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## Comparing Foreign Multinationals and Local Firms in Vietnam<sup>1</sup>

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### Abstract

This paper compares the economic performance of foreign multinational corporations (MNCs) and local firms in Vietnam, distinguishing between two distinct types of local firms, state-owned enterprises (SOEs) and non-SOEs. Between the mid-1990s and 2000, foreign MNCs in Vietnam's economy grew very rapidly but their growth has been much slower thereafter. Consistent with the theoretical suggestion that MNCs possess relatively large amounts of firm-specific assets related to production technology, marketing networks, and management know-how, these comparisons suggest that foreign MNCs were generally larger and had higher labor productivity, capital intensity, wage levels, investment propensities, and trade propensities than non-MNCs. On the other hand, foreign MNCs tended to have relatively low capital productivity and wage shares of value added, while results regarding profitability were mixed. In general, these differentials tended to be relatively small between foreign MNCs and SOEs, and SOEs tended to be larger than foreign MNCs in terms of employment. Correspondingly, comparisons of foreign MNCs with non-MNCs generally revealed more consistent differences, largely because the local private sector is still very underdeveloped in Vietnam.

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## 1. Introduction

Since 1986, Vietnam has implemented a series of ambitious reforms to open itself to the world and the region, and change its formerly centrally planned economy into a market-driven economy. Most observers agree that these policy reform efforts have contributed to a marked increase in living standards and a remarkable economic transition toward a market-based economy. Two important aspects of these policy reforms were efforts to increase inward foreign direct investment (FDI) by foreign multinational corporations (MNCs) and reduce dependence on state-owned enterprises (SOEs). Foreign MNCs responded very favorably to the policy changes as FDI flows and then production by foreign MNCs increased rapidly in the 1990s.<sup>2</sup> On the other hand, efforts to reduce dependence on SOEs were less successful, with investment outlays by SOEs growing relatively rapidly since 1995 and production of SOEs increasing at a rate roughly equivalent to that of total gross domestic product (GDP).<sup>3</sup> The difficulties encountered in reducing reliance on SOEs and the rapid growth of MNCs are both related to policy biases against local private firms in Vietnam, which were especially strong before the implementation of enterprise law reform beginning in 2000.

The purpose of this paper is to investigate the role foreign MNCs have played in the Vietnamese economy during this period of economic reform and compare their economic performance with that of local, Vietnamese-owned firms. To our knowledge, no previous study has carefully compared foreign MNCs and local firms in Vietnam, making the results of these comparisons of interest to observers of both MNCs and the Vietnamese economy. Because there are important differences between SOEs and other locally-owned enterprises, which are called non-SOEs here, the analysis presents three types of comparisons, comparisons of (1) foreign MNCs

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<sup>2</sup> For example, FDI flows increased from US\$100-300 million a year in 1989-1993 to US\$1.0-1.4 billion annually in 1994-1995 and a peak of US\$2.2-2.4 billion annually in 1996-1997, before falling off some to US\$1.3-1.7 billion per year in 1998-2002 (International Centre for the Study of East Asian Development 2004, Table 12.2). Trends in production by foreign MNCs will be detailed below.

<sup>3</sup> For example, investment outlays of SOEs increased over three-fold between 1995 and 2001 and SOE's shares of total investment outlays increased from 42-49 percent in 1995-1997 to 58 percent or more in 1999-2001 (Appendix Table 1). Trends in production will be detailed below.

and all local firms, (2) foreign MNCs and SOEs, and (3) foreign MNCs and non-SOEs.<sup>4</sup> To this end Section 2 first examines the theoretical and methodological issues that underlie the study. Second, Section 3 reviews the available time series evidence for the 1994-2002 period. Section 4 then looks at cross-industry evidence from the 1995 economic census covering 1994/1995, the 1999 industrial survey covering 1998, and the 2001 enterprise census covering 2000, respectively. Finally, Section 5 summarizes the conclusions emerging from the study.

## **2. Ownership and Enterprise Performance: Theoretical and Methodological Perspectives**

There are two rather distinct areas of economic literature relevant to this paper. The most important body of literature stems from the theory of the MNC. This literature inevitably begins with an attempt to explain why MNCs exist when MNCs are clearly at a disadvantage relative to local firms in foreign markets because MNCs have inferior knowledge of those markets and how to operate in them. Correspondingly, the economic theory of the MNC focuses on explaining how MNCs overcome these disadvantages with two major explanations emerging.<sup>5</sup> Although there is disagreement over the necessary conditions for a firm to become a MNC, there is general agreement that MNCs tend to possess relatively large amounts of firm-specific assets, especially proprietary, knowledge-based, generally intangible assets related to production techniques and processes, marketing networks, and/or management ability. The clearest empirical evidence supporting this assertion is the fact that MNCs tend to be relatively intensive in research and development (R&D) and advertising than non-MNCs (e.g., Dunning 1988, 1993; Markusen

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<sup>4</sup> The name non-SOEs is used in this paper because this group includes a wide variety of ownership structures. Household enterprises were by far the largest group of non-SOEs accounting for 31-36 percent of GDP in 1994-2002, followed distantly by collectives (8-10 percent), mixed enterprises (4 percent) and other private enterprises (3-4 percent, General Statistical Office various years).

<sup>5</sup> For example, according to Dunning (1981, 1993), three types of advantages are necessary, (1) ownership advantages or advantages accruing from exploitation of firm-specific assets (e.g., patents, marketing networks), (2) internalization advantages or advantages accruing from the internalization of economic transactions within a single firm unit (e.g., the reduction of transactions costs where uncertainty makes inter-firm transactions risky and thus costly), and (3) locational advantages or advantages accruing from operating in a specific location (e.g., reductions in transport or labor costs). In contrast, others (e.g., Buckley and Casson 1991, Casson 1987, Rugman 1980, 1985) argue that internalization is the single necessary condition required to explain the existence of the MNC and that the possession of firm-specific assets simply reflects the internalization process.

1991; and Caves 1996). The fact that MNCs possess these firm-specific, ownership-based assets in relatively large amounts then implies that they are likely to be relatively efficient in some sense compared to non-MNCs. Correspondingly, MNCs are also likely to be relatively profitable than other firms if they face similar demand conditions. In addition, the marketing networks of MNCs are often more concentrated in international marketing than the marketing networks of non-MNCs and possession of more sophisticated international trade networks makes it easier for MNCs to exploit international trade opportunities than for non-MNCs.

There is a growing empirical literature comparing foreign MNCs and local firms in manufacturing industries of Asian economies, which suggests that foreign MNCs do indeed tend to be more efficient than local firms in many cases (e.g., Ramstetter 1999a; Sjöholm 1998, 1999; Takii 2002; Takii and Ramstetter 2003). These and other studies also suggest that there has been a positive correlation between foreign MNC shares of industries and efficiency in local firms in Indonesia (Blomström and Sjöholm, 1999; Sjöholm 1998, 1999; Takii 2001). In addition, there is evidence that foreign MNCs tend to be relatively large (e.g., Ramstetter 1999a; Takii and Ramstetter 2003), relatively capital intensive (Ramstetter 1994, 1999a), pay relatively high wages (e.g., Lipsey and Sjöholm 2001, 2002; Matsuoka 2001; Ramstetter 1999a, 2003), and have relatively high profit rates (Ramstetter 1999a; Ramstetter and Matsuoka 2001), that may be related to greater efficiency in MNCs.<sup>6</sup> In some contrast, evidence for Thailand (e.g., Ito 2002; Ramstetter 1994, 2002b, 2003, Tambunlertchai and Ramstetter 1991) and Malaysia (e.g., Menon 1998; Oguchi 2002) suggests that MNCs are not necessarily more efficient in those economies. Other studies suggest that foreign MNCs tended to be more dependent on international trade, and on exports in particular, than local firms in a wide range of Asian economies (e.g., Ramstetter 1994, 1999a, 1999b, 2002a).

The most sophisticated comparisons of foreign MNCs and local firms, including many of those cited above, use firm- or plant-level data to model a given activity and then compare the two groups of firms or plants, after removing other relevant influences on the activity in question that

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<sup>6</sup> It is important to realize that these other differences may not be related to greater efficiency and that other factors such as market imperfections may explain such differences.

the economic models used identify. For example, when comparing production technology in two ownership groups, it is common to estimate production functions for the two groups of firms, test to see if the production actually differs between the two groups, and then examine the differences observed if they are found to be statistically significant. Another approach is to model the economic activity in question (e.g., average labor productivity, wage levels, trade propensities) directly as a function of related variables (e.g., factor intensities, size, vintage) and a set of dummy variables identifying firms belonging to the ownership group(s) of interest. The signs and significance levels of the coefficients on the ownership dummies then reveal the differences in the dependent variable among ownership groups after controlling for differences in the other relevant independent variables that are included in the equations. Similar approaches have also been employed to compare efficiency in SOEs and non-SOEs in Vietnam (Vu 2003), for example.

Unfortunately, the lack of access to firm- and/or plant-level data sets precludes similar comparisons of foreign MNCs and local firms or plants for Vietnam at present and in many other cases.<sup>7</sup> In such cases, an alternative approach has been to compare time-wise and/or industry-wise variation in indicators of corporate performance (e.g., Hill 1998, Menon 1998, Oguchi 2002, Ramstetter 1999a). However, this approach has never been attempted with Vietnamese data and there are now sufficient data to make a number of important comparisons. Simple t-tests can then be used to see if observed differences in the time-wise or industry-wise variation of performance in foreign MNCs and local firms is statistically significant (i.e., consistent over time or across industries) if other influences are not accounted for.<sup>8</sup> The primary drawback of this methodology is that the lack of data makes it impossible to construct reliable models that sort out the influences

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<sup>7</sup> Such analyses could potentially be facilitated if access to the firm-level data underlying the 1995 economic censuses and the 2001 enterprise census, and/or the plant-level data underlying the 1999 industrial survey (see below) could be arranged. However, we do not know if this would be possible in the Vietnamese case.

<sup>8</sup> More specifically, these t-tests test the null hypothesis that the mean values of an indicator of firm performance differ between foreign MNCs and local firms, allowing for differences in variances across ownership groups. If the sample size differs among groups m and n, the t-statistic and degrees of freedom are: (Sachs 1984, p. 270):

$$t = \frac{MN(X1) - MN(X2)}{\sqrt{((VR(X1)/N1) + (VR(X2)/N2))}}$$

$$df = \frac{VR(X1)/N1 + VR(X2)/N2}{((VR(X1)/N1)^2 / (N1 - 1) + (VR(X2)/N2)^2 / (N2 - 1))}$$

If sample size is the same for groups 1 and 2, these formulae become:

$$t = \frac{MN(X1) - MN(X2)}{\sqrt{((VR(X1) + VR(X2))/N)}}$$

$$df = N - 1 + ((2N - 2) / ((VR(X1)/VR(X2)) + (VR(X2)/VR(X1))))$$

where MN=mean operator, N1, N2=number of observations for samples 1 and 2, SQ=square root operator, VR=sample variance operator, X1=value of X in samples 1 and 2.

of ownership and the influences of other factors that may be involved. For example, if one observes foreign MNCs to have relatively high average labor productivity, it may be that this difference results from the fact that foreign MNCs are more capital intensive and that differences in average labor productivity would disappear if differences in capital intensity could be controlled for. On the other hand, the t-tests employed here to test for differences in time- and industry-wise variation have the important advantage of being relatively robust in small samples such as those used in this paper. This can be an important advantage, when as in the Vietnamese case, one often does not have enough observations to estimate more sophisticated models in time series or relatively small industrial cross sections.

Following a similar study of five other Asian economies (Ramstetter 1999a), the indicators examined can be divided into five groups of economic indicators related to (1) firm or plant size (e.g., employees, sales [output], or value added per firm or plant), (2) factor productivity and factor payments (e.g., value added or sales per worker or unit of capital, compensation per employee), factor intensity (total assets or fixed assets per employee, investment per unit of value added), functional income distribution (labor compensation per unit of value added or sales, profits per unit of value added or sales), and trade propensities (exports or imports per unit of value added or sales). As data availability allows, these indicators will be compared in three different samples, time series for all industries and the industrial sector in 1994-2002 as available, as well as for three cross-sections of industries from the 1995 economic census (1994/1995 data), the 1999 industrial survey (1998 data), and the 2001 enterprise census (2000 data).

