# Foreign Multinationals in East Asia's Large Developing Economies

*Eric D. Ramstetter*
*ICSEAD*
*and*
*Graduate School of Economics, Kyushu University*

Working Paper Series Vol. 2012-06
March 2012



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

# Foreign Multinationals in East Asia's Large Developing Economies

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

March 2012

## Abstract

This paper first illustrates the fact that FDI stocks are generally a poor proxy for trends in real activities (e.g., sales and employment) of foreign MNCs in Asia's developing economies. Second, it demonstrates how foreign MNC shares of host economy activities, and trends in shares of those activities, differ greatly depending on the activity being examined. For example, foreign MNCs usually account for large shares of production than of employment, reflecting the tendency for foreign MNCs to have relatively high labor productivity compared to local firms or plants. Similarly, foreign MNCs often tend to pay higher wages and the limited evidence available. However, there are notable exceptions to these patterns, and often substantial differences in trends of foreign MNC shares, or equivalently in trends of foreign MNC-local differentials, depending on the indicator, host economy, time period, and/or industry examined. Perhaps the most prevalent differentials in Asia's developing economies are for foreign MNCs to export a relatively large proportion of their sales and to be relatively large compared to their local counterparts.

**Keywords:** Multinational corporations, developing economies, Asia, manufacturing
**JEL categories:** F23, N15, O53

**Acknowledgement:**
This paper is one output of the research project "Real Activities of Foreign Multinationals in East Asia's Developing Economies: Measurement, Trends, and Implications", which was funded by the International Centre for the Study of East Asian Development (ICSEAD) in fiscal 2011 (ending March 2012). I thank ICSEAD for financial support and ICSEAD staff for logistic assistance. Responsibility for all opinions expressed and any remaining errors or omissions is the author's alone.

## 1. Introduction

Over the last two and a half decades, multinational corporations (MNCs) have been increasingly prominent actors in developing economies worldwide and particularly in Asia. A large portion of the academic literature on related topics and the vast majority of journalistic reports on the importance of MNCs rely on foreign direct investment (FDI) data to illustrate MNCs' increased importance. The first task of this paper is to illustrate yet again that FDI data often paint a misleading picture of trends in the real activities of MNCs such as production and employment, focusing on examples of foreign MNCs operating in from East Asia's six largest developing economies.[1]

Second, the paper illustrates how shares of foreign MNCs in host economies differ greatly depending on the economic indicator used, even if measured accurately. For example, foreign MNCs tend to account for relatively large shares of international trade, intermediate shares of production, but relatively small shares of employment in Asia's developing economies. This in turn reflects systematic differences between foreign MNCs and local firms or plants, which remain predominantly non-MNCs. As theory predicts, there is a tendency for foreign MNCs in developing Asia to have relatively high productivity, wages, and export propensities, for example.[2] However, differences between foreign MNCs and local firms or plants are not always as consistent as theory and the literature, both academic and journalistic, might lead one to expect.

In the following section, the paper first shows trends in FDI stocks and ratios of FDI stocks to GDP, emphasizing the important point that the economic meaning of these trends differs greatly from the meaning of trends in indicators more directly related to production, such as the stock of fixed assets in foreign MNCs. Second, in section 3, the paper describes trends in

[1] These are Malaysia, Thailand, China, Indonesia, the Philippines, and Vietnam. MNCs based in these home economies, especially China, and to a lesser extent Malaysia and Thailand, have also become more prominent in recent years. However, home-economy MNCs are less prominent in the other three economies.

[2] See Caves (2007), Dunning and Lundan (2008), and Rugman and Brewer (2001, Part 1) for general literature reviews of these and related points. See Ramstetter (1999, 2011b, 2011c) for examples from Asia.

more precise measures of the shares of foreign MNCs in production and employment, and highlights how they differ from trends in FDI stock-GDP ratios when direct comparisons are possible. The section also examines trends in differentials between foreign MNCs and local counterparts in terms of size, average labor productivity, average capital productivity, wages, capital intensity, and export propensities, among other indicators, as the data allow. Throughout, the paper updates and expands the existing information on foreign multinationals in East Asia's large developing economies. In this respect, the paper can serve as a useful, more detailed and more focused supplement to publications like UNCTAD's *World Investment Report*, which generally overemphasize the importance of FDI trends and do not have the space to analyze individual cases or data sources in the detail provided here.

## 2. Interpreting Trends in FDI Flows and Stocks

Increasing ratios of inward foreign direct investment (FDI) flows or stocks to gross domestic product (GDP) flows or fixed investment (i.e., gross fixed capital formation) flows or stocks in host developing economies are the most often cited indicators of the growing importance of foreign MNCs in those economies.[3] This evidence is used because FDI flows and stocks are the most widely and consistently compiled indicator of activities by foreign MNCs, and the only indicator widely available in a timely fashion.[4] However, the interpretation of trends and patterns in FDI flows or stocks, or related indicators, is not straightforward.

Positive, inward FDI flows reflect the willingness of foreign MNCs to allocate the remitted financial resources to recipient affiliates instead of the parent or other affiliates controlled by the parent. Thus, the size of FDI flows to a given location is probably a reasonable indication

[3] The definition of an "economy" generally corresponds to nation-states, but there are exceptions. For example, China and Hong Kong are generally considered separate economies, partially because they are separate customs' territories, even though they have been part of the same nation-state for more than a decade.

[4] Nonetheless, it is important to note that definitions of FDI often differ greatly among host economies

of the profits MNCs expect to earn from that location compared to alternative FDI locations, for example. If valuation (inflation) is ignored, relatively large FDI flows in a given year also indicate relatively high profit expectations in that year compared to others. However, analyzing patterns and trends in FDI flows is probably more similar to compiling an opinion poll of MNCs' managers than to analyzing patterns or trends in production or employment of recipient affiliates, for example. Furthermore, like other investment flows, FDI flows are often volatile and it is not unusual for aggregate inward FDI flows to be negative in a year.[5]

Cumulative, inward FDI flows, or inward FDI stocks, are a better proxy for the scale of real economic activities (e.g., production or employment) by recipient MNC affiliates because they measure the extent to which all past investment decisions have allocated capital resources to recipients instead of other alternatives. However, there are two fundamental measurement problems that complicate the interpretation of patterns and trends in FDI stocks. Most importantly, on a corporate balance sheet, the inward FDI stock is only one, peculiarly defined source of finance for recipient MNC affiliates, the cumulative equity (defined in the balance sheet sense to include equity financed through reinvesting earnings) and loans received from the parent company or related affiliates abroad.[6] Because recipient MNC affiliates also receive equity and loans from other (usually predominantly local) sources, increases in the stock of FDI (positive FDI flows) can be used to finance (1) increases in the recipient affiliate's stock of fixed assets, (2) increases in other assets held by the affiliate, such as inventory, bank deposits, or other financial assets (e.g., stocks, bonds), and/or (3) decreases in the stocks of equity and/or loans obtained from non-FDI sources (e.g., other companies,

[5] Negative, inward flows result when withdrawals of previously invested FDI capital exceed investments of new FDI capital.

[6] The stock of FDI is equal to the equity and loans remitted from the parent company and related companies residing abroad to a recipient company in which the parent or related companies hold a "a lasting interest in an enterprise resident in another economy" (International Monetary Fund 1993, p. 86). Reinvested earnings (equity generated by the affiliate) and valuation adjustments are also included in principle but sometimes not measured. Statistically, the lasting interest is usually defined as investments when a single foreign parent and/or related foreign companies hold combined ownership shares in an affiliate of 10 percent or more, that is where the ultimate beneficial owner owns one-tenth of an affiliate, or more.

financial institutions). In other words, large portions of FDI are often used for purposes other than investment in production-related fixed assets, but rather for reorganizing an affiliate's assets or liabilities. Correspondingly, changes in FDI stocks are not always correlated with changes in production, employment or other activities of MNCs (Lipsey 1999; Ramstetter 1998, 2000, 2011b, 2011c).

Second, the construction of any stock data is always confronted with an important valuation problem resulting from changes in asset prices related to the stock in question. In principle, data on FDI positions (stocks) are cumulative FDI flows adjusted for changes in asset valuation (International Monetary Fund, various years a). However, because FDI is a source of finance used to purchase a variety of assets and to reduce liabilities, many of which have no market price, accurate valuation adjustments are very difficult for FDI stocks, even in the most advanced economies. Correspondingly, the six developing economies studied here only began to report FDI stock data in recent years and Vietnam still does not report FDI position data to the International Monetary Fund (various years b).[7] Because FDI is a source of finance, not an asset itself, it is also impossible methodologically to construct FDI stock data so that they correspond to capital stock estimates for the host economy as a whole.[8] In other words, ratios of FDI stocks to host economy activity cannot provide conceptually accurate measures of the shares of foreign MNCs in a host economy because there is no corresponding, host economy-wide measure to compare the FDI measure with.

Careful analysis of the existing data clarifies this important point. For example, Table 1 shows crude estimates of FDI stocks and ratios of those stocks to GDP for six East Asian developing economies studied here, South Asia's three largest developing economies, and 5

[7] As of March 2012, the investment position data begin for Thailand in 1995, Indonesia, Malaysia and the Philippines in 2001, and China in 2004.

[8] For example, data on total capital stocks in an economy (when available) usually refer to stocks of fixed assets, or cumulative fixed investment flows adjusted for depreciation and valuation changes. However, as emphasized above, the purchase of fixed assets is only one use of FDI capital (in addition to the purchase of a wide range of non-fixed assets or to the reduced reliance on non-FDI sources of equity and loans).

large advanced economies in East Asia for 1990-2011. Because many of these economies did not report stock data for many of these years (see above), FDI stocks are estimated simply as cumulative flows of FDI from 1970 forward.[9] Because prices have tended to increase over time, and FDI-related asset inflation has often been much higher than producer or wholesale price inflation, for example, these calculations generally overvalue newer FDI flows relative to older ones. Thus, although much of the literature (United Nations Conference on Trade and Development, various years) emphasizes how the U.S. dollar value of FDI flows and stocks have increased exceedingly rapidly in many recent years for many economies worldwide, a large part of the increases results from inflation, not increases in real FDI. Unfortunately, existing price indices do not allow for accurate deflation of FDI stock series relative to other flow or stock series.[10]

Between 1990 and 2011, the largest increases of FDI stocks in developing Asia were in India (1,211 fold), Bangladesh (424 fold), and Vietnam (266 fold), where initial FDI stocks were very low (US$0.2 billion or less in 1990; Table 1). Low initial stocks resulted in large part from severe policy restrictions on the activities of foreign MNCs before 1990, while rapid growth thereafter reflects the results of removing or loosening many of these restrictions. FDI stocks also increased very rapidly in China (88 fold), again reflecting the influence of reduced restrictions on foreign MNCs after 1990, but China began to loosen restrictions in the early 1980s and had already had the largest stock of FDI in developing Asia in 1990 (US$19 billion). And only Hong Kong and Singapore had larger inward stocks among Asia's advanced economies. On the other hand, growth was slowest in Malaysia (7.6 fold), which had the second largest initial stock among Asian developing economies (US$15 billion), and in the Philippines, which had among the lowest initial stocks (US$3.5 billion). Thailand and

[9] See Appendix Table 1 for the FDI flow data underlying FDI stock estimates and Appendix Table 2 for GDP estimates used to calculate ratios of FDI stocks to GDP.

[10] Series on real FDI flows or stocks are typically constructed using flow deflators (e.g., for GDP or fixed investment), but these deflators do not account for relevant, often large changes in asset prices and therefore badly distort the real series.

Indonesia had intermediate growth rates (14 fold each) and initial stocks (US$8.3 and 6.3 billion, respectively).

Despite three major slowdowns surrounding 1998, 2001, and 2009, Asia's developing economies generally grew relatively rapidly during this period. Correspondingly, foreign MNCs often increased inward FDI stocks rapidly in order to facilitate increased access to these rapidly growing markets. Large markets also created a strong motive for MNCs to invest in China, India, and Indonesia, while relatively high incomes made Malaysia, Thailand, and more recently China and Indonesia, attractive.[11] Because GDP growth was relatively rapid in these economies, increases in ratios of FDI stocks to GDP were generally much slower than increases in FDI stocks themselves. Nonetheless, FDI stocks generally grew more rapidly than these host economies and this is reflected in increases of ratios of FDI stocks to GDP for all Asian developing economies in 1990-2011 (Table 1). The largest increases were again observed in three economies with relatively low initial ratios, India (0.1 to 12 percent), Bangladesh (0.1 to 6 percent), and Vietnam (3.8 to 53 percent). Increases were also large in China (4.8 to 24 percent) and Thailand (10 to 35 percent), but smaller in Indonesia (5.0 to 10 percent), the Philippines (7.1 to 16 percent), and Malaysia (35 to 47 percent).

There were also large fluctuations in ratios of FDI stocks to GDP in some years, especially those surrounding the Asian financial crisis, which broke in mid-1997 and severely affected Indonesia, Thailand, Malaysia, and the Philippines in subsequent years. On the other hand, the crisis had less severe consequences for China and Vietnam. Indonesia was the most severely

[11] There is considerable evidence that allocation of FDI flows and real activities of MNCs (e.g., sales) among host economies is positively correlated with economic size, economic growth, and per capita incomes (Ramstetter 2011a, 199-202). Measured in U.S. dollars, China's GDP was 13 percent of Japan's in 1990 (by far Asia's largest economy in that year), and grew to 119 percent of Japan's level in 2011 (Appendix Table 2). Corresponding ratios were 11 and 31 percent, respectively, for India and 4 and 14 percent, respectively for Indonesia. Again measured in U.S. dollars, Malaysia's per capita GDP was 10 percent of Japan's level in 1990 and 19 percent of it in 2011, while similar ratios were 6 and 12 percent, respectively, for Thailand, 1 and 11 percent respectively, for China, and 3 and 8 percent, respectively for Indonesia. None of the Asia's other large developing economies had a GDP level exceeding 6 percent of Japan's or per capita GDP exceeding 5 percent of Japan's. These U.S. dollar estimates overestimate differences in purchasing power between incomes in rich and poor economies, largely because nontradable goods and services are much cheaper in poorer economies.

affected and a 71 percent decline in the value of the rupiah, combined with a sharp economic contraction, led to 56 percent decline in the U.S. dollar value of its GDP in 1998 (Appendix Table 2, International Monetary Fund 2012). As a result, the ratio of FDI stocks to GDP rose from 12 percent in 1997 to 27 percent in 1998, before falling back to 17 percent in 1999, and 12-13 percent in 2000-2001 (Table 1). Relatively large depreciations and negative growth also contributed to substantial declines in the U.S. dollar value of GDP and increases in FDI stock-GDP ratios in Malaysia, Thailand, and the Philippines.[12] In Thailand and the Philippines (and in Korea, another economic at the center of the crisis), there were also substantial increases in inward FDI stocks following the crisis, which contrasted to falling FDI stocks in Indonesia and relatively small increases in Malaysia. The increases in Korea and Thailand are conspicuous here because a large portion of the increase in FDI in these economies was used to fund buy outs of financially stressed local partners in joint ventures. Substantially reduced restrictions on foreign ownership, which were among the strictest in Asia in these two economies prior to the crisis, also contributed to the increase in takeovers.

In light of this discussion, it is worthwhile to reconsider questions such as the following:

Did the large short-term increases in FDI stocks and ratios of FDI stocks to GDP after the Asian crisis result in increased shares of foreign MNCs in Korean or Thai employment?

Did the large long-term increase in FDI stock-GDP ratios in China and Vietnam in 1990-2011 mean that the importance of foreign MNCs actually increased 5 and 15 fold, respectively, in these economies?

The answer to these questions is of course a resounding “no” in both cases. Large fluctuations in exchange rates and other prices clearly distorted FDI stock-GDP ratios. Moreover, over the longer term it appears that the inability to properly deflate the FDI stock (adjust it for changes in FDI-related asset prices) means that ratios calculated in current prices (such as those in Table 1) will often overstate the real growth rate of FDI relative to GDP, for example. Financial crises and economic downturns, or conversely economic booms, also create

[12] Between 1997 and 1998, annual average exchange rates depreciated 28 percent in Malaysia and the Philippines, and 24 percent in Thailand (International Monetary Fund (2012).

relatively large motives for reorganizing corporate assets and liabilities and can influence the extent to which FDI is used to finance activities other than fixed investment. Correspondingly, it is important to measure shares of foreign MNCs more accurately if one wants a realistic estimate of how important foreign MNCs are, and how their importance changes.

## 3. Measuring the Size and Characteristics of Foreign Multinationals

Given that trends and patterns in ratios of FDI flows or stocks to GDP or other measures of host economic activity are not capable of accurately measuring trends in the scale of foreign MNC activity, how might one measure foreign MNC shares more accurately? The simplest approach is to measure a specific economic activity that is relatively easy to estimate (e.g., sales or employment) in the same way for both foreign MNCs and local firms, and then calculate foreign MNC shares of the total. Unfortunately, such data are not common and usually only cover manufacturing. Thus, direct comparisons with total FDI stock-GDP ratios are only possible for exports and urban employment in China, sales of large firms in the Philippines, and sales or employment of Vietnam's non-household enterprises. In manufacturing, Malaysia, Thailand, and Indonesia compile censuses or surveys in which plants are also asked to report foreign ownership information among many other indicators. China's surveys of large industrial firms and Vietnam's censuses of non-household firms are similar. For Thailand and the Philippines, private compilations of data on large firms are also useful in this context, though the Thai data acquired to date only cover manufacturing.

This section uses these sources to (1) analyze trends in foreign MNC shares of production and employment in all industries, manufacturing, and trade, for each host economy studied in single time series and (2) compare of trends in indicators of size, productivity, wages, and profits, among others, for foreign MNCs and corresponding differentials between foreign MNCs and local plants and firms, which are predominantly non-MNCs. The analyses are

descriptive and focused on interpreting the meaning of the data and the observed, aggregate trends and patterns. However, even these simple, descriptive analyses must confront five important data problems.

First, most of these data do not cover all firms or plants in their respective economies. Size cutoffs are common and smaller firms or plants are often excluded. Because most foreign MNCs are large, the excluded firms or plants are predominantly local. Thus shares of foreign MNCs in sample totals often exceed foreign MNC shares of corresponding economy-wide estimates for the same indicator (e.g., value added, employment).

Second, most of the host country data only cover manufacturing or industry (manufacturing plus mining and utilities), ignoring important services industries, among others. Moreover, many of the host economy data are only available for recent years, making it difficult to ascertain medium- to long-run trends. Fortunately, home country surveys of Japanese and U.S. MNCs abroad provide supplemental information on sales and employment by these large investors for all industries, manufacturing, and trade for most of these host economies since 1988. However, these home country sources sometimes suppress information for country-industry-year combinations when samples are small and the coverage of the Japanese data varies somewhat over time.[13]

Third, many of the indicators collected in the data on foreign MNCs are not estimated for host developing economies as a whole. For example, data on foreign MNCs often measure production as sales, including intermediate consumption, but exclude data on intermediate consumption which are necessary to estimate value added, or equivalently, GDP. On the other hand, all host economies publish economy-wide estimates of GDP, excluding intermediate consumption, but most do not publish similar data on output, sales or intermediate consumption. Correspondingly, it is often necessary to infer trends in foreign MNC shares of

[13] This paper uses official estimates because they are the only available for recent years. Alternative estimates attempt to adjust for coverage variation in the Japanese MNC surveys (Ramstetter 2011b, Tables, 9, 11).

production from ratios of foreign MNC sales or output to host economy GDP. Because intermediate consumption is large, these ratios do not measure the size of foreign MNC shares in production and can easily exceed 100 percent. However, ratios of intermediate consumption to sales or output do not typically fluctuate in a wide range for the aggregates examined in this paper. Thus, trends in sales-GDP ratios are often highly correlated with trends in precise measures of foreign MNC shares in value added or in sales or output. On the other hand, estimates of employment are usually defined as the number of workers for both foreign MNCs and host economies as a whole, facilitating more precise calculations.

Fourth, the ownership thresholds used to define foreign MNCs differ among data sources. In principle, this paper tries to use the standard definition of MNCs, firms or plants with foreign ownership shares of 10 percent or more, and this is the most common definition in the data used below. However, there are important exceptions. Malaysia's manufacturing data only distinguish majority-foreign MNCs and the precise ownership cutoffs are not clear in the host economy data for China, the Philippines, and Vietnam. Precise details are provided in the host economy subsections below.

Fifth, there are important differences between firm and plant-level data that complicate interpretations of industry-level compilations (e.g., for manufacturing or trade). These complications result from the existence of multi-product firms or plants. For example, firms or plants whose main activity is manufacturing often have extensive trade or services activities, and vice versa. Because plants tend to be more specialized than firms, these problems affect compilations of firm-level data more than compilations of plant-level data, but plants can also have substantial activities in several industries.

**3a. Malaysia**

The Malaysian data in Tables 2-3 and all but one of the indicators calculated from the

Malaysian data in Table 4 are calculated from published compilations of censuses (1993, 2000, 2005) and surveys (all other years except 1998) of manufacturing plants.[14] These data differ from data for other economies examined here because they only allow distinction of majority-foreign MNCs (foreign shares of 50 percent or more) and exclude minority-foreign plants. Underlying samples were also much larger in the census years, but samples for all years included all large plants and most foreign MNCs. Since 1995, the published compilations estimates use stratified sample information to smooth out the various series, including the number of plants in survey years.[15]

According to these data, foreign MNCs accounted for 40-45 percent of the value added produced by sample manufacturing plants in 1990-1997 and in 2000-2004, but only 35-37 percent in 2005-2009 (Table 2). Foreign MNC shares were also unusually large in 1999 (51 percent), because value added in foreign MNCs declined much less rapidly than value added of all plants in 1997-1999 (7 versus 18 percent).[16] Calculated as a ratio to national accounts' estimates of manufacturing GDP (bottom half of Table 2), foreign MNC shares fluctuated in the 40-45 percent range in 1991-1997 and 2000-2004, peaked at 48 percent in 1999, but were smaller in 1990 (36 percent) and 2005-2009 (28-30 percent). These data thus suggest that foreign MNC shares of manufacturing production generally fluctuated in a rather narrow range during 1991-2004 (the spike in 1999 being the exception), but declined somewhat thereafter. On the other hand, ratios of sales by Japanese and U.S. MNCs to manufacturing GDP fluctuated in a relatively wide range in 1991-2004 (54-92 percent and 32-82 percent, respectively) compared to corresponding ratios of output by all foreign MNC output to manufacturing GDP (171-211 percent). Ratios for both Japanese U.S. MNCs fell in recent

[14] Unpublished compilations from the plant-level data for 2000-2004 are used to estimate export-output ratios (Ramstetter and Haji Ahmad 2009). However, coverage of the export data is poorer for 2004 than for other years in the sample.

[15] Published compilations (Malaysia, Department of Statistics, various years) report there were under 9,000 plants in 1990-1992 and 1994, but over 19,000 plants in all other years.

