-squared	0.256	0.309	0.298	0.312	0.311	0.302	0.295	0.331	0.327	0.311	0.313	0.308	0.283
F-statistic	48	65	63	69	72	70	71	85	87	85	84	81	67
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ChiSq, heteroscedasticity	71	245	298	292	364	756	354	531	314	248	326	262	331
significance level	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Appendix Table 8: Additional Details from Regressions Explaining the Relationship between Annual Changes in Value Added per Employee (=dependent variable), Initial Size, Vintage, and Foreign Ownership Group**

Independent Variables	1986	1987	1988	1989	1991	1992	1993	1994	1995	1996	1997	1998
RAW DATA (all establishments, dependent variable= $\ln(Vt/Et)-\ln(Vt-1/Et-1)$ )												
Constant	1.082	0.707	0.482	0.916	0.502	0.963	1.068	0.490	0.761	0.636	0.633	0.655
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI311-312t	-0.060	-0.047	-	-0.003	-0.061	0.122	-0.058	0.185	0.036	-0.007	-	-
significance level	0.11	0.23	-	0.96	0.10	0.08	0.32	0.09	0.11	0.84	-	-
DI313t	-0.052	-0.035	0.087	-	-0.069	-0.003	-0.056	0.361	-0.079	0.075	-0.044	-0.216
significance level	0.45	0.64	0.19	-	0.34	0.98	0.47	0.00	0.12	0.20	0.37	0.00
DI314t	-0.239	-0.290	0.118	-0.026	-0.572	-0.186	-0.152	0.209	-0.230	-0.049	-0.094	-0.174
significance level	0.00	0.00	0.00	0.66	0.00	0.01	0.02	0.06	0.00	0.25	0.00	0.00
DI321t	0.08	-0.23	0.09	0.02	-0.09	0.18	0.01	0.21	-	0.06	-0.05	-0.05
significance level	0.04	0.00	0.00	0.65	0.01	0.01	0.91	0.06	-	0.08	0.02	0.05
DI322t	0.059	-0.165	0.192	0.027	-0.122	0.110	-0.006	0.121	0.016	-0.032	-0.054	-0.059
significance level	0.25	0.00	0.00	0.64	0.00	0.11	0.93	0.27	0.51	0.34	0.01	0.01
DI323t	0.202	-0.343	0.223	-0.134	0.229	-0.033	-	0.177	0.029	0.039	-0.195	-0.126
significance level	0.12	0.01	0.04	0.18	0.00	0.73	-	0.14	0.64	0.54	0.00	0.10
DI324t	0.141	-0.280	0.149	0.010	-0.307	0.376	0.057	0.259	-0.060	0.004	-0.059	-0.067
significance level	0.23	0.01	0.21	0.90	0.00	0.00	0.47	0.03	0.21	0.93	0.17	0.23
DI331t	0.239	0.042	0.062	-0.010	-0.018	-0.014	0.027	0.131	0.026	0.030	-0.046	-0.050
significance level	0.00	0.41	0.09	0.86	0.66	0.85	0.66	0.23	0.33	0.40	0.09	0.12
DI332t	-0.017	-0.085	-0.061	-0.075	-	0.057	-0.065	0.139	0.081	-0.014	-0.042	0.004
significance level	0.77	0.14	0.27	0.23	-	0.43	0.30	0.21	0.01	0.70	0.14	0.89
DI341t	-0.002	0.147	0.262	-0.053	-0.021	0.088	0.110	0.324	-0.080	0.129	0.035	-0.062
significance level	0.99	0.09	0.00	0.52	0.78	0.46	0.25	0.01	0.17	0.01	0.53	0.44
DI342t	-	-0.194	0.125	-0.152	0.013	0.144	-0.097	0.200	0.051	-0.002	-0.093	-0.152
significance level	-	0.00	0.00	0.01	0.78	0.06	0.16	0.08	0.19	0.97	0.00	0.00