In the Vietnamese case, comparisons of foreign MNCs and local firms are further complicated by the fact that Vietnam has had some very severe policy biases that favored SOEs but made the establishment and operation of locally-owned private firms very difficult. These biases stem directly from the socialist ideology, which the ruling Communist Party has relied upon to establish its legitimacy and made it very difficult for private individuals or firms to accumulate wealth or control over factors of production. As a result, Vietnam's private sector remained very underdeveloped even after the economic reforms that took place during the late 1980s and the 1990s. Although many of the formal biases have been removed by the implementation of

enterprise law reform since 2000 (e.g., Van Arkadie and Mallon 2003, ch. 9), some biases and a lingering, though weakening, distrust of private enterprise remain. In this respect, a second body of literature regarding the efficacy of public ownership is also relevant to this paper. This literature goes back to Adam Smith's famous argument that competition in the market place constitutes an invisible hand which allocates resources efficiently as long as competition is sufficiently vigorous (Heilbroner 1967 pp. 48-54). The argument further implies that public ownership of firms can reduce economic efficiency by diluting the motive to seek profit. However, the theoretical work of Stretton and Orchard (1994) and surveys of the empirical literature by Aharoni (2000), Megginson and Netter (2001), and Stretton and Orchard (1994), highlight a number of cases in which SOEs do not appear to be less profitable and/or less efficient than private firms.<sup>9</sup> In this context, however, the important point is that SOEs and non-SOEs have faced very different policy environments during the period studied, and that comparisons of foreign MNCs and SOEs may therefore yield very different results than comparisons foreign MNCs and non-SOEs. Correspondingly, in addition to comparing foreign MNCs and all local firms, the following sections also make separate comparisons of foreign MNCs and SOEs and of foreign MNCs and non-SOEs as data availability permits.

### **3. Time Series Evidence**

As indicated above, in the mid- and late-1990s the production of foreign MNCs in Vietnam increased markedly, both in absolute value (Figure 1) and relative to total GDP or gross output (Table 1).<sup>10</sup> In all industries combined, the GDP of foreign MNCs at current prices increased from 11 billion dong in 1994 to 49 billion dong in 1999 and then 75 billion dong in 2002.

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<sup>9</sup> A more recent example is that the most profitable firms in Northeast Asia's large steel industry in the 1990s were China Steel of Taiwan, an SOE, and Pohang Steel of Korea, which was formerly an SOE (Ramstetter and Movshuk 2002).

<sup>10</sup> There are three measures of production used in this analysis. GDP is perhaps the best measure and refers to the value of production less the value of intermediate goods and services used in the production process. Sales and gross output are very similar measures that refer to the value of production sold or produced (the difference being changes in inventories, which tend to be small), including the value of intermediate goods and services.



Corresponding shares of total GDP at current prices increased rapidly from 6.4 percent in 1994 to 12.2 percent in 1999, before leveling off to 13.9 percent in 2002. Increases in foreign shares were somewhat smaller if measured in 1994 prices (to 10.4 percent in 1999 and 10.9 percent in 2002), indicating relatively high inflation in the products of foreign MNCs. All these calculations and others below overestimate foreign shares to some extent because foreign MNC-SOE joint ventures are classified as foreign MNCs by Vietnam's General Statistical Office (Nguyen, et al., p. 15).<sup>11</sup> The vast majority of GDP produced by foreign MNCs was in the industrial sector, and more specifically, in the mining and manufacturing industries.<sup>12</sup> Correspondingly, foreign shares were much larger in the industrial sector, increasing from about one-fourth of industrial GDP in the mid-1990s to a little over one-third in 1999. Foreign MNC shares of industrial gross output at 1994 prices followed a similar trend but then stagnated at 35 percent in 1999-2002. Because of large presence in Vietnam's oil industry, foreign MNCs accounted for three-quarters or more of mining GDP or gross output. Although much smaller, foreign MNC shares of GDP grew rapidly in manufacturing, from 10 percent in 1994 to over 20 percent in 1999. Shares of foreign MNCs in manufacturing gross output were much larger and increased more slowly, from 18 percent in 1995 to 28 percent in 1999, and then 30-31 percent in 2000-2002. The relatively high shares of foreign MNCs in manufacturing gross output reflect the fact that these MNCs are generally involved in labor-intensive processing where intermediate materials account for a large portion of total sales, yielding low value added-sales ratios. Foreign MNCs were relatively small in the tertiary industries, accounting for only 1-2 percent of Vietnam's total tertiary GDP in 1994-1999, and virtually non-existent in the agricultural sector (see Appendix Table 1).

If foreign MNCs in all industries are compared with corresponding local firms in time series from 1994 forward, they are seen to have, on average, relatively low ratios of labor

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<sup>11</sup> It is also likely that official statistics tend to overestimate the size of SOEs because they have incentives to overreport production and profits to meet state targets and underestimate the size of non-SOEs because they have incentives to underreport production and profits so as to avoid taxation and scrutiny by the authorities. However, it is not clear how these biases affect estimates of foreign MNC shares.

<sup>12</sup> In 1994-1999 the industrial sector accounted for 87-88 percent of the GDP produced by foreign MNCs if measured at constant prices and 86-91 percent if measured at current prices (Appendix Table 1). Mining accounted for the largest portion of GDP produced by foreign MNCs, but its share fell from 63 percent in 1994 to 52 percent in 1999 if measured in constant prices and 56 percent if measured in current prices. On the other hand, manufacturing's share increased from 24 percent to 34-35 percent in the same period.

compensation to GDP and relatively high ratios of operation surplus, capital outlays, exports, and imports to GDP, as well as relatively high GDP per employee (Table 2). Moreover, all of these differences were very consistent over time, and thus significantly different from zero at the 1 percent level or better. In the industrial sector, where the vast majority of foreign MNCs are, patterns were similar with foreign MNCs having relatively low ratios of compensation to GDP and relatively high ratios of operating surplus and relatively high average labor productivity, measured as gross output per employee in this case. In addition, foreign MNCs tended to be much larger than local firms, measured either in terms of employment or gross output per firm. All of the differences observed at this level of aggregation were highly significant statistically (at the 1 percent level or better). If mining and manufacturing are disaggregated, compensation-GDP ratios were again significantly lower in foreign MNCs in both industries. On the other hand, operating surplus-GDP ratios were relatively high, and these differences were highly significant in mining but they were not significant at the standard 5 percent level or better in manufacturing. Similar differences were also observed in the tertiary sector and they too were significant statistically. In short, compared to all local firms, foreign MNCs were relatively large and had relatively high labor productivity, profitability (indicated by the operating surplus-value added ratio), investment propensities, and trade propensities, but a relatively low labor share of value added.

If foreign MNCs are compared with non-SOEs, all of these differences (except those in trade propensities, for which there are no data) were qualitatively similar and tended to be relatively large (Table 2). All of the observed differences were also statistically significant at the standard levels or better. On the other hand, comparisons with SOEs reveal relatively small differences in most cases and these differences were insignificant in manufacturing and for the compensation-GDP ratio in the tertiary sector. Thus, differences between foreign MNCs and local firms tended to be somewhat smaller and less consistent for SOEs but larger and more consistent for non-SOEs.

#### 4. Cross-Industry Evidence from Economic Censuses and the Industrial Surveys

Table 3 shows the shares of employment, fixed assets, and sales by ownership group for the industry grouping included in the 1995 economic census. In the industrial sector, which accounts for the vast majority of foreign MNC activity as noted above, the sample from this census covered MNCs and SOEs rather well, but coverage of non-SOEs was much poorer.<sup>13</sup> Outside of the industrial sector it is more difficult to evaluate census coverage but this census did not cover agriculture and coverage of the tertiary sector was almost certainly much poorer than coverage of industry. In the tertiary sector we also suspect that coverage of MNCs and SOEs was much better than coverage of non-SOEs, but we have no objective evidence of this other than the fact that non-SOE shares of census totals are much smaller than non-SOE shares of GDP, for example. The relatively comprehensive coverage of SOEs and foreign MNCs in the census totals would suggest that the census data exaggerate the shares of these groups in the Vietnamese economy, but comparisons with the time series data suggest that this is not the case at least for shares of foreign MNCs in sales or gross output (Tables 1, 3). For example, in mining the census data suggest that foreign MNCs shares of sales were 77 percent, which is almost equal to the share of gross output at 1994 prices in the time series data, 78 percent. In manufacturing, the census estimate for foreign MNCs was actually lower than the time series estimate, 11 percent compared to 18 percent, largely because the share of SOEs in manufacturing sales in the census data (74 percent) was much higher than the corresponding time series estimate (50 percent; Appendix Table 1).

In all industries combined, SOEs were by far the largest group in the 1995 census with over 76 percent of sales, 71 percent of employment, and 63 percent of fixed assets. Foreign MNCs accounted for relatively small shares of employment and sales, 5 percent and 9 percent, respectively, but much larger shares of fixed assets, 31 percent. One reason that MNC shares were so much larger in terms of fixed assets was because of the relatively large investments in crude oil exploration. Fixed assets of MNCs in crude oil mining amounted to 21 trillion dong or 56 percent

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<sup>13</sup> For example, the ratios of census estimates of employment in the industrial sector to corresponding time series estimates for 1995 were 74 percent for MNCs and 109 percent in SOEs but only 18 percent for non-SOEs (Appendix Tables 1, 2).

of the 37 trillion dong in all industries (Appendix Table 2). Foreign MNCs were also relatively large in hotels and restaurants, education and training, culture and sport, and health care and social relief. In processing, foreign MNC shares were relatively large in a wide range of industries, foodstuff and beverages, leather and shoes, wood products, coke and oil products, metals, metal products, office equipment and computers, non-classified electric machinery, radio and television, etc., precision instruments, engine vehicles, other transportation means, and furniture.

Labor productivity, capital productivity, and capital intensity are then compared across two samples of industries using these data, where capital is defined as the stock of fixed assets.<sup>14</sup> In the first sample of 14 single-digit industries, which includes mining and manufacturing aggregates and a number of tertiary industries, average labor productivity was 287 percent higher and capital intensity was 1,602 percent higher in foreign MNCs than in the other two groups combined, but average capital productivity was 64 percent lower (Table 4). None of these differences were significant at the standard 5 percent level. However, differences in capital productivity were significant at the somewhat lower 10 percent level and differences in capital intensity were significant at 11 percent. Comparisons with SOEs also revealed that MNCs had significantly lower average capital productivity than SOEs at the 5 percent level. Differences between MNCs and non-SOEs tended to be even larger but not very consistent as none of these differences were statistically significant at standard levels.

Similar differences are also observed in a second sample of 23 manufacturing industries, with foreign MNCs having higher average labor productivity (59 percent) and capital intensity (389 percent) but lower average capital productivity (56 percent) than local firms. In comparisons of foreign MNCs and all local firms in this sample, differences in average capital productivity and capital intensity were much more consistent across industries and highly significant statistically, but differences in average labor productivity remained insignificant. In this sample, comparisons with SOEs and non-SOEs are only possible for average capital productivity. Both comparisons suggest lower capital productivity in foreign MNCs but only the comparison with SOEs yields

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<sup>14</sup> Economically, this is a very poor measure of capital because it refers to the book values of these assets, not to their economic value.

significant differences. In other words, comparisons with SOEs most closely resemble comparisons with all local firms, largely because SOEs were by far the largest group of firms (and the largest group of non-MNCs) in the 1995 economic census.

In the 1999 industrial survey, which covered industrial firms with 5 or more employees in 17 provinces for 1998, SOEs and foreign MNCs were relatively small in terms of the number of plants, accounting for 23 percent and 15 percent of the total, respectively (Table 5).<sup>15</sup> SOEs were again the largest group in terms of employment and employee compensation, accounting for one-half or a little more of these variables, while foreign MNCs accounted for a little less than one-fourth of the employees covered and a little more than one-third of labor compensation. On the other hand, shares of foreign MNCs were much larger in terms of value added, about one-half, and fixed investment, a little over two-thirds.

Foreign MNC shares are generally much larger in the industrial survey for 1998 than in the economic census for 1994/1995, partially reflecting the fact that foreign MNC presence clearly grew rapidly during the interim period. However, differences in census and survey coverage are also important and may account for some of the differences observed. In particular, this survey appears to have covered foreign MNCs even better than the previous census, while coverage of SOEs was somewhat poorer than in the census, and coverage on non-SOEs remained very poor.<sup>16</sup> Thus, on average, foreign shares calculated from the industrial survey were probably subject to a rather large upward bias and this is indicated by comparison of foreign MNC shares of value added (GDP) with corresponding time series estimates in mining (87 percent versus 78 percent) and manufacturing (39 percent versus 21 percent; Tables 1, 5).

The industrial survey data are consistent with other sources, indicating that foreign MNCs again accounted for a very large share of mining oil production, which accounted for 11 trillion dong or 46 percent of the 25 trillion dong in value added produced by all foreign MNCs in this

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<sup>15</sup> These 17 provinces accounted for 41 percent of establishments, 59 percent of employment, and 75 percent of gross output at current prices countrywide (General Statistical Office, 2000a).