[16] Data for 1998 were never compiled.

years. Outside of manufacturing, MNC data are only available for Japanese and U.S. MNCs and suggest that both of these groups had substantially larger sales-Malaysian GDP ratios in manufacturing than in trade or in all industries combined.[17] Ratios of Japanese trade MNC sales to Malaysian trade GDP were relatively large compared to U.S. ratios before 2003, but they fluctuated in a wide range and were apparently smaller than U.S. shares in 2009.

Trends in employment shares of foreign MNCs contrasted to trends value added shares or ratios of MNC sales to GDP in two important respects. First, shares of all foreign MNCs in total manufacturing employment tended to increase slightly between 1990-2004 (25-30 percent) and 2005-2009 (28-33 percent) rather than decrease. Second, these shares varied in a narrower range than corresponding shares of manufacturing GDP. Shares of Japanese and U.S. MNCs in manufacturing employment also varied in relatively narrow ranges (6.4-11 percent and 3.6-7.1 percent, respectively).

Foreign MNC shares of employment tended to be relatively small compared to corresponding shares of production (value added or output) for sample plants in the Malaysian manufacturing data. Correspondingly, the average product of labor measured either as output per worker or value added per worker was usually higher in foreign MNCs than in local plants (Table 4). Differentials between foreign MNCs and local plants were larger and more consistent for output per worker than for value added per worker. Moreover, differentials in value added per worker were relatively small (8 percent or less) in several years (1990-1994, 2006, 2009). In short, differences in average labor productivity were not very consistent if measured as value added per worker, but more consistent in terms of output per worker. MNC-local differentials in wages were also relatively small in 1990-1994 (7 percent or less), but were larger in subsequent years (11-17 percent in 1995-1997 and 18-30 percent in 1999-2009). Capital intensity differentials fluctuated in a wide range (-20 to +11

[17] In other words, manufacturing accounted for the majority of sales by these ownership groups, 68-85 percent of sales by Japanese MNCs and 48-78 percent for U.S. MNCs.

percent) and were quite inconsistent, but MNC-local differentials in the average product of capital (value added-fixed asset ratio) were always positive and sometimes quite large (10-77 percent). The largest MNC-local differentials were in export propensities (ratios of exports to output) in 2000-2004 (59-157 percent) and plant size, measured either in terms of workers or output per plant (292-939 percent and 352-1445 percent, respectively).

In other words, foreign MNCs were clearly much larger and more dependent on exports than their local counterparts. These data also suggest that foreign MNCs paid consistently higher wages after 1999. However, wage differentials in earlier years and differentials in value added per worker, value added-fixed asset ratios, and capital intensity were less consistent. These patterns are consistent with observations for earlier years (Ramstetter 1999) and detailed manufacturing industries (Oguchi et al. 2002; Ramstetter and Haji Ahmad 2009) as well as more rigorous studies showing productivity differentials to be relatively small and inconsistent after accounting for plant scale and factor intensities (Haji Ahmad 2010, ch. 6) and wage differentials to persist in several manufacturing industries even after accounting for worker quality and other related plant characteristics (Ramstetter 2012).

### 3b. Thailand

In Thailand, the only comprehensive data on foreign MNCs come from compilations of unpublished, plant-level data underlying censuses of manufacturing plants for 1996 and 2006.[18] Unfortunately, these data sets contain a large number of duplicate observations, complicating their interpretation (see more below). Information on large manufacturing firms have also been compiled from Ministry of Commerce records by private sources for 1990-1991, 1994-2000, and 2006-2009 and are used as relevant below. All of compilations from these sources define MNCs as plants for firms with foreign ownership shares of 10

[18] Thailand also conducts smaller surveys periodically between censuses (e.g., 1998, 1999, 2000, 2002), but the published compilations do not contain compilations for MNCs or other ownership groups and the underlying plant-level samples are far too small to be comparable with the census samples.

percent or more.

If the duplication problem is ignored, compilations from the manufacturing census suggest that value added of foreign manufacturing MNCs fell 14 percent in 1996-2006 if measured in U.S. dollars, and that output increased only 6.4 percent (Table 5). Correspondingly, these data indicate that the share of foreign MNCs in manufacturing GDP fell sharply, from 50 to 33 percent. The trend is similar if small plants (19 or fewer workers) and duplicate records are eliminated from the database (45 to 28 percent, author's calculations). Ratios of output of in foreign MNCs to manufacturing GDP also fell from 195 percent to 141 percent. However, these trends contrast sharply to those observed in data on large firms, and in home data on Japanese and U.S. MNCs. All of these other sources indicate substantial increases in sales of foreign MNCs and corresponding ratios to GDP. Differences in definitions of sales and output are usually minor, and ratios of output in manufacturing plants to sales by all large MNCs, U.S. MNCs, or Japanese MNCs were all much larger in 1996 than 2006. It thus seems very likely that the 2006 census substantially underestimate the scope of foreign MNC production compared to 1996 census.

The large firm data and the U.S. and Japanese data are also consistent with the general perception that foreign MNCs have grown substantially in many Thai manufacturing industries after the 1997 crisis, with majority-foreign MNCs growing particularly rapidly after many foreign ownership restrictions were relaxed in 1998 (Kohpaiboon and Ramstetter 2008). Japanese MNCs have expanded particularly rapidly in recent years with ratios of their sales to manufacturing GDP increasing from under 41 percent or less in 1990-1992 to 59-88 percent in 1993-2003, and 115-134 percent in 2004-2010 (Table 5). Although smaller, ratios of sales by U.S. MNCs to GDP also increased markedly (from 14-19 percent in 1990-1996 to 38-45 percent in 2004-2009). One reason Japanese ratios are so high is that manufacturing affiliates often engage in substantial trading activity. Moreover, Japanese trading firms have always

been very active in Thailand, though ratios of sales by Japanese trade MNCs to Thailand's trade GDP fluctuated widely (between 28 and 97 percent). Sales of U.S. traders have also increased in recent years but remain much smaller in than their Japanese counterparts.

Data on manufacturing plants also suggest declines in employment by foreign MNCs between 1996 and 2006, both absolutely and relative to Thai manufacturing employment (Table 6). However, the decline in the foreign MNC share of manufacturing employment was less pronounced than corresponding declines in value added shares, 22 to 17 percent. Consistent with the sales data, employment in Japan's manufacturing MNCs grew rapidly for most of this period, increasing from under 5 percent of the Thai manufacturing total through 1995 to 9-10 percent in 2005-2010. U.S. MNC shares of manufacturing and trade employment, and Japanese shares of trade employment also increased some, but were much smaller.

As indicated above, the Thai manufacturing census data include a large number of small plants with 19 or fewer employees and a substantial number of duplicates. Table 7a thus presents comparisons of foreign MNCs and local plants using two samples, the overall samples which include small plants and double counting and more comparable samples of medium-large plants with 20 or more workers and duplicates removed.[19] However, both sets of calculations indicate similar patterns. MNCs were relatively large and had relatively high average labor productivity (either output or value added per worker), compensation per worker, capital intensity, and export propensities (2006 only). On the other hand, capital productivity was slightly lower in MNCs. The largest MNC-local differentials were again in terms of plant size, though not surprisingly the size differentials were markedly smaller in the

[19] The original data include 32,489 plants in 1996 and 73,931 plants in 2006, most of which were small, predominantly local plants (18,454 and 50,997, respectively). After duplicates were removed, the remaining samples consisted of 11,113 and 17,775 plants, respectively. Although the number of plants in these samples was small, they accounted for most of the employment (76 and 74 percent respectively), output (82 and 83 percent, respectively), and value added (85 and 81 percent, respectively) in the larger samples. Most of the omitted plants were local, not MNCs.

smaller samples of medium-large plants. There is also substantial evidence that the aggregate MNC-local differentials in productivity and wages are less pronounced when manufacturing industries are disaggregated and after other related influences are accounted for (Movshuk and Matsuoka-Movshuk 2006; Ramstetter 2006). On the other hand, evidence suggests that difference in export propensities is more robust (Ramstetter and Umemoto 2006).

Some interesting comparisons of large foreign MNCs and large local firms are also possible and probably more meaningful than comparisons in samples of small firms. These data suggest that size differentials were relatively large in 1994-1996, but became smaller or negative by 2006-2009. They also indicate that MNCs had higher sales-fixed asset ratios but smaller sales-total asset ratios. On the other hand, ratios of equity to total assets were larger in MNCs with MNC-local differentials being particularly large in 1994-1996 before the crisis. And here again, a much larger proportion of MNCs exported compared to local firms in 2006-2009.

**3c. China**

Largely because China's communist leaders have derived much of their political legitimacy from efforts to equalize distribution, the Chinese government and statisticians have paid more attention to collecting ownership-related data than in most capitalist developing economies. For example, China is one of the few countries to tag exports by owner of the shipper. Published compilations of these data show that the share of foreign MNCs in China's total exports rose rapidly from 20 to 55 percent in 1992-2003 before stabilizing in the 55-58 percent range in 2003-2010 (Table 8). This contrasts with corresponding trends in FDI stock-GDP ratios, which increased over 4.2-fold in 1992-2003 and then declined 18 percent in 2003-2010 (Table 1). The increase in the foreign MNC share of exports corresponded with a marked rise in the share of manufactures (narrowly defined to exclude many processed food

and mineral products) in total exports from 74 to 92 percent in 1992-2003 to 93-95 percent thereafter (China, National Bureau of Statistics, various years).

In past years, China used communist accounting practices which resulted in the adoption of some peculiar statistical definitions and compilation methodologies for much of the period under study. Many series have also undergone some large revisions in recent years as China's economic transition has led it to use more standard definitions and methodologies. Perhaps the biggest change came in 2005, when the national accounts were revised to measure value added in services more accurately. This resulted in large upward revisions estimates of GDP and the shares of services in GDP, and to the adoption of a more standard industrial classification.[20] Another peculiarity of the old industrial classification was its focus on industry (mining, manufacturing, and utilities combined) and the secondary sector (industry plus construction), as well as its lack of GDP data for the important manufacturing industry (until 2004). Published compilations of value added from China's surveys of industrial firms with independent accounting units (large firms since 1998) only overlap with the manufacturing GDP data for three years, suggesting that these large firms accounted for the vast majority of manufacturing GDP and that about one-third of this was produced by foreign MNCs (Table 8). Similar to trends in shares of total exports, foreign MNC shares of value added produced by manufacturing firms rose markedly between 1995 and 2003 (from 10 to 32 percent) and leveled out thereafter (at 32-33 percent).

Foreign MNC shares of output in these firms were larger but followed a similar trend (rising from 21 to 34 percent and then leveling out at 35 percent), before declining some (to 30-31 percent 2009-2010, Table 8). Manufacturing firms accounted for the vast majority of output by China's industrial firms and sales by Japanese and U.S. MNCs, which also grew rapidly but never accounted for a combined share of more than 17-18 percent of the output in

[20] For example, for 2004, the total GDP estimate (current yuan) is 17 percent higher in the new series and the estimate of tertiary GDP is 48 percent higher; i.e., the share of the tertiary sector rises from 32 percent in the old series to 41 percent in the new one (China, National Bureau of Statistics, various years [2005 and 2011 issues]).

all foreign manufacturing MNCs in China (in 1999-2003). Through 2003, sales of Japanese and U.S. manufacturers were of similar magnitude, but Japanese firms became larger thereafter. Japanese sales have also grown very rapidly in trade in recent years, though corresponding data for U.S. MNCs are suppressed and cannot be compared.

Revisions in Chinese accounting practices also make it difficult to calculate foreign MNC shares of manufacturing employment because economy-wide estimates of employment by industry are only available for urban units in recent years. Because most MNCs are probably urban units and China's labor statistics compile estimates of employment by urban units belonging to foreign MNCs, ratios to urban employment are arguably more meaningful than ratios to total employment and presented in Table 9. Similar to the trends in foreign MNC shares of exports and in contrast to trends in FDI stock-GDP ratios, foreign MNC shares in urban employment also increased rapidly from 0.4 percent in 1990 to 5.1 percent in 2007, before stabilizing in the 5.1-5.3 percent range in 2007-2010. Japanese MNC shares followed a similar trend rising to 0.5 percent in 2007 before leveling out. On the other hand, after an initial increase, U.S. shares stagnated in the 0.13-0.14 percent range 1999-2003 before resuming an upward trend to 0.4 percent in 2009. U.S. and Japanese shares were several times larger in manufacturing and trade than in all industries, reflecting the concentration of Japanese and U.S. firms in those industries.

Somewhat peculiarly, employment in large firms greatly exceeded urban employment in manufacturing and industry (by more than 2-fold in 2008-2010, Table 9). This implies that more than half of the employment in large industrial firms (primarily manufacturers) was in rural areas, which seems unlikely. Although the reasons for this apparent anomaly is not clear, discrepancies between firm-level and unit-level (i.e., plant-level) accounting are likely to be important because large, multi-unit firms report firm-level information including many units in rural areas and units involved in trade or other services, for example. Thus, for these firms,

it is probably best to focus on foreign MNC shares of employment in sample firms, which were often similar to shares in value added and output at about one-third.

Correspondingly, when foreign MNC-local differentials in average labor productivity are calculated, they were small or negative in many years (2005-2007 for value added per worker and 2007-2010 for output per worker, Table 10). Differentials were also small or negative for output-fixed asset ratios in manufacturing in 2006-2010, but somewhat larger in previous years, and larger yet if calculated for all industrial firms including those in mining and utilities. Thus, differentials in average productivity have apparently declined for these aggregates in recent years. On the other hand, size differentials remained relatively large over this period, though they were reduced after 1998 when small, predominantly local firms were excluded from the samples.

**3d. Indonesia**

Like Malaysia, Indonesia has a long series of censuses (1986, 1996, 2006) and surveys (all other years from 1975 forward) of manufacturing plants with ownership information and many other indicators. These data cover only medium-large plants with 20 or more employees and published compilations do not contain estimates for MNCs, which must be calculated from the underlying micro data. The data also contain the precise foreign ownership share, so it is possible to define MNCs using the standard 10 percent cutoff.

Calculations from these data indicate that foreign MNCs accounted for relatively small shares of Indonesia's manufacturing GDP as late as the early 1990s (12-13 percent in 1990-1991, Table 11). The foreign MNC share increased markedly during the rapid growth of the mid-1990s, reaching 21 percent in 1996. It then fell sharply to 18 percent in 1997, but the share of all medium-large plants fell even more sharply from a peak of 67-68 percent in 1992-1996 to only 50 percent in 1997. In other words, the decline of the foreign MNC share

in 1997 seems largely the result of sharply reduced survey coverage in this year. Correspondingly, foreign MNC shares rebounded to 23 percent in 1998-2000. This interpretation is consistent with the subsequent recovery in the shares of all medium-large plants and with trends in ratios of sales to manufacturing GDP for Japanese MNCs, which declined slightly in 1997, and U.S. MNCs, which increased in this year. Since 2001, all medium-large plants have accounted for somewhat lower shares of manufacturing value added, 52-59 percent. Foreign MNC shares fluctuated in the 19-22 percent range in 2001-2007, but then reached historical highs of 24 percent in 2008 and 26 percent in 2009.

Japanese MNCs have always been very important in Indonesian manufacturing, their sales amounting to between 37 and 75 percent of the output by all medium-large foreign MNCs (Table 11). Ratios of sales by Japanese MNCs to manufacturing GDP also increased rapidly in the early and mid-1990s to as high as 25 percent in 1995. Since 1998 these ratios have fluctuated in the 25-36 percent range. Corresponding ratios for U.S. MNCs were much smaller but had a stronger upward trend (from 2.2-4.5 percent in 1990-1998 to 5.1-6.1 percent in 1999-2003 and 6.8-7.5 percent in 2005-2007). Corresponding ratios were usually smaller in trade but tended to increase in recent years. Manufacturing and trade again accounted for the vast majority of sales by Japanese MNCs but other industries (probably petroleum) accounted for the majority of sales by U.S. MNCs.

Foreign MNC shares of employment were generally smaller and had more stable, upward trends than shares of GDP. For example, the share of all medium-large, foreign MNC plants in manufacturing rose from 3.5-4.4 percent in 1990-1991 to 5.6-7.1 percent in 1992-1997, 7.5-8.7 percent in 1998-2005, and 9.7-10.2 percent in 2006-2009 (Table 12). Japanese MNC shares rose during the 1990s but fluctuated in the 2.1-2.5 percent range in 2000-2010, and U.S. shares jumped to relatively high levels (0.45-0.63 percent) in 2005-2009. Japanese and U.S. shares were much lower in trade (under 0.1 percent) and all industries (under 0.4 percent).

Comparisons of foreign MNCs and local, medium-large plants in Table 13 reflect the patterns observed above. Output per worker was between 51 and 155 percent higher in foreign MNCs and value added per worker was 70 to 149 percent higher. In other words, average labor productivity differentials were consistently large. However, estimates of productivity differentials for the 1990s often become insignificant statistically at the industry level, after accounting for the influences of factor intensities and scale (Takii 2006). In contrast, aggregate wage differentials were somewhat smaller than labor productivity differentials, but they usually remained significant at the industry level and after accounting for worker quality and other plant-level characteristics thought to affect wages in 1996 (Lipsey and Sjöholm 2004). Export-propensity differentials were also significant in many manufacturing industries in the 1990s (Ramstetter and Takii 2006).

**3e. The Philippines**

In the Philippines, the National Statistics Office conducts the *Annual Survey of Philippine Business and Industry* (previously the *Annual Survey of Establishments*), which contains ownership information and could potentially be used to perform analyzes of MNC activities similar to those of other countries reviewed above. However, Hill (2003, p. 236) provides the only known, limited compilations of these data, showing that MNCs accounted for 56 percent of the manufacturing output of surveyed firms in 1995.[21] Although I have not been able to access the official, plant-level data, Business World (various years) publishes data on the Top 1000 firms in the Philippines for many years now and Table 14 summarizes data on MNC sales from that source, as well as corresponding home data on Japanese and U.S. MNCs.

These data show foreign MNCs accounted for substantial shares of large manufacturing

[21] Using a separate, more limited survey of firms in food, clothing, and electronics in 2002 which was carried out by the Asian Development Bank, Dueñas-Caparas (2006) examines the determinants of exports, finding that MNC affiliates had higher export propensities than local firms in all industries and specifications examined. Lall (2000, p. 10) also provides a list of the top 50 exporters in the Philippines, showing that most of them were MNCs, many of which were in electronics.

firm sales. Moreover, the 52 percent share observed in 1995 (Table 14) is comparable with Hill's aforementioned estimate of the foreign MNC share in manufacturing output. There was also a strong upward trend in MNC shares of large firm sales from 52-59 percent in 1995-1999 to 73-79 percent in 2002-2007, followed by a decline to 59-66 percent in 2008-2010. Ratios of sales by large MNCs and Japanese to manufacturing GDP also rose then declined in a similar manner, while ratios of U.S. MNCs to manufacturing GDP fluctuated in a smaller range. Sales by manufacturing MNCs accounted for the majority of sales by all large MNCs, Japanese MNCs and U.S. MNCs.

Correspondingly, of MNC sales to GDP were much smaller in the trade sector and in all industries than in manufacturing (Table 14). Reflecting the large share of manufacturing in MNC sales, ratios of sales by large foreign MNCs to GDP in all industries followed a trend similar to that in manufacturing, increasing 1.7-fold in 1995-2005, before falling back to close to 1995 levels in 2010. The upward trend was similar to but less rapid than increases in FDI stock-GDP ratios in 1995-2005 (2.1-fold) but the subsequent decline was much more pronounced than the substantially smaller decrease in FDI stock-GDP ratios (22 percent in 2005-2010; Table 1).

Unfortunately, the large firm data do not include estimates of employment so it is only possible to calculate shares of employment for Japanese and U.S. MNCs. In manufacturing, Japanese MNC shares rose from 1.3-2.4 percent in 1990-1995 to 3.3-4.8 percent in 1996-2000 and 5.4-5.9 percent in 2002-2004, before declining to 4.4-5.0 percent in 2005-2010 (Table 15). Corresponding U.S. shares fell from 2.7-3.8 percent in 1990-1997 to 1.9-2.3 percent in 1998-2009. Shares of trade employment and total employment were always much lower, no more than 0.1 percent or 0.6 percent, respectively.[22]

[22] Although the Philippine large firm data contain a number indicators which would be interesting to examine (similar to the Thai data in Table 7b), it would take considerable time to process the data to allow such comparisons. Unfortunately, this author has not been able to find the resources to facilitate such processing yet.

**3f. Vietnam**

Among the economies studied here, Vietnam was the last to receive substantial inflows of FDI. Vietnamese policy prohibited FDI until the late 1980s and there has been a rather strong upward trend in MNC shares of the economy since reforms began in the late 1980s (Table 1). Increases accelerated after the mid-1990s when Vietnam successfully controlled the high inflation that followed the *doi moi* (reform) of the late 1980s and early 1990s. According to the economic census for 1994, sales of all foreign MNCs amounted to 9 percent of the sales of all firms and 12 percent of total GDP in all industries (Table 16). In 1994-2000, ratios of foreign MNC sales to total firm sales and increased from 2.3-fold to 20 percent in the latter year, while ratios of MNC sales to GDP increased even more rapidly, 3.2-fold to 37 percent. Although rapid, both of these increases were much smaller than the corresponding 6.1-fold increase in the FDI-GDP ratio during this period (Table 1). After the implementation of the Enterprise Law in 2000, the foreign MNC share of all firm sales grew more slowly to a peak of 25 percent in 2006 and then declined to 17 percent in 2009 as sales of local, private firms increased particularly rapidly.[23] Ratios of foreign MNC sales to GDP continued to increase throughout 2000-2009. However, increases in ratios of sales by MNCs and all firms to GDP primarily reflect the relatively rapid growth of the formal, enterprise sector compared to the household sector, which is excluded from the firm census data but included in the GDP data. In marked contrast, FDI-GDP ratios continued to increase rapidly in 2000-2009 (3.5-fold), though they appear to have declined slightly thereafter.

In 1994, foreign MNC shares were high in mining, largely because foreign oil firms accounted for most of the oil production in the country and almost half of all MNC sales (Table 16). Manufacturing MNCs grew much more rapidly thereafter and accounted for almost two-thirds of all foreign MNC sales in 2000 and over three-fourths in 2009. The share

[23] In many industries, the Enterprise Law ended or greatly weakened official discrimination in favor of state-owned enterprises and MNCs, creating the foundation for rapid growth in local, private firms.

of foreign MNCs in all manufacturing firm sales also increased rapidly in 1994-2000, from 11 to 41 percent. However, it stabilized thereafter, peaking at 47 percent in 2006 and then falling back to 42 percent in 2009. Here again ratios of foreign MNC sales to manufacturing GDP increased rather steadily in 2000-2009 because manufacturing enterprises grew faster than the household manufacturing sector. Ratios of all firm sales to GDP were also much higher in manufacturing and trade than in all industries, reflecting the fact that enterprises played a relatively large role in these sectors, especially compared to the important agricultural sector which remains dominated by households. Sales of Japan's MNCs also grew rapidly both in absolute value and relative to GDP in manufacturing, especially in recent years. Unfortunately, data on Japanese sales in trade and U.S. sales in all industries are suppressed for many years and U.S. data are not published by industry.