DI351t	-0.009	0.100	0.333	0.019	0.021	0.184	-0.032	0.331	-0.026	0.099	-0.049	-0.137
significance level	0.91	0.26	0.00	0.79	0.75	0.05	0.69	0.01	0.63	0.05	0.33	0.06
DI352t	0.052	0.005	0.116	0.032	0.023	0.039	0.105	0.262	0.024	0.081	0.041	-0.132
significance level	0.38	0.93	0.01	0.60	0.64	0.61	0.12	0.02	0.53	0.07	0.31	0.02
DI355t	-0.212	0.098	0.428	0.076	-0.140	0.041	0.036	0.263	0.156	0.012	0.075	-0.035
significance level	0.01	0.18	0.00	0.30	0.02	0.64	0.64	0.02	0.00	0.80	0.06	0.49
DI356t	0.011	0.033	0.148	0.015	-0.079	0.310	-0.091	0.261	0.115	0.039	0.001	-0.152
significance level	0.82	0.53	0.00	0.79	0.08	0.00	0.15	0.02	0.00	0.31	0.96	0.00
DI361t	-0.004	0.046	0.117	0.078	0.197	0.075	0.119	0.358	-0.044	0.039	0.029	-0.050
significance level	0.97	0.71	0.41	0.50	0.05	0.52	0.26	0.00	0.53	0.63	0.76	0.73
DI362t	-0.066	0.169	-0.027	-0.068	-0.048	0.347	0.187	-	0.292	0.210	-0.320	0.128
significance level	0.74	0.34	0.82	0.63	0.70	0.01	0.08	-	0.00	0.04	0.04	0.49
DI363t	-0.056	-	-0.122	-0.052	-0.086	0.091	-0.099	0.213	0.047	-0.034	-0.116	-0.313
significance level	0.31	-	0.01	0.43	0.10	0.23	0.13	0.06	0.15	0.41	0.00	0.00
DI364t	-0.226	-0.064	-0.203	-0.133	-0.132	-0.085	-0.207	0.205	-0.035	-0.142	-0.157	-0.110
significance level	0.00	0.17	0.00	0.02	0.00	0.23	0.00	0.06	0.16	0.00	0.00	0.00
DI369t	0.342	0.048	-0.346	0.042	0.035	0.036	-0.073	-0.056	0.218	0.035	-0.120	-0.221
significance level	0.00	0.65	0.01	0.68	0.68	0.70	0.39	0.65	0.00	0.58	0.03	0.00
DI371t	0.901	-0.432	0.412	0.337	-0.160	-0.106	0.842	0.213	0.167	0.113	0.213	-0.404
significance level	0.01	0.18	0.02	0.06	0.23	0.56	0.00	0.18	0.11	0.32	0.06	0.00
DI372t	-	-	-	-	-0.474	0.339	0.042	0.329	-0.118	0.196	0.096	-0.001
significance level	-	-	-	-	0.01	0.18	0.82	0.06	0.42	0.14	0.39	0.99
DI381t	-0.024	0.037	0.099	0.065	-0.019	0.138	0.032	0.194	0.018	0.105	-0.124	-0.043
significance level	0.65	0.48	0.03	0.30	0.68	0.08	0.62	0.08	0.62	0.01	0.00	0.25
DI382t	-0.103	0.110	0.092	0.051	0.014	-	-0.058	0.334	0.058	0.003	-0.060	-0.331
significance level	0.17	0.14	0.17	0.48	0.85	-	0.43	0.00	0.15	0.94	0.16	0.00
DI383t	-0.080	0.077	0.151	0.159	0.011	0.196	0.084	0.235	0.227	0.120	-0.107	-0.207
significance level	0.29	0.27	0.03	0.03	0.86	0.03	0.27	0.04	0.00	0.01	0.03	0.00
DI384t	0.060	0.102	0.107	-0.010	-0.022	0.131	0.070	0.230	-0.011	-	-0.091	-0.220
significance level	0.35	0.09	0.05	0.88	0.69	0.12	0.34	0.04	0.76	-	0.02	0.00
DI385t	-0.132	0.186	0.141	-0.062	-0.001	0.010	-0.132	0.100	0.164	-0.028	-0.211	0.009
significance level	0.17	0.06	0.26	0.54	0.99	0.95	0.38	0.54	0.05	0.70	0.06	0.94
DI390t	-0.191	0.174	-0.024	-0.002	-0.042	0.072	-0.053	0.182	-0.033	0.047	-0.051	-0.112