<sup>16</sup> For example the ratios of survey estimates of employment in the industrial sector to corresponding time series estimates for 1998 were 91 percent for MNCs and 68 percent in SOEs but only 14 percent for non-SOEs (Appendix Tables 1, 3). Comparisons of industrial survey estimates of value added and time series GDP estimates were similar with ratios of 76 percent for MNCs and 44 percent for SOEs but only 19 percent for non-SOEs.

sample (Appendix Table 3). Here again, almost all of this production was in the crude oil and natural gas industry. Ranked by value added, this was followed by a variety of manufacturing industries: food and beverages (3.0 trillion dong), leather products and footwear (1.4 trillion dong), textiles (1.3 trillion dong), non-metallic mineral products (1.2 trillion dong), chemicals and precision machinery (0.9 trillion dong each). In manufacturing, foreign MNC shares of value added were relatively high (46 percent or more) in textiles, leather and footwear, coke and refined petroleum, basic metals, metal products, radio and television, etc., precision machinery, other transportation machinery, and furniture and miscellaneous manufactures. In general, foreign MNC shares were relatively large in terms of value added and fixed investment, but smaller in terms of the number of establishments and employment, suggesting that they were larger and had more productive labor and capital intensity than other groups on average.

Table 6 makes these and other comparisons in a sample of two-digit manufacturing industries. In this sample, foreign MNCs were larger than all local plants and much larger than non-SOEs, but smaller than SOEs by both size measures. Differences between foreign MNCs and all local plants or SOEs were not that pervasive, however, and none of these differences were significant at the standard levels. On the other hand, foreign MNCs were more consistently larger than non-SOEs, and these differences were thus significant. Foreign MNCs also had significantly higher value added per worker and compensation per worker than all groups of local plants, suggesting that average labor productivity and wages were both higher in foreign MNCs than in local plants, regardless of the group. Differences were smaller between foreign MNCs and SOEs than between foreign MNCs and non-SOEs. As in the time series analysis above, the ratio of compensation to value added was lower in foreign MNCs, indicating a relatively low wage bill, but none of these differences were statistically significant. These results were also consistent with the time series results above in that the investment propensity was significantly higher in foreign MNCs than in the other two groups. Interestingly, differences in the investment propensity were larger between foreign MNCs and SOEs than between foreign MNCs and non-SOEs, a fact which seemingly contradicts time series information suggesting that SOEs have accounted for a large and increasing share of capital outlays countrywide (see footnote 3 above).

The most recent 2001 enterprise census of 2000 data was similar to the previous economic census of 1994/1995 data in that the census appears to have covered SOEs quite comprehensively. In addition, the coverage of industrial foreign MNCs also appears to have been quite comprehensive and the coverage of non-SOEs seems to have improved compared to previous censuses/surveys. However, the coverage of non-SOEs is still less comprehensive than coverage of SOEs and foreign MNCs.<sup>17</sup> Census estimates of foreign MNC shares of sales were smaller than corresponding time series estimates of shares in gross output at 1994 prices in mining (77 percent versus 83 percent) but larger in manufacturing (42 percent versus 30 percent; Tables 1, 7).<sup>18</sup> Probably because the coverage of non-SOEs was somewhat better, census estimates of the shares of foreign MNCs in the number of firms and the number of employees for 2000 were somewhat smaller than corresponding industrial survey estimates for 1998 in mining (2 percent of firms and 4 percent of employment) and manufacturing (10 percent of firms and 22 percent of employment; Tables 5, 7). It is also important to recall that time series evidence suggests that the increase in foreign shares began to slow markedly about 1999 or 2000 (Table 1), but it is unlikely that they actually declined. Rather the lower shares of foreign MNCs in the 2000 census compared to the 1998 survey probably result from better coverage of non-MNCs and particularly, non-SOEs. As in the 1995 census, coverage appears to have been weaker outside of industry, though it is very difficult to ascertain the precise extent to which this sector was covered.

Foreign MNCs again accounted for a very large share of mining oil production, which amounted to 40 trillion dong or 25 percent of the 162 trillion dong in sales of all foreign MNCs in this sample (Table 7, Appendix Table 4). As in the previous census and survey, almost all of the mining production was in the crude oil and natural gas industry. No other two-digit industry had sales even half as large as oil and gas, but there were a large number of two-digit manufacturing industries with relatively large sales: food and beverages (19 trillion dong), other transportation

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<sup>17</sup> For, example, the number of employees in industrial firms in the 2001 enterprise census of 2000 data exceeded the corresponding time series estimate for 1999 for SOEs (879,052 vs. 759,105) and foreign MNCs (363,859 vs. 293,583) but the reverse was true for non-MNCs (580,929 vs. 1,869,411; Appendix Tables 1, 4).

<sup>18</sup> As noted above, time series estimates indicate that foreign shares of GDP were smaller if measured in 1994 prices than if measured in current prices and this is also likely to be case for foreign shares of gross output. If this is the case, the time series estimates mentioned here are lower than they would be in current prices.

equipment (9.5 trillion dong) leather products and footwear (9.2 trillion dong), office and computing equipment (8.5 trillion dong), chemicals (7.3 trillion dong), radio, television, and telecommunication equipment (5.8 trillion dong), non-metallic mineral products (5.6 trillion dong), textiles (5.2 trillion dong), basic metals (4.4 trillion dong) motor vehicles (4.3 trillion dong), and apparel (4.0 trillion dong). In the tertiary sector, sales were also relatively large in transportation and telecommunications (5.0 trillion dong) and trade (3.6 trillion dong).

In manufacturing, foreign MNC shares were relatively large in a number of industries concentrated in the machinery sector, exceeding one half of total sales in leather and footwear, coke and refined petroleum, basic metals, machinery and equipment, office and computing machinery, electrical machinery and apparatus, radio, television, and telecommunication equipment, precision machinery, motor vehicles, other transportation machinery, as well as furniture and miscellaneous manufactures (Table 7). In the tertiary sector, foreign MNC shares also exceeded this threshold in the relatively small industries of education and training as well as the medical and social relief. In general, foreign MNC shares were largest in terms of profits and fixed assets, of intermediate size in terms of sales, and smaller in terms of the number of firms and employment. In short, foreign MNCs would appear to have been larger, more profitable, had more productive labor and higher capital intensity, but less productive capital than local firms.

As in the previous census, these comparisons are made in two samples, the first being a sample of 14 single-digit industries dominated by tertiary industries (Table 8). In this sample, comparisons with all local firms reveal that foreign MNCs were indeed relatively large, had relatively high average labor productivity and capital intensity, but relatively low capital productivity. Of these differences, only the difference in capital intensity was significant at standard levels though differences in average labor productivity were almost significant at the 8 percent level. Perhaps most surprising, though, is that foreign MNCs actually had negative profits in a large number of industries, resulting in a negative mean profit-sales ratio of -6.5 percent, even though the aggregate profit-sales ratio was a very high positive figure, 13 percent (calculated from Appendix Table 4). This result obtains because the mining industry accounted for almost all of the profits earned by foreign MNCs, 20.9 trillion dong (21.0 trillion in oil and gas) of 21.2 trillion



dong. The difference in profitability is not significant at standard levels but it is consistent enough to be significant at the 11 percent level. Foreign MNCs are again significantly smaller than SOEs in terms of employment, but other differences with SOEs were very similar to differences between foreign MNCs and all local firms. In contrast, foreign MNCs are significantly larger than non-SOEs in terms of both employment and sales, while other comparisons between foreign MNCs and non-SOEs were again similar to those between foreign MNCs and all local firms.

In the sample of two-digit manufacturing industries, results are again similar with foreign MNCs shown to be relatively large and characterized by relatively high average labor productivity and capital intensity, but relatively low average capital productivity and profitability compared to all local firms. Of these differences, only differences in capital intensity and average labor productivity were significant at standard levels, but differences in profitability were consistent enough to be significant at the 8 percent level. When compared with SOEs, foreign MNCs were again smaller in terms of employment and larger in terms of sales, but these differences were not significant. On the other hand foreign MNCs had significantly higher capital intensity and average labor productivity, but significantly lower average capital productivity and profitability. Compared to non-SOEs, foreign MNCs had significantly higher employment per firm, capital intensity, and average labor productivity, but other differences were not significant even at the 10 percent level.

In short, analysis of the variation across industries suggests that foreign MNCs were generally larger than local firms and had relatively high labor productivity, wages, capital intensity, and investment propensities, but relatively low wage shares of value added and profit rates. Differences in labor productivity, wages, capital intensity, and investment propensities were rather consistent across industries in most samples and thus significantly different from zero in many samples examined. In contrast, differences in capital productivity were significant in manufacturing samples in 1994/1995, but not in other samples, while differences in size, wage shares, and profits were not significant in any of the samples examined. The major difference emerging from separate comparisons of foreign MNCs with SOEs and non-SOEs were that foreign

MNCs tended to be smaller than SOEs in terms of employment but larger than non-SOEs. Other differences between foreign MNCs and SOEs also tended to be smaller than differences between MNCs and non-SOEs.

## **5. Conclusions**

This paper first showed that shares of foreign MNCs in the Vietnamese economy rose rapidly through 1999, reflecting the government's rather successful promotion of FDI in the 1990s, but then leveled off. Foreign MNC shares tended to be highest in terms of exports and profits, of intermediate size in terms of production and capital outlays, small in terms of wage payments, employment, and smallest in terms of the number of enterprises. Foreign shares were also much larger in mining and manufacturing, the two industries which dominated foreign MNC activity, than overall. These differences suggest differences between foreign MNCs and local firms in firm size, labor and capital productivity, investment propensities, capital intensity, profitability, wage shares of value added, and trade propensities.

The paper then uses time series evidence and three industry-level cross sections covering the 1994-2002 period to compare related indicators of firm performance for foreign MNCs and local firms in Vietnam. Because shares of SOEs remained rather high in Vietnam's economy during this period and SOEs faced a very different policy environment than non-SOEs, separate comparisons of foreign MNCs with these two groups were also performed when the data permitted. These comparisons all indicated that compared to all local firms or plants, foreign MNCs tended to be relatively large, and had relatively high labor productivity, wages, capital intensity, and investment propensities, but relatively low wage shares of value added. Evidence with regard to profit rates was mixed with time series evidence and aggregate calculations from the census of 2000 data suggesting relatively high profit rates, but cross industry evidence from the 2000 census suggesting that profits were concentrated in the mining industry and negative in most other industries. Almost all of the differentials observed in time series were very consistent and highly significant statistically. Cross industry differences in labor productivity, wages, capital intensity,

and investment propensities were also consistent in most samples and these differences were thus significantly different from zero in many samples examined. In contrast, cross industry differences in capital productivity were significant in manufacturing samples in 1994/1995, but not in other samples, while differences in size, wage shares, and profits were not significant in any of the cross-industry samples examined. The major difference emerging from separate comparisons of foreign MNCs with SOEs and non-SOEs were that foreign MNCs tended to be smaller than SOEs in terms of employment but larger than non-SOEs. Other differences between foreign MNCs and SOEs also tended to be smaller than differences between MNCs and non-SOEs.

One must be very clear that these crude comparisons do not constitute rigorous tests of differences among groups of firms for several reasons. First and foremost, many of these comparisons are likely to be affected by other factors that could not be accounted for here. For example, differences in labor productivity are very likely to be affected by differences in size, vintage, factor intensities, and the like. In order to make more rigorous comparisons it is thus necessary to construct models that allow one to identify relevant control variables and isolate their effects before comparing ownership groups. Unfortunately, the second and third large problems faced in this study, small sample size and lack of data on relevant variables, make such modeling impossible with these data sets. One possible way to address the first two problems would be to arrange access to the firm-level data underlying the economic censuses or the industrial survey. Nonetheless, it is important that differences between foreign MNCs and local firms in Vietnam appear to resemble the differences suggested by theory in many respects, the important exception being the comparison of capital productivity in the 1995 census. Moreover, these results are similar to those obtained in similar comparisons for other Asian economies, and an important first step in clarifying the role foreign MNCs have come to play in the Vietnamese economy.