The employment data also suggest that ratios of employment in Vietnam's firms and foreign MNCs relative to total employment increased rapidly during this period (Table 17). However, the employment data contrast with the sales data in suggesting that employment growth in foreign MNCs kept pace with that in local firms in recent years. The foreign MNC share of employment in all firms grew from 5 percent in 1995 to 12 percent in 2000 and 23 percent in 2006, and remained at 21-23 percent thereafter. The increase was even more pronounced in manufacturing from 7 to 24 and 41 percent, respectively, before stabilizing at 41-43 percent. Employment also grew rapidly in Japanese MNCs, particularly in manufacturing, which accounted for 90 percent or more of the employment by all foreign MNCs and Japanese MNCs since 2002. U.S. MNCs employed far fewer workers than Japanese MNCs, but official U.S. data probably underestimate U.S. MNC employment.[24] However, here again, increases in the foreign MNC share of total firm employment in all

[24] Until the ratification of the U.S.-Vietnam Bilateral Trade Agreement in 2001, U.S. law prohibited most U.S. FDI in Vietnam. However, many U.S. firms invested through affiliates in other countries. Official estimates of U.S. MNC employment in 2004 (5,900) are far below alternative estimates of employment created by both directly and indirectly owned projects (8,441 and 8,412, respectively; Vietnam, Ministry of Planning and Investment, Foreign Investment Agency, 2005, Tables 7-8).

industries (2.6-fold in 1995-2000 and 1.7-fold in 2000-2009) were much slower than corresponding increases in FDI stock-GDP ratios (Table 1).

In manufacturing, the relatively rapid growth of foreign MNC shares of enterprise employment compared to sales means that MNC-local differentials in sales per employee declined rapidly after 2000 (Table 18). For example the mean foreign MNC-local differential in this measure of average labor productivity was 50 percent or more through 2004, but fell below 10 percent in 2008 and was negative in 2009. There was a similar trend in capital intensity differentials, though foreign MNCs continued to use more fixed assets per worker than local firms throughout this sample period. Conversely, differences in sales-fixed asset ratios were always negative, but they too became smaller with the passage of time. Wage differentials also fell sharply from 50-56 percent in 2000-2001 to 20 percent in 2004, but stabilized in the 10-17 percent range thereafter. Profit rates were much higher in foreign MNCs in 2001-2005 but somewhat lower in 2000 and in 2008-2009. Foreign MNCs were much larger than local firms in all years, however.

Foreign MNCs were also much larger than local firms in trade and mining, with particularly large differentials in sales per firm in mining. Similarly, sales per worker, fixed assets per worker, and compensation per worker were usually much larger in foreign MNCs in these industries. Similar to manufacturing differentials in sales-fixed asset ratios were negative in trade, but went from negative to positive in mining. Profit rate differentials again fluctuated more than others.

## 4. Conclusions

Although the detailed analysis in this paper is quite tedious, it illustrates two important points. First, trends in FDI stocks are generally a very poor proxy for trends in real activities such as sales and employment of foreign MNCs in Asia's developing economies. Second,

foreign MNC shares of host economy activities, and trends in shares of those activities, differ greatly depending on the activities being examined. For example, foreign MNCs usually account for larger shares of production than of employment, reflecting the tendency for foreign MNCs to have relatively high labor productivity compared to local firms or plants. Similarly, foreign MNCs often tend to pay higher wages than local plants. However, there are notable exceptions to these patterns, and often substantial differences in trends of foreign MNC shares, or equivalently in trends of foreign MNC-local differentials, depending on the indicator, host economy, time period, and/or industry examined. Perhaps the most prevalent differentials in Asia's developing economies are for foreign MNCs to export a relatively large proportion of their sales and to be relatively large compared to their local counterparts.

**References**


Asian Development Bank (various years), *Key Indicators for Asia and the Pacific*, 2007-2011 issues, Manila: Asian Development Bank, http://www.adb.org/publications/series/key-indicators-for-asia-and-the-pacific.

Advanced Research Group Co. Ltd. (1998) *Financial Focus*, CD-ROM. Bangkok: Advanced Research Group Co., Ltd.

Bangko Sentral ng Pilipinas (2012), *Selected Philippine Economic Indicators*, February issue, http://www.bsp.gov.ph/statistics/statistics_selected_monthly.asp.

Bank Indonesia (2012), *Indonesia Financial Statistics*, February, Table V.1 Balance of Payments: Summary http://www.bi.go.id/web/en/Statistik/Statistik+Ekonomi+dan+ Keuangan+ Indonesia/Versi+HTML/Sektor+Eksternal/#).

Bank of Japan (2012), Balance of Payments Statistics, http://www.stat-search.boj.or.jp/ssi/cgi-bin/famecgi2?cgi=$nme_a000_en&lstSelection=10

Bank of Korea (2012), Economic Statistics System (ECOS), Balance of Payments, http://ecos.bok.or.kr/EIndex_en.jsp.

Bank Negara Malaysia (2012), *Monthly Statistical Bulletin*, February issue, Kuala Lumpur: Bank Negara Malaysia, http://www.bnm.gov.my/index.php?ch=109&pg=294&ac=244&yr =2012&mth=2&eId=box1.

Bank of Thailand (2012). Statistics, Economic and Financial, http://www.bot.or.th/English/Statistics/EconomicAndFinancial/Pages/index.aspx.

Business On-Line (various years), Data on the largest 15 firms in each of 66 manufacturing industries for 2006 (delivered 2008) and the largest 1000 manufacturing firms in 2007-2009 (delivered 2010). Bangkok: Business On-Line (delivered by email).

Business World (various years), *Top 1000 Corporations in the Philippines*, 1996-2009 issues, Manila: Business World.

Caves, Richard E. (2007), *Multinational Enterprise and Economic Analysis*, 3rd edition, London: Cambridge University Press.

Central Bank of the Republic of China (Taiwan) (various years), Balance of Payments Statistics, http://www.cbc.gov.tw/ct.asp?xItem=2070&ctNode=512&mp=2 (March 2012) and *Balance of Payments, Taiwan District, Republic of China, 1958-1982*, Taipei: Central Bank of China (pub. 1983).

China, National Bureau of Statistics (2012), *China Monthly Economic Indicators*, January issue, Beijing: National Bureau of Statistics.

China, National Bureau of Statistics (various years), *China Statistical Yearbook*, 1996-2010 issues: Beijing: National Bureau of Statistics (previously State Statistical Bureau).

Dunning, John H. and Sarianna M. Lundan (2008), *Multinational Enterprises and the Global Economy, Second Edition*, Cheltenham, U.K.: Edward Elgar.

Haji Ahmad, Shahrazat Binti (2010), "A Quantitative Study on the Productivity of the Manufacturing Industry in Malaysia", Ph.D. Dissertation, Graduate School of Social Systems Studies, University of Kitakyushu (March).

Hill, Hal (2003), "Industry" in Arsenio M. Balisacan and Hal Hill (eds.), *The Philippine Economy: Development, Policies, and Challenges*, Oxford and New York: Oxford University Press, pp. 219-253.

Hong Kong, Census and Statistics Department (2012). *Balance of Payments Statistics of Hong Kong, Fourth Quarter 2011*. Hong Kong: Census and Statistics Department http://www.censtatd.gov.hk/products_and_services/products/publications/statistical_report/national_income_and_bop/index_cd_B1040001_dt_detail.jsp.

Indonesia, Badan Pusat Statistik (various years a), *Statistik Industri* (*Industrial Statistics*), various volumes and underlying plant-level data, 1990-2009 issues. Jakarta: Badan Pusat Statistik.

Indonesia, Badan Pusat Statistik (various years b), *Statistik Indonesia* (*Statistical Yearbook of Indonesia*), 1991-2011 issues. Jakarta: Badan Pusat Statistik.

International Monetary Fund (2011), *World Economic Outlook Database*, September issue, Washington, D.C.: International Monetary Fund. (http://www.imf.org/external/pubs/ft/weo/2010/02/weodata/index.aspx).

International Monetary Fund (various years a), *Balance of Payments Manual*, Fifth Edition 1993 and Sixth Edition 2010, Washington, D.C.: International Monetary Fund.

International Monetary Fund (various years b), *International Financial Statistics*, March 2012 CD-ROM and 1994 Yearbook, Washington, D.C.: International Monetary Fund.

Japan, Ministry of Economy Trade and Industry (various years), *Dai __ Kai Wagakuni Kigyou no Gaikai Jigyou Katsudou [The __ Survey of Overseas Business Activities of Japanese Companies]*, Surveys Number 21-40 (1990-2009 data; in Japanese), Tokyo: Ministry of Economy Trade and Industry (Ministry of International Trade and Industry in 1990-2000), No. 32-40 available from http://www.meti.go.jp/statistics/tyo/kaigaizi/result-2.html.

Japan, Research Institute of Economy Trade and Industry (2011), Kaigai Chokusetsu Toshi Database 2010 version (in Japanese), http://www.rieti.go.jp/jp/database/FDI2010/index.html.

Kohpaiboon, Archanun and Eric D. Ramstetter (2008), “Foreign Ownership and Producer Concentration in Thai Manufacturing”, Working Paper 2008-05, Kitakyushu: International Centre for the Study of East Asian Development.

Lall, Sanjaya (2000), “Export Performance and Competitiveness in the Philippines”, Queen Elizabeth House, University of Oxford: QEH Working Paper Series QEHWPS49.

Lipsey, Robert E. (1999), “The Location and Characteristics of U.S. Affiliates in Asia”, National Bureau of Economic Research Working Paper No. 6876, Cambridge, MA: NBER.

Lipsey, Robert E. (2001), “Foreign Direct Investment in Three Financial Crises”, National Bureau of Economic Research Working Paper No. 8084, Cambridge, MA: NBER.

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

Malaysia, Department of Statistics (2006), *Annual National Product and Expenditure Accounts, 1987-2005*, Kuala Lumpur: Department of Statistics.

Malaysia, Department of Statistics (2011), *National Accounts, Gross Domestic Product 2000-2010*, Kuala Lumpur: Department of Statistics.

Malaysia, Department of Statistics (2012), *Malaysia Economic Statistics-Time Series 2011*, Kuala Lumpur: Department of Statistics.

Malaysia, Department of Statistics (various years a), *Annual Survey of Manufacturing Industries*, 1992-1998, 2000, 2002-2005, 2007-2009 issues [1995-1997, 1999, 2001-2004, 2006-2008 data], *Industrial Surveys Peninsular Malaysia*, 1990-1991 issues, Kuala Lumpur: Department of Statistics.

Malaysia, Department of Statistics (various years b), *Census of Manufacturing Industries*, 2001 and 2006 issues [2000 and 2005 data], Kuala Lumpur: Department of Statistics.

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

Oguchi, Noriyoshi, Nor Aini Mohd Amdzah, Zainon Bakar, Rauzah Zainal Abidin, and Mazlina Shafii (2002). "Productivity of Foreign and Domestic Firms in Malaysian Manufacturing Industry", *Asian Economic Journal*, 16(3), 215-228.

Phan, Minh Ngoc and Eric D. Ramstetter (2004), “Foreign Multinationals and Local Firms in Vietnam’s Economic Transition”, *Asian Economic Journal*, 18(4), 371-404.

Philippines, National Statistical Coordination Board (various years), ____ *Philippine Statisical Yearbook*, 1998-2010 issues, Manila: NSCB.

Ramstetter, Eric D. (1998), “Measuring the Size of Foreign Multinationals in the Asia-Pacific”, in Grahame Thompson, ed., *Economic Dynamism in the Asia-Pacific*, London: Routledge, pp. 185-212.

Ramstetter, Eric D. (1999), “Comparisons of Foreign Multinationals and Local Firms in Asian Manufacturing Over Time”, *Asian Economic Journal*, 13 (3): 163-203.

Ramstetter, Eric D. (2000), "Recent Trends in Foreign Direct Investment in Asia: The Aftermath of the Crisis to Late 1999", Working Paper 2000-01, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. (2003), "Recent Trends in Large Firms in Singapore and Thailand: Did Foreign Multinationals Perform Differently than Local Firms Through the Crisis?", in Mitsuru Toida and Jinichi Uemura, eds., *Ajia Kogyoken no Keizai Tenbo 2003 [Projections for Asian Industrializing Region 2003]*, Tokyo: Institute of Developing Economies, pp. 83-170.

Ramstetter, Eric D. (2005), "Identifying the Sources and Destinations of Foreign Direct Investment: Some Asian Examples", Expert Meeting on Capacity Building in the Area of FDI: Data Compilation and Policy Formulation in Developing Countries, 12-14 December (http://www.unctad.org/sections/wcmu/docs/C2em18p24_en.pdf).

Ramstetter, Eric D. (2006), "Are Productivity Differentials Important in Thai Manufacturing?", in Eric D. Ramstetter and Fredrik Sjöholm, eds. *Multinational Corporations in Indonesia and Thailand: Wages, Productivity, and Exports*, Hampshire, UK: Palgrave Macmillan, pp. 114-142.

Ramstetter, Eric D. (2011a), "Ranking Locations for Japan's Manufacturing Multinationals in Asia: A Literature Survey Illustrated with Indexes", *Asian Economic Journal*, 25(2), 197-226.

Ramstetter, Eric D. (2011b), "Recent Downturns and Inward Direct Investment in Asia's Large Economies", Working Paper 2011-10, Kitakyushu: International Centre for the Study of East Asian Development.

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

Ramstetter, Eric D. (2012), "Do Foreign Multinationals Pay Relatively High Wages in Malaysian Manufacturing?", Working Paper 2012-03, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Shahrazat Binti Haji Ahmad (2009), "Foreign Multinationals in Malaysian Manufacturing After the Crisis", Working Paper 2009-13, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Sadayuki Takii, (2006) 'Exporting and Foreign Ownership in Indonesian Manufacturing', *Economics and Finance in Indonesia* 54 (3): 317–345.

Ramstetter, Eric D. and Masaru Umemoto (2006), "Exports and Foreign Ownership in Thai Manufacturing", in Eric D. Ramstetter and Fredrik Sjöholm, eds. *Multinational Corporations in Indonesia and Thailand: Wages, Productivity, and Exports*, Hampshire, UK: Palgrave Macmillan, pp. 194-219.

Reserve Bank of India (2012), *RBI Bulletin*, Balance of Payments Statistics, March (http://rbidocs.rbi.org.in/rdocs/Bulletin/DOCs/41T_CSM080310.xls).

Rugman, Alan R. and Thomas L. Brewer eds. (2001), *The Oxford Handbook of International Business*, Oxford: Oxford University Press.

Singapore, Ministry of Trade and Industry (2012), *Economic Survey of Singapore 2011*, Singapore Ministry of Trade and Industry (downloadable from www.mti.gov.sg).

Takii, Sadayuki (2006), "Productivity Differentials and Spillovers in Indonesian Manufacturing", in Eric D. Ramstetter and Fredrik Sjöholm, eds. *Multinational Corporations in Indonesia and Thailand: Wages, Productivity, and Exports*, Hampshire, UK: Palgrave Macmillan, pp. 85-103.

Thailand, National Economic and Social Development Board (2012), *National Accounts of Thailand, New Series (Chain Volume Measures), 1990-2010 Editions*, Bangkok: NESDB, http://www.nesdb.go.th/Portals/0/eco_datas/account/ni/ni_2010/Tab.NI-CVM2010.xls.

Thailand, National Statistical Office (various years), Report of the ____ Industrial Census, Whole Kingdom, 1997 and 2007 issues (1996 and 2006 data) and underlying plant-level data sets. Bangkok: National Statistical Office.

United Nations Conference on Trade and Development (2011), Database on "Foreign direct investment stocks and flows", http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sRF_ActivePath=p,5&sRF_Expanded=,p,5 (revised July-August)/

United Nations Conference on Trade and Development (various years), *World Investment Report*, 1992-2011 issues. Geneva: Division on Investment and Enterprise, UNCTAD, http://www.unctad.org/Templates/Page.asp?intItemID=1465&lang=1.

United States, Bureau of Economic Analysis (2012), Data from "Operations of U.S. Parent Companies Their Foreign Affiliates", http://www.bea.gov/scb/account_articles/international/iidguide.htm#USDIA1.

Vietnam, General Statistics Office (1998), *Major Social and Economic Information Obtained from the Large Scale Surveys in Period of 1990-1996*, Hanoi: Statistical Publishing House.

Vietnam, General Statistics Office (various years a), Author's compilations of firm-level enterprise census data underlying *The Real Situation of Enterprises Through the Results of Surveys Conducted in _____*, 2001-2002-2003 to 2007-2008-2009 issues and *Business results of all enterprises of Viet Nam in 2009*, Hanoi: Statistical Publishing House, recent issues available from http://www.gso.gov.vn/default_en.aspx?tabid=515&idmid=6.

Vietnam, General Statistics Office (various years b), *Statistical Yearbook*, 1995-2010 issues, Hanoi: Statistical Publishing House, and related data downloaded from the English, "Statistical Data" section of http://www.gso.gov.vn.

Vietnam, Ministry of Planning and Investment, Foreign Investment Agency (2005), "The Impact of the U.S.-Vietnam Bilateral Trade Agreement on Overall and U.S. Foreign Direct Investment in Vietnam", report prepared by the with funding and technical assistance from the U.S. Agency for International Development's STAR-Vietnam Project (October 20, 2005 draft), Tables 7-8.

**Appendix A: Data Sources for FDI estimates**

The estimates of FDI stock data presented in Table 1 are cumulative flows calculated from data presented in Appendix Table 1. In principle, these are the most recent estimates of net inward FDI from foreign-domiciled companies in the reporting economy. These are balance of payments data and in principle follow the definitions in International Monetary Fund (various years) and most data are from compilations in International Monetary Fund (2012) or more recent updates (and in some cases older data) taken from national sources. The national

sources used are: Bangko Sentral ng Pilipinas (2012), Bank Indonesia (2011), Bank of Japan (2012), Bank of Korea (2012), Bank Negara Malaysia (2011), Bank of Thailand (2011), Central Bank of the Republic of China (Taiwan) (various years), Hong Kong, Census and Statistics Department (2012), Reserve Bank of India (2012), and Singapore, Ministry of Trade and Industry (2012). All data from national sources use definitions that are more or less compatible with International Monetary Fund (2012).

The most important discrepancy among host economies is that several still do not collect estimates of reinvested earnings (often an important source of MNC-owned equity as measured on a corporate balance sheet). Data collection and compilation practices have become increasingly standardized, however, and as a result data for recent years, especially for years following the Asian crisis that surrounded 1998. Recent data are thus are more comprehensive and comparable than data for earlier years.

Data from Asian Development Bank (various years) and United Nations Conference on Trade and Development (2011) are sometimes used to estimate missing older observations when data are unavailable from International Monetary Fund (2012) or national sources. In most cases, data from these sources are similar, if not identical, to those reported in previous issues of International Monetary Fund (2012), but omitted from more recent issues. However, there are no known balance of payments-based estimates for Hong Kong in 1970-1997 and Vietnam in 1970-1988, for which estimates are taken from United Nations Conference on Trade and Development (2011). For Vietnam, inward FDI was clearly close to zero during this period and this is reflected in Table 1. However, FDI in Hong Kong was definitely large and I suspect that the estimates used to calculate FDI stocks in Table 1 are subject to particularly a large margin of error during this period.

Finally, I wish to emphasize that all estimates of FDI (and other international capital flows) are probably subject to much larger margins of error than estimates of other economic

activities that are more clearly defined and measured in more standardized ways. As a result, there are often large discrepancies between home and host country estimates of the same investment flows, even when host and home sources use similar definitions and methodologies (Ramstetter 2005). These discrepancies are generally much larger than corresponding discrepancies in estimates of identical merchandise trade flows by importers and exporters, for example. When estimating FDI stocks the problem is compounded because there is no practical way to account for asset inflation, which often results in overvaluing recently created FDI stocks compared to older FDI stocks. The bottom line is that the economic meaning of FDI is often ambiguous because it is a source of finance and it is not defined or measure consistently. Thus, comparisons or aggregations of FDI flows or stocks across economies should be interpreted with great caution.