significance level	0.01	0.00	0.68	0.98	0.47	0.41	0.49	0.12	0.46	0.34	0.21	0.06
F-statistic	13	13	9	10	13	16	17	10	14	8	8	9
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ChiSq, heteroscedasticity	618	460	362	536	522	949	1064	539	601	528	1129	778
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix Table 8 (continued)

Independent Variables	1986	1987	1988	1989	1991	1992	1993	1994	1995	1996	1997	1998
RAW DATA (largest 25% of establishments sorted by output, dependent variable= $\ln(V_t/E_t)-\ln(V_{t-1}/E_{t-1})$ )												
Constant	0.232	0.719	0.746	0.469	0.346	0.744	1.283	0.084	0.195	0.442	0.621	1.110
significance level	0.43	0.03	0.00	0.08	0.17	0.02	0.00	0.79	0.34	0.02	0.01	0.00
DI311-312t	-0.347	-0.062	-	-0.069	0.045	0.299	0.081	0.308	0.103	0.004	-	-
significance level	0.00	0.74	-	0.67	0.68	0.08	0.57	0.13	0.04	0.96	-	-
DI313t	-0.065	0.052	0.145	-	0.000	0.225	0.000	0.736	-0.111	0.177	-0.142	-0.423
significance level	0.65	0.84	0.30	-	1.00	0.35	1.00	0.00	0.40	0.18	0.37	0.02
DI314t	-0.129	0.005	-0.023	-0.105	0.143	0.249	0.163	0.270	0.119	0.076	0.041	0.113
significance level	0.27	0.98	0.81	0.57	0.36	0.21	0.32	0.21	0.25	0.45	0.57	0.41
DI321t	0.19	-0.43	-0.03	0.10	0.01	0.37	0.18	0.43	-	0.14	-0.12	-0.03
significance level	0.07	0.02	0.69	0.52	0.95	0.04	0.20	0.04	-	0.07	0.04	0.71
DI322t	0.111	-0.281	-0.094	0.121	-0.065	0.376	0.282	0.244	-0.009	0.039	-0.039	0.013
significance level	0.42	0.18	0.43	0.49	0.59	0.04	0.06	0.24	0.89	0.60	0.60	0.88
DI323t	0.641	-0.588	-0.081	-0.360	0.375	0.020	-	0.502	0.109	0.118	-0.319	-0.329
significance level	0.12	0.10	0.74	0.15	0.06	0.93	-	0.02	0.47	0.43	0.03	0.10
DI324t	-0.036	-0.354	-0.582	0.136	-0.489	0.448	0.323	0.439	-0.045	0.101	-0.063	-0.057
significance level	0.93	0.26	0.02	0.61	0.00	0.02	0.05	0.04	0.61	0.24	0.51	0.64
DI331t	0.162	0.021	-0.072	-0.107	0.038	0.197	0.157	0.258	0.061	0.003	-0.133	-0.070
significance level	0.11	0.91	0.32	0.51	0.74	0.26	0.28	0.21	0.30	0.97	0.05	0.36
DI332t	0.061	-0.219	-0.285	-0.084	-	0.334	-0.074	0.189	0.191	-0.016	-0.213	-0.057
significance level	0.77	0.45	0.15	0.72	-	0.06	0.64	0.38	0.02	0.86	0.04	0.59
DI341t	-0.132	0.304	0.262	-0.117	0.051	0.081	0.169	0.434	-0.120	0.073	-0.021	-0.011
significance level	0.37	0.19	0.08	0.55	0.74	0.75	0.31	0.04	0.18	0.39	0.85	0.92
DI342t	-	-0.309	-0.145	-0.239	0.050	0.395	-0.091	0.330	0.061	0.096	-0.245	-0.161
significance level	-	0.14	0.31	0.20	0.74	0.04	0.60	0.12	0.55	0.30	0.02	0.26
DI351t	-0.165	0.165	0.315	-0.063	0.121	0.395	0.019	0.386	-0.047	0.171	-0.186	-0.202
significance level	0.23	0.44	0.01	0.73	0.37	0.05	0.91	0.07	0.55	0.03	0.03	0.05