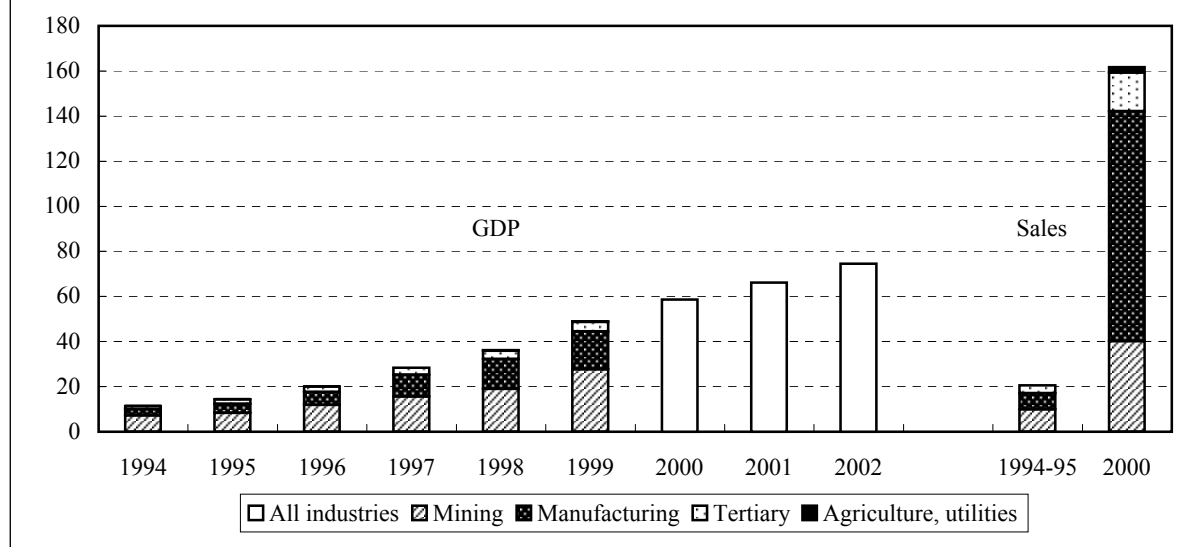
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**Figure 1: GDP and Sales of Foreign MNCs in Vietnam (trillion dong)**



Notes and sources: GDP from national accounts data in Appendix Table 1, Sales from census data in Appendix Tables 2 and 4 (agriculture not included in 1994-95 census); all variables in current prices.

**Table 1: Foreign MNC Shares of Economic Activities by Industry and Indicator 1994-2002 (percent)**

Indicator, industry	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>All industries</b>									
GDP at 1994 prices	6.41	6.73	7.35	8.20	9.24	10.36	10.82	10.85	10.94
GDP at current prices	6.41	6.30	7.39	9.07	10.03	12.24	13.27	13.76	13.90
Employment compensation	na	4.49	5.32	5.75	6.33	8.10	na	na	na
Operating surplus	na	20.35	20.21	30.23	27.91	27.70	na	na	na
Capital outlays	30.39	30.37	25.97	27.96	20.75	17.28	18.70	18.35	18.50
Exports	na	27.03	na	na	34.35	40.57	47.03	45.23	47.12
Imports	10.31	18.00	18.33	27.57	23.20	28.80	27.83	30.74	33.97
Employment	na	na	na	0.38	0.53	0.53	0.60	na	na
<b>Industry (=mining + manufacturing + utilities)</b>									
Gross output at 1994 prices	26.41	25.09	26.73	28.92	31.98	34.68	35.94	35.30	35.32
GDP at 1994 prices	25.88	25.90	27.42	29.18	31.18	34.04	na	na	na
GDP at current prices	25.88	24.85	28.11	31.59	33.48	38.30	na	na	na
Employment compensation	na	21.48	24.43	24.56	25.49	31.22	na	na	na
Operating surplus	na	44.21	41.99	55.52	49.30	48.80	na	na	na
Number of establishments	0.05	0.07	0.09	0.11	0.15	0.16	0.16	0.21	na
Number of employees	2.66	3.98	5.95	8.29	9.25	10.05	na	na	na
<b>Mining</b>									
Gross output at 1994 prices	na	77.83	78.01	77.75	79.98	83.74	83.28	81.93	79.93
GDP at 1994 prices	79.19	79.24	79.39	78.64	78.80	80.95	na	na	na
GDP at current prices	79.19	76.27	78.16	79.04	78.41	81.96	na	na	na
Employment compensation	na	68.71	70.83	68.55	72.39	77.83	na	na	na
Operating surplus	na	88.57	89.72	91.43	89.18	89.22	na	na	na
<b>Manufacturing</b>									
Gross output at 1994 prices	na	18.12	20.14	22.86	26.08	28.34	30.09	30.20	31.34
GDP at 1994 prices	10.16	10.28	12.54	15.53	17.89	20.42	na	na	na
GDP at current prices	10.16	11.44	13.73	18.52	21.33	23.67	na	na	na
Employment compensation	na	10.47	12.51	14.65	11.31	12.60	na	na	na
Operating surplus	na	12.77	11.30	30.44	30.38	31.39	na	na	na
<b>Tertiary industries</b>									
GDP at 1994 prices	1.59	1.76	1.80	2.06	2.31	2.48	na	na	na
GDP at current prices	1.59	1.71	1.77	2.06	2.19	2.38	na	na	na
Employment compensation	na	1.03	1.11	1.40	1.89	2.19	na	na	na
Operating surplus	na	4.14	3.69	4.44	3.65	3.63	na	na	na

Source: Calculated from Appendix Table 1

**Table 2: Percentage Differences Between Foreign MNCs and Local Firms by Industry and Indicator, 1994-2002**

Indicator, industry	1994	1995	1996	1997	1998	1999	2000	2001	2002	MEAN	SIG.
<b>FOREIGN MNCs vs. ALL LOCAL FIRMS</b>											
<b>All industries</b>											
Compensation/GDP	na	-30	-30	-39	-39	-37	na	na	na	-35	0.00
Operating surplus/GDP	na	280	217	334	247	175	na	na	na	247	0.00
Capital outlays/GDP	538	548	340	289	135	50	50	41	41	202	0.00
Exports/GDP	na	451	na	na	369	389	480	418	452	427	0.00
Imports/GDP	68	226	181	282	171	190	152	178	219	185	0.00
GDP/employee	na	na	na	2,520	1,995	2,504	2,423	na	na	2,360	0.00
<b>Industry (=mining + manufacturing + utilities)</b>											
Compensation/GDP	na	-17	-17	-30	-32	-27	na	na	na	-25	0.00
Operating surplus/GDP	na	140	85	170	93	54	na	na	na	104	0.00
Gross output/establishment	68,728	46,809	42,154	37,607	31,494	34,065	34,417	25,654	na	38,313	0.00
Employees/establishment	5,145	5,701	7,236	8,281	6,752	7,090	na	na	na	6,676	0.00
Gross output/employee	1,212	709	476	350	361	375	na	na	na	544	0.00
<b>Mining</b>											
Compensation/GDP	na	-32	-32	-42	-28	-23	na	na	na	-31	0.00
Operating surplus/GDP	na	141	144	183	127	82	na	na	na	135	0.00
<b>Manufacturing</b>											
Compensation/GDP	na	-10	-10	-24	-53	-54	na	na	na	-30	0.04
Operating surplus/GDP	na	13	-20	93	61	47	na	na	na	39	0.15
<b>Tertiary industries</b>											
Compensation/GDP	na	-40	-38	-32	-14	-8	na	na	na	-27	0.02
Operating surplus/GDP	na	148	112	121	69	54	na	na	na	100	0.00
<b>FOREIGN MNCs vs. SOEs</b>											
<b>All industries</b>											
Compensation/GDP	na	-9	-8	-19	-21	-15	na	na	na	-15	0.00
Operating surplus/GDP	na	112	68	142	96	59	na	na	na	94	0.00
Capital outlays/GDP	397	361	186	152	49	-7	-6	-12	-9	97	0.02
GDP/employee	na	na	na	432	381	499	475	na	na	448	0.00
<b>Industry (=mining + manufacturing + utilities)</b>											
Compensation/GDP	na	-5	-5	-19	-21	-13	na	na	na	-13	0.03
Operating surplus/GDP	na	106	49	127	58	25	na	na	na	68	0.00
Gross output/establishment	296	124	89	67	44	49	32	-9	na	65	0.00
Employees/establishment	-30	-37	-25	-19	-33	-28	na	na	na	-29	0.00
Gross output/employee	465	257	150	106	116	107	na	na	na	187	0.01
<b>Mining</b>											
Compensation/GDP	na	-21	-22	-35	-18	-13	na	na	na	-22	0.00
Operating surplus/GDP	na	82	82	126	81	51	na	na	na	84	0.00
<b>Manufacturing</b>											
Compensation/GDP	na	4	4	-11	-44	-45	na	na	na	-18	0.18
Operating surplus/GDP	na	2	-37	63	27	17	na	na	na	13	0.54
<b>Tertiary industries</b>											
Compensation/GDP	na	-34	-30	-23	-6	2	na	na	na	-18	0.07
Operating surplus/GDP	na	82	51	60	30	25	na	na	na	49	0.01



**Table 2 (continued)**

Indicator, industry	1994	1995	1996	1997	1998	1999	2000	2001	2002	MEAN	SIG.
<b>FOREIGN MNCs vs. NON-SOEs</b>											
<b>All industries</b>											
Compensation/GDP	na	-40	-40	-49	-49	-47	na	na	na	-45	0.00
Operating surplus/GDP	na	833	863	1,108	801	546	na	na	na	809	0.00
Capital outlays/GDP	710	834	642	588	335	188	185	171	151	420	0.00
GDP/employee	na	na	na	4,196	3,288	4,088	3,979	na	na	3,884	0.00
<b>Industry (=mining + manufacturing + utilities)</b>											
Compensation/GDP	na	-35	-35	-46	-49	-48	na	na	na	-43	0.00
Operating surplus/GDP	na	276	277	384	318	261	na	na	na	303	0.00
Gross output/establishment	214,925	142,175	128,401	115,511	96,896	101,320	98,988	70,350	na	113,770	0.00
Employees/establishment	7,295	8,122	10,233	11,990	9,893	9,980	na	na	na	9,540	0.00
Gross output/employee	2,808	1,630	1,144	856	871	906	na	na	na	1,277	0.00
<b>Mining</b>											
Compensation/GDP	na	-50	-50	-56	-46	-40	na	na	na	-48	0.00
Operating surplus/GDP	na	2,511	2,092	851	684	283	na	na	na	811	0.00
<b>Manufacturing</b>											
Compensation/GDP	na	-27	-27	-40	-63	-64	na	na	na	-44	0.00
Operating surplus/GDP	na	40	40	181	206	189	na	na	na	130	0.02
<b>Tertiary industries</b>											
Compensation/GDP	na	-47	-46	-42	-23	-19	na	na	na	-35	0.00
Operating surplus/GDP	na	348	358	340	179	120	na	na	na	252	0.00

Source: Calculated from Appendix Table 1

**Table 3: Shares of SOEs and Foreign MNCs in Enterprises with Independent Cost Accounting by Indicator and Industry in 1994-1995 from the 1995 Economic Census (percent)**

Industry	Employees		Fixed Assets		Sales	
	SOEs	Foreign MNCs	SOEs	Foreign MNCs	SOEs	Foreign MNCs
All industries	71	5	63	31	76	9
Mining	84	4	12	87	23	77
Manufacturing (processing industries)	64	7	68	22	74	11
Food & beverages	na	6	49	40	64	14
Cigarettes, tobacco	na	1	96	3	98	0
Textiles	na	6	82	15	70	11
Apparel	na	8	50	17	69	12
Leather, shoes, suitcases, saddles	na	19	38	40	52	32
Wood products, bamboo, etc.	na	7	38	25	42	10
Paper & paper products	na	8	85	8	77	12
Publishing & printing	na	1	98	1	98	1
Coke, oil products, nuclear	na	7	61	39	89	11
Chemicals & chemical products	na	4	74	19	90	5
Rubber & plastic products	na	5	54	23	60	5
Non-metallic mineral products	na	1	92	4	92	1
Metals	na	8	68	26	70	26
Metal products	na	3	64	19	61	12
Non-classified machinery	na	2	84	12	86	3
Office equipment & computers	na	26	64	22	82	17
Non-classified electric machinery	na	5	64	30	80	15
Radio, television, & telecommunication	na	15	50	39	87	7
Precision instruments, clocks	na	13	49	44	76	19
Motor vehicles	na	11	48	49	52	44
Other transportation machinery	na	3	69	28	79	16
Furniture	na	13	24	32	33	16
Regenerate	na	0	94	0	73	0
Electricity, gas, water	99	0	94	6	100	0
Construction	79	0	82	4	83	1
Trade & repair of engine vehicles, etc.	71	1	79	3	79	0
Hotel & restaurants	56	12	26	64	71	23
Transportation, storage, & communication	77	1	93	3	83	10
Finance & banking	88	1	72	10	80	5
Scientific & technical activities	79	0	62	1	83	1
Asset business activities & consulting	76	8	59	38	83	14
Education & training	52	12	4	63	1	88
Health care & social relief	24	33	11	22	78	0
Culture & sport	65	17	32	68	98	2
Public & personal services	94	1	94	5	98	1

Source: Calculated from Appendix Table A2.