Table 1: Inward FDI Stocks and Ratios to GDP in Asia's Large Economies

| | Advanced economies | | | | | Developing economies | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Singa-pore | Japan | Hong Kong | Korea | Tai-wan | Ma-lay-sia | Thai-land | China | Indo-nesia | Philip-pines | India | Viet-nam | Paki-stan | Ban-gla-desh |
| FDI Stocks (cumulative flows from 1970, US$ billions) | | | | | | | | | | | | | | |
| 1990 | 27.7 | 4.8 | 27.3 | 5.3 | 6.7 | 15.2 | 8.3 | 18.6 | 6.3 | 3.5 | 0.2 | 0.2 | 1.5 | 0.0 |
| 1991 | 32.5 | 6.1 | 28.3 | 6.5 | 8.0 | 19.2 | 10.3 | 22.9 | 7.8 | 4.0 | 0.3 | 0.6 | 1.8 | 0.0 |
| 1992 | 34.7 | 8.9 | 32.2 | 7.2 | 8.9 | 24.4 | 12.4 | 34.1 | 9.6 | 4.2 | 0.5 | 1.1 | 2.1 | 0.0 |
| 1993 | 39.4 | 9.0 | 39.1 | 7.8 | 9.8 | 29.4 | 14.3 | 61.6 | 11.6 | 5.5 | 1.1 | 2.0 | 2.5 | 0.0 |
| 1994 | 48.0 | 9.9 | 47.0 | 8.6 | 11.2 | 33.8 | 15.6 | 95.4 | 13.7 | 7.1 | 2.1 | 4.0 | 2.9 | 0.0 |
| 1995 | 59.5 | 10.0 | 53.2 | 10.4 | 12.7 | 37.9 | 17.7 | 131.2 | 18.0 | 8.6 | 4.2 | 5.7 | 3.6 | 0.0 |
| 1996 | 69.2 | 10.2 | 63.6 | 12.7 | 14.6 | 43.0 | 20.0 | 171.4 | 24.2 | 10.1 | 6.6 | 8.1 | 4.5 | 0.1 |
| 1997 | 83.0 | 13.4 | 75.0 | 15.5 | 16.8 | 48.2 | 23.9 | 215.7 | 28.9 | 11.3 | 10.2 | 10.4 | 5.2 | 0.2 |
| 1998 | 90.3 | 16.6 | 89.8 | 20.9 | 17.1 | 50.3 | 31.2 | 259.4 | 28.7 | 13.6 | 12.8 | 12.0 | 5.7 | 0.4 |
| 1999 | 106.8 | 29.3 | 114.3 | 30.3 | 20.0 | 54.2 | 37.3 | 298.2 | 26.8 | 14.8 | 15.0 | 13.4 | 6.3 | 0.6 |
| 2000 | 123.3 | 37.7 | 176.3 | 39.6 | 24.9 | 58.0 | 40.7 | 336.6 | 22.2 | 17.1 | 18.6 | 14.7 | 6.6 | 0.9 |
| 2001 | 138.4 | 43.9 | 200.0 | 43.1 | 29.0 | 58.6 | 45.8 | 380.8 | 19.3 | 17.3 | 24.1 | 16.0 | 7.0 | 0.9 |
| 2002 | 144.8 | 53.1 | 209.7 | 45.5 | 30.5 | 61.8 | 49.1 | 430.1 | 19.4 | 18.8 | 29.7 | 17.4 | 7.8 | 1.0 |
| 2003 | 156.8 | 59.5 | 223.3 | 49.0 | 30.9 | 64.2 | 54.3 | 477.2 | 18.8 | 19.3 | 34.0 | 18.9 | 8.3 | 1.3 |
| 2004 | 177.8 | 67.3 | 257.4 | 58.3 | 32.8 | 68.9 | 60.2 | 532.1 | 20.7 | 20.0 | 39.8 | 20.5 | 9.4 | 1.7 |
| 2005 | 193.2 | 70.1 | 291.0 | 64.6 | 34.4 | 72.9 | 68.3 | 649.3 | 29.0 | 21.8 | 47.4 | 22.5 | 11.6 | 2.5 |
| 2006 | 222.6 | 63.6 | 336.0 | 68.2 | 41.9 | 79.0 | 77.7 | 773.4 | 34.0 | 24.8 | 67.7 | 24.9 | 15.9 | 3.2 |
| 2007 | 259.6 | 86.1 | 390.4 | 69.9 | 49.6 | 87.6 | 89.0 | 933.5 | 40.9 | 27.7 | 93.2 | 31.6 | 21.5 | 3.9 |
| 2008 | 271.4 | 110.5 | 450.0 | 73.2 | 55.1 | 94.8 | 97.6 | 1,109 | 50.2 | 29.2 | 136.6 | 41.1 | 26.9 | 4.9 |
| 2009 | 295.8 | 122.5 | 502.4 | 75.5 | 57.9 | 96.2 | 102.4 | 1,223 | 55.1 | 31.2 | 172.2 | 48.7 | 29.3 | 5.6 |
| 2010 | 344.5 | 121.2 | 573.5 | 76.6 | 60.4 | 105.3 | 112.1 | 1,408 | 68.5 | 32.9 | 196.4 | 56.7 | 31.3 | 6.5 |
| 2011 | 408.5 | 118.9 | 656.6 | 81.2 | 58.4 | 116.1 | 120.6 | 1,642 | 86.6 | 34.0 | 227.4 | 64.6 | 32.7 | 7.2 |
| FDI Stock-GDP Ratios (percent) | | | | | | | | | | | | | | |
| 1990 | 71.21 | 0.16 | 35.48 | 1.95 | 4.08 | 34.62 | 9.72 | 4.76 | 5.02 | 7.09 | 0.06 | 3.75 | 3.11 | 0.06 |
| 1991 | 72.02 | 0.18 | 31.86 | 2.05 | 4.33 | 38.58 | 10.75 | 5.61 | 5.53 | 8.00 | 0.09 | 8.09 | 3.21 | 0.06 |
| 1992 | 66.81 | 0.23 | 30.95 | 2.13 | 4.04 | 40.68 | 11.38 | 6.98 | 6.26 | 7.23 | 0.19 | 11.07 | 3.54 | 0.07 |
| 1993 | 65.21 | 0.21 | 32.61 | 2.09 | 4.23 | 43.34 | 11.70 | 10.05 | 6.63 | 9.10 | 0.38 | 15.31 | 3.90 | 0.11 |
| 1994 | 65.52 | 0.21 | 34.64 | 1.97 | 4.42 | 44.67 | 10.82 | 17.06 | 7.00 | 9.96 | 0.64 | 24.34 | 4.53 | 0.13 |
| 1995 | 68.36 | 0.19 | 36.86 | 1.95 | 4.63 | 42.08 | 10.53 | 18.03 | 8.07 | 10.22 | 1.15 | 27.61 | 4.86 | 0.12 |
| 1996 | 72.71 | 0.22 | 40.02 | 2.21 | 5.07 | 42.03 | 11.00 | 20.02 | 9.66 | 10.77 | 1.76 | 32.96 | 5.84 | 0.15 |
| 1997 | 83.54 | 0.31 | 42.53 | 2.92 | 5.64 | 47.37 | 15.85 | 22.64 | 12.12 | 12.17 | 2.42 | 38.52 | 6.86 | 0.47 |
| 1998 | 106.18 | 0.43 | 53.78 | 5.86 | 6.20 | 68.69 | 27.92 | 25.45 | 27.17 | 18.40 | 3.03 | 44.17 | 7.56 | 0.88 |
| 1999 | 125.88 | 0.67 | 70.02 | 6.56 | 6.69 | 67.49 | 30.45 | 27.52 | 17.32 | 17.86 | 3.31 | 46.83 | 8.80 | 1.23 |
| 2000 | 130.77 | 0.81 | 104.22 | 7.42 | 7.64 | 61.85 | 33.16 | 28.08 | 13.44 | 21.06 | 3.90 | 47.28 | 8.88 | 1.81 |
| 2001 | 157.83 | 1.07 | 120.07 | 8.54 | 9.88 | 63.12 | 39.61 | 28.74 | 11.99 | 22.63 | 4.93 | 49.32 | 9.64 | 1.97 |
| 2002 | 159.77 | 1.36 | 128.05 | 7.90 | 10.12 | 61.25 | 38.71 | 29.58 | 9.92 | 23.11 | 5.82 | 49.69 | 10.71 | 1.98 |
| 2003 | 163.36 | 1.41 | 140.85 | 7.61 | 9.95 | 58.29 | 38.10 | 29.08 | 8.01 | 22.99 | 5.76 | 47.74 | 9.96 | 2.30 |
| 2004 | 157.76 | 1.46 | 155.15 | 8.07 | 9.65 | 55.20 | 37.31 | 27.55 | 8.06 | 21.87 | 5.78 | 45.10 | 9.62 | 2.88 |
| 2005 | 154.07 | 1.54 | 163.69 | 7.64 | 9.44 | 52.84 | 38.70 | 28.77 | 10.16 | 21.18 | 5.86 | 42.42 | 10.62 | 4.11 |
| 2006 | 153.16 | 1.46 | 176.93 | 7.16 | 11.13 | 50.30 | 37.53 | 28.51 | 9.32 | 20.26 | 7.46 | 40.79 | 12.48 | 4.92 |
| 2007 | 146.41 | 1.97 | 188.52 | 6.67 | 12.63 | 46.84 | 36.05 | 26.71 | 9.46 | 18.53 | 8.09 | 44.37 | 15.02 | 5.22 |
| 2008 | 143.32 | 2.26 | 208.96 | 7.86 | 13.76 | 42.54 | 35.80 | 24.53 | 9.82 | 16.83 | 10.92 | 45.55 | 16.44 | 5.77 |
| 2009 | 161.37 | 2.43 | 240.07 | 9.05 | 15.33 | 49.83 | 38.85 | 24.50 | 10.23 | 18.50 | 13.62 | 52.31 | 18.09 | 5.89 |
| 2010 | 154.68 | 2.22 | 255.50 | 7.55 | 14.04 | 44.25 | 35.16 | 23.95 | 9.69 | 16.48 | 12.03 | 54.77 | 17.70 | 6.16 |
| 2011 | 153.28 | 2.03 | 265.91 | 6.98 | 11.57 | 46.88 | 35.52 | 23.50 | 10.38 | 15.75 | 12.33 | 53.12 | 16.00 | 6.27 |
| Addenda: Per Capita GDP (US$) | | | | | | | | | | | | | | |
| 2011 | 50,714 | 45,774 | 34,393 | 23,749 | 21,592 | 8,617 | 5,281 | 5,184 | 3,469 | 2,255 | 1,527 | 1,362 | 1,164 | 690 |

Notes: 2011 FDI flow estimates for 2011 extrapolated using grotwth rates for the first 3 quarters for China, the Philippines, India, Vietnam, and Pakistan, and growth rates for the first 2 quarters for Bangladesh.
Sources: Appendix Tabels 1, 2.

Table 2: Production of Manufacturing Plants and Japanese and U.S. MNCs in Malaysia

| | All industries | | Manufacturing | | | | | | Trade | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sales | | Output or sales | | | | Value added | | Sales | |
| | Home, firms | | Host, plants | | Home, firms | | Host, plants | | Home, firms | |
| Year | Japan | U.S. | All | MNCs | Japan | U.S. | All | MNCs | Japan | U.S. |
| Values (US$ billions) | | | | | | | | | | |
| 1990 | 7.61 | 7.05 | 35.42 | 16.14 | 5.70 | 3.38 | 9.07 | 3.81 | 1.51 | - |
| 1991 | 10.92 | 7.73 | 43.74 | 21.05 | 8.37 | 3.93 | 11.32 | 4.92 | 1.86 | - |
| 1992 | 10.09 | 9.07 | 52.66 | 26.10 | 8.04 | 4.95 | 13.78 | 6.24 | 1.54 | - |
| 1993 | 14.36 | 9.86 | 64.09 | 29.10 | 11.57 | 5.48 | 17.17 | 6.83 | 2.25 | - |
| 1994 | 20.55 | 12.07 | 75.04 | 36.66 | 16.60 | 6.86 | 18.87 | 8.32 | 3.13 | 1.09 |
| 1995 | 23.59 | 14.61 | 98.60 | 45.13 | 20.14 | 8.54 | 23.81 | 9.92 | 2.50 | 1.16 |
| 1996 | 28.57 | 16.76 | 108.68 | 50.46 | 23.43 | 9.93 | 28.43 | 12.41 | 4.03 | 1.57 |
| 1997 | 26.79 | 19.51 | 105.62 | 50.07 | 22.08 | 12.46 | 28.14 | 12.61 | 3.67 | 1.58 |
| 1998 | 16.37 | 19.80 | - | - | 12.79 | 14.52 | - | - | 2.48 | 1.20 |
| 1999 | 21.52 | 23.35 | 95.10 | 50.76 | 16.86 | 17.74 | 23.10 | 11.67 | 3.12 | - |
| 2000 | 31.17 | 28.01 | 115.79 | 58.29 | 21.30 | 20.47 | 27.92 | 12.34 | 4.17 | 2.41 |
| 2001 | 25.23 | 28.67 | 104.21 | 53.78 | 20.84 | 21.44 | 25.03 | 11.33 | 3.73 | 2.68 |
| 2002 | 24.46 | 31.03 | 120.14 | 60.14 | 19.70 | 23.68 | 28.89 | 12.58 | 4.00 | 2.50 |
| 2003 | 35.85 | 35.01 | 136.01 | 66.06 | 30.47 | 27.14 | 32.08 | 13.77 | 4.51 | 3.26 |
| 2004 | 32.22 | 39.24 | 158.37 | 76.28 | 25.26 | 29.32 | 36.28 | 15.84 | 5.79 | - |
| 2005 | 31.17 | 44.90 | 173.09 | 75.15 | 26.38 | 34.20 | 31.21 | 11.69 | 3.34 | - |
| 2006 | 34.80 | 49.09 | 193.62 | 87.88 | 28.21 | - | 35.40 | 13.22 | 5.39 | - |
| 2007 | 33.72 | 48.49 | 216.12 | 93.79 | 27.98 | - | 41.35 | 14.95 | 4.51 | - |
| 2008 | 33.71 | 52.85 | 245.13 | 93.81 | 25.44 | - | 47.12 | 16.32 | 5.05 | - |
| 2009 | 28.53 | 46.95 | 207.13 | 83.62 | 20.41 | 29.84 | 39.29 | 14.62 | 5.30 | 5.57 |
| 2010 | 40.45 | - | - | - | 28.51 | - | - | - | 6.11 | - |
| Ratios to GDP (value added) by industry (percent) | | | | | | | | | | |
| 1990 | 17 | 15 | 338 | 154 | 54 | 32 | 87 | 36 | 48 | - |
| 1991 | 21 | 15 | 354 | 171 | 68 | 32 | 92 | 40 | 49 | - |
| 1992 | 16 | 15 | 351 | 174 | 54 | 33 | 92 | 42 | 30 | - |
| 1993 | 21 | 14 | 376 | 171 | 68 | 32 | 101 | 40 | 37 | - |
| 1994 | 27 | 16 | 385 | 188 | 85 | 35 | 97 | 43 | 43 | 15 |
| 1995 | 26 | 16 | 428 | 196 | 87 | 37 | 103 | 43 | 29 | 13 |
| 1996 | 27 | 16 | 394 | 183 | 85 | 36 | 103 | 45 | 40 | 15 |
| 1997 | 26 | 19 | 378 | 179 | 79 | 45 | 101 | 45 | 35 | 15 |
| 1998 | 22 | 26 | - | - | 63 | 71 | - | - | 29 | 14 |
| 1999 | 26 | 28 | 395 | 211 | 70 | 74 | 96 | 48 | 32 | - |
| 2000 | 33 | 30 | 400 | 201 | 74 | 71 | 96 | 43 | 40 | 23 |
| 2001 | 27 | 31 | 383 | 198 | 77 | 79 | 92 | 42 | 35 | 25 |
| 2002 | 24 | 31 | 407 | 204 | 67 | 80 | 98 | 43 | 36 | 23 |
| 2003 | 33 | 32 | 412 | 200 | 92 | 82 | 97 | 42 | 39 | 28 |
| 2004 | 26 | 31 | 418 | 201 | 67 | 77 | 96 | 42 | 45 | - |
| 2005 | 23 | 33 | 424 | 184 | 65 | 84 | 76 | 29 | 23 | - |
| 2006 | 22 | 31 | 421 | 191 | 61 | - | 77 | 29 | 33 | - |
| 2007 | 18 | 26 | 417 | 181 | 54 | - | 80 | 29 | 22 | - |
| 2008 | 15 | 24 | 421 | 161 | 44 | - | 81 | 28 | 20 | - |
| 2009 | 15 | 24 | 421 | 170 | 41 | 61 | 80 | 30 | 22 | 23 |
| 2010 | 17 | - | - | - | 46 | - | - | - | 21 | - |

Notes: -=not available or not disclosed; sales or output include intermediate consumption which value added excludes; host data refer to all plants and MNCs with foreign shares of 50 percent or more covered in Malaysia's manufacturing censuses or surveys; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade for Malaysian GDP and Japanese MNCs, wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Japan, Ministry of Economy, Trade and Industry (various years); Malaysia, Department of Statistics (2006, 2011, various years a, various years b); United States Bureau of Economic Analysis (various years).

Table 3: Employment of Manufacturing Plants and Japanese and U.S. MNCs in Malaysia

| | All industries | | Manufacturing | | | | Trade | |
|---|---|---|---|---|---|---|---|---|
| | Home, firms | | Host, plants | | Home, firms | | Home, firms | |
| Year | Japan | U.S. | All | MNCs | Japan | U.S. | Japan | U.S. |
| Thousands of workers | | | | | | | | |
| 1990 | 101.33 | 71.30 | 844.73 | 358.65 | 94.69 | 60.80 | 2.95 | 2.70 |
| 1991 | 117.49 | 78.80 | 976.94 | 439.87 | 109.87 | 68.20 | 2.92 | 2.60 |
| 1992 | 113.21 | 84.50 | 1,034.08 | 469.28 | 105.67 | 72.70 | 4.60 | 3.00 |
| 1993 | 156.60 | 84.80 | 1,266.73 | 495.30 | 147.49 | 72.20 | 5.47 | 3.20 |
| 1994 | 193.32 | 128.60 | 1,225.40 | 529.17 | 182.93 | 111.40 | 5.13 | 4.30 |
| 1995 | 200.79 | 143.60 | 1,389.55 | 526.68 | 190.47 | 125.70 | 4.64 | 3.80 |
| 1996 | 223.89 | 119.60 | 1,448.83 | 555.50 | 208.39 | 100.10 | 7.33 | 4.40 |
| 1997 | 217.50 | 138.60 | 1,411.45 | 558.44 | 203.37 | 117.20 | 6.99 | 4.40 |
| 1998 | 191.75 | 128.10 | - | - | 174.98 | 109.20 | 7.45 | 4.80 |
| 1999 | 227.02 | 128.00 | 1,358.18 | 570.28 | 209.69 | 106.30 | 7.98 | 5.60 |
| 2000 | 255.08 | 132.30 | 1,574.80 | 600.70 | 233.10 | 110.70 | 9.73 | 5.30 |
| 2001 | - | 127.80 | 1,392.17 | 547.97 | - | 106.30 | - | 5.70 |
| 2002 | 210.49 | 106.40 | 1,489.06 | 572.04 | 195.44 | 86.00 | 9.82 | 5.60 |
| 2003 | 227.04 | 94.90 | 1,502.93 | 574.78 | 209.80 | 77.90 | 10.06 | 5.00 |
| 2004 | 211.60 | 114.30 | 1,542.54 | 607.86 | 191.91 | 84.90 | 12.29 | 6.60 |
| 2005 | 210.72 | 126.30 | 1,675.16 | 551.25 | 190.38 | 90.40 | 12.84 | 5~10 |
| 2006 | 212.81 | 130.90 | 1,721.43 | 617.28 | 194.47 | 94.60 | 12.41 | 7.20 |
| 2007 | 196.37 | 112.20 | 1,800.35 | 606.32 | 174.39 | 80.40 | 15.43 | 7.40 |
| 2008 | 174.06 | 107.30 | 1,771.33 | 577.04 | 146.45 | 74.80 | 16.47 | 7.30 |
| 2009 | 162.24 | 135.40 | 1,693.15 | 599.82 | 136.09 | 87.30 | 16.46 | 8.20 |
| 2010 | 180.04 | - | - | - | 144.02 | - | 16.95 | - |
| Ratios to total employment by industry (percent) | | | | | | | | |
| 1990 | 1.52 | 1.07 | 63.38 | 26.91 | 7.10 | 4.56 | 0.24 | 0.22 |
| 1991 | 1.70 | 1.14 | 66.46 | 29.92 | 7.47 | 4.64 | - | - |
| 1992 | 1.61 | 1.20 | 63.07 | 28.62 | 6.44 | 4.43 | 0.37 | 0.24 |
| 1993 | 2.12 | 1.15 | 73.35 | 28.68 | 8.54 | 4.18 | 0.43 | 0.25 |
| 1994 | 2.54 | 1.69 | 64.77 | 27.97 | 9.67 | 5.89 | - | - |
| 1995 | 2.63 | 1.88 | 78.04 | 29.58 | 10.70 | 7.06 | 0.34 | 0.28 |
| 1996 | 2.67 | 1.42 | 75.77 | 29.05 | 10.90 | 5.24 | 0.47 | 0.28 |
| 1997 | 2.54 | 1.62 | 70.48 | 27.89 | 10.16 | 5.85 | 0.44 | 0.28 |
| 1998 | 2.23 | 1.49 | - | - | 9.17 | 5.72 | 0.46 | 0.30 |
| 1999 | 2.57 | 1.45 | 68.23 | 28.65 | 10.53 | 5.34 | 0.48 | 0.34 |
| 2000 | 2.75 | 1.43 | 72.43 | 27.63 | 10.72 | 5.09 | 0.54 | 0.30 |
| 2001 | - | 1.37 | 63.74 | 25.09 | - | 4.87 | - | 0.28 |
| 2002 | 2.21 | 1.12 | 71.97 | 27.65 | 9.45 | 4.16 | 0.46 | 0.27 |
| 2003 | 2.30 | 0.96 | 70.53 | 26.97 | 9.85 | 3.66 | 0.45 | 0.22 |
| 2004 | 2.12 | 1.15 | 76.25 | 30.05 | 9.49 | 4.20 | 0.53 | 0.29 |
| 2005 | 2.10 | 1.26 | 84.21 | 27.71 | 9.57 | 4.54 | 0.56 | - |
| 2006 | 2.07 | 1.27 | 82.65 | 29.64 | 9.34 | 4.54 | 0.52 | 0.30 |
| 2007 | 1.86 | 1.06 | 91.05 | 30.66 | 8.82 | 4.07 | 0.62 | 0.30 |
| 2008 | 1.63 | 1.01 | 91.09 | 29.67 | 7.53 | 3.85 | 0.66 | 0.29 |
| 2009 | 1.49 | 1.24 | 93.69 | 33.19 | 7.53 | 4.83 | 0.63 | 0.31 |
| 2010 | 1.62 | - | - | - | 7.66 | - | 0.65 | - |

Notes: -=not available or not disclosed; host data refer to all plants and MNCs with foreign shares of 50 percent or more covered in Malaysia's manufacturing censuses or surveys; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade as well as hotels and restaurants for Malaysian totals, wholesale and retail trade for Japanese MNCs, and wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Japan, Ministry of Economy, Trade and Industry (various years); Malaysia, Department of Statistics (2012, various years a, various years b); United States Bureau of Economic Analysis (various years).