DI352t	-0.166	-0.006	0.007	-0.027	0.147	0.152	0.325	0.448	0.050	0.068	-0.027	-0.373
significance level	0.15	0.97	0.93	0.87	0.24	0.40	0.03	0.03	0.48	0.40	0.71	0.00
DI355t	-0.692	0.001	0.392	0.012	-0.037	0.172	0.088	0.336	0.177	0.059	0.007	-0.064
significance level	0.00	1.00	0.00	0.94	0.77	0.36	0.60	0.12	0.02	0.49	0.92	0.55
DI356t	-0.141	0.048	-0.027	-0.113	-0.030	0.621	-0.067	0.241	0.179	-0.003	-0.074	-0.345
significance level	0.28	0.81	0.77	0.52	0.82	0.00	0.67	0.24	0.01	0.97	0.31	0.00
DI361t	0.012	0.017	0.002	0.076	0.428	0.136	0.416	0.466	-0.044	0.164	-0.016	-0.021
significance level	0.96	0.96	0.99	0.77	0.04	0.57	0.02	0.03	0.76	0.19	0.91	0.92
DI362t	-0.098	0.336	-0.131	-0.262	-0.028	0.687	0.413	-	0.518	0.172	-0.552	0.340
significance level	0.82	0.35	0.50	0.40	0.92	0.00	0.07	-	0.01	0.23	0.09	0.18
DI363t	-0.496	-	0.052	-0.297	-0.040	0.376	0.034	0.344	0.042	-0.051	-0.116	-0.790
significance level	0.07	-	0.81	0.16	0.82	0.08	0.84	0.16	0.70	0.68	0.32	0.00
DI364t	0.353	-0.285	-0.158	-0.136	0.693	0.142	-0.100	-0.027	-0.002	-0.069	-0.114	-0.422
significance level	0.07	0.43	0.43	0.68	0.47	0.61	0.73	0.94	0.99	0.71	0.36	0.34
DI369t	0.161	-0.396	-0.284	-0.234	0.274	-0.013	0.078	-0.093	0.467	-0.145	-0.102	-0.406
significance level	0.43	0.19	0.26	0.38	0.19	0.96	0.66	0.70	0.00	0.20	0.61	0.05
DI371t	0.414	-0.362	0.208	0.213	-0.083	0.137	0.808	0.305	0.170	0.071	0.191	-0.474
significance level	0.21	0.21	0.31	0.36	0.62	0.60	0.00	0.22	0.15	0.64	0.20	0.00
DI372t	-	-	-	-	-0.504	0.434	0.240	0.333	-0.272	0.148	0.132	0.009
significance level	-	-	-	-	0.04	0.25	0.30	0.25	0.11	0.50	0.42	0.97
DI381t	-0.309	0.130	-0.079	-0.012	-0.013	0.415	0.075	0.258	0.018	0.139	-0.257	-0.055
significance level	0.01	0.51	0.34	0.94	0.92	0.03	0.62	0.21	0.79	0.09	0.00	0.54
DI382t	-0.314	0.113	0.182	-0.063	0.269	-	-0.010	0.506	0.175	0.101	-0.047	-0.446
significance level	0.07	0.65	0.17	0.76	0.12	-	0.96	0.02	0.12	0.33	0.69	0.00
DI383t	-0.300	0.145	-0.008	0.023	0.041	0.339	0.153	0.321	0.330	0.094	-0.239	-0.265
significance level	0.02	0.50	0.94	0.90	0.77	0.07	0.31	0.12	0.00	0.25	0.01	0.01
DI384t	-0.057	0.201	-0.003	-0.140	0.052	0.404	0.220	0.366	0.011	-	-0.220	-0.471
significance level	0.67	0.33	0.98	0.44	0.70	0.05	0.21	0.09	0.89	-	0.02	0.00
DI385t	-0.674	0.270	0.163	-0.011	0.224	-0.437	-0.517	0.298	-0.065	-0.021	-0.635	0.089
significance level	0.02	0.57	0.67	0.98	0.53	0.55	0.29	0.39	0.78	0.91	0.02	0.80
DI390t	-0.152	0.062	0.064	0.244	-0.109	0.189	-0.027	0.406	0.020	0.209	-0.292	-0.046
significance level	0.54	0.82	0.76	0.28	0.59	0.42	0.89	0.07	0.85	0.06	0.01	0.76