**Table 4: Percentage Differences between Foreign MNCs and Local Firms with Independent Cost Accounting by Indicator and Industry in 1994-1995 from the 1995 Economic Census**

Industry	Foreign MNCs vs. All Local Firms			Foreign MNCs vs. SOEs			Foreign MNCs vs. Non-SOEs		
	Sales/Empl.	Sales/FxAs.	FxAs./Empl.	Sales/Empl.	Sales/FxAs.	FxAs./Empl.	Sales/Empl.	Sales/FxAs.	FxAs./Empl.
<b>All industries</b>	95	-61	815	74	-57	646	195	-79	2,486
<b>Single-Digit Industries</b>									
Mining	8,767	-52	18,187	7,746	-52	16,190	69,607	-32	103,007
Manufacturing (processing industries)	64	-57	283	36	-55	203	198	-67	811
Electricity, gas, water	-72	-98	1,175	-72	-98	1,169	42	-95	2,729
Construction	173	-81	1,320	158	-80	1,218	250	-83	1,931
Trade & repair of engine vehicles, etc.	-65	-90	253	-68	-90	213	-52	-91	425
Hotel & restaurants	115	-83	1,160	50	-87	1,036	852	-39	1,468
Transportation, storage, & communication	708	276	115	586	291	76	2,136	106	988
Finance & banking	341	-50	789	367	-53	888	204	-38	391
Scientific & technical activities	58	-47	196	50	-60	272	97	19	66
Asset business activities & consulting	75	-74	577	52	-74	488	576	-75	2,620
Education & training	5,091	311	1,164	29,957	347	6,624	2,275	307	484
Health care & social relief	na	-100	-40	na	-100	54	na	-100	-55
Culture & sport	-89	-99	919	-92	-99	698	9,700	-80	49,504
Public & personal services	-47	-85	263	-49	-85	251	78	-83	969
MEAN	287	-64	1,602	244	-68	1,494	595	-55	3,436
SIGNIFICANCE	0.20	0.10	0.11	0.22	0.05	0.11	0.14	0.68	0.30
<b>Two-Digit Processing Industries</b>									
Food & beverages	163	-75	973	na	-73	na	na	-83	na
Cigarettes, tobacco	-42	-87	347	na	-87	na	na	-88	na
Textiles	90	-30	170	na	-14	na	na	-88	na
Apparel	61	-34	145	na	-49	na	na	17	na
Leather, shoes, suitcases, saddles	105	-31	197	na	-42	na	na	6	na
Wood products, bamboo, etc.	54	-66	348	na	-62	na	na	-69	na
Paper & paper products	50	65	-9	na	76	na	na	-4	na
Publishing & printing	-12	14	-23	na	14	na	na	26	na
Coke, oil products, nuclear	64	na	768	na	na	na	na	na	na
Chemicals & chemical products	18	-80	485	na	-81	na	na	-70	na
Rubber & plastic products	0	-82	470	na	-81	na	na	-86	na
Non-metallic mineral products	-15	-74	224	na	-73	na	na	-85	na
Metals	296	4	281	na	0	na	na	74	na
Metal products	330	-42	636	na	-33	na	na	-60	na
Non-classified machinery	72	-76	623	na	-75	na	na	-90	na
Office equipment & computers	-42	-30	-17	na	-42	na	na	726	na
Non-classified electric machinery	214	-59	661	na	-60	na	na	-40	na
Radio, television, & telecommunication	-56	-88	255	na	-89	na	na	-60	na
Precision instruments, clocks	63	-69	420	na	-71	na	na	-33	na
Motor vehicles	540	-17	669	na	-17	na	na	-17	na
Other transportation machinery	599	-51	1,333	na	-50	na	na	-67	na
Furniture	20	-61	203	na	-65	na	na	-58	na
Regenerate	na	na	na	na	na	na	na	na	na
MEAN	59	-56	389	na	-58	na	na	-50	na
SIGNIFICANCE	0.33	0.00	0.00	na	0.00	na	na	0.54	na

Note: na=not available (no local firms in the comparison group) Source: Calculated from Appendix Table A2.

**Table 5: Shares of Foreign MNCs and SOEs in Industrial Establishments in 17 Provinces by Indicator and Industry for 1998 from the 1999 Industrial Survey (percent)**

Industry	Establishments		Employees		Compensation of Employees		Value Added		Fixed Investment	
	SOEs	For. MNCs	SOEs	For. MNCs	SOEs	For. MNCs	SOEs	For. MNCs	SOEs	For. MNCs
Industry total	23	15	53	23	50	36	42	51	21	69
Mining	40	3	69	6	60	37	12	87	19	78
Manufacturing	22	16	51	25	48	36	50	39	20	69
Food & beverages	15	9	57	17	53	34	54	39	17	74
Tobacco	80	13	92	8	96	4	100	0	94	6
Textiles	26	25	69	19	68	25	46	46	16	76
Apparel	17	21	45	24	47	29	45	32	33	39
Leather products & footwear	22	34	26	45	18	62	23	57	6	79
Wood & wood products	13	5	35	9	36	19	36	25	39	35
Paper & paper products	17	9	54	12	62	16	64	18	36	50
Publishing & printing	78	4	94	2	95	3	97	1	90	1
Coke & refined petroleum	0	67	0	80	0	94	0	78	0	93
Chemicals & chemical products	29	24	68	16	54	34	49	40	21	74
Rubber & plastics	16	21	47	27	55	29	56	24	13	74
Non-metallic mineral products	19	5	64	9	62	22	58	34	60	17
Basic metals	19	25	86	9	79	18	45	52	25	71
Fabricated metal products	19	25	48	28	46	41	33	54	18	66
Machinery & equipment	42	17	78	10	64	21	42	40	37	48
Electrical machinery & apparatus	32	4	72	16	79	14	59	32	15	85
Radio, television & communication	30	45	37	57	33	63	38	56	7	92
Precision machinery	13	67	19	78	11	88	4	96	6	94
Motor vehicles	30	13	65	15	52	37	48	42	37	60
Other transportation machinery	44	12	77	12	57	28	33	61	54	43
Furniture & miscellaneous manufactures	7	10	13	18	12	40	7	65	7	68
Recycling	0	96	0	100	0	100	0	100	0	100
Electricity, gas, & water	91	9	99	1	96	4	99	1	96	4

Source: Calculated from Appendix Table A3.

**Table 6: Percentage Differences between Foreign MNCs and Local Establishments by Indicator and Industry for 1998 from the 1999 Industrial Survey**

Industry	Foreign MNCs vs. All Local Plants						Foreign MNCs vs. SOEs						Foreign MNCs vs. Non-SOEs					
	E/N	V/N	V/E	C/E	I/V	C/V	E/N	V/N	V/E	C/E	I/V	C/V	E/N	V/N	V/E	C/E	I/V	C/V
<b>All industries</b>	65	480	252	89	118	-46	-36	84	185	66	165	-42	284	2,700	628	175	9	-62
<b>Single-digit Industries</b>																		
Mining	85	19,878	10,676	817	-47	-91	6	8,816	8,307	614	-44	-92	301	183,837	45,791	3,900	-73	-91
Manufacturing	81	249	93	69	241	-13	-31	8	58	51	330	-4	313	1,413	266	127	71	-38
Electricity, gas, & water	-92	-93	-17	355	498	448	-92	-93	-17	355	498	448	na	na	na	na	na	na
<b>Two-digit Manufacturing Industries</b>																		
Food & beverages	113	553	206	153	340	-17	-47	27	141	117	494	-10	465	4,172	657	295	59	-48
Tobacco	-41	-97	-95	-50	1,202	829	-45	-97	-95	-50	1,202	829	4,233	4,254	0	88	den=0	87
Textiles	-29	158	264	41	270	-61	-71	5	262	34	386	-63	224	1,118	276	99	48	-47
Apparel	18	83	55	33	36	-14	-56	-40	38	20	69	-13	127	331	90	58	-2	-17
Leather products & footwear	60	161	63	103	180	25	13	59	41	94	483	38	102	281	88	111	74	12
Wood & wood products	84	493	223	138	64	-26	-37	61	157	107	31	-19	159	897	285	162	114	-32
Paper & paper products	44	122	54	33	359	-13	-57	-48	21	11	399	-8	203	718	170	95	258	-28
Publishing & printing	-55	-79	-53	61	13	243	-62	-83	-54	58	22	244	121	107	-6	197	-77	217
Coke & refined petroleum	94	77	-9	290	266	327	na	na	na	na	na	na	94	77	-9	290	266	327
Chemicals & chemical products	-38	112	240	167	334	-22	-71	-1	238	162	335	-22	109	629	248	189	330	-17
Rubber & plastics	38	22	-12	9	760	24	-57	-67	-24	-9	1,217	20	206	278	23	69	331	37
Non-metallic mineral products	85	886	432	179	-62	-48	-48	117	318	146	-53	-41	398	7,263	1,379	305	-85	-73
Basic metals	-69	235	997	118	127	-80	-92	-10	991	113	150	-80	297	4,652	1,098	230	-15	-72
Fabricated metal products	18	250	198	80	68	-40	-56	21	176	52	126	-45	165	839	255	184	1	-20
Machinery & equipment	-43	227	477	127	38	-61	-67	134	615	143	36	-66	112	442	156	58	42	-38
Electrical machinery & apparatus	308	898	145	-17	1,099	-66	62	294	143	-22	970	-68	1,720	4,543	155	40	4,293	-45
Radio, television & communication	62	57	-3	28	772	32	3	0	-3	25	741	28	455	422	-6	50	1,041	60
Precision machinery	80	1,081	555	103	-37	-69	-17	439	547	95	-40	-70	705	5,657	615	179	-9	-61
Motor vehicles	25	412	309	231	103	-19	-45	110	279	204	81	-20	249	1,815	449	358	360	-17
Other transportation machinery	-2	1,055	1,082	199	-51	-75	-43	580	1,097	225	-56	-73	268	3,923	994	94	35	-82
Furniture & miscellaneous manuf.	112	1,631	716	196	14	-64	0	547	549	151	6	-61	134	1,915	760	207	16	-64
Recycling	1,230	1,548	24	69	den=0	37	na	na	na	na	na	na	1,230	1,548	24	69	den=0	37
MEAN	30	55	97	95	226	-15	-44	-10	127	79	229	-19	239	932	191	150	115	-17
SIGNIFICANCE	0.46	0.42	0.03	0.00	0.01	0.32	0.07	0.83	0.01	0.00	0.01	0.21	0.02	0.00	0.00	0.00	0.03	0.28

Notes: C=compensation of employees E=number of employments; I=investment in fixed assets; N=number of establishments; V=value added; na=not available (no local plants in the comparison group); den=denominator. Source: Calculated from Appendix Table A3.

**Table 7: Shares of SOEs and Foreign MNCs in Enterprises with Independent Cost Accounting by Indicator and Industry for 2000 from the 2001 Enterprise Census (percent)**

Industry	Firms		Employees		Sales		Pre-tax Profits		Fixed Assets	
	SOEs	For. MNCs	SOEs	For. MNCs	SOEs	For. MNCs	SOEs	For. MNCs	SOEs	For. MNCs
All industries	14	4	58	12	50	22	41	54	52	39
Agriculture, forestry, fisheries	95	5	98	2	94	6	101	-1	94	6
Mining and quarrying	31	2	66	4	22	77	6	94	28	70
Manufacturing	15	10	44	22	37	42	59	33	29	59
Food & beverages	8	4	48	13	40	27	98	11	32	55
Tobacco	74	9	96	3	98	1	109	-10	82	17
Textiles	18	16	58	19	46	39	6	81	39	52
Apparel	18	17	45	20	46	34	46	45	36	34
Leather products & footwear	19	24	24	38	17	65	33	63	11	68
Wood & wood products	8	6	31	16	38	21	62	18	28	36
Paper & paper products	9	6	37	12	42	18	115	-26	36	40
Publishing & printing	62	3	88	2	93	2	100	-2	86	8
Coke & refined petroleum	0	25	0	58	0	77	0	100	0	95
Chemicals & chemical products	23	21	66	13	49	39	44	39	32	59
Rubber & plastics	8	18	32	30	27	36	-102	228	17	57
Non-metallic mineral products	19	5	60	8	57	30	198	-133	33	60
Basic metals	15	11	79	7	34	52	27	73	29	64
Fabricated metal products	14	15	46	22	21	45	-49	200	22	66
Machinery & equipment	29	13	67	17	37	51	39	42	29	65
Office & computing machinery	0	50	0	99	0	100	0	100	0	100
Electrical machinery & apparatus	17	29	38	51	31	56	39	45	21	73
Radio, television & communication	31	33	37	52	19	78	17	81	28	71
Precision machinery	16	33	26	36	9	73	6	70	8	84
Motor vehicles	21	12	54	23	15	80	4	94	14	84
Other transportation machinery	28	15	58	25	22	69	7	86	22	76
Furniture & miscellaneous manuf.	4	14	8	35	8	52	-7	66	11	63
Recycling	0	0	0	0	0	0	0	0	0	0
Electricity, gas & water supply	65	6	99	1	90	10	141	-41	94	6
Construction	24	1	71	1	78	2	81	-6	75	3
Trade, motor vehicle repair, etc.	7	0	60	1	55	1	72	-8	56	17
Hotels & restaurants	9	4	46	20	53	31	-12	115	16	75
Transportation, telecommunications	14	3	62	2	69	12	83	11	79	6
Finance & credit	7	3	80	3	81	12	79	14	88	7
Science & technology	0	0	0	0	0	0	0	0	0	0
Assets, consulting	19	10	61	14	39	37	-34	135	8	88
Education & training	0	9	0	30	0	66	0	87	0	76
Medical & social relief	4	25	3	38	0	86	0	99	0	83
Culture & sports	47	17	55	28	50	35	-46	185	11	78
Personal & social services	27	1	87	2	87	6	99	-1	94	1

Note: Fixed assets include long-term investments.