Table 4: Comparisons of MNCs (majority-foreign) and Local Plants in Malaysian Manufacturing

| Year | Workers per plant | Output per plant, US$ mil. | Output per worker, US$ | Value added per worker, US$ | Wages & salaries per worker, US$ | Fixed assets per worker, US$ | Value added-fixed asset ratios | Export-output ratios, % |
|---|---|---|---|---|---|---|---|---|
| Majority foreign MNCs | | | | | | | | |
| 1990 | 354 | 15.934 | 45,006 | 10,625 | 2,909 | 13,939 | 0.762 | - |
| 1991 | 354 | 16.935 | 47,856 | 11,192 | 3,163 | 15,635 | 0.716 | - |
| 1992 | 359 | 19.986 | 55,620 | 13,292 | 3,809 | 18,809 | 0.707 | - |
| 1993 | 340 | 20.003 | 58,762 | 13,841 | 3,963 | 19,810 | 0.699 | - |
| 1994 | 420 | 29.093 | 69,272 | 15,716 | 4,342 | 23,130 | 0.679 | - |
| 1995 | 349 | 29.947 | 85,688 | 18,840 | 5,040 | 28,469 | 0.662 | - |
| 1996 | 377 | 34.235 | 90,841 | 22,336 | 5,770 | 31,451 | 0.710 | - |
| 1997 | 299 | 26.833 | 89,660 | 22,589 | 5,595 | 30,141 | 0.749 | - |
| 1999 | 193 | 17.212 | 89,003 | 20,470 | 4,630 | 24,314 | 0.842 | - |
| 2000 | 354 | 34.371 | 97,043 | 20,541 | 4,854 | 27,516 | 0.747 | 70 |
| 2001 | 310 | 30.454 | 98,148 | 20,672 | 5,317 | 32,141 | 0.643 | 67 |
| 2002 | 289 | 30.357 | 105,127 | 21,994 | 5,391 | 31,802 | 0.692 | 65 |
| 2003 | 321 | 36.887 | 114,939 | 23,950 | 5,510 | 28,868 | 0.830 | 66 |
| 2004 | 325 | 40.789 | 125,482 | 26,054 | 5,697 | 29,035 | 0.897 | 42 |
| 2005 | 344 | 46.912 | 136,332 | 21,208 | 5,974 | 30,631 | 0.692 | - |
| 2006 | 377 | 53.708 | 142,374 | 21,424 | 6,481 | 28,237 | 0.759 | - |
| 2007 | 333 | 51.479 | 154,680 | 24,657 | 7,244 | 29,109 | 0.847 | - |
| 2008 | 333 | 54.155 | 162,576 | 28,290 | 7,965 | 33,788 | 0.837 | - |
| 2009 | 342 | 47.624 | 139,401 | 24,370 | 7,743 | 30,639 | 0.795 | - |
| Percentage differentials between majority-foreign MNCs and local plants | | | | | | | | |
| 1990 | 316 | 373 | 13 | -2 | -1 | -16 | 18 | - |
| 1991 | 299 | 352 | 13 | -6 | 2 | -15 | 10 | - |
| 1992 | 292 | 363 | 18 | 0 | 4 | -20 | 25 | - |
| 1993 | 871 | 1,158 | 30 | 3 | 7 | -11 | 16 | - |
| 1994 | 326 | 436 | 26 | 4 | 5 | -13 | 19 | - |
| 1995 | 748 | 1,073 | 38 | 17 | 11 | 1 | 16 | - |
| 1996 | 690 | 1,001 | 39 | 25 | 17 | 3 | 21 | - |
| 1997 | 642 | 922 | 38 | 24 | 15 | -10 | 38 | - |
| 1999 | 365 | 635 | 58 | 41 | 22 | -20 | 77 | - |
| 2000 | 582 | 1,021 | 64 | 28 | 19 | 1 | 28 | 120 |
| 2001 | 540 | 952 | 64 | 27 | 26 | 11 | 15 | 88 |
| 2002 | 458 | 797 | 61 | 24 | 21 | 3 | 20 | 109 |
| 2003 | 500 | 815 | 53 | 21 | 21 | -16 | 44 | 157 |
| 2004 | 501 | 759 | 43 | 19 | 18 | -12 | 36 | 59 |
| 2005 | 716 | 1,177 | 56 | 22 | 25 | 3 | 19 | - |
| 2006 | 939 | 1,445 | 49 | 7 | 30 | -12 | 21 | - |
| 2007 | 757 | 1,195 | 51 | 12 | 28 | -2 | 14 | - |
| 2008 | 759 | 1,002 | 28 | 10 | 27 | -1 | 11 | - |
| 2009 | 802 | 1,012 | 23 | 8 | 30 | -10 | 20 | - |
| Mean | 584 | 868 | 40 | 15 | 17 | -7 | 25 | 107 |
| StdDev | 205 | 314 | 17 | 12 | 10 | 9 | 15 | 37 |

Sources: Malaysia, Department of Statistics (2010, various years a, various years b); Ramstetter and Haji Ahmad (2009, Appendix Tables 3a, 3b, 10a, 10b).

Table 5: Sales of Manufacturing Firms or Plants and Japanese and U.S. MNCs in Thailand

| | All industries | | Manufacturing | | | | | | | | Trade | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sales | | Output or sales | | | | | | Value added | | Sales | |
| | Home, firms | | Host, firms | | Host, plants | | Home, firms | | Host, plants | | Home, firms | |
| Year | Japan | U.S. | All | MNCs | All | MNCs | Japan | U.S. | All | MNCs | Japan | U.S. |
| Values (US$ billions) | | | | | | | | | | | | |
| 1990 | 17.12 | 7.63 | 42.32 | 23.91 | - | - | 7.48 | 3.21 | - | - | 8.87 | 0.86 |
| 1991 | 17.60 | 8.40 | 54.56 | 28.68 | - | - | 9.29 | 3.59 | - | - | 7.53 | 0.95 |
| 1992 | 15.33 | 8.56 | - | - | - | - | 10.49 | 3.67 | - | - | 4.42 | 1.08 |
| 1993 | 29.57 | 9.34 | - | - | - | - | 16.82 | 4.03 | - | - | 11.51 | 1.24 |
| 1994 | 33.64 | 11.35 | 75.09 | 37.31 | - | - | 21.68 | 5.11 | - | - | 10.72 | 1.29 |
| 1995 | 40.30 | 14.51 | 96.78 | 48.28 | - | - | 23.29 | 6.51 | - | - | 15.37 | 1.78 |
| 1996 | 51.62 | 16.38 | 108.89 | 56.24 | 140.37 | 75.75 | 28.37 | 7.23 | 39.50 | 19.44 | 20.86 | 1.90 |
| 1997 | 35.80 | 16.81 | 74.48 | 36.22 | - | - | 21.39 | 7.03 | - | - | 12.66 | 1.68 |
| 1998 | 25.89 | 14.71 | 67.82 | 36.12 | - | - | 16.68 | 7.94 | - | - | 8.19 | 0.91 |
| 1999 | 32.32 | 16.85 | 74.86 | 42.37 | - | - | 21.48 | 11.40 | - | - | 8.75 | 1.33 |
| 2000 | 34.69 | 21.19 | 89.59 | 54.66 | - | - | 25.44 | 13.73 | - | - | 7.90 | 1.84 |
| 2001 | 33.41 | 22.41 | - | - | - | - | 24.97 | 14.42 | - | - | 7.04 | 2.14 |
| 2002 | 38.66 | 21.49 | - | - | - | - | 27.09 | 11.56 | - | - | 10.05 | 3.33 |
| 2003 | 49.35 | 23.24 | - | - | - | - | 33.30 | 12.77 | - | - | 13.82 | 3.81 |
| 2004 | 73.82 | 31.45 | - | - | - | - | 56.52 | 18.88 | - | - | 14.75 | 4.86 |
| 2005 | 88.18 | 37.25 | - | - | - | - | 63.44 | 22.15 | - | - | 21.40 | 5.75 |
| 2006 | 99.43 | 42.89 | 174.34 | 119.81 | 188.65 | 80.60 | 70.48 | 25.10 | 45.32 | 18.73 | 25.11 | 6.58 |
| 2007 | 124.82 | 46.25 | 274.65 | 154.05 | - | - | 92.98 | 26.96 | - | - | - | 7.51 |
| 2008 | 119.47 | 52.03 | 323.76 | 172.44 | - | - | 90.45 | 30.52 | - | - | 24.10 | 8.32 |
| 2009 | 108.74 | 47.52 | 268.40 | 150.14 | - | - | 84.43 | 26.85 | - | - | - | 6.89 |
| 2010 | 151.30 | - | - | - | - | - | 108.26 | - | - | - | 29.23 | - |
| Ratios to GDP (value added) by industry (percent) | | | | | | | | | | | | |
| 1990 | 22 | 10 | 208 | 118 | - | - | 37 | 16 | - | - | 76 | 7 |
| 1991 | 20 | 10 | 234 | 123 | - | - | 40 | 15 | - | - | 58 | 7 |
| 1992 | 15 | 8 | - | - | - | - | 41 | 14 | - | - | 29 | 7 |
| 1993 | 26 | 8 | - | - | - | - | 59 | 14 | - | - | 67 | 7 |
| 1994 | 26 | 9 | 237 | 118 | - | - | 68 | 16 | - | - | 54 | 6 |
| 1995 | 27 | 10 | 261 | 130 | - | - | 63 | 18 | - | - | 68 | 8 |
| 1996 | 32 | 10 | 281 | 145 | 362 | 195 | 73 | 19 | 102 | 50 | 86 | 8 |
| 1997 | 27 | 13 | 229 | 111 | - | - | 66 | 22 | - | - | 57 | 8 |
| 1998 | 25 | 14 | 263 | 140 | - | - | 65 | 31 | - | - | 48 | 5 |
| 1999 | 28 | 15 | 251 | 142 | - | - | 72 | 38 | - | - | 46 | 7 |
| 2000 | 30 | 19 | 292 | 178 | - | - | 83 | 45 | - | - | 44 | 10 |
| 2001 | 31 | 21 | - | - | - | - | 88 | 51 | - | - | 42 | 13 |
| 2002 | 32 | 18 | - | - | - | - | 85 | 36 | - | - | 58 | 19 |
| 2003 | 36 | 17 | - | - | - | - | 87 | 34 | - | - | 76 | 21 |
| 2004 | 48 | 20 | - | - | - | - | 128 | 43 | - | - | 71 | 23 |
| 2005 | 52 | 22 | - | - | - | - | 130 | 45 | - | - | 96 | 26 |
| 2006 | 50 | 22 | 304 | 209 | 329 | 141 | 123 | 44 | 79 | 33 | 97 | 26 |
| 2007 | 53 | 20 | 395 | 222 | - | - | 134 | 39 | - | - | - | 24 |
| 2008 | 45 | 20 | 412 | 219 | - | - | 115 | 39 | - | - | 71 | 24 |
| 2009 | 43 | 19 | 380 | 212 | - | - | 119 | 38 | - | - | - | 20 |
| 2010 | 49 | - | - | - | - | - | 118 | - | - | - | 72 | - |

Notes: -=not available or not disclosed; sales or output include intermediate consumption which value added excludes; host firm data refer to large firm data compiled by Ramstetter (2003) and from Business On-Line (various years); host plant data are compiled from industrial censuses; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade for Thai GDP and Japanese MNCs, wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Business On-Line (various years); Japan, Ministry of Economy, Trade and Industry (various years); Ramstetter (2003); Thailand, National Statistics Office (various years); Thailand, National Economic and Social Development Board (2012); United States Bureau of Economic Analysis (various years).

Table 6: Employment of Manufacturing Plants and Japanese and U.S. MNCs in Thailand

| | All industries | | Manufacturing | | | | Trade | |
|---|---|---|---|---|---|---|---|---|
| | Home, firms | | Host, plants | | Home, firms | | Home, firms | |
| Year | Japan | U.S. | All | MNCs | Japan | U.S. | Japan | U.S. |
| Thousands of workers | | | | | | | | |
| 1990 | 124.75 | 64.40 | - | - | 109.96 | 49.00 | 7.99 | 5.20 |
| 1991 | 158.25 | 72.00 | - | - | 141.43 | 55.50 | 8.66 | 5.60 |
| 1992 | 128.13 | 73.20 | - | - | 114.21 | 57.10 | 8.04 | 5.20 |
| 1993 | 204.98 | 74.80 | - | - | 187.54 | 56.70 | 9.44 | 5.60 |
| 1994 | 220.74 | 99.90 | - | - | 202.03 | 81.10 | 8.71 | 4.60 |
| 1995 | 218.48 | 112.70 | - | - | 186.79 | 91.50 | 17.66 | 4.50 |
| 1996 | 285.96 | 117.60 | 2,444.53 | 947.15 | 246.43 | 95.70 | 21.96 | 5.10 |
| 1997 | 269.96 | 132.90 | - | - | 241.55 | 105.10 | 15.43 | 4.90 |
| 1998 | 255.78 | 129.10 | - | - | 229.20 | 104.20 | 12.80 | 3.20 |
| 1999 | 280.43 | 127.50 | - | - | 252.44 | 100.80 | 13.54 | 5.70 |
| 2000 | 329.56 | 134.70 | - | - | 298.79 | 104.90 | 14.19 | 8.20 |
| 2001 | - | 131.20 | - | - | - | 99.40 | - | 9.20 |
| 2002 | 352.99 | 134.70 | - | - | 322.14 | 92.00 | 14.35 | 6.80 |
| 2003 | 396.30 | 117.40 | - | - | 353.88 | 83.50 | 20.06 | 7.10 |
| 2004 | 472.85 | 142.70 | - | - | 426.71 | 105.10 | 21.38 | 7.40 |
| 2005 | 525.54 | 146.80 | - | - | 477.15 | 106.80 | 23.91 | 7.10 |
| 2006 | 532.34 | 146.80 | 3,726.42 | 943.88 | 484.84 | 109.60 | 26.48 | 7.10 |
| 2007 | 568.28 | 156.40 | - | - | 516.99 | 114.20 | - | 7.60 |
| 2008 | 545.52 | 169.50 | - | - | 486.34 | 116.90 | 27.07 | 7.10 |
| 2009 | 542.24 | 195.70 | - | - | 488.12 | 120.50 | 27.33 | 6.90 |
| 2010 | 606.98 | - | - | - | 544.17 | - | - | - |
| Ratios to total employment by industry (percent) | | | | | | | | |
| 1990 | 0.42 | 0.21 | - | - | 3.77 | 1.68 | - | - |
| 1991 | 0.54 | 0.25 | - | - | 3.87 | 1.52 | - | - |
| 1992 | 0.42 | 0.24 | - | - | 2.90 | 1.45 | - | - |
| 1993 | 0.68 | 0.25 | - | - | 4.83 | 1.46 | - | - |
| 1994 | 0.73 | 0.33 | - | - | 4.82 | 1.94 | - | - |
| 1995 | 0.71 | 0.37 | - | - | 4.05 | 1.99 | - | - |
| 1996 | 0.92 | 0.38 | 56.47 | 21.88 | 5.69 | 2.21 | - | - |
| 1997 | 0.86 | 0.42 | - | - | 5.61 | 2.44 | - | - |
| 1998 | 0.85 | 0.43 | - | - | 5.37 | 2.44 | 0.31 | 0.08 |
| 1999 | 0.91 | 0.42 | - | - | 5.91 | 2.36 | 0.32 | 0.13 |
| 2000 | 1.05 | 0.43 | - | - | 6.43 | 2.26 | 0.32 | 0.19 |
| 2001 | - | 0.41 | - | - | - | 2.02 | - | 0.20 |
| 2002 | 1.07 | 0.41 | - | - | 6.38 | 1.82 | 0.29 | 0.14 |
| 2003 | 1.17 | 0.35 | - | - | 6.68 | 1.58 | 0.39 | 0.14 |
| 2004 | 1.36 | 0.41 | - | - | 7.79 | 1.92 | 0.39 | 0.13 |
| 2005 | 1.49 | 0.42 | - | - | 8.54 | 1.91 | 0.43 | 0.13 |
| 2006 | 1.49 | 0.41 | 67.70 | 17.15 | 8.81 | 1.99 | 0.48 | 0.13 |
| 2007 | 1.57 | 0.43 | - | - | 9.20 | 2.03 | - | 0.14 |
| 2008 | 1.47 | 0.46 | - | - | 8.92 | 2.14 | 0.47 | 0.12 |
| 2009 | 1.44 | 0.52 | - | - | 9.08 | 2.24 | 0.45 | 0.11 |
| 2010 | 1.60 | - | - | - | 10.17 | - | - | - |

Notes: -=not available or not disclosed; host data refer to plants covered in industrial censuses; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade for Thai totals and Japanese MNCs, but to wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Japan, Ministry of Economy, Trade and Industry (various years); Thailand, Bank of Thailand (2012); Thailand, National Statistics Office (various years); United States Bureau of Economic Analysis (various years).

Table 7a: Comparisons of MNCs and Local Plants in Thai Manufacturing

| Year | Workers per plant | Output per plant, US$ mil. | Output per worker, US$ | Value added per worker, US$ | Compen-sation per worker, US$ | Fixed assets per worker, US$ | Value added-fixed asset ratios | Export-output ratios, % |
|---|---|---|---|---|---|---|---|---|
| Foreign MNCs, all plants | | | | | | | | |
| 1996 | 345 | 27.586 | 79,979 | 20,520 | 4,659 | 39,229 | 0.523 | - |
| 2006 | 355 | 30.335 | 85,392 | 19,844 | 3,824 | 35,712 | 0.556 | 44.85 |
| Foreign MNCs, excluding small plants and duplicates | | | | | | | | |
| 1996 | 397 | 33.369 | 84,118 | 22,186 | 4,677 | 39,866 | 0.557 | - |
| 2006 | 397 | 33.518 | 84,501 | 18,691 | 3,781 | 36,024 | 0.519 | 41.97 |
| Percentage differentials between foreign MNCs and local plants, all plants | | | | | | | | |
| 1996 | 585 | 1,170 | 85 | 53 | 44 | 76 | -13 | - |
| 2006 | 810 | 1,901 | 120 | 108 | 44 | 110 | -1 | 66 |
| Percentage differentials between foreign MNCs and local plants, no small plants or duplicates | | | | | | | | |
| 1996 | 238 | 512 | 81 | 48 | 42 | 67 | -12 | - |
| 2006 | 225 | 516 | 90 | 71 | 33 | 87 | -8 | 50 |

Sources: Author's compilations of plant-level data from National Statistical Office (various years).

Table 7b: Comparisons of MNCs and Large, Local Firms in Thai Manufacturing

| | Indicators for MNCs and MNC-Local Differentials | | | | | | |
|---|---|---|---|---|---|---|---|
| Year | Sales per firm, US$ mil. | Sales-total asset ratios | Sales-fixed asset ratios | Profit-sales ratios, % | Equity-total asset ratios, % | Percen-tage of firms exporting | Number of MNCs Local firms |
| Foreign MNCs | | | | | | | |
| 1994 | 42 | 0.790 | - | 5.39 | 39.90 | - | 732 |
| 1995 | 56 | 0.864 | - | 4.33 | 36.85 | - | 824 |
| 1996 | 62 | 0.856 | - | 2.71 | 35.66 | - | 824 |
| 2006 | 191 | 1.963 | 5.591 | 4.86 | 48.56 | 58.39 | 447 |
| 2007 | 269 | 1.806 | 4.013 | 5.37 | 53.19 | 54.76 | 504 |
| 2008 | 295 | 1.773 | 3.985 | 4.93 | 54.12 | 54.09 | 501 |
| 2009 | 266 | 1.649 | 3.650 | 5.41 | 57.96 | 54.07 | 492 |
| Percentage differentials between foreign MNCs and large, local firms | | | | | | | |
| 1994 | 36.84 | -22.68 | - | 113.52 | 54.62 | - | 849 |
| 1995 | 55.37 | -12.14 | - | 105.89 | 41.04 | - | 933 |
| 1996 | 59.96 | -7.66 | - | 176.98 | 44.42 | - | 933 |
| Mean | 50.72 | -14.16 | - | 132.13 | 46.69 | - | - |
| Stdev | 12.24 | 7.71 | - | 39.03 | 7.07 | - | - |
| 2006 | 7.91 | -43.37 | 61.33 | -21.61 | -7.09 | 39.68 | 488 |
| 2007 | -4.32 | -41.85 | 29.24 | 16.82 | 16.31 | 26.33 | 496 |
| 2008 | -16.30 | -51.00 | 10.17 | 139.31 | 17.47 | 34.29 | 499 |
| 2009 | -1.82 | -39.15 | 34.70 | 31.76 | 23.66 | 38.71 | 508 |
| Mean | -3.63 | -43.84 | 33.86 | 41.57 | 12.58 | 34.75 | - |
| Stdev | 9.96 | 5.08 | 21.12 | 68.93 | 13.51 | 6.08 | - |

Notes: Samples consist of data on large firms compiled by the original sources from Ministry of Commerce registration data; in this table, MNCs defined as firms with foreign shares of 33% or greater.

Sources: Author's compilations of firm-level data from Advanced Research Group Co., Ltd. (1998); Business On-Line (various years).

Table 8: Sales of Large (from 1998) Industrial Firms and Japanese and U.S. MNCs in China

| | All industries | | | Industry | | Manufacturing | | | | | | Trade | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ex- | Sales | | Output | | Output or sales | | | | Value added | | Sales | |
| | ports | Home, firms | | Host, firms | | Host, firms | | Home, firms | | Host, firms | | Home, firms | |
| Year | All | Japan | U.S. | All | MNCs | All | MNCs | Japan | U.S. | All | MNCs | Japan | U.S. |
| Values (US$ billions) | | | | | | | | | | | | | |
| 1990 | - | 1.0 | 1.4 | - | - | - | - | 0.9 | 0.7 | - | - | 0.0 | 0.3 |
| 1991 | - | 1.1 | 1.5 | - | - | - | - | 1.0 | 0.9 | - | - | 0.0 | 0.4 |
| 1992 | 17 | 1.4 | 2.4 | - | - | - | - | 1.2 | 1.5 | - | - | 0.0 | 0.5 |
| 1993 | 25 | 5.6 | 2.5 | 689 | 63 | 617 | - | 4.4 | 1.7 | 189 | - | 0.1 | 0.4 |
| 1994 | 35 | 7.1 | 4.6 | 596 | 76 | 531 | - | 5.4 | 3.3 | 143 | - | 0.5 | 0.8 |
| 1995 | 47 | 10 | 7.4 | 658 | 128 | 580 | 123 | 7.8 | 5.3 | 146 | 15 | 2.0 | 0.9 |
| 1996 | 62 | 16 | 11 | 755 | 144 | 697 | 137 | 12 | 8.5 | 190 | 32 | 3.9 | 1.4 |
| 1997 | 75 | 21 | 15 | 752 | 172 | 721 | 163 | 15 | 11 | 189 | 39 | 4.8 | 1.8 |
| 1998 | 81 | 22 | 17 | 818 | 202 | 708 | - | 15 | 13 | 181 | - | 5.8 | 1.8 |
| 1999 | 89 | 27 | 23 | 878 | 229 | 759 | 216 | 20 | 18 | 200 | 53 | 5.5 | 2.7 |
| 2000 | 119 | 34 | 30 | 1,035 | 283 | 893 | 267 | 26 | 23 | 234 | 66 | 6.1 | 3.6 |
| 2001 | 133 | 34 | 37 | 1,153 | 329 | 1,004 | 309 | 27 | 27 | 265 | 77 | 6.6 | 5.5 |
| 2002 | 170 | 41 | 47 | 1,338 | 392 | 1,170 | 368 | 33 | 33 | 313 | 93 | 7.0 | 8.2 |
| 2003 | 240 | 59 | 57 | 1,719 | 536 | 1,539 | 516 | 49 | 43 | 412 | 130 | 9 | 8.3 |
| 2004 | 339 | 83 | 73 | 2,262 | 711 | - | - | 65 | 55 | - | - | 16 | - |
| 2005 | 444 | 112 | 93 | 3,071 | 975 | 2,658 | 940 | 85 | 69 | 698 | 233 | 24 | - |
| 2006 | 564 | 141 | 115 | 3,971 | 1,255 | 3,444 | 1,217 | 106 | 88 | 908 | 302 | 31 | - |
| 2007 | 695 | 185 | 139 | 5,326 | 1,678 | 4,648 | 1,628 | 138 | 100 | 1,235 | 399 | 41 | - |
| 2008 | 790 | 222 | 168 | 7,303 | 2,156 | 6,352 | 2,085 | 158 | 116 | - | - | 56 | - |
| 2009 | 672 | 247 | 244 | 8,026 | 2,235 | 7,015 | 2,165 | 179 | 127 | - | - | 59 | - |
| 2010 | 862 | 299 | - | 10,319 | 2,805 | 9,003 | 2,721 | 211 | - | - | - | 79 | - |
| Ratios to GDP (value added) by industry (percent) | | | | | | | | | | | | | |
| 1990 | - | 0.26 | 0.36 | - | - | - | - | - | - | - | - | 0.07 | 1.26 |
| 1991 | - | 0.27 | 0.38 | - | - | - | - | - | - | - | - | 0.05 | 1.18 |
| 1992 | 20.43 | 0.28 | 0.49 | - | - | - | - | - | - | - | - | 0.06 | 1.22 |
| 1993 | 27.51 | 0.91 | 0.40 | 280 | 25.47 | - | - | - | - | - | - | 0.26 | 0.81 |
| 1994 | 28.69 | 1.27 | 0.83 | 264 | 33.48 | - | - | - | - | - | - | 1.20 | 1.77 |
| 1995 | 31.51 | 1.42 | 1.02 | 220 | 42.94 | - | - | - | - | - | - | 3.53 | 1.65 |
| 1996 | 40.72 | 1.88 | 1.33 | 213 | 40.66 | - | - | - | - | - | - | 5.77 | 2.06 |
| 1997 | 40.98 | 2.19 | 1.60 | 189 | 43.26 | - | - | - | - | - | - | 6.25 | 2.41 |
| 1998 | 44.07 | 2.14 | 1.67 | 199 | 49.26 | - | - | - | - | - | - | 6.93 | 2.10 |
| 1999 | 45.47 | 2.52 | 2.16 | 203 | 52.85 | - | - | - | - | - | - | 6.06 | 2.99 |
| 2000 | 47.93 | 2.80 | 2.50 | 214 | 58.61 | - | - | - | - | - | - | 6.16 | 3.61 |
| 2001 | 50.06 | 2.57 | 2.76 | 219 | 62.46 | - | - | - | - | - | - | 5.95 | 5.01 |
| 2002 | 52.21 | 2.82 | 3.21 | 234 | 68.43 | - | - | - | - | - | - | 5.78 | 6.77 |
| 2003 | 54.84 | 3.62 | 3.45 | 259 | 80.73 | - | - | - | - | - | - | 6.59 | 6.14 |
| 2004 | 57.07 | 4.29 | 3.78 | 287 | 90.24 | - | - | 10.33 | 8.80 | - | - | 10.40 | - |
| 2005 | 58.30 | 4.98 | 4.10 | 326 | 103 | 362 | 128 | 11.53 | 9.47 | 95 | 31.71 | 13.96 | - |
| 2006 | 58.18 | 5.21 | 4.26 | 347 | 110 | 386 | 136 | 11.83 | 9.81 | 102 | 33.78 | 14.82 | - |
| 2007 | 56.98 | 5.30 | 3.99 | 367 | 115 | 404 | 142 | 11.96 | 8.68 | 107 | 34.72 | 15.03 | - |
| 2008 | 55.25 | 4.92 | 3.72 | 390 | 115 | 430 | 141 | 10.69 | 7.88 | - | - | 14.93 | - |
| 2009 | 55.93 | 4.95 | 4.88 | 405 | 113 | 435 | 134 | 11.12 | 7.86 | - | - | 13.97 | - |
| 2010 | 54.65 | 5.05 | - | 434 | 118 | - | - | - | - | - | - | 14.89 | - |