F-statistic	5	4	2	2	2	3	4	2	2	1	2	4
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00
ChiSq, heteroscedasticity	206	168	171	172	159	559	217	229	197	198	398	196
significance level	0.00	0.06	0.04	0.06	0.37	0.00	0.01	0.00	0.06	0.04	0.00	0.08

Appendix Table 8 (continued)

Independent Variables	1986	1987	1988	1989	1991	1992	1993	1994	1995	1996	1997	1998
BACKCAST DATA (all establishments, dependent variable= $\ln(Vt/Et)-\ln(Vt-1/Et-1)$ )												
Constant	0.979	0.486	0.469	0.813	0.624	0.972	1.028	0.588	0.821	0.759	0.581	0.730
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DI311-312t	-0.032	-0.029	-	-0.016	-0.071	0.122	-0.055	0.176	0.056	-0.001	-	-
significance level	0.25	0.33	-	0.76	0.01	0.03	0.28	0.07	0.01	0.97	-	-
DI313t	-0.057	-0.025	0.050	-	-0.121	-0.006	-0.050	0.352	-0.048	0.098	-0.067	-0.213
significance level	0.24	0.63	0.27	-	0.03	0.94	0.45	0.00	0.32	0.07	0.18	0.00
DI314t	-0.180	-0.187	0.080	-0.033	-0.559	-0.147	-0.163	0.171	-0.278	-0.069	-0.081	-0.189
significance level	0.00	0.00	0.00	0.54	0.00	0.01	0.00	0.09	0.00	0.07	0.01	0.00
DI321t	0.01	-0.13	0.06	0.03	-0.10	0.19	-0.02	0.20	-	0.01	0.00	-0.05
significance level	0.84	0.00	0.00	0.59	0.00	0.00	0.67	0.04	-	0.70	0.88	0.05
DI322t	-0.002	-0.081	0.118	0.022	-0.109	0.143	0.005	0.077	0.040	-0.015	-0.059	-0.036
significance level	0.96	0.03	0.00	0.68	0.00	0.01	0.93	0.43	0.06	0.65	0.00	0.14
DI323t	0.061	-0.138	0.142	-0.099	0.131	-0.018	-	0.194	0.080	0.042	-0.205	-0.118
significance level	0.50	0.06	0.03	0.23	0.02	0.81	-	0.07	0.16	0.46	0.00	0.11
DI324t	0.074	-0.166	0.140	0.008	-0.217	0.313	0.044	0.314	-0.007	0.045	-0.056	-0.071
significance level	0.35	0.04	0.07	0.91	0.00	0.00	0.51	0.00	0.86	0.31	0.19	0.19
DI331t	0.120	0.038	0.050	-0.031	-0.028	0.035	0.009	0.143	0.068	-0.005	-0.033	-0.050
significance level	0.00	0.28	0.03	0.56	0.36	0.55	0.86	0.15	0.01	0.89	0.21	0.11
DI332t	-0.027	-0.037	-0.038	-0.012	-	0.044	-0.072	0.176	0.166	-0.032	-0.028	0.006
significance level	0.54	0.39	0.28	0.83	-	0.45	0.18	0.08	0.00	0.35	0.32	0.84
DI341t	0.054	0.083	0.198	-0.050	-0.045	0.072	0.135	0.303	-0.010	0.056	0.085	-0.069
significance level	0.46	0.17	0.00	0.52	0.45	0.48	0.10	0.00	0.86	0.21	0.13	0.37
DI342t	-	-0.139	0.075	-0.098	-0.022	0.165	-0.094	0.195	0.045	0.019	-0.096	-0.170
significance level	-	0.00	0.01	0.08	0.51	0.01	0.11	0.06	0.22	0.63	0.00	0.00
DI351t	0.025	0.070	0.250	0.034	0.030	0.216	-0.051	0.351	-0.019	-0.009	0.047	-0.143
significance level	0.71	0.32	0.00	0.63	0.60	0.01	0.47	0.00	0.72	0.86	0.35	0.05
DI352t	0.075	-0.010	0.083	0.061	0.002	0.034	0.115	0.284	0.065	0.092	0.035	-0.143