Source: Calculated from Appendix Table 4.

**Table 8: Percentage Differences between Foreign MNCs and Local Firms by Indicator and Industry for 2000 from the 2001 Enterprise Census**

Industry	Foreign MNCs vs. All Local Plants						Foreign MNCs vs. SOEs						Foreign MNCs vs. Non-SOEs					
	E/N	S/N	S/E	S/K	K/E	P/S	E/N	S/N	S/E	S/K	K/E	P/S	E/N	S/N	S/E	S/K	K/E	P/S
<b>Industry total</b>	236	600	108	-57	382	312	-27	57	114	-43	273	199	752	1,591	98	-82	1,021	1,238
<b>Single-digit Industries</b>																		
Agriculture, forestry, fisheries	-65	39	298	8	270	-114	-65	39	298	8	270	-114	na	na	na	na	na	na
Mining and quarrying	108	15,580	7,433	42	5,215	373	-4	5,208	5,422	43	3,756	357	363	202,154	43,605	16	37,678	1,242
Manufacturing	157	536	148	-51	408	-32	-27	62	121	-45	303	-51	399	1,368	194	-62	675	91
Electricity, gas & water supply	-83	73	939	74	496	-354	-89	19	937	74	494	-354	1,323	65,729	4,525	-45	8,370	-439
Construction	-45	95	253	-38	468	-381	-82	-41	219	-40	430	-391	50	623	383	-31	597	-346
Trade, motor vehicle repair, etc.	341	390	11	-94	1,720	-733	-52	-42	22	-93	1,538	-627	947	926	-2	-96	2,094	-942
Hotels & restaurants	521	1,035	83	-85	1,096	-1,791	6	45	37	-88	1,023	-1,716	1,229	4,440	242	-74	1,215	-2,108
Transportation, telecommunication	-37	318	560	124	195	-16	-86	-24	435	139	124	-29	49	1,554	1,009	69	555	159
Finance & credit	-4	362	383	73	180	18	-91	-62	334	79	142	17	393	4,883	911	2	887	27
Assets, consulting	44	402	248	-92	4,168	-755	-58	70	304	-91	4,389	-519	302	936	158	-93	3,698	-6,902
Education & training	360	1,929	341	-40	635	235	na	na	na	na	na	na	360	1,929	341	-40	635	235
Medical & social relief	85	1,781	916	26	709	1,119	131	8,694	3,706	-99	264,953	-1,387	83	1,697	883	27	673	1,091
Culture & sports	86	161	40	-85	807	-508	37	89	38	-91	1,375	-689	242	405	48	-64	307	-300
Personal & social services	101	633	264	669	-53	-114	-39	114	250	690	-56	-113	1,191	6,861	439	408	6	-171
MEAN	11	1,695	517	-35	711	-210	-58	418	491	-70	645	-193	309	13,363	613	-52	1,731	-272
SIGNIFICANCE	0.81	0.28	0.08	0.56	0.01	0.11	0.03	0.35	0.08	0.26	0.01	0.09	0.02	0.26	0.07	0.41	0.01	0.18

**Table 8 (continued)**

Industry	Foreign MNCs vs. All Local Plants						Foreign MNCs vs. SOEs						Foreign MNCs vs. Non-SOEs					
	E/N	S/N	S/E	S/K	K/E	P/S	E/N	S/N	S/E	S/K	K/E	P/S	E/N	S/N	S/E	S/K	K/E	P/S
<b>Two-digit Manufacturing Industries</b>																		
Food & beverages	237	732	147	-70	727	-67	-48	29	148	-61	529	-84	586	1,585	146	-82	1,246	-253
Tobacco	-70	-84	-48	-93	622	-697	-75	-87	-48	-93	621	-695	239	285	14	-86	701	-1,464
Textiles	24	242	176	-41	368	565	-63	-3	162	-36	309	1,627	247	1,011	220	-57	644	127
Apparel	23	161	112	-1	113	59	-53	-19	72	-22	121	32	121	575	205	49	104	197
Leather products & footwear	93	482	202	-12	242	-8	25	196	136	-36	267	-51	134	755	264	11	228	406
Wood & wood products	203	333	43	-53	204	-18	-26	-19	9	-56	148	-48	334	654	74	-50	249	72
Paper & paper products	101	209	54	-68	376	-196	-52	-39	27	-61	229	-153	210	464	82	-74	599	-667
Publishing & printing	-34	-38	-6	-81	403	-215	-54	-58	-10	-81	383	-210	140	294	64	-80	706	-530
Coke & refined petroleum	319	887	135	-82	1,232	87,478	na	na	na	na	na	na	319	887	135	-82	1,232	87,478
Chemicals & chemical products	-41	147	317	-56	849	0	-77	-9	299	-57	827	12	80	788	393	-52	931	-31
Rubber & plastics	95	154	31	-56	199	-413	-58	-41	43	-61	264	-268	228	300	22	-53	159	-984
Non-metallic mineral products	70	686	363	-72	1,562	-235	-47	99	273	-72	1,218	-228	288	3,137	735	-74	3,131	-276
Basic metals	-36	807	1,320	-39	2,238	149	-87	119	1,632	-31	2,424	72	253	2,382	604	-57	1,553	-26,171
Fabricated metal products	66	372	184	-58	574	-343	-53	104	335	-30	518	-292	242	544	88	-76	678	-392
Machinery & equipment	36	568	391	-45	787	-30	-43	201	430	-39	763	-22	377	1,684	274	-63	910	-46
Office & computing machinery	10,113	52,802	418	-93	7,472	74	na	na	na	na	na	na	10,113	52,802	418	-93	7,472	74
Electrical machinery & apparatus	159	222	24	-51	155	-37	-21	8	36	-46	153	-38	769	732	-4	-63	161	-36
Radio, television & communication	120	626	230	48	123	18	32	292	196	64	80	13	426	2,784	449	-56	1,152	67
Precision machinery	16	462	383	-48	835	-13	-31	288	461	-29	693	42	48	555	342	-59	964	-28
Motor vehicles	115	2,774	1,237	-24	1,653	283	-28	805	1,162	-9	1,290	324	463	8,703	1,465	-67	4,692	197
Other transportation machinery	88	1,114	545	-31	834	186	-19	484	622	-9	696	277	476	2,578	365	-81	2,403	84
Furniture & miscellaneous manuf.	227	561	102	-36	216	82	19	76	48	10	35	-251	257	663	114	-46	294	24
MEAN	89	981	258	-78	734	-115	-30	351	351	-38	604	-112	283	3,440	276	-80	1,063	-122
SIGNIFICANCE	0.12	0.17	0.01	0.19	0.00	0.08	0.23	0.24	0.00	0.02	0.00	0.05	0.01	0.14	0.01	0.13	0.00	0.18

Notes: C=compensation of employees E=number of employments; K=fixed assets; N=number of establishments; P=profits; V=value added; na=not available (no local firms in the comparison group); den=denominator. Source: Calculated from Appendix Table A4.



**Appendix Table 1: Economic Activities by Owner, Industry, and Indicator, 1994-2002**  
(billion dong, values in current current prices unless indicated otherwise)

Indicator, industry	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>PART A: FOREIGN MULTATIONALS</b>									
<b>All industries</b>									
GDP at 1994 prices	11,441	13,155	15,709	18,970	22,593	26,560	29,598	31,733	34,260
GDP at current prices	11,441	14,428	20,106	28,450	36,214	48,958	58,626	66,212	74,518
Employment compenstation	na	6,623	9,319	11,305	14,580	20,336	na	na	na
Operating surplus	na	4,096	5,734	10,191	11,010	13,055	na	na	na
Capital outlays	16,500	22,000	22,700	30,300	24,300	22,671	27,172	30,011	34,000
Exports	na	16,260	na	na	42,654	65,282	96,496	100,106	120,280
Imports	6,585	16,205	22,536	37,342	35,399	47,159	61,658	73,405	102,434
Number of employees	na	na	na	130,304	184,201	190,099	218,350	na	na
<b>Agriculture</b>									
GDP at 1994 prices	0	0	0	3	96	71	na	na	na
GDP at current prices	0	0	0	5	165	119	na	na	na
Employment compenstation	na	0	0	4	128	71	na	na	na
Operating surplus	na	0	0	0	13	19	na	na	na
<b>Industry (=mining + manufacturing + utilities)</b>									
Gross output at 1994 prices	23,843	25,933	31,562	38,878	48,358	58,515	71,285	80,261	91,906
GDP at 1994 prices	9,990	11,385	13,730	16,520	19,643	23,349	na	na	na
GDP at current prices	9,990	12,430	17,743	25,297	32,293	44,506	na	na	na
Employment compenstation	na	5,954	8,502	10,122	12,646	18,049	na	na	na
Operating surplus	na	3,626	5,167	9,485	10,352	12,281	na	na	na
Number of establishments	268	439	540	666	881	959	1,063	1,449	na
Number of employees	62,909	104,715	163,488	225,253	253,712	293,583	na	na	na
<b>Mining</b>									
Gross output at 1994 prices	na	10,834	12,457	14,238	16,889	20,585	22,766	23,839	23,877
GDP at 1994 prices	7,217	8,197	9,331	10,462	11,956	13,923	na	na	na
GDP at current prices	7,217	8,397	11,944	15,625	18,971	27,622	na	na	na
Employment compenstation	na	3,784	5,382	5,848	8,891	13,313	na	na	na
Operating surplus	na	3,177	4,519	7,353	7,155	8,559	na	na	na
<b>Manufacturing</b>									
Gross output at 1994 prices	na	15,084	19,094	24,607	31,469	37,892	47,578	55,431	66,977
GDP at 1994 prices	2,705	3,109	4,306	6,015	7,638	9,371	na	na	na
GDP at current prices	2,705	3,927	5,671	9,574	13,207	16,752	na	na	na
Employment compenstation	na	2,109	3,046	4,217	3,687	4,691	na	na	na
Operating surplus	na	448	647	2,132	3,197	3,681	na	na	na
<b>Tertiary industries</b>									
GDP at 1994 prices	1,451	1,770	1,979	2,447	2,854	3,140	na	na	na
GDP at current prices	1,451	1,998	2,363	3,148	3,756	4,333	na	na	na
Employment compenstation	na	669	817	1,179	1,806	2,216	na	na	na
Operating surplus	na	470	567	706	645	755	na	na	na
<b>PART B: STATE-OWNED ENTERPRISES</b>									
<b>All industries</b>									
GDP at 1994 prices	71,623	78,367	87,208	95,638	100,953	103,531	111,522	119,824	128,068
GDP at current prices	71,623	91,977	108,635	126,970	144,406	154,927	170,141	184,836	205,379
Employment compenstation	na	46,628	54,481	62,615	73,696	76,025	na	na	na
Operating surplus	na	12,305	18,397	18,831	22,349	25,972	na	na	na
Capital outlays	20,796	30,447	42,894	53,570	65,034	76,958	83,568	95,020	103,300
Number of employees	na	na	na	3,094,235	3,532,968	3,605,709	3,643,809	na	na
<b>Agriculture</b>									
GDP at 1994 prices	2,190	2,119	2,235	2,378	2,408	2,334	na	na	na
GDP at current prices	2,190	2,664	3,424	3,628	3,961	4,188	na	na	na
Employment compenstation	na	1,574	2,026	2,147	2,637	2,385	na	na	na
Operating surplus	na	448	550	587	584	810	na	na	na