Notes: -=not available or not disclosed; sales or output include intermediate consumption which value added excludes; host data refer to firms with independent accounting systems; from 1998 host data small firms included in earlier years; host data refer to all plants and MNCs with foreign shares of 50 percent or more covered in Malaysia's manufacturing censuses or surveys; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade for Chinese GDP and Japanese MNCs, wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); China, National Bureau of Statistics (various years); Japan, Ministry of Economy, Trade and Industry (various years); United States Bureau of Economic Analysis (various years).

Table 9: Employment of Large Industrial Firms, Japanese and U.S. MNCs in China

| | All industries | | | Industry | | Manufacturing | | | | Trade | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Urban | Home, firms | | Host, large firms | | Host, large firms | | Home, firms | | Home, firms | |
| Year | MNCs | Japan | U.S. | All | MNCs | All | MNCs | Japan | U.S. | Japan | U.S. |
| Thousands of workers | | | | | | | | | | | |
| 1990 | 660 | 30.97 | 21.30 | - | - | - | - | 26.02 | 17.80 | 0.36 | 1.50 |
| 1991 | 1,650 | 41.61 | 22.30 | - | - | - | - | 35.92 | 20.40 | 0.41 | 1.60 |
| 1992 | 2,210 | 44.27 | 31.40 | - | - | - | - | 41.00 | 28.50 | 0.07 | 2.00 |
| 1993 | 2,880 | 112.1 | 36.30 | - | - | - | - | 103.0 | 33.70 | 0.51 | 1.70 |
| 1994 | 4,060 | 171.4 | 87.40 | - | - | - | - | 156.6 | 78.60 | 1.58 | 2.70 |
| 1995 | 5,130 | 226.4 | 109.5 | - | - | - | - | 206.4 | 99.10 | 5.37 | 2.80 |
| 1996 | 5,400 | 334.2 | 135.3 | - | - | - | - | 304.2 | 115.7 | 11.33 | 5.60 |
| 1997 | 5,810 | 402.3 | 178.0 | - | - | - | - | 368.2 | 148.9 | 14.48 | 7.80 |
| 1998 | 5,870 | 397.5 | 210.5 | - | - | - | - | 359.2 | 167.4 | 17.68 | 5.40 |
| 1999 | 6,121 | 478.9 | 293.7 | - | - | - | - | 440.1 | 229.7 | 16.38 | 9.00 |
| 2000 | 6,423 | 549.4 | 292.6 | - | - | - | - | 508.2 | 222.8 | 17.97 | 9.20 |
| 2001 | 6,709 | 531.4 | 314.5 | - | - | - | - | 491.7 | 236.3 | 18.14 | 11.80 |
| 2002 | 7,575 | 697.4 | 357.0 | - | - | - | - | 647.4 | 242.9 | 26.00 | 23.80 |
| 2003 | 8,631 | 914.2 | 375.2 | - | 12,587 | - | 12,435 | 847.5 | 248.6 | 30.12 | 25.60 |
| 2004 | 10,328 | 1,010 | 507.1 | 60,986 | 14,445 | 52,196 | 14,292 | 934.7 | 318.9 | 39.31 | 23.40 |
| 2005 | 12,452 | 1,207 | 612.8 | 68,960 | 18,996 | 59,353 | 18,768 | 1,111 | 403.8 | 47.08 | 26.10 |
| 2006 | 14,072 | 1,290 | 704.1 | 73,584 | 21,181 | 63,469 | 20,940 | 1,186 | 456.2 | 49.68 | 29.00 |
| 2007 | 15,830 | 1,428 | 788.8 | 78,752 | 23,530 | 68,555 | 23,236 | 1,303 | 479.0 | 58.81 | 25~50 |
| 2008 | 16,220 | 1,345 | 952.5 | 88,376 | 25,794 | 77,316 | 25,464 | 1,185 | 553.9 | 74.19 | 25~50 |
| 2009 | 16,988 | 1,407 | 1,433 | 88,312 | 24,504 | 77,195 | 24,187 | 1,245 | 666.8 | 77.86 | 46.40 |
| 2010 | 18,231 | 1,483 | - | 95,447 | 26,457 | 80,225 | 26,135 | 1,316 | - | 86.37 | - |
| Ratios to urban employment by industry (percent) | | | | | | | | | | | |
| 1990 | 0.39 | 0.02 | 0.01 | - | - | - | - | - | - | - | - |
| 1991 | 0.94 | 0.02 | 0.01 | - | - | - | - | - | - | - | - |
| 1992 | 1.24 | 0.02 | 0.02 | - | - | - | - | - | - | - | - |
| 1993 | 1.58 | 0.06 | 0.02 | - | - | - | - | - | - | - | - |
| 1994 | 2.18 | 0.09 | 0.05 | - | - | - | - | - | - | - | - |
| 1995 | 2.69 | 0.12 | 0.06 | - | - | - | - | - | - | - | - |
| 1996 | 2.71 | 0.17 | 0.07 | - | - | - | - | - | - | - | - |
| 1997 | 2.80 | 0.19 | 0.09 | - | - | - | - | - | - | - | - |
| 1998 | 2.72 | 0.18 | 0.10 | - | - | - | - | - | - | - | - |
| 1999 | 2.73 | 0.21 | 0.13 | - | - | - | - | - | - | - | - |
| 2000 | 2.77 | 0.24 | 0.13 | - | - | - | - | - | - | - | - |
| 2001 | 2.78 | 0.22 | 0.13 | - | - | - | - | - | - | - | - |
| 2002 | 3.01 | 0.28 | 0.14 | - | - | - | - | - | - | - | - |
| 2003 | 3.29 | 0.35 | 0.14 | - | 33.42 | - | 41.72 | 2.84 | 0.83 | 0.48 | 0.41 |
| 2004 | 3.78 | 0.37 | 0.19 | 158.32 | 37.50 | 171.09 | 46.85 | 3.06 | 1.05 | 0.67 | 0.40 |
| 2005 | 4.39 | 0.43 | 0.22 | 171.54 | 47.25 | 184.85 | 58.45 | 3.46 | 1.26 | 0.87 | 0.48 |
| 2006 | 4.75 | 0.44 | 0.24 | 175.88 | 50.63 | 189.37 | 62.48 | 3.54 | 1.36 | 0.96 | 0.56 |
| 2007 | 5.11 | 0.46 | 0.25 | 182.98 | 54.67 | 197.83 | 67.05 | 3.76 | 1.38 | 1.16 | - |
| 2008 | 5.05 | 0.42 | 0.30 | 206.43 | 60.25 | 225.13 | 74.15 | 3.45 | 1.61 | 1.44 | - |
| 2009 | 5.10 | 0.42 | 0.43 | 202.86 | 56.29 | 221.07 | 69.27 | 3.57 | 1.91 | 1.49 | 0.89 |
| 2010 | 5.26 | 0.43 | - | 211.65 | 58.67 | 220.57 | 71.86 | 3.62 | - | 1.61 | - |

Notes: -=not available or not disclosed; host data refer to urban units in all industries and large firms with independent accounting systems for industry and manufacturing; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade for Chinese urban totals and Japanese MNCs, but wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); China, National Bureau of Statistics (various years); Japan, Ministry of Economy, Trade and Industry (various years); United States Bureau of Economic Analysis (various years).

Table 10: Comparisons of Foreign MNCs and Local Firms in Chinese Industry

| | Large industrial firms | | | | | Large manufacturing firms | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Workers per firm | Output per firm, US$ mil. | Output per worker, US$ | Value added per worker, US$ | Output-fixed assets ratio | Workers per firm | Output per firm, US$ mil. | Output per worker, US$ | Value added per worker, US$ | Output-fixed assets ratio |
| Foreign MNCs (thousands of workers, no. of firms, US$ billions for other variables) | | | | | | | | | | |
| 1993 | - | 3.128 | - | - | 2.341 | - | - | - | - | - |
| 1994 | - | 2.600 | - | - | 2.107 | - | - | - | - | - |
| 1995 | - | 2.589 | - | - | 2.619 | - | 2.519 | - | - | - |
| 1996 | - | 3.307 | - | - | 2.278 | - | 3.193 | - | - | - |
| 1997 | - | 4.007 | - | - | 2.130 | - | 3.843 | - | - | - |
| 1998 | - | 7.655 | - | - | 2.016 | - | - | - | - | - |
| 1999 | - | 8.532 | - | - | 2.091 | - | 8.542 | - | - | 2.385 |
| 2000 | - | 9.965 | - | - | 2.392 | - | 9.962 | - | - | 2.691 |
| 2001 | - | 10.466 | - | - | 2.450 | - | 10.431 | - | - | 2.810 |
| 2002 | - | 11.378 | - | - | 2.683 | - | 11.360 | - | - | - |
| 2003 | 326 | 13.891 | 42,578 | 11,134 | 3.233 | 327 | 13.571 | 41,523 | 10,446 | 3.705 |
| 2004 | 338 | 16.630 | 49,221 | 12,748 | 3.727 | 339 | - | - | - | - |
| 2005 | 337 | 17.284 | 51,303 | 13,149 | 3.728 | 338 | 16.913 | 50,102 | 12,395 | 4.209 |
| 2006 | 348 | 20.619 | 59,257 | 15,126 | 3.903 | 349 | 20.282 | 58,130 | 14,407 | 4.333 |
| 2007 | 349 | 24.871 | 71,298 | 17,949 | 4.123 | 349 | 24.489 | 70,075 | 17,180 | 4.639 |
| 2008 | 331 | 27.692 | 83,574 | - | 4.063 | 332 | 27.199 | 81,899 | - | 4.508 |
| 2009 | 325 | 29.652 | 91,211 | - | 3.775 | 326 | 29.175 | 89,503 | - | 4.213 |
| 2010 | 357 | 37.885 | 106,026 | - | 4.012 | 359 | 37.359 | 104,128 | - | 4.412 |
| Percentage differentials between majority-foreign MNCs and local firms | | | | | | | | | | |
| 1993 | - | 114 | - | - | 32 | - | - | - | - | - |
| 1994 | - | 118 | - | - | 19 | - | - | - | - | - |
| 1995 | - | 125 | - | - | 38 | - | 127 | - | - | - |
| 1996 | - | 151 | - | - | 31 | - | 143 | - | - | - |
| 1997 | - | 194 | - | - | 47 | - | 161 | - | - | - |
| Mean | | 140 | | | 33 | | 144 | | | |
| StdDev | | 33 | | | 10 | | 17 | | | |
| 1998 | - | 72 | - | - | 42 | - | - | - | - | - |
| 1999 | - | 78 | - | - | 49 | - | 86 | - | - | 30 |
| 2000 | - | 78 | - | - | 61 | - | 87 | - | - | 34 |
| 2001 | - | 78 | - | - | 59 | - | 84 | - | - | 29 |
| 2002 | - | 77 | - | - | - | - | 84 | - | - | - |
| 2003 | - | 85 | - | - | 73 | - | 90 | - | - | 32 |
| 2004 | 28 | 89 | 48 | - | 69 | 44 | - | - | - | - |
| 2005 | 45 | 78 | 22 | 4 | 48 | 63 | 93 | 18 | 8 | 16 |
| 2006 | 60 | 83 | 14 | -4 | 45 | 80 | 100 | 11 | 1 | 9 |
| 2007 | 70 | 84 | 8 | -11 | 37 | 90 | 100 | 5 | -7 | 4 |
| 2008 | 84 | 87 | 2 | - | 30 | 105 | 104 | -0 | - | -2 |
| 2009 | 83 | 84 | 0 | - | 33 | 104 | 99 | -2 | - | 0 |
| 2010 | 96 | 91 | -3 | - | 29 | 117 | 108 | -4 | - | -1 |
| Mean | 67 | 82 | 13 | -4 | 48 | 86 | 94 | 5 | 1 | 15 |
| StdDev | 24 | 6 | 18 | 8 | 15 | 26 | 8 | 9 | 7 | 15 |

Note: Industry includes mining, manufacturing, & utilities; using a narrow definition (SITC 5-9) that excludes many food- and resource-based manufactures, shares of manufactures in total exports rose from 85-87% in 1995-1997 to 95% percent in 2006-2009.

Sources: China, National Bureau of Statistics (various years).

Table 11: Production of Manufacturing Plants and Japanese and U.S. MNCs in Indonesia

| | All industries | | Manufacturing | | | | | | Trade | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sales | | Output or sales | | | | Value added | | Sales | |
| | Home, firms | | Host, plants | | Home, firms | | Host, plants | | Home, firms | |
| Year | Japan | U.S. | All | MNCs | Japan | U.S. | All | MNCs | Japan | U.S. |
| Values (US$ billions) | | | | | | | | | | |
| 1990 | 3.60 | 7.62 | 36.75 | 8.17 | 3.01 | 0.55 | 13.66 | 2.98 | 0.11 | 0.13 |
| 1991 | 4.75 | 8.09 | 42.11 | 9.19 | 3.81 | 0.59 | 15.34 | 3.25 | 0.27 | 0.14 |
| 1992 | 6.70 | 8.26 | 49.85 | 11.29 | 5.66 | 0.68 | 20.41 | 4.81 | 0.55 | 0.15 |
| 1993 | 6.59 | 8.23 | 58.85 | 13.22 | 5.16 | 0.84 | 23.87 | 5.53 | 0.77 | 0.14 |
| 1994 | 10.77 | 8.87 | 66.75 | 17.56 | 8.12 | 1.86 | 27.70 | 7.58 | 1.77 | 0.06 |
| 1995 | 17.35 | 9.23 | 80.71 | 23.42 | 12.64 | 1.15 | 32.87 | 9.49 | 1.11 | 0.08 |
| 1996 | 15.71 | 10.55 | 96.39 | 29.02 | 13.17 | 1.44 | 39.85 | 12.15 | 0.89 | 0.22 |
| 1997 | 15.69 | 10.33 | 71.86 | 22.34 | 12.24 | 1.62 | 28.89 | 10.20 | 1.95 | 0.24 |
| 1998 | 7.95 | 7.51 | 39.26 | 12.85 | 6.38 | 1.02 | 15.44 | 5.40 | 0.95 | 0.08 |
| 1999 | 18.17 | 10.68 | 62.15 | 21.09 | 9.38 | 1.99 | 24.36 | 8.52 | 8.20 | 0.11 |
| 2000 | 17.98 | 12.74 | 74.66 | 27.88 | 15.06 | 2.32 | 28.12 | 10.71 | 1.83 | 0.28 |
| 2001 | 17.08 | 14.89 | 70.40 | 23.29 | 13.90 | 2.84 | 26.28 | 8.87 | 2.25 | - |
| 2002 | 16.88 | 14.31 | 94.78 | 30.39 | 14.16 | 2.98 | 33.29 | 11.05 | 1.71 | 2.18 |
| 2003 | 19.40 | 16.28 | 97.80 | 33.34 | 16.84 | 3.58 | 38.10 | 13.79 | 1.28 | 2.22 |
| 2004 | 26.99 | 16.67 | 110.30 | 36.73 | 22.77 | - | 40.15 | 14.33 | - | 2.39 |
| 2005 | 37.01 | 18.29 | 112.18 | 37.39 | 28.15 | 5.35 | 40.85 | 15.04 | 6.19 | - |
| 2006 | 34.41 | 23.75 | 141.12 | 53.05 | 26.40 | 6.99 | 56.16 | 22.28 | 4.74 | 1.99 |
| 2007 | 40.80 | 27.39 | 169.24 | 58.35 | 31.78 | 8.72 | 65.46 | 24.97 | 6.93 | 2.24 |
| 2008 | 47.46 | 27.75 | 197.68 | 81.66 | 36.79 | - | 74.18 | 34.63 | 8.36 | 2.61 |
| 2009 | 56.85 | 29.00 | 192.58 | 83.22 | 46.60 | - | 77.04 | 37.06 | 8.11 | 2.18 |
| 2010 | 65.79 | - | - | - | 51.31 | - | - | - | 10.20 | - |
| Ratios to GDP (value added) by industry (percent) | | | | | | | | | | |
| 1990 | 3.15 | 6.66 | 155.45 | 34.54 | 12.71 | 2.34 | 57.77 | 12.61 | 0.57 | 0.66 |
| 1991 | 3.70 | 6.31 | 153.86 | 33.59 | 13.90 | 2.17 | 56.06 | 11.87 | 1.28 | 0.67 |
| 1992 | 4.81 | 5.94 | 163.18 | 36.94 | 18.51 | 2.22 | 66.82 | 15.74 | 2.35 | 0.63 |
| 1993 | 4.17 | 5.21 | 166.99 | 37.52 | 14.65 | 2.37 | 67.73 | 15.70 | 2.92 | 0.51 |
| 1994 | 6.09 | 5.01 | 161.62 | 42.53 | 19.66 | 4.50 | 67.07 | 18.36 | 6.00 | 0.20 |
| 1995 | 8.58 | 4.56 | 165.44 | 48.01 | 25.91 | 2.35 | 67.38 | 19.46 | 3.29 | 0.23 |
| 1996 | 6.91 | 4.64 | 165.49 | 49.82 | 22.61 | 2.47 | 68.41 | 20.87 | 2.38 | 0.59 |
| 1997 | 7.27 | 4.79 | 124.32 | 38.65 | 21.17 | 2.81 | 49.99 | 17.65 | 5.69 | 0.71 |
| 1998 | 8.33 | 7.86 | 164.57 | 53.86 | 26.73 | 4.25 | 64.74 | 22.63 | 6.46 | 0.57 |
| 1999 | 12.98 | 7.63 | 170.78 | 57.94 | 25.77 | 5.48 | 66.94 | 23.41 | 36.62 | 0.47 |
| 2000 | 10.89 | 7.72 | 163.07 | 60.88 | 32.90 | 5.06 | 61.43 | 23.39 | 6.85 | 1.06 |
| 2001 | 10.64 | 9.28 | 151.02 | 49.97 | 29.82 | 6.08 | 56.37 | 19.03 | 8.71 | - |
| 2002 | 8.63 | 7.32 | 168.67 | 54.09 | 25.20 | 5.30 | 59.24 | 19.67 | 5.10 | 6.51 |
| 2003 | 8.27 | 6.93 | 147.44 | 50.26 | 25.39 | 5.39 | 57.44 | 20.79 | 3.27 | 5.69 |
| 2004 | 10.51 | 6.49 | 153.02 | 50.96 | 31.59 | - | 55.70 | 19.87 | - | 5.79 |
| 2005 | 12.95 | 6.40 | 143.18 | 47.73 | 35.93 | 6.82 | 52.14 | 19.19 | 13.92 | - |
| 2006 | 9.44 | 6.51 | 140.57 | 52.84 | 26.30 | 6.96 | 55.93 | 22.19 | 8.66 | 3.64 |
| 2007 | 9.44 | 6.34 | 144.76 | 49.91 | 27.18 | 7.45 | 56.00 | 21.36 | 10.69 | 3.46 |
| 2008 | 9.30 | 5.44 | 139.29 | 57.54 | 25.92 | - | 52.27 | 24.40 | 11.72 | 3.66 |
| 2009 | 10.54 | 5.38 | 135.41 | 58.51 | 32.76 | - | 54.17 | 26.06 | 11.33 | 3.04 |
| 2010 | 9.31 | - | - | - | 29.26 | - | - | - | 10.52 | - |

Notes: -=not available or not disclosed; sales or output include intermediate consumption which value added excludes; host data refer to all plants and MNCs with foreign shares of 10 percent or more covered in Indonesia's manufacturing censuses or surveys; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade as well as hotels and restaurants for Indonesian GDP, wholesale and retail trade for Japanese MNCs, and wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Indonesia, Badan Pusat Statistik (various years a); Japan, Ministry of Economy, Trade and Industry (various years); United States Bureau of Economic Analysis (various years).