significance level	0.10	0.81	0.01	0.30	0.95	0.60	0.05	0.01	0.06	0.03	0.37	0.01
DI355t	-0.078	0.109	0.296	-0.021	-0.132	0.062	0.028	0.266	0.203	0.009	0.084	-0.030
significance level	0.15	0.04	0.00	0.77	0.00	0.40	0.69	0.01	0.00	0.84	0.03	0.55
DI356t	0.030	0.025	0.094	-0.002	-0.095	0.304	-0.061	0.212	0.149	-0.019	0.050	-0.139
significance level	0.44	0.54	0.00	0.98	0.01	0.00	0.28	0.04	0.00	0.60	0.08	0.00
DI361t	0.025	0.030	0.111	0.055	0.145	0.065	0.118	0.359	0.043	-0.103	0.143	-0.050
significance level	0.79	0.74	0.29	0.56	0.09	0.53	0.21	0.00	0.60	0.16	0.18	0.72
DI362t	-0.027	0.120	-0.016	-0.056	-0.060	0.252	0.091	-	0.345	0.077	-0.256	0.130
significance level	0.86	0.36	0.85	0.63	0.51	0.02	0.35	-	0.00	0.45	0.11	0.45
DI363t	-0.045	-	-0.096	-0.031	-0.099	0.097	-0.069	0.187	0.062	-0.026	-0.107	-0.327
significance level	0.29	-	0.00	0.60	0.01	0.13	0.22	0.07	0.03	0.49	0.00	0.00
DI364t	-0.191	-0.025	-0.147	-0.109	-0.158	-0.068	-0.193	0.176	-0.036	-0.152	-0.152	-0.127
significance level	0.00	0.49	0.00	0.04	0.00	0.23	0.00	0.07	0.10	0.00	0.00	0.00
DI369t	0.213	0.040	-0.157	0.012	0.018	-0.007	-0.058	0.026	0.199	-0.011	-0.108	-0.239
significance level	0.00	0.57	0.03	0.89	0.78	0.93	0.40	0.82	0.00	0.85	0.04	0.00
DI371t	0.256	0.157	0.156	0.401	-0.115	-0.063	0.785	0.222	0.222	-0.003	0.254	-0.433
significance level	0.02	0.11	0.12	0.00	0.28	0.65	0.00	0.11	0.01	0.98	0.03	0.00
DI372t	-	-	-	-	-0.332	0.344	0.039	0.285	-0.137	0.137	0.161	0.049
significance level	-	-	-	-	0.01	0.07	0.78	0.08	0.29	0.30	0.16	0.72
DI381t	-0.014	0.050	0.041	0.068	-0.046	0.171	-0.002	0.164	0.047	0.086	-0.104	-0.053
significance level	0.73	0.21	0.17	0.24	0.19	0.01	0.98	0.10	0.15	0.03	0.00	0.16
DI382t	-0.088	0.111	0.068	0.023	0.008	-	-0.054	0.327	0.066	0.017	-0.052	-0.320
significance level	0.14	0.06	0.13	0.73	0.89	-	0.41	0.00	0.07	0.73	0.22	0.00
DI383t	-0.067	0.063	0.118	0.115	-0.029	0.236	0.051	0.256	0.299	0.126	-0.079	-0.203
significance level	0.21	0.20	0.01	0.09	0.55	0.00	0.44	0.01	0.00	0.01	0.12	0.00
DI384t	0.025	0.069	0.081	0.031	-0.065	0.148	0.062	0.223	0.047	-	-0.063	-0.236
significance level	0.59	0.12	0.02	0.61	0.13	0.03	0.34	0.03	0.17	-	0.11	0.00
DI385t	-0.148	0.227	0.025	-0.085	-0.013	0.008	-0.122	0.113	0.166	-0.103	-0.120	0.018
significance level	0.10	0.01	0.78	0.34	0.88	0.95	0.36	0.45	0.04	0.21	0.37	0.88
DI390t	-0.129	0.126	-0.020	0.003	-0.126	0.149	-0.089	0.200	0.002	0.049	-0.042	-0.095
significance level	0.02	0.00	0.59	0.97	0.01	0.04	0.18	0.06	0.95	0.28	0.30	0.09
F-statistic	14	10	10	12	18	21	20	16	22	12	8	10
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ChiSq, heteroscedasticity	285	210	306	586	518	939	1414	800	525	453	1065	778