**Appendix Table 1 (continued)**

Indicator, industry	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>PART B: STATE-OWNED ENTERPRISES (continued)</b>									
<b>Industry (=mining + manufacturing + utilities)</b>									
Gross output at 1994 prices	45,248	51,991	58,166	64,474	69,463	73,208	82,897	93,434	104,348
GDP at 1994 prices	20,300	22,899	25,508	28,129	30,587	32,157	na	na	na
GDP at current prices	20,300	25,892	30,834	38,292	45,315	51,120	na	na	na
Employment compensation	na	13,091	15,522	18,850	22,483	23,864	na	na	na
Operating surplus	na	3,668	6,015	6,324	9,199	11,312	na	na	na
Number of establishments	2,014	1,973	1,879	1,843	1,821	1,786	1,633	1,541	na
Number of employees	675,111	750,090	754,453	769,165	787,431	759,105	na	na	na
<b>Mining</b>									
Gross output at 1994 prices	na	2,419	2,747	3,206	3,203	3,088	3,474	3,912	4,363
GDP at 1994 prices	1,394	1,587	1,707	2,084	2,360	2,375	na	na	na
GDP at current prices	1,394	1,922	2,411	3,052	3,853	4,350	na	na	na
Employment compensation	na	1,103	1,384	1,748	2,211	2,407	na	na	na
Operating surplus	na	400	502	635	802	894	na	na	na
<b>Manufacturing</b>									
Gross output at 1994 prices	na	43,401	48,098	52,864	56,830	59,702	67,494	75,831	84,437
GDP at 1994 prices	16,123	18,014	19,914	21,523	23,148	24,316	na	na	na
GDP at current prices	16,123	19,381	22,020	26,746	31,257	35,205	na	na	na
Employment compensation	na	9,990	11,351	13,263	15,626	18,035	na	na	na
Operating surplus	na	2,165	3,972	3,652	5,949	6,616	na	na	na
<b>Tertiary industries</b>									
GDP at 1994 prices	49,133	53,349	59,465	65,131	67,958	69,040	na	na	na
GDP at current prices	49,133	63,421	74,377	85,050	95,130	99,619	na	na	na
Employment compensation	na	31,963	36,933	41,618	48,576	49,776	na	na	na
Operating surplus	na	8,189	11,832	11,920	12,566	13,850	na	na	na
<b>PART C: NON-STATE-OWNED ENTERPRISES</b>									
<b>All industries</b>									
GDP at 1994 prices	95,470	104,045	110,916	116,656	121,050	126,181	132,546	140,978	150,807
GDP at current prices	95,470	122,487	143,295	158,203	180,396	196,057	212,879	230,247	256,201
Employment compensation	na	94,372	111,351	122,696	141,963	154,665	na	na	na
Operating surplus	na	3,728	4,242	4,691	6,085	8,096	na	na	na
Capital outlays	17,000	20,000	21,800	24,500	27,800	31,542	34,594	38,512	46,500
Number of employees	na	na	na	31,127,687	31,083,392	31,883,750	32,343,273	na	na
<b>Agriculture</b>									
GDP at 1994 prices	46,778	49,200	51,342	53,514	55,362	58,488	na	na	na
GDP at current prices	46,778	59,555	72,090	77,193	88,946	97,417	na	na	na
Employment compensation	na	53,298	64,421	69,131	82,241	89,639	na	na	na
Operating surplus	na	129	152	125	177	333	na	na	na
<b>Industry (=mining + manufacturing + utilities)</b>									
Gross output at 1994 prices	21,180	25,451	28,369	31,068	33,402	37,027	44,144	53,647	63,948
GDP at 1994 prices	8,304	9,676	10,840	11,970	12,773	13,080	na	na	na
GDP at current prices	8,304	11,706	14,534	16,483	18,833	20,569	na	na	na
Employment compensation	na	8,674	10,783	12,238	14,483	15,905	na	na	na
Operating surplus	na	907	1,124	1,276	1,446	1,571	na	na	na
Number of establishments	511,900	612,977	623,710	615,296	590,246	615,453	652,272	682,330	na
Number of employees	1,624,917	1,778,396	1,827,511	1,721,352	1,700,946	1,869,141	na	na	na
<b>Mining</b>									
Gross output at 1994 prices	na	667	765	869	1,025	908	1,095	1,346	1,631
GDP at 1994 prices	503	561	715	758	857	902	na	na	na
GDP at current prices	503	690	927	1,091	1,372	1,731	na	na	na
Employment compensation	na	620	832	935	1,180	1,386	na	na	na
Operating surplus	na	10	16	54	66	140	na	na	na
<b>Manufacturing</b>									
Gross output at 1994 prices	na	24,776	27,596	30,192	32,367	36,108	43,026	52,281	62,295
GDP at 1994 prices	7,796	9,108	10,119	11,205	11,908	12,201	na	na	na
GDP at current prices	7,796	11,010	13,600	15,380	17,442	18,810	na	na	na
Employment compensation	na	8,051	9,947	11,296	13,292	14,499	na	na	na
Operating surplus	na	896	1,107	1,220	1,379	1,431	na	na	na

**Appendix Table 1 (continued)**

Indicator, industry	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>PART C: NON-STATE-OWNED ENTERPRISES (continued)</b>									
<b>Tertiary industries</b>									
GDP at 1994 prices	40,388	45,169	48,734	51,172	52,915	54,613	na	na	na
GDP at current prices	40,388	51,226	56,671	64,527	72,617	78,071	na	na	na
Employment compenstation	na	32,400	36,147	41,327	45,239	49,121	na	na	na
Operating surplus	na	2,692	2,966	3,290	4,462	6,192	na	na	na
<b>PART D: ALL ENTERPRISES</b>									
<b>All industries</b>									
GDP at 1994 prices	178,534	195,567	213,833	231,264	244,596	256,272	273,666	292,535	313,135
GDP at current prices	178,534	228,892	272,036	313,623	361,016	399,942	441,646	481,295	536,098
Employment compenstation	na	147,623	175,151	196,616	230,239	251,026	na	na	na
Operating surplus	na	20,129	28,373	33,713	39,444	47,123	na	na	na
Capital outlays	54,296	72,447	87,394	108,370	117,134	131,171	145,333	163,543	183,800
Exports	44,458	60,146	80,051	107,311	124,192	160,924	205,191	221,305	255,244
Imports	63,884	90,021	122,943	135,436	152,577	163,722	221,533	238,813	301,510
Number of employees	na	na	na	34,352,226	34,800,561	35,679,558	36,205,432	na	na
<b>Agriculture</b>									
GDP at 1994 prices	48,968	51,319	53,577	55,895	57,866	60,893	na	na	na
GDP at current prices	48,968	62,219	75,514	80,826	93,072	101,724	na	na	na
Employment compenstation	na	54,872	66,447	71,282	85,006	92,095	na	na	na
Operating surplus	na	577	702	712	774	1,162	na	na	na
<b>Industry (=mining + manufacturing + utilities)</b>									
Gross output at 1994 prices	90,271	103,375	118,097	134,420	151,223	168,749	198,326	227,342	260,202
GDP at 1994 prices	38,594	43,960	50,078	56,619	63,003	68,586	na	na	na
GDP at current prices	38,594	50,028	63,111	80,072	96,441	116,195	na	na	na
Employment compenstation	na	27,719	34,807	41,210	49,612	57,818	na	na	na
Operating surplus	na	8,201	12,306	17,085	20,997	25,164	na	na	na
Number of establishments	514,182	615,389	626,129	617,805	592,948	618,198	654,968	685,320	na
Number of employees	2,362,937	2,633,201	2,745,452	2,715,770	2,742,089	2,921,829	na	na	na
<b>Mining</b>									
Gross output at 1994 prices	na	13,920	15,968	18,314	21,118	24,580	27,335	29,097	29,871
GDP at 1994 prices	9,114	10,345	11,753	13,304	15,173	17,200	na	na	na
GDP at current prices	9,114	11,009	15,282	19,768	24,196	33,703	na	na	na
Employment compenstation	na	5,507	7,598	8,531	12,282	17,106	na	na	na
Operating surplus	na	3,587	5,037	8,042	8,023	9,593	na	na	na
<b>Manufacturing</b>									
Gross output at 1994 prices	na	83,261	94,788	107,662	120,666	133,702	158,098	183,542	213,709
GDP at 1994 prices	26,624	30,231	34,339	38,743	42,694	45,888	na	na	na
GDP at current prices	26,624	34,318	41,291	51,700	61,906	70,767	na	na	na
Employment compenstation	na	20,150	24,344	28,776	32,605	37,225	na	na	na
Operating surplus	na	3,509	5,726	7,004	10,525	11,728	na	na	na
<b>Tertiary industries</b>									
GDP at 1994 prices	90,972	100,288	110,178	118,750	123,727	126,793	na	na	na
GDP at current prices	90,972	116,645	133,411	152,725	171,503	182,023	na	na	na
Employment compenstation	na	65,032	73,897	84,124	95,621	101,113	na	na	na
Operating surplus	na	11,351	15,365	15,916	17,673	20,797	na	na	na

Sources: General Statistical Office (2000a, 2000b, 2001, various years); Nguyen et al. (2002)

**Appendix Table 2: Principle Indicators for Enterprises with Independent Cost Accounting in 1994-1995 from the 1995 Economic Census by Industry and Owner**

Industry	Employees (number)			Sales (billion dong)			Fixed Assets (billion dong)		
	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign
		SOEs	MNCs		SOEs	MNCs		SOEs	MNCs
All industries	2,034,855	1,506,911	97,832	220,088	182,419	20,625	83,839	76,140	36,891
Mining	98,035	85,316	3,722	2,945	2,897	9,916	2,996	2,927	20,801
Coal, mildcoal, peat	52,693	na	0	1,527	1,524	0	1,607	1,605	0
Crude oil, natural gas, petrol services	4,753	na	3,075	652	651	9,851	246	245	20,693
Ores	8,276	na	309	139	138	61	584	584	52
Stone and other minerals	32,313	na	338	627	583	3	559	493	56
Manufacturing (processing industries)	999,620	687,961	73,618	59,318	49,156	7,157	28,358	24,642	7,996
Foodstuff & beverage production	184,375	na	11,366	16,853	12,581	2,736	5,169	4,240	3,418
Cigarettes, rustic tobacco production	10,963	na	73	3,606	3,543	14	672	661	20
Textile production	124,465	na	8,080	4,500	3,553	555	4,251	4,092	744
Dress production, tanning & dyeing fur products	135,976	na	11,034	2,971	2,307	388	1,729	1,043	343
Tanning & processing leather, sandal hand bag, shoes, suitcase, saddle	82,416	na	18,710	1,354	1,033	631	644	409	435
Wood, wood products, bamboo, neohouzeaua, straw	56,370	na	4,249	1,874	873	217	770	393	260
Paper & paper products	24,299	na	2,173	1,467	1,273	196	1,342	1,239	109
Publishing, printing, & copy	16,672	na	167	1,755	1,737	15	961	951	7
Coke, oil products, nuclear	1,847	na	136	1,459	1,459	177	173	173	110
Chemicals & chemical products	42,681	na	1,715	6,056	5,687	287	1,360	1,237	320
Rubber & plastic products	17,298	na	894	1,389	883	72	585	409	172
Non-metallic minerals	111,395	na	1,546	6,367	5,901	75	5,741	5,502	258
Metal	16,583	na	1,500	1,738	1,648	622	716	654	247
Metallic products	25,285	na	799	781	545	106	479	381	111
Non-classified machinery	44,205	na	836	1,550	1,384	50	1,226	1,171	168
Office equipment & computers	321	na	111	65	64	13	9	7	3
Non-classified electric machinery	14,007	na	772	872	816	151	342	310	143
Radio, television, & telecommunication equipment	9,963	na	1,759	1,996	1,880	156	341	277	214
Health, accurate, & optical instruments; clocks	3,756	na	556	108	101	26	67	58	51
Engine vehicles	11,677	na	1,434	318	294	250	252	233	238
Other transportation means	34,191	na	922	1,303	1,224	246	1,084	1,039	419
Bed, wardrobe, desk, table, chair production	30,710	na	4,786	928	362	173	433	151	205
Regenerate	165	na	0	10	7	0	13	12	0
Electricity, gas, & water	48,280	47,849	239	6,215	6,204	9	15,742	15,679	994
Construction	303,024	240,904	886	14,421	12,121	115	5,359	4,591	223
Trade & repair of engine vehicles, motorbikes, & personal goods	222,324	160,305	1,883	112,150	89,149	333	6,930	5,630	207
Hotel & restaurants	60,179	38,694	8,375	3,508	3,225	1,049	2,568	1,831	4,503
Transportation, storehouse, & communication	197,506	154,317	2,736	12,084	11,129	1,353	19,039	18,216	567
Finance & banking	40,952	36,432	492	4,967	4,172	263	709	567	76
Scientific & technical activities	972	772	4	23	19	0	8	5	0
Asset business activities & consulting	37,304	31,052	3,403	2,287	2,188	365	1,646	1,577	1,016
Education & training	494	291	67	3	0	22	3	0	4
Health care & social relief	407	146	196	2	2	0	3	0	1
Culture & sport	9,520	7,419	1,982	1,878	1,878	43	232	231	491
Public & personal services	16,238	15,453	229	285	281	2	246	242	13

Source: General Statistical Office (1998).