Table 12: Employment of Manufacturing Plants and Japanese and U.S. MNCs in Indonesia

| | All industries | | Manufacturing | | | | Trade | |
|---|---|---|---|---|---|---|---|---|
| | Home, firms | | Host, plants | | Home, firms | | Home, firms | |
| Year | Japan | U.S. | All | MNCs | Japan | U.S. | Japan | U.S. |
| Thousands of workers | | | | | | | | |
| 1990 | 66.04 | 42.70 | 2,662.80 | 268.48 | 58.18 | 11.40 | 0.74 | 0.80 |
| 1991 | 79.20 | 42.90 | 2,993.98 | 347.51 | 71.41 | 10.80 | 0.88 | 0.80 |
| 1992 | 79.93 | 46.90 | 3,312.88 | 467.74 | 71.77 | 12.80 | 1.02 | 1.80 |
| 1993 | 114.30 | 52.30 | 3,574.81 | 538.67 | 101.70 | 15.10 | 1.39 | 1.60 |
| 1994 | 145.23 | 61.30 | 3,813.67 | 646.00 | 126.77 | 25.50 | 6.08 | 1.40 |
| 1995 | 174.75 | 58.40 | 4,174.14 | 715.37 | 154.37 | 21.30 | 3.16 | 1.40 |
| 1996 | 226.11 | 61.90 | 4,214.97 | 767.92 | 203.88 | 24.20 | 4.82 | 1.70 |
| 1997 | 217.09 | 66.00 | 4,154.84 | 780.90 | 196.32 | 26.30 | 2.77 | 1.80 |
| 1998 | 205.31 | 64.00 | 4,123.61 | 788.55 | 189.24 | 25.10 | 2.21 | 1.00 |
| 1999 | 234.92 | 72.30 | 4,234.98 | 864.99 | 215.56 | 27.70 | 3.03 | 1.10 |
| 2000 | 277.85 | 73.30 | 4,366.82 | 932.36 | 258.36 | 30.30 | 2.27 | 1.50 |
| 2001 | - | 79.20 | 4,385.92 | 941.41 | - | 33.40 | - | 1.40 |
| 2002 | 280.57 | 80.20 | 4,364.87 | 929.67 | 254.67 | 32.70 | 8.07 | 2.00 |
| 2003 | 284.47 | 78.10 | 4,273.88 | 986.65 | 255.40 | 32.80 | 8.94 | 1.70 |
| 2004 | 314.86 | 73.30 | 4,324.98 | 963.66 | 278.33 | 32.50 | 12.31 | 2.30 |
| 2005 | 327.61 | 122.70 | 4,226.57 | 977.81 | 284.09 | 75.80 | 16.20 | 5~10 |
| 2006 | 324.87 | 105.10 | 4,755.70 | 1,161.16 | 284.29 | 66.30 | 9.55 | 2.10 |
| 2007 | 335.59 | 107.20 | 4,624.94 | 1,197.38 | 291.71 | 59.60 | 9.65 | 1.80 |
| 2008 | 307.48 | 107.20 | 4,457.93 | 1,274.23 | 266.90 | 56.40 | 8.05 | 1.80 |
| 2009 | 309.28 | 109.30 | 4,345.17 | 1,243.50 | 274.22 | 57.40 | 8.86 | 1.70 |
| 2010 | 346.81 | - | - | - | 291.48 | - | 11.55 | - |
| Ratios to total employment by industry (percent) | | | | | | | | |
| 1990 | 0.09 | 0.06 | 34.61 | 3.49 | 0.76 | 0.15 | 0.01 | 0.01 |
| 1991 | 0.10 | 0.06 | 37.68 | 4.37 | 0.90 | 0.14 | 0.01 | 0.01 |
| 1992 | 0.10 | 0.06 | 40.13 | 5.67 | 0.87 | 0.16 | 0.01 | 0.02 |
| 1993 | 0.14 | 0.07 | 40.70 | 6.13 | 1.16 | 0.17 | 0.01 | 0.01 |
| 1994 | 0.18 | 0.07 | 35.18 | 5.96 | 1.17 | 0.24 | - | - |
| 1995 | 0.22 | 0.07 | 41.22 | 7.06 | 1.52 | 0.21 | 0.02 | 0.01 |
| 1996 | 0.26 | 0.07 | 39.13 | 7.13 | 1.89 | 0.22 | 0.03 | 0.01 |
| 1997 | 0.25 | 0.08 | 37.74 | 7.09 | 1.78 | 0.24 | 0.02 | 0.01 |
| 1998 | 0.23 | 0.07 | 41.51 | 7.94 | 1.90 | 0.25 | 0.01 | 0.01 |
| 1999 | 0.26 | 0.08 | 36.77 | 7.51 | 1.87 | 0.24 | 0.02 | 0.01 |
| 2000 | 0.31 | 0.08 | 37.51 | 8.01 | 2.22 | 0.26 | 0.01 | 0.01 |
| 2001 | - | 0.09 | 36.29 | 7.79 | - | 0.28 | - | 0.01 |
| 2002 | 0.31 | 0.09 | 36.04 | 7.68 | 2.10 | 0.27 | 0.05 | 0.01 |
| 2003 | 0.31 | 0.08 | 37.18 | 8.58 | 2.22 | 0.29 | 0.05 | 0.01 |
| 2004 | 0.34 | 0.08 | 39.07 | 8.71 | 2.51 | 0.29 | 0.06 | 0.01 |
| 2005 | 0.35 | 0.13 | 35.36 | 8.18 | 2.38 | 0.63 | 0.09 | - |
| 2006 | 0.34 | 0.11 | 40.00 | 9.77 | 2.39 | 0.56 | 0.05 | 0.01 |
| 2007 | 0.34 | 0.11 | 37.39 | 9.68 | 2.36 | 0.48 | 0.05 | 0.01 |
| 2008 | 0.30 | 0.10 | 35.52 | 10.15 | 2.13 | 0.45 | 0.04 | 0.01 |
| 2009 | 0.29 | 0.10 | 33.84 | 9.68 | 2.14 | 0.45 | 0.04 | 0.01 |
| 2010 | 0.32 | - | - | - | 2.11 | - | 0.05 | - |

Notes: -=not available or not disclosed; host data refer to all plants and MNCs with foreign shares of 10 percent or more covered in Indonesia's manufacturing censuses or surveys; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade as well as hotels and restaurants for Indonesian totals, wholesale and retail trade for Japanese MNCs, and wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Indonesia, Badan Pusat Statistik (various years a, various years b); Japan, Ministry of Economy, Trade and Industry (various years); United States Bureau of Economic Analysis (various years).

Table 13: Comparisons of Foreign MNCs and Local (Medium-Large) Plants in Indonesian Manufacturing

| Year | Workers per plant | Output per plant, US$ mil. | Output per worker, US$ | Value added per worker, US$ | Compen-sation per worker, US$ | Export-output ratios, % |
|---|---|---|---|---|---|---|
| Foreign MNCs (foreign ownership shares of 10% or more) | | | | | | |
| 1990 | 452 | 13.747 | 30,415 | 11,100 | 1,650 | 16.94 |
| 1991 | 477 | 12.611 | 26,456 | 9,347 | 682 | 21.90 |
| 1992 | 524 | 12.653 | 24,131 | 10,283 | 1,836 | 35.95 |
| 1993 | 542 | 13.317 | 24,550 | 10,274 | 1,867 | 28.46 |
| 1994 | 578 | 15.710 | 27,189 | 11,737 | 1,987 | 31.58 |
| 1995 | 597 | 19.551 | 32,740 | 13,270 | 2,192 | 31.81 |
| 1996 | 581 | 21.966 | 37,787 | 15,827 | 2,386 | 35.61 |
| 1997 | 551 | 15.777 | 28,609 | 13,067 | 2,152 | 31.27 |
| 1998 | 503 | 8.200 | 16,294 | 6,845 | 825 | - |
| 1999 | 507 | 12.353 | 24,378 | 9,851 | 1,443 | 27.97 |
| 2000 | 532 | 15.893 | 29,898 | 11,484 | 1,412 | 26.82 |
| 2001 | 551 | 13.623 | 24,744 | 9,421 | 1,458 | - |
| 2002 | 557 | 18.210 | 32,692 | 11,888 | 1,454 | - |
| 2003 | 559 | 18.878 | 33,790 | 13,977 | 2,640 | - |
| 2004 | 572 | 21.786 | 38,116 | 14,867 | 1,759 | 23.32 |
| 2005 | 582 | 22.245 | 38,242 | 15,379 | 1,781 | 24.65 |
| 2006 | 539 | 24.627 | 45,684 | 19,186 | 2,067 | 34.70 |
| 2007 | 550 | 26.777 | 48,729 | 20,852 | 2,024 | 23.74 |
| 2008 | 578 | 37.017 | 64,085 | 27,179 | 2,434 | 20.13 |
| 2009 | 562 | 37.639 | 66,924 | 29,804 | 2,192 | 26.36 |
| Percentage differentials between foreign MNCs and local plants | | | | | | |
| 1990 | 201 | 667 | 155 | 149 | 92 | 0 |
| 1991 | 184 | 504 | 113 | 105 | -39 | -1 |
| 1992 | 209 | 450 | 78 | 87 | 49 | 63 |
| 1993 | 207 | 401 | 63 | 70 | 55 | 36 |
| 1994 | 226 | 472 | 75 | 85 | 61 | 31 |
| 1995 | 251 | 595 | 98 | 96 | 69 | 21 |
| 1996 | 266 | 607 | 93 | 97 | 68 | 37 |
| 1997 | 243 | 568 | 95 | 136 | 54 | 37 |
| 1998 | 200 | 516 | 106 | 127 | 25 | - |
| 1999 | 206 | 513 | 100 | 110 | 85 | 67 |
| 2000 | 216 | 594 | 119 | 126 | 61 | 21 |
| 2001 | 215 | 469 | 81 | 86 | 33 | - |
| 2002 | 216 | 451 | 74 | 84 | 37 | - |
| 2003 | 215 | 444 | 72 | 89 | 95 | - |
| 2004 | 223 | 463 | 74 | 93 | 39 | 67 |
| 2005 | 241 | 467 | 66 | 94 | 36 | 43 |
| 2006 | 310 | 664 | 86 | 104 | 31 | 67 |
| 2007 | 314 | 523 | 51 | 76 | 31 | 68 |
| 2008 | 326 | 649 | 76 | 119 | 42 | 23 |
| 2009 | 304 | 666 | 90 | 131 | 28 | 39 |
| Mean | 239 | 534 | 88 | 103 | 48 | 39 |
| StdDev | 43 | 85 | 23 | 22 | 29 | 23 |

Sources: Indonesia, Badan Pusat Statistik (various years a); International Monetary Fund (2012)..

Table 14: Revenues or Sales of Large Firms and Japanese and U.S. MNCs in the Philippines

| | All industries | | | | Manufacturing | | | | Trade | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Host, firms | | Home, firms | | Host, firms | | Home, firms | | Host, firms | | Home, firms | |
| Year | All | MNCs | Japan | U.S. | All | MNCs | Japan | U.S. | All | MNCs | Japan | U.S. |
| Values (US$ billions) | | | | | | | | | | | | |
| 1990 | - | - | 1.49 | 4.18 | - | - | 1.37 | 2.71 | - | - | 0.06 | 0.26 |
| 1991 | - | - | 1.72 | 4.52 | - | - | 1.50 | 2.90 | - | - | 0.11 | 0.24 |
| 1992 | - | - | 2.21 | 5.42 | - | - | 1.84 | 3.81 | - | - | 0.02 | 0.22 |
| 1993 | - | - | 2.97 | 5.69 | - | - | 2.66 | 4.05 | - | - | 0.15 | 0.33 |
| 1994 | - | - | 4.05 | 6.62 | - | - | 3.75 | 4.26 | - | - | 0.02 | - |
| 1995 | 64.93 | 19.09 | 4.15 | 7.80 | 30.74 | 15.99 | 3.75 | 5.27 | 9.43 | 0.69 | 0.07 | 0.58 |
| 1996 | 78.17 | 25.17 | 7.94 | 8.71 | 35.32 | 20.61 | 6.26 | 5.85 | 11.41 | 0.91 | 1.27 | 0.66 |
| 1997 | 81.67 | 27.37 | 9.99 | 8.78 | 38.18 | 22.37 | 7.51 | 5.87 | 11.76 | 1.18 | 2.02 | 0.74 |
| 1998 | 65.82 | 18.34 | 7.96 | 7.69 | 31.60 | 15.94 | 6.30 | 5.06 | 9.41 | 0.88 | 1.20 | 0.56 |
| 1999 | 70.80 | 21.88 | 10.23 | 9.06 | 33.49 | 18.73 | 8.13 | 5.87 | 10.84 | 1.79 | 1.27 | 0.90 |
| 2000 | 71.87 | 27.17 | 11.20 | 10.79 | 37.16 | 23.51 | 10.09 | 6.67 | 9.67 | 1.97 | 0.31 | 1.16 |
| 2001 | 70.47 | 28.17 | 13.32 | 11.05 | 35.08 | 23.90 | 12.02 | 6.54 | 9.22 | 1.66 | 0.61 | 1.47 |
| 2002 | 73.79 | 36.41 | 13.53 | 12.14 | 37.56 | 27.84 | 12.78 | 6.77 | 9.39 | 2.12 | 0.22 | 1.50 |
| 2003 | 78.07 | 36.79 | 13.56 | 12.26 | 40.56 | 29.68 | 12.66 | 7.05 | 9.33 | 2.27 | 0.49 | 1.31 |
| 2004 | 87.62 | 38.88 | 14.86 | 12.33 | 43.52 | 31.66 | 13.69 | 7.10 | 11.24 | 2.36 | - | 1.06 |
| 2005 | 94.90 | 46.05 | 13.57 | 13.57 | 44.74 | 35.18 | 11.62 | 8.33 | 13.12 | 3.08 | 1.31 | 1.11 |
| 2006 | 109.81 | 48.75 | 14.46 | 15.64 | 51.29 | 38.20 | 12.27 | 10.06 | 15.17 | 3.72 | 1.09 | 1.07 |
| 2007 | 127.66 | 61.86 | 14.89 | 16.60 | 56.48 | 44.57 | 12.44 | 10.73 | 19.20 | 5.09 | - | 1.36 |
| 2008 | 133.46 | 54.86 | 19.12 | 16.97 | 61.29 | 36.26 | 13.74 | 10.47 | 24.11 | 7.56 | - | 1.49 |
| 2009 | 129.21 | 54.61 | 16.80 | 16.85 | 56.91 | 37.82 | 12.29 | 9.71 | 21.73 | 5.19 | - | 1.22 |
| 2010 | 153.51 | 55.35 | 19.51 | - | 63.61 | 38.15 | 14.59 | - | 25.53 | 6.82 | - | - |
| Ratios to GDP (value added) by industry (percent) | | | | | | | | | | | | |
| 1990 | - | - | 3.36 | 9.43 | - | - | 12.45 | 24.61 | - | - | 0.90 | 4.03 |
| 1991 | - | - | 3.78 | 9.94 | - | - | 13.04 | 25.19 | - | - | 1.64 | 3.71 |
| 1992 | - | - | 4.18 | 10.23 | - | - | 14.37 | 29.72 | - | - | 0.30 | 2.95 |
| 1993 | - | - | 5.47 | 10.46 | - | - | 20.63 | 31.39 | - | - | 1.98 | 4.26 |
| 1994 | - | - | 6.31 | 10.33 | - | - | 25.13 | 28.56 | - | - | 0.20 | - |
| 1995 | 87.60 | 25.75 | 5.60 | 10.53 | 180.39 | 93.80 | 21.98 | 30.95 | 92.61 | 6.77 | 0.67 | 5.72 |
| 1996 | 94.36 | 30.38 | 9.58 | 10.51 | 186.93 | 109.06 | 33.11 | 30.97 | 101.40 | 8.07 | 11.29 | 5.82 |
| 1997 | 99.18 | 33.24 | 12.13 | 10.66 | 208.22 | 122.01 | 40.95 | 32.04 | 109.25 | 10.94 | 18.78 | 6.83 |
| 1998 | 91.16 | 25.41 | 11.02 | 10.64 | 186.60 | 94.09 | 37.17 | 29.88 | 88.98 | 8.34 | 11.35 | 5.33 |
| 1999 | 85.31 | 26.36 | 12.33 | 10.92 | 171.94 | 96.15 | 41.77 | 30.13 | 83.77 | 13.86 | 9.80 | 6.93 |
| 2000 | 88.70 | 33.53 | 13.82 | 13.32 | 187.44 | 118.60 | 50.90 | 33.62 | 75.58 | 15.39 | 2.42 | 9.05 |
| 2001 | 92.41 | 36.93 | 17.47 | 14.49 | 186.46 | 127.03 | 63.88 | 34.74 | 75.79 | 13.69 | 5.05 | 12.08 |
| 2002 | 90.70 | 44.76 | 16.63 | 14.92 | 186.98 | 138.56 | 63.59 | 33.69 | 73.05 | 16.48 | 1.67 | 11.65 |
| 2003 | 93.04 | 43.85 | 16.16 | 14.61 | 196.14 | 143.55 | 61.24 | 34.10 | 70.39 | 17.11 | 3.69 | 9.89 |
| 2004 | 95.90 | 42.55 | 16.26 | 13.49 | 198.87 | 144.71 | 62.57 | 32.46 | 77.06 | 16.17 | - | 7.26 |
| 2005 | 92.07 | 44.68 | 13.17 | 13.16 | 180.48 | 141.88 | 46.86 | 33.59 | 77.59 | 18.24 | 7.74 | 6.58 |
| 2006 | 89.86 | 39.89 | 11.84 | 12.79 | 177.66 | 132.34 | 42.51 | 34.85 | 73.92 | 18.14 | 5.33 | 5.21 |
| 2007 | 85.47 | 41.42 | 9.97 | 11.11 | 166.27 | 131.20 | 36.61 | 31.58 | 75.15 | 19.92 | - | 5.32 |
| 2008 | 76.62 | 31.49 | 10.98 | 9.74 | 154.26 | 91.27 | 34.57 | 26.34 | 81.19 | 25.47 | - | 5.00 |
| 2009 | 76.76 | 32.44 | 9.98 | 10.01 | 159.03 | 105.68 | 34.35 | 27.12 | 76.23 | 18.21 | - | 4.29 |
| 2010 | 76.91 | 27.73 | 9.77 | - | 148.62 | 89.14 | 34.09 | - | 73.64 | 19.68 | - | - |

Notes: -=not available or not disclosed; sales or output include intermediate consumption which value added excludes; host data refer to the 1000 largest firms; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade as well as hotels and restaurants for Philippine GDP, wholesale and retail trade for Japanese MNCs, and wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Business World (various years); Japan, Ministry of Economy, Trade and Industry (various years); United States Bureau of Economic Analysis (various years).

Table 15: Employment of Japanese and U.S. MNCs in the Philippines

| | All industries | | Manufacturing | | Trade | |
|---|---|---|---|---|---|---|
| | Home, firms | | Home, firms | | Home, firms | |
| Year | Japan | U.S. | Japan | U.S. | Japan | U.S. |
| Thousands of workers | | | | | | |
| 1990 | 41.68 | 97.90 | 33.38 | 84.60 | 0.64 | 3.10 |
| 1991 | 39.32 | 88.30 | 30.26 | 75.50 | 1.33 | 2.90 |
| 1992 | 45.16 | 87.60 | 36.38 | 79.60 | 0.45 | 1.90 |
| 1993 | 60.47 | 85.80 | 50.23 | 78.60 | 0.20 | 2.70 |
| 1994 | 69.52 | 93.80 | 60.03 | 77.30 | 0.75 | 3.40 |
| 1995 | 70.88 | 105.60 | 58.90 | 91.70 | 0.84 | 3.80 |
| 1996 | 94.60 | 97.10 | 88.30 | 82.90 | 1.78 | 4.10 |
| 1997 | 106.71 | 91.80 | 98.29 | 74.30 | 3.81 | 4.50 |
| 1998 | 108.53 | 70.90 | 97.45 | 54.70 | 4.32 | 4.00 |
| 1999 | 140.89 | 85.40 | 131.29 | 61.90 | 1.63 | 4.80 |
| 2000 | 141.50 | 85.70 | 131.02 | 61.10 | 1.75 | 5.60 |
| 2001 | - | 81.90 | - | 55.60 | - | 6.20 |
| 2002 | 164.13 | 93.90 | 154.84 | 67.10 | 1.33 | 6.40 |
| 2003 | 169.14 | 85.00 | 158.07 | 63.20 | 1.53 | 5.60 |
| 2004 | 193.77 | 88.70 | 181.01 | 61.20 | 3.02 | 3.90 |
| 2005 | 171.29 | 95.10 | 156.90 | 65.40 | 3.68 | 4.30 |
| 2006 | 167.30 | 106.70 | 153.13 | 64.40 | 2.92 | 3.60 |
| 2007 | 151.37 | 117.90 | 136.35 | 65.80 | - | 3.30 |
| 2008 | 175.09 | 125.60 | 128.59 | 60.20 | - | 2.70 |
| 2009 | 157.72 | 150.30 | 142.70 | 50~100 | - | 2.60 |
| 2010 | 197.12 | - | 152.22 | - | - | - |
| Ratios to total employment by industry (percent) | | | | | | |
| 1990 | 0.19 | 0.44 | 1.49 | 3.78 | - | - |
| 1991 | 0.17 | 0.39 | 1.27 | 3.18 | 0.04 | 0.09 |
| 1992 | 0.19 | 0.37 | 1.44 | 3.15 | 0.01 | 0.06 |
| 1993 | 0.25 | 0.35 | 2.04 | 3.20 | 0.01 | 0.08 |
| 1994 | 0.28 | 0.37 | 2.36 | 3.04 | 0.02 | 0.10 |
| 1995 | 0.28 | 0.41 | 2.25 | 3.50 | 0.02 | 0.10 |
| 1996 | 0.35 | 0.36 | 3.28 | 3.08 | 0.04 | 0.10 |
| 1997 | 0.40 | 0.35 | 3.61 | 2.73 | 0.09 | 0.11 |
| 1998 | 0.41 | 0.27 | 3.59 | 2.01 | 0.10 | 0.09 |
| 1999 | 0.51 | 0.31 | 4.76 | 2.24 | 0.04 | 0.11 |
| 2000 | 0.52 | 0.31 | 4.77 | 2.23 | 0.04 | 0.12 |
| 2001 | - | 0.28 | - | 1.91 | - | 0.12 |
| 2002 | 0.55 | 0.31 | 5.40 | 2.34 | 0.02 | 0.11 |
| 2003 | 0.55 | 0.28 | 5.38 | 2.15 | 0.03 | 0.10 |
| 2004 | 0.61 | 0.28 | 5.91 | 2.00 | 0.05 | 0.07 |
| 2005 | 0.53 | 0.29 | 5.05 | 2.11 | 0.06 | - |
| 2006 | 0.51 | 0.32 | 5.01 | 2.11 | 0.05 | 0.06 |
| 2007 | 0.45 | 0.35 | 4.46 | 2.15 | - | 0.05 |
| 2008 | 0.51 | 0.37 | 4.39 | 2.06 | - | 0.04 |
| 2009 | 0.45 | 0.43 | 4.93 | - | - | 0.04 |
| 2010 | 0.55 | - | 5.02 | - | - | - |

Notes: -=not available or not disclosed; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade as well as hotels and restaurants for Philippine totals, wholesale and retail trade for Japanese MNCs, and wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Japan, Ministry of Economy, Trade and Industry (various years); Philippines, National Statistical Coordination Board (various years); United States Bureau of Economic Analysis (various years).