significance level	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix Table 8 (continued)

Independent Variables	1986	1987	1988	1989	1991	1992	1993	1994	1995	1996	1997	1998
BACKCAST DATA (largest 25% of establishments sorted by output, dependent variable= $\ln(V_t/E_t)-\ln(V_{t-1}/E_{t-1})$ )												
Constant	0.403	0.116	0.482	0.186	0.491	0.771	1.215	-0.045	0.338	0.407	0.441	1.026
significance level	0.05	0.62	0.00	0.42	0.01	0.00	0.00	0.88	0.06	0.01	0.06	0.00
DI311-312t	-0.219	-0.065	-	-0.106	0.035	0.268	-0.037	0.221	0.076	0.055	-	-
significance level	0.01	0.63	-	0.44	0.68	0.05	0.76	0.24	0.13	0.39	-	-
DI313t	0.026	-0.025	0.243	-	0.005	0.139	-0.067	0.627	-0.116	0.359	-0.240	-0.430
significance level	0.88	0.89	0.04	-	0.98	0.53	0.64	0.00	0.32	0.00	0.12	0.01
DI314t	-0.128	0.025	-0.044	-0.212	0.049	0.216	0.057	0.172	0.066	0.083	0.001	0.089
significance level	0.28	0.87	0.58	0.19	0.70	0.18	0.69	0.40	0.44	0.28	0.99	0.51
DI321t	-0.05	-0.16	0.03	0.10	0.00	0.34	0.05	0.39	-	0.05	-0.02	-0.03
significance level	0.59	0.25	0.53	0.48	0.98	0.01	0.66	0.04	-	0.41	0.71	0.66
DI322t	-0.008	-0.078	-0.065	0.089	-0.106	0.345	0.170	0.193	0.048	0.114	-0.045	0.021
significance level	0.95	0.60	0.34	0.55	0.24	0.01	0.16	0.31	0.39	0.10	0.53	0.80
DI323t	-0.006	-0.117	0.015	-0.361	0.224	0.005	-	0.294	0.030	0.170	-0.325	-0.316
significance level	0.98	0.61	0.93	0.09	0.16	0.98	-	0.17	0.86	0.20	0.02	0.12
DI324t	-0.075	-0.095	-0.294	0.006	-0.336	0.326	0.187	0.422	0.011	0.130	-0.057	-0.049
significance level	0.73	0.67	0.08	0.97	0.00	0.04	0.18	0.03	0.89	0.09	0.56	0.68
DI331t	0.087	0.034	0.000	-0.088	0.018	0.120	0.015	0.202	0.029	0.073	-0.124	-0.076
significance level	0.36	0.80	0.99	0.53	0.84	0.38	0.90	0.28	0.58	0.26	0.06	0.31
DI332t	0.037	-0.067	-0.014	0.020	-	0.187	-0.166	0.134	0.167	0.007	-0.141	-0.045
significance level	0.84	0.74	0.91	0.91	-	0.18	0.21	0.50	0.01	0.93	0.16	0.67
DI341t	0.025	0.194	0.235	-0.083	-0.004	0.079	0.089	0.389	-0.083	0.053	0.022	-0.019
significance level	0.87	0.26	0.02	0.63	0.97	0.70	0.53	0.05	0.42	0.48	0.84	0.87
DI342t	-	-0.272	-0.021	-0.159	0.015	0.374	-0.159	0.313	0.021	0.126	-0.256	-0.186
significance level	-	0.08	0.79	0.32	0.90	0.01	0.26	0.11	0.82	0.12	0.01	0.19
DI351t	-0.122	0.119	0.260	0.019	0.089	0.346	-0.143	0.377	-0.079	0.055	-0.054	-0.217
significance level	0.31	0.44	0.00	0.90	0.40	0.03	0.29	0.06	0.36	0.46	0.52	0.03
DI352t	-0.062	-0.047	0.052	0.046	0.114	0.114	0.146	0.408	0.040	0.137	-0.027	-0.392
significance level	0.55	0.74	0.37	0.75	0.24	0.43	0.26	0.03	0.51	0.06	0.71	0.00
DI355t	-0.294	0.034	0.356	-0.275	-0.076	0.146	-0.056	0.241	0.181	0.049	0.025	-0.084