**Appendix Table 3: Principle Indicators for 1998 for Industrial Establishments in 17 Provinces by Industry and Owner**

Industry	Establishments (number)			Employees (number)			Compensation of Employees (billion dong)			Value Added (billion dong)			Fixed Investment (billion dong)		
	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign
	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	
Industry total	4,040	1,084	727	782,432	537,198	231,887	8,222	6,448	4,614	23,645	20,060	24,688	4,740	3,304	10,776
Mining and quarrying	177	74	6	108,469	79,272	6,817	982	921	566	1,685	1,578	11,409	510	448	1,821
Coal	25	21	1	57,341	57,252	224	692	692	4	1,031	1,031	1	323	323	48
Crude oil & natural gas	2	2	2	11,109	11,109	6,419	110	110	559	168	168	11,394	41	41	1,773
Mining of metal ores	5	3	1	513	261	72	6	3	2	12	7	13	2	1	0
Other mining & quarrying	145	48	2	39,506	10,650	102	174	117	1	474	373	2	144	83	0
Manufacturing	3,843	990	719	666,188	450,151	225,004	7,086	5,374	4,042	20,331	16,852	13,267	4,019	2,645	8,946
Food & beverages	871	148	84	89,850	61,673	18,480	969	774	504	4,837	4,223	3,048	696	451	1,931
Tobacco	13	12	2	8,593	8,584	780	174	174	8	2,284	2,284	11	43	43	3
Textiles	153	54	51	76,199	65,409	18,006	714	643	237	1,497	1,292	1,287	379	249	1,206
Apparel	287	63	75	106,205	63,014	32,791	1,010	665	414	1,449	968	693	187	101	122
Leather products & footwear	94	31	48	94,312	44,250	77,177	737	361	1,223	1,032	559	1,374	288	75	1,075
Wood & wood products	235	31	13	20,033	7,704	2,034	136	60	33	280	136	92	50	30	27
Paper & paper products	176	32	17	20,764	12,685	2,893	221	163	41	587	457	126	189	135	186
Publishing & printing	147	119	6	15,895	15,281	291	273	267	8	938	919	8	209	189	2
Coke & refined petroleum	2	0	4	99	0	385	1	0	19	26	0	94	2	0	20
Chemicals & chemical products	178	68	56	29,845	24,346	5,861	460	382	241	1,391	1,141	928	208	170	602
Rubber & plastics	207	41	55	22,501	14,365	8,251	299	229	120	917	680	297	359	174	999
Non-metallic mineral products	581	114	31	57,363	40,203	5,672	620	493	171	2,244	2,003	1,180	543	394	109
Basic metals	55	14	18	23,362	22,019	2,338	267	257	58	483	457	530	148	127	368
Fabricated metal products	196	49	65	14,964	9,982	5,832	205	162	144	364	262	422	185	99	360
Machinery & equipment	132	66	27	22,644	19,615	2,628	232	188	61	480	335	321	159	113	146
Electrical machinery & apparatus	65	22	3	14,241	12,130	2,681	241	219	38	533	457	245	110	106	610
Radio, television & communication	40	22	33	5,444	4,728	7,279	80	71	136	266	230	345	41	37	464
Precision machinery	15	6	30	2,069	1,791	7,462	23	21	172	38	34	904	15	14	221
Motor vehicles	77	26	11	6,523	4,974	1,165	66	54	39	118	97	86	37	34	55
Other transportation machinery	111	56	15	16,458	14,292	2,173	202	161	80	309	265	483	91	87	70
Furniture & miscellaneous manuf.	206	16	22	18,777	3,106	4,254	156	30	105	257	53	475	79	18	165
Recycling	2	0	53	47	0	16,571	0	0	193	1	0	318	0	0	204
Electricity, gas, & water supply	20	20	2	7,775	7,775	66	154	154	6	1,630	1,630	11	211	211	9
Electricity, gas, steam, hot water	3	3	2	743	743	66	25	25	6	1,263	1,263	11	8	8	9
Water production	17	17	0	7,032	7,032	0	129	129	0	367	367	0	203	203	0

Source: General Statistical Office (2000a).

**Appendix Table 4: Selected Indicators for Enterprises in 2000 from the 2001 Enterprise Census by Industry and Owner**

Industry	Firms (number)			Employees (number)			Sales (billion dong)			Pre-tax Profits (billion dong)			Fixed & Long-term Assets (billion dong)		
	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign
	SOEs	MNCs		SOEs	MNCs		SOEs	MNCs		SOEs	MNCs		SOEs	MNCs	
All industries	38,233	5,531	1,529	3,032,194	2,008,847	407,800	577,215	372,740	161,673	18,348	16,345	21,181	229,262	195,985	148,587
Agriculture, forestry	801	801	30	222,036	222,036	2,874	6,893	6,893	483	196	196	26	16,713	16,713	1,041
Agriculture	484	484	29	194,746	194,746	2,862	6,153	6,153	483	155	155	26	15,749	15,749	908
Forestry	317	317	1	27,290	27,290	12	740	740	0	42	42	0	964	964	134
Fisheries	48	48	12	4,307	4,307	1,028	469	469	23	6	6	-28	216	216	39
Mining	421	135	9	150,132	104,254	6,681	11,982	11,350	40,163	1,320	1,295	20,936	9,698	9,281	22,935
Coal	41	30	1	72,822	72,279	280	4,269	4,225	93	-15	-20	-71	1,722	1,703	187
Crude oil & natural gas	3	3	1	3,447	3,447	5,991	4,889	4,889	40,000	1,197	1,197	21,000	6,354	6,354	22,631
Mining of metal ores	21	13	1	6,219	4,715	74	366	331	23	15	15	8	110	93	4
Other mining & quarrying	356	89	6	67,644	23,813	336	2,458	1,906	46	124	104	-1	1,511	1,131	113
Manufacturing	9,355	1,515	1,048	1,238,574	703,782	356,396	143,085	91,144	101,933	4,306	3,751	2,074	52,308	37,496	76,462
Food & beverages	3,338	283	149	234,105	128,957	35,185	51,673	28,331	19,181	766	840	93	12,006	8,694	14,915
Tobacco	21	17	2	11,782	11,585	334	5,061	5,023	75	311	310	-27	681	671	139
Textiles	354	76	67	101,832	73,263	23,875	8,027	6,087	5,196	48	14	205	4,869	4,008	5,345
Apparel	484	105	96	187,129	105,684	45,661	7,714	5,380	3,990	149	125	122	3,665	1,997	1,909
Leather products & footwear	194	48	62	182,187	69,369	112,342	4,968	2,421	9,243	156	141	266	2,568	910	5,412
Wood & wood products	684	61	42	50,712	18,430	9,436	3,337	1,592	887	72	54	16	878	392	497
Paper & paper products	363	36	25	30,763	12,812	4,261	4,715	2,386	1,005	583	534	-119	1,670	1,006	1,100
Publishing & printing	264	167	7	22,529	20,258	393	4,001	3,769	66	306	302	-6	1,398	1,310	123
Coke & refined petroleum	9	0	3	464	0	648	270	0	888	0	0	58	30	0	550
Chemicals & chemical products	330	97	86	57,704	44,292	8,920	11,306	9,083	7,290	406	291	261	2,417	1,900	3,546
Rubber & plastics	381	38	85	35,635	16,609	15,487	6,039	2,580	3,429	118	94	-210	2,455	941	3,195
Non-metallic mineral products	1,043	213	56	117,104	76,229	10,687	13,157	10,614	5,553	790	672	-451	11,002	9,027	16,685
Basic metals	119	20	14	26,997	22,925	2,030	4,091	2,847	4,367	76	76	200	997	785	1,753
Fabricated metal products	522	88	91	39,527	23,560	11,443	4,099	1,598	3,375	66	32	-132	1,819	1,182	3,548
Machinery & equipment	206	70	32	25,248	20,496	5,331	2,118	1,594	2,197	30	20	22	834	696	1,562
Office & computing machinery	2	0	2	30	0	3,064	16	0	8,488	0	0	130	0	0	1,253
Electrical machinery & apparatus	119	28	48	18,439	14,239	19,255	3,083	2,171	4,002	149	106	121	1,080	840	2,877
Radio, television & communication	62	29	31	8,511	6,615	9,360	1,596	1,382	5,797	81	73	348	1,154	1,108	2,827
Precision machinery	29	7	14	4,342	1,760	2,435	283	99	766	21	4	49	154	73	805
Motor vehicles	148	35	21	10,248	7,259	3,125	1,059	795	4,320	21	14	327	516	461	2,757
Other transportation machinery	226	76	41	30,716	24,054	10,488	4,321	3,021	9,516	112	60	707	1,394	1,281	4,445
Furniture & miscellaneous manuf.	452	21	74	42,271	5,386	22,636	2,125	370	2,299	47	-10	93	720	215	1,220
Recycling	5	0	0	299	0	0	25	0	0	0	0	0	4	0	0

**Appendix Table A4 (continued)**

Industry	Firms (number)			Employees (number)			Sales (billion dong)			Pre-tax Profits (billion dong)			Fixed & Long-term Assets (billion dong)		
	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign	Non-MNCs		Foreign
	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	SOEs	MNCs	
Electricity, gas & water supply	106	73	7	71,275	71,016	782	16,455	16,441	1,877	1,693	1,692	-490	47,591	47,579	3,114
Electricity, gas, steam, hot water	14	4	5	57,008	56,858	711	15,125	15,114	1,774	1,589	1,588	-507	44,669	44,666	2,629
Water production	92	69	2	14,267	14,158	71	1,330	1,327	103	104	104	17	2,922	2,913	484
Construction	3,943	946	41	489,106	351,708	2,812	38,636	30,711	783	759	581	-43	13,475	10,389	440
Trade, motor vehicle repair, etc.	17,321	1,133	43	350,997	212,820	3,842	294,724	163,182	3,584	1,868	1,241	-144	14,516	9,776	2,891
Motor vehicle sales & repair	3,450	93	7	40,081	14,706	576	44,819	16,449	828	234	76	7	1,765	760	105
Wholesale trade	6,500	703	28	230,325	159,734	2,263	213,148	136,143	2,429	1,247	1,003	-95	10,691	8,071	2,065
Retail trade	7,371	337	8	80,591	38,380	1,003	36,757	10,589	327	387	163	-56	2,059	946	721
Hotels & restaurants	1,844	182	73	48,843	28,287	12,000	4,558	3,530	2,049	137	111	-1,039	4,998	3,083	14,691
Transportation, telecommunications	1,731	246	58	314,627	200,062	6,673	36,068	28,256	5,047	5,420	5,037	639	31,466	26,302	1,969
Road & pipe transportation	982	74	21	119,597	33,558	2,698	7,805	2,897	410	332	131	10	5,691	2,021	400
Water transportation	315	52	5	39,905	21,098	532	4,272	3,187	1,624	117	71	57	3,763	2,643	107
Air transportation	4	3	0	8,173	7,814	0	6,267	5,741	0	439	429	0	1,934	1,895	0
Transportation support activities	422	111	26	52,798	43,448	1,437	5,692	4,398	805	823	697	109	3,990	3,655	908
Post & telecommunications	8	6	6	94,154	94,144	2,006	12,033	12,033	2,207	3,709	3,709	463	16,089	16,089	554
Finance & credit	997	75	29	62,526	51,308	1,739	18,051	16,503	2,426	2,207	2,031	349	33,825	32,106	2,630
Financial intermediation	973	58	19	57,295	46,274	974	14,263	12,740	1,951	1,807	1,637	477	33,093	31,396	2,459
Insurance	7	6	9	4,591	4,533	757	1,327	1,318	470	138	135	-128	674	662	170
Financial support activities	17	11	1	640	501	8	2,461	2,446	4	262	260	0	59	48	0
Science & technology	7	0	0	141	0	0	10	0	0	0	0	0	2	0	0
Assets, consulting	1,228	256	144	47,753	34,165	8,086	4,161	2,564	2,450	267	257	-1,032	2,698	1,835	19,501
Real assets	123	31	80	6,158	5,031	4,807	1,035	698	1,748	163	146	-971	1,699	1,076	19,397
Leasing	39	2	2	589	252	35	43	7	16	-4	0	-5	25	7	32
Computer-related activities	70	2	19	1,177	139	604	95	30	134	-4	1	-32	21	4	-5
Other consulting	996	221	43	39,829	28,743	2,640	2,988	1,830	553	112	110	-24	954	749	78
Education & training	74	0	7	1,527	0	665	170	0	327	8	0	50	94	0	302
Medical & social relief	18	1	6	809	36	499	21	0	133	-1	0	-48	44	0	220
Culture & sports	98	55	20	8,891	6,767	3,378	590	457	314	32	17	-69	680	318	2,343
Personal & social services	241	65	2	20,650	18,299	345	1,343	1,240	82	130	128	-1	938	890	7
Rubbish clearance	85	54	0	17,959	17,086	0	687	666	0	43	42	0	861	849	0
Other services	156	11	2	2,691	1,213	345	656	574	82	87	86	-1	77	41	7

Source: General Statistical Office (2002).