Table 16: Revenues or Sales of All Firms, All MNCs, and Japanese and U.S. MNCs in Vietnam

| | All industries | | | | Mining | | Manufacturing | | | Trade | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Host, firms | | Home, firms | | Host, firms | | Host, firms | | Home | Host, firms | | Home |
| Year | All | MNCs | Japan | U.S. | All | MNCs | All | MNCs | Japan | All | MNCs | Japan |
| Values (US$ billions) | | | | | | | | | | | | |
| 1992 | - | - | 0.01 | - | - | - | - | - | 0.01 | - | - | 0.00 |
| 1993 | - | - | 0.00 | - | - | - | - | - | 0.00 | - | - | 0.00 |
| 1994 | 21.95 | 1.88 | 0.12 | 0.00 | 1.17 | 0.90 | 6.06 | 0.65 | 0.10 | 10.26 | 0.03 | 0.02 |
| 1995 | - | - | 0.04 | 0.00 | - | - | - | - | 0.01 | - | - | - |
| 1996 | - | - | 0.23 | 0.00 | - | - | - | - | 0.20 | - | - | 0.02 |
| 1997 | - | - | 0.39 | 0.04 | - | - | - | - | 0.32 | - | - | 0.02 |
| 1998 | - | - | 0.69 | 0.06 | - | - | - | - | 0.63 | - | - | 0.02 |
| 1999 | - | - | 1.49 | - | - | - | - | - | 1.41 | - | - | - |
| 2000 | 57.18 | 11.43 | 2.10 | - | 3.56 | 2.86 | 17.39 | 7.18 | 1.97 | 24.34 | 0.27 | 0.07 |
| 2001 | 63.39 | 12.16 | 2.17 | - | 3.45 | 2.60 | 20.28 | 7.94 | 2.05 | 25.50 | 0.38 | 0.05 |
| 2002 | 76.62 | 14.69 | 2.37 | - | 3.66 | 2.70 | 24.20 | 10.04 | 2.15 | 31.75 | 0.48 | 0.13 |
| 2003 | 92.30 | 18.84 | 3.17 | - | 4.44 | 3.68 | 29.92 | 12.86 | 2.95 | 36.86 | 0.62 | 0.11 |
| 2004 | 104.61 | 23.91 | 4.61 | - | 6.10 | 4.43 | 38.41 | 16.70 | 4.21 | 39.39 | 0.66 | - |
| 2005 | 129.34 | 29.89 | 5.38 | - | 8.16 | 5.75 | 45.57 | 20.11 | 4.81 | 49.51 | 1.26 | - |
| 2006 | 152.00 | 37.65 | 6.62 | - | 9.30 | 6.52 | 54.63 | 25.69 | 5.88 | 62.46 | 1.76 | - |
| 2007 | 199.22 | 45.66 | 8.90 | - | 8.84 | 6.47 | 72.58 | 32.95 | 7.91 | 82.24 | 2.16 | - |
| 2008 | 309.43 | 59.65 | 10.69 | - | 11.57 | 8.18 | 93.60 | 41.95 | 9.26 | 129.15 | 3.10 | - |
| 2009 | 366.74 | 64.16 | 12.20 | - | 14.90 | 4.75 | 115.67 | 48.50 | 10.41 | 135.08 | 4.15 | - |
| 2010 | - | - | 13.81 | - | - | - | - | - | 12.01 | - | - | - |
| Ratios to GDP (value added) by industry (percent) | | | | | | | | | | | | |
| 1992 | - | - | 0.05 | - | - | - | - | - | 0.35 | - | - | 0.00 |
| 1993 | - | - | 0.04 | - | - | - | - | - | 0.22 | - | - | 0.00 |
| 1994 | 134.83 | 11.55 | 0.76 | 0.01 | 141.11 | 108.80 | 249.68 | 26.88 | 3.91 | 372.65 | 1.10 | 0.89 |
| 1995 | - | - | 0.18 | 0.00 | - | - | - | - | 0.45 | - | - | - |
| 1996 | - | - | 0.95 | 0.00 | - | - | - | - | 5.26 | - | - | 0.44 |
| 1997 | - | - | 1.44 | 0.14 | - | - | - | - | 7.16 | - | - | 0.49 |
| 1998 | - | - | 2.55 | 0.22 | - | - | - | - | 13.60 | - | - | 0.50 |
| 1999 | - | - | 5.18 | - | - | - | - | - | 27.87 | - | - | - |
| 2000 | 183.43 | 36.67 | 6.73 | - | 118.33 | 94.97 | 300.47 | 124.13 | 34.01 | 548.82 | 5.99 | 1.61 |
| 2001 | 193.94 | 37.20 | 6.64 | - | 114.56 | 86.41 | 313.69 | 122.85 | 31.64 | 553.95 | 8.25 | 1.01 |
| 2002 | 218.51 | 41.89 | 6.76 | - | 121.10 | 89.51 | 335.24 | 139.05 | 29.77 | 641.53 | 9.61 | 2.59 |
| 2003 | 233.35 | 47.63 | 8.02 | - | 120.23 | 99.67 | 369.79 | 159.00 | 36.50 | 686.30 | 11.63 | 2.06 |
| 2004 | 230.27 | 52.64 | 10.15 | - | 132.50 | 96.28 | 415.78 | 180.74 | 45.56 | 639.39 | 10.65 | - |
| 2005 | 244.41 | 56.48 | 10.16 | - | 145.49 | 102.64 | 417.45 | 184.22 | 44.06 | 690.17 | 17.56 | - |
| 2006 | 249.53 | 61.80 | 10.87 | - | 149.16 | 104.54 | 422.02 | 198.48 | 45.42 | 752.28 | 21.20 | - |
| 2007 | 280.53 | 64.30 | 12.54 | - | 127.40 | 93.33 | 480.77 | 218.27 | 52.41 | 846.66 | 22.28 | - |
| 2008 | 339.68 | 65.48 | 11.73 | - | 128.64 | 90.93 | 505.03 | 226.34 | 49.98 | 992.48 | 23.80 | - |
| 2009 | 377.38 | 66.03 | 12.55 | - | 153.86 | 48.99 | 592.49 | 248.42 | 53.34 | 941.15 | 28.92 | - |
| 2010 | - | - | 12.98 | - | - | - | - | - | 57.36 | - | - | - |

Notes: -=not available or not disclosed; host firms are those covered in enterprise censuses; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade as well as hotels and restaurants for Indonesian GDP, wholesale and retail trade for Japanese MNCs, and wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Japan, Ministry of Economy, Trade and Industry (various years); United States Bureau of Economic Analysis (various years); Vietnam, General Statistics Office (1998, various years a).

Table 17: Employment of All Firms, All MNCs, and Japanese and U.S. MNCs in Vietnam

| | All industries | | | | Mining | | Manufacturing | | | Trade | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Host, firms | | Home, firms | | Host, firms | | Host, firms | | Home | Host, firms | | Home |
| Year | All | MNCs | Japan | U.S. | All | MNCs | All | MNCs | Japan | All | MNCs | Japan |
| Thousands of workers | | | | | | | | | | | | |
| 1992 | - | - | 0.21 | - | - | - | - | - | 0.21 | - | - | 0.00 |
| 1993 | - | - | 0.35 | - | - | - | - | - | 0.30 | - | - | 0.00 |
| 1994 | - | - | 1.27 | 0.00 | - | - | - | - | 0.92 | - | - | 0.06 |
| 1995 | 2,035 | 97.83 | 5.82 | 0.00 | 98.04 | 3.72 | 999.6 | 73.62 | 5.16 | 222.3 | 1.88 | - |
| 1996 | - | - | 10.73 | 0.00 | - | - | - | - | 8.81 | - | - | 0.52 |
| 1997 | - | - | 13.20 | 1.00 | - | - | - | - | 11.41 | - | - | 0.22 |
| 1998 | - | - | 16.51 | 1.30 | - | - | - | - | 14.74 | - | - | 0.15 |
| 1999 | - | - | 24.29 | 2.40 | - | - | - | - | 21.69 | - | - | 0.38 |
| 2000 | 3,538 | 407.7 | 36.44 | 5.70 | 153.3 | 6.68 | 1,598 | 356.3 | 33.72 | 369.3 | 3.94 | 0.55 |
| 2001 | 3,937 | 487.3 | - | 5.30 | 128.9 | 6.49 | 1,801 | 435.2 | - | 403.1 | 4.90 | - |
| 2002 | 4,568 | 686.2 | 45.38 | 5.20 | 144.0 | 7.25 | 2,178 | 624.8 | 40.70 | 450.9 | 5.58 | 0.82 |
| 2003 | 5,052 | 851.4 | 54.67 | 4.70 | 141.2 | 7.74 | 2,511 | 784.7 | 50.65 | 493.5 | 5.31 | 0.57 |
| 2004 | 5,495 | 1,037 | 85.10 | 5.90 | 150.4 | 7.61 | 2,834 | 960.4 | 81.42 | 560.9 | 6.58 | - |
| 2005 | 6,032 | 1,199 | 102.6 | 4.90 | 169.6 | 8.23 | 3,045 | 1,111 | 96.43 | 663.6 | 8.42 | - |
| 2006 | 6,148 | 1,435 | 129.6 | 5.60 | 170.8 | 8.68 | 3,276 | 1,330 | 121.2 | 712.5 | 10.85 | - |
| 2007 | 6,963 | 1,628 | 166.6 | 5.70 | 179.4 | 8.94 | 3,698 | 1,518 | 157.3 | 796.2 | 10.52 | - |
| 2008 | 8,111 | 1,826 | 162.0 | 6.30 | 192.5 | 9.94 | 3,924 | 1,683 | 150.4 | 985.0 | 13.46 | - |
| 2009 | 9,187 | 1,917 | 187.7 | 15.70 | 214.3 | 9.71 | 4,120 | 1,761 | 175.9 | 1,116 | 16.41 | - |
| 2010 | - | - | 226.3 | - | - | - | - | - | 213.8 | - | - | - |
| Ratios to total employment by industry (percent) | | | | | | | | | | | | |
| 1992 | - | - | 0.00 | - | - | - | - | - | 0.01 | - | - | - |
| 1993 | - | - | 0.00 | - | - | - | - | - | 0.01 | - | - | - |
| 1994 | - | - | 0.00 | 0.00 | - | - | - | - | 0.04 | - | - | - |
| 1995 | 6.16 | 0.30 | 0.02 | 0.00 | 49.02 | 1.86 | 37.82 | 2.79 | 0.20 | - | - | - |
| 1996 | - | - | 0.03 | 0.00 | - | - | - | - | 0.32 | - | - | - |
| 1997 | - | - | 0.04 | 0.00 | - | - | - | - | 0.40 | - | - | - |
| 1998 | - | - | 0.05 | 0.00 | - | - | - | - | 0.50 | - | - | - |
| 1999 | - | - | 0.07 | - | - | - | - | - | 0.70 | - | - | - |
| 2000 | 9.41 | 1.08 | 0.10 | - | 59.93 | 2.61 | 45.00 | 10.03 | 0.95 | 9.48 | 0.10 | 0.01 |
| 2001 | 10.21 | 1.26 | - | - | 47.43 | 2.39 | 46.33 | 11.20 | - | 9.92 | 0.12 | - |
| 2002 | 11.56 | 1.74 | 0.11 | - | 50.81 | 2.56 | 52.36 | 15.02 | 0.98 | 10.53 | 0.13 | 0.02 |
| 2003 | 12.45 | 2.10 | 0.13 | - | 47.68 | 2.61 | 55.06 | 17.21 | 1.11 | 10.89 | 0.12 | 0.01 |
| 2004 | 13.21 | 2.49 | 0.20 | - | 46.37 | 2.35 | 58.65 | 19.88 | 1.69 | 11.77 | 0.14 | - |
| 2005 | 14.10 | 2.80 | 0.24 | - | 66.11 | 3.21 | 60.52 | 22.08 | 1.92 | 14.45 | 0.18 | - |
| 2006 | 13.98 | 3.26 | 0.29 | - | 60.85 | 3.09 | 59.90 | 24.31 | 2.22 | 14.76 | 0.22 | - |
| 2007 | 15.40 | 3.60 | 0.37 | - | 60.03 | 2.99 | 65.28 | 26.80 | 2.78 | 16.15 | 0.21 | - |
| 2008 | 17.46 | 3.93 | 0.35 | - | 66.07 | 3.41 | 65.42 | 28.06 | 2.51 | 19.31 | 0.26 | - |
| 2009 | 19.24 | 4.01 | 0.39 | - | 73.52 | 3.33 | 63.89 | 27.31 | 2.73 | 21.68 | 0.32 | - |
| 2010 | - | - | 0.46 | - | - | - | - | - | 3.05 | - | - | - |

Notes: -=not available or not disclosed; host data refer to firms covered in enterprise censuses; home data refer to affiliates of MNCs covered by Japanese and U.S. surveys; trade includes wholesale and retail trade Vietnamese totals and Japanese MNCs, and wholesale trade only for U.S. MNCs.

Sources: Asian Development Bank (various years); Japan, Ministry of Economy, Trade and Industry (various years); United States Bureau of Economic Analysis (various years); Vietnam, General Statistics Office (1998, various years a; various years b).

Table 18: Comparisons of MNCs and Local Firms in Vietnam's Manufacturing, Trade, and Mining Industries

| Year | Workers per firm | Sales per firm, US$ mil. | Sales per worker, US$ | Fixed assets per worker, US$ | Sales/ fixed assets, ratios | Compen-sation per worker, US$ | Gross profits/ sales, % |
|---|---|---|---|---|---|---|---|
| Manufacturing: foreign MNCs | | | | | | | |
| 1994/95 | - | - | 8,865 | 9,905 | 0.895 | - | - |
| 2000 | 341 | 6.867 | 20,161 | 14,594 | 1.382 | 1,119 | 2.04 |
| 2001 | 288 | 5.260 | 18,252 | 12,131 | 1.505 | 1,085 | 3.73 |
| 2002 | 372 | 5.981 | 16,064 | 8,974 | 1.790 | 995 | 4.93 |
| 2003 | 397 | 6.510 | 16,393 | 7,718 | 2.124 | 1,050 | 5.68 |
| 2004 | 416 | 7.232 | 17,386 | 7,255 | 2.396 | 1,071 | 5.37 |
| 2005 | 435 | 7.871 | 18,105 | 7,280 | 2.487 | 1,143 | 3.99 |
| 2006 | 444 | 8.581 | 19,317 | 7,701 | 2.508 | 1,296 | 3.32 |
| 2007 | 462 | 10.031 | 21,708 | 8,020 | 2.707 | 1,441 | 0.90 |
| 2008 | 426 | 10.620 | 24,922 | 9,464 | 2.633 | 1,826 | 2.32 |
| 2009 | 405 | 11.162 | 27,540 | 11,103 | 2.480 | 1,951 | 1.34 |
| Manufacturing: percentage differentials between foreign MNCs and local plants | | | | | | | |
| 1994/95 | - | - | 51.76 | 254.67 | -57.21 | - | - |
| 2000 | 156.76 | 529.88 | 145.32 | 513.62 | -60.02 | 55.91 | -33.08 |
| 2001 | 147.14 | 399.30 | 102.04 | 404.28 | -59.94 | 49.94 | 69.91 |
| 2002 | 212.90 | 451.46 | 76.24 | 245.55 | -49.00 | 32.66 | 89.54 |
| 2003 | 241.65 | 466.93 | 65.94 | 177.07 | -40.11 | 26.93 | 148.35 |
| 2004 | 302.10 | 503.16 | 50.00 | 119.00 | -31.50 | 19.52 | 120.40 |
| 2005 | 377.13 | 556.19 | 37.53 | 109.85 | -34.46 | 14.55 | 71.53 |
| 2006 | 428.04 | 586.14 | 29.94 | 67.62 | -22.48 | 16.66 | 16.21 |
| 2007 | 479.30 | 591.79 | 19.42 | 45.02 | -17.65 | 9.70 | -0.18 |
| 2008 | 553.84 | 607.03 | 8.13 | 34.78 | -19.77 | 15.37 | -26.23 |
| 2009 | 592.15 | 569.48 | -3.27 | 19.09 | -18.78 | 10.30 | -30.28 |
| Mean | 349 | 526 | 53 | 174 | -35 | 25 | 43 |
| StdDev | 162 | 69 | 46 | 167 | 16 | 16 | 66 |
| Trade: foreign MNCs | | | | | | | |
| 1994/95 | - | - | 16,121 | 10,037 | 1.606 | - | - |
| 2000 | 88 | 5.904 | 67,466 | 46,524 | 1.450 | 2,178 | -3.91 |
| 2001 | 80 | 6.226 | 77,523 | 40,186 | 1.929 | 2,432 | -2.43 |
| 2002 | 88 | 7.546 | 85,269 | 34,067 | 2.503 | 2,291 | -2.52 |
| 2003 | 89 | 10.408 | 117,559 | 36,098 | 3.257 | 2,519 | -1.21 |
| 2004 | 83 | 8.306 | 99,705 | 29,024 | 3.435 | 2,326 | -0.38 |
| 2005 | 96 | 14.314 | 149,532 | 24,372 | 6.136 | 3,018 | -0.02 |
| 2006 | 112 | 18.149 | 162,237 | 25,351 | 6.400 | 3,357 | 0.07 |
| 2007 | 103 | 21.217 | 205,654 | 32,449 | 6.338 | 3,638 | 1.44 |
| 2008 | 97 | 22.279 | 230,137 | 25,210 | 9.129 | 4,910 | 1.14 |
| 2009 | 66 | 16.671 | 252,905 | 22,368 | 11.307 | 5,558 | 0.70 |

Table 18 continued

| Year | Workers per firm | Sales per firm, US$ mil. | Sales per worker, US$ | Fixed assets per worker, US$ | Sales/ fixed assets, ratios | Compen-sation per worker, US$ | Gross profits/ sales, % |
|---|---|---|---|---|---|---|---|
| Trade: percentage differentials between foreign MNCs and local plants | | | | | | | |
| 1994/95 | - | - | -65.25 | 250.09 | -90.07 | - | - |
| 2000 | 319.33 | 329.35 | 2.39 | 962.27 | -90.36 | 188.76 | -812.65 |
| 2001 | 354.34 | 458.33 | 22.89 | 894.00 | -87.64 | 227.04 | -7,349.92 |
| 2002 | 390.20 | 495.18 | 21.42 | 1,361.06 | -91.69 | 187.90 | -557.61 |
| 2003 | 411.82 | 710.65 | 58.38 | 1,282.98 | -88.55 | 182.95 | -316.94 |
| 2004 | 438.58 | 668.62 | 42.71 | 958.66 | -86.52 | 138.82 | -237.56 |
| 2005 | 578.86 | 1,278.42 | 103.05 | 747.79 | -76.05 | 178.62 | -102.63 |
| 2006 | 725.08 | 1,447.36 | 87.54 | 489.32 | -68.18 | 166.17 | -88.70 |
| 2007 | 699.55 | 1,513.30 | 101.78 | 539.97 | -68.47 | 142.09 | 185.17 |
| 2008 | 706.94 | 1,331.38 | 77.38 | 325.77 | -58.34 | 155.13 | 225.67 |
| 2009 | 481.95 | 1,136.56 | 112.49 | 198.55 | -28.83 | 152.51 | -28.05 |
| Mean | 511 | 937 | 63 | 776 | -74 | 172 | -908 |
| StdDev | 155 | 450 | 39 | 388 | 20 | 27 | 2,285 |
| Mining: foreign MNCs | | | | | | | |
| 1994/95 | - | - | 242,946 | 509,638 | 0.477 | - | - |
| 2000 | 742 | 317.332 | 427,479 | 223,639 | 1.911 | 6,461 | -0.16 |
| 2001 | 433 | 173.483 | 400,899 | 233,862 | 1.714 | 4,360 | 52.17 |
| 2002 | 557 | 207.990 | 373,154 | 200,308 | 1.863 | 8,005 | 53.41 |
| 2003 | 553 | 263.144 | 475,910 | 196,570 | 2.421 | 7,361 | 52.50 |
| 2004 | 401 | 233.289 | 582,455 | 361,298 | 1.612 | 7,053 | 56.92 |
| 2005 | 412 | 287.662 | 699,057 | 175,226 | 3.989 | 7,854 | 44.08 |
| 2006 | 413 | 310.302 | 750,989 | 189,571 | 3.962 | 8,185 | 61.05 |
| 2007 | 358 | 258.925 | 724,062 | 203,124 | 3.565 | 9,967 | 0.26 |
| 2008 | 311 | 255.546 | 822,353 | 189,460 | 4.341 | 8,806 | 54.38 |
| 2009 | 294 | 143.813 | 488,808 | 264,275 | 1.850 | 13,445 | 0.53 |
| Mining: percentage differentials between foreign MNCs and local plants | | | | | | | |
| 1994/95 | - | - | 8,430.40 | 17,493.19 | -51.51 | - | - |
| 2000 | 111.64 | 18,780.98 | 8,821.17 | 8,519.89 | 3.50 | 858.20 | -101.27 |
| 2001 | 152.12 | 14,491.39 | 5,687.44 | 9,330.78 | -38.63 | 365.04 | 225.08 |
| 2002 | 248.53 | 18,536.71 | 5,247.30 | 7,657.92 | -31.07 | 733.26 | 181.76 |
| 2003 | 311.70 | 34,324.68 | 8,261.60 | 9,793.95 | -15.49 | 586.93 | 1,263.96 |
| 2004 | 225.88 | 16,155.76 | 4,888.20 | 8,035.85 | -38.69 | 396.87 | 271.30 |
| 2005 | 219.07 | 14,879.54 | 4,594.76 | 3,634.24 | 25.72 | 318.49 | 94.85 |
| 2006 | 239.56 | 14,757.57 | 4,275.58 | 3,206.03 | 32.35 | 286.48 | 343.99 |
| 2007 | 248.50 | 18,101.40 | 5,122.81 | 3,548.56 | 43.15 | 311.94 | -89.15 |
| 2008 | 265.76 | 16,095.94 | 4,327.99 | 2,608.11 | 63.51 | 207.44 | 1,124.78 |
| 2009 | 249.13 | 3,337.17 | 884.48 | 692.44 | 24.23 | 326.48 | -95.90 |
| Mean | 227 | 16,946 | 5,211 | 5,703 | 7 | 439 | 322 |
| StdDev | 57 | 7,534 | 2,197 | 3,282 | 36 | 214 | 487 |

Note: For 1994/95, workers as of July 1, 1995, sales and fixed assets for 1994; all means and standard deviations refer to 2000-2009 only.

Sources: Asian Development Bank (various years); Vietnam, General Statistics Office (1998, various years a).