significance level	0.01	0.82	0.00	0.06	0.44	0.33	0.69	0.22	0.01	0.53	0.72	0.42
DI356t	-0.041	0.014	0.038	-0.074	-0.021	0.551	-0.163	0.175	0.171	-0.061	0.019	-0.301
significance level	0.72	0.92	0.57	0.62	0.83	0.00	0.21	0.36	0.00	0.40	0.79	0.00
DI361t	0.060	-0.008	-0.078	0.176	0.317	0.122	0.273	0.509	-0.019	-0.002	0.182	-0.017
significance level	0.79	0.97	0.64	0.42	0.07	0.55	0.09	0.01	0.86	0.99	0.24	0.94
DI362t	0.053	0.204	-0.068	-0.195	-0.066	0.500	0.092	-	0.481	0.170	-0.546	0.333
significance level	0.84	0.44	0.73	0.45	0.75	0.01	0.62	-	0.00	0.28	0.09	0.18
DI363t	-0.384	-	0.033	-0.257	-0.095	0.361	-0.041	0.321	-0.009	0.023	-0.076	-0.820
significance level	0.02	-	0.78	0.16	0.49	0.04	0.78	0.16	0.91	0.83	0.49	0.00
DI364t	0.304	-0.315	-0.132	-0.030	0.373	0.083	-0.178	0.107	-0.452	-0.116	-0.068	-0.402
significance level	0.35	0.26	0.57	0.91	0.41	0.69	0.39	0.73	0.35	0.43	0.63	0.36
DI369t	0.083	-0.276	-0.477	-0.287	0.091	0.030	-0.013	0.005	0.419	-0.075	-0.091	-0.365
significance level	0.68	0.22	0.00	0.20	0.57	0.87	0.94	0.98	0.00	0.47	0.65	0.07
DI371t	0.121	0.087	0.139	0.392	-0.078	-0.022	0.672	0.253	0.115	0.046	0.252	-0.513
significance level	0.50	0.67	0.30	0.04	0.58	0.91	0.00	0.25	0.28	0.74	0.09	0.00
DI372t	-	-	-	-	-0.401	0.460	0.113	0.277	-0.283	0.085	0.234	0.038
significance level	-	-	-	-	0.04	0.11	0.57	0.30	0.16	0.68	0.17	0.84
DI381t	-0.151	0.125	-0.015	0.059	-0.034	0.379	-0.077	0.223	0.005	0.172	-0.216	-0.041
significance level	0.15	0.39	0.80	0.68	0.73	0.01	0.54	0.24	0.94	0.03	0.00	0.64
DI382t	-0.189	0.058	0.173	-0.027	0.101	-	-0.135	0.498	0.078	0.127	-0.040	-0.447
significance level	0.24	0.75	0.14	0.88	0.44	-	0.37	0.01	0.31	0.16	0.72	0.00
DI383t	-0.220	0.089	0.058	0.044	0.009	0.363	-0.003	0.292	0.296	0.129	-0.249	-0.274
significance level	0.07	0.57	0.47	0.78	0.93	0.02	0.98	0.13	0.00	0.08	0.01	0.00
DI384t	-0.007	0.107	0.051	-0.001	-0.036	0.370	0.021	0.263	0.072	-	-0.149	-0.507
significance level	0.95	0.49	0.49	0.99	0.73	0.02	0.88	0.17	0.28	-	0.10	0.00
DI385t	-0.691	0.200	0.061	0.001	-0.042	-0.033	-0.119	0.523	-0.076	-0.127	-0.815	0.169
significance level	0.06	0.55	0.83	1.00	0.87	0.94	0.76	0.08	0.54	0.59	0.01	0.60
DI390t	-0.089	0.068	0.011	0.253	-0.131	0.248	-0.167	0.341	0.019	0.235	-0.232	0.009
significance level	0.65	0.74	0.93	0.18	0.35	0.19	0.29	0.10	0.80	0.02	0.02	0.95
F-statistic	2	3	3	3	2	4	5	4	3	2	2	4
significance level	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ChiSq, heteroscedasticity	75	58	112	167	156	355	253	393	262	225	324	200
significance level	1.00	1.00	0.98	0.17	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.06