

Globalization and Working Conditions: Evidence from Indonesia

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Abstract: This paper analyzes the link between globalization and working conditions using labor-force surveys in Indonesia during the 1990-2003 period. The data include wage and non-wage measures of working conditions. The results suggest that wages and non-wage measures of working conditions are positively related at the industry level and that wages are positively linked to increases in foreign investment, suggesting a positive link between globalization and working conditions in Indonesia.

With a population over 220 million, Indonesia is an important exporter and importer in Southeast Asia and the world. Over the past two decades, the Indonesian government has made a tremendous effort to integrate with the world economy. Indonesia's trade and investment policy transformed from an inward-looking import substitution strategy towards export promotion after the oil bust in the mid-1980s. Integration brought benefits and costs. While the move towards export promotion brought attention to Indonesia's working conditions in the 1990s (Manning 2003), Indonesia was hit particularly hard by the 1997 Asian crisis. After nearly a decade of strong inflows, foreign investment sharply reversed. The crisis led to substantive trade liberalization reforms as part of meeting IMF conditions. Indonesia was an active participant in the Uruguay Round negotiations, was one of the first countries to ratify the WTO, and agreed to one of the highest proportions of tariff bindings in the world.

This study examines globalization and working conditions in Indonesia in three sections. The first section describes Indonesia's globalization experience and shows how Indonesia made a concerted effort to move from import substitution towards export promotion. The second section provides an overview of working conditions in Indonesia by describing the evolution of labor regulations, providing some evidence of enforcement of labor laws, and presenting two firm-level case studies. These results suggest that problems with working conditions persist, but international pressure and exposure to international markets seem to be positively related to working conditions. The third section contains an analysis of labor market surveys to evaluate six measures of working conditions: inter-industry wage differentials, work facilities, medical benefits, safety, available transportation, and worker-based qualitative assessments overall conditions. The results suggest that wages and conditions are positively related and tend to be higher in exporting sectors receiving foreign direct investment (FDI).

1. Globalization in Indonesia

Among the many possible definitions of globalization, this section mainly focuses on trade and foreign investment because these were the areas that the government targeted for liberalization. Much of the foreign investment was industry specific: textiles/apparel dominated the first wave and chemicals and other manufacturing dominated later waves. Furthermore, as in many other developing countries, foreign investment had a distinctly

outward-focus with much of the foreign investment entered with the intention of producing for export.

During import substitution¹, the government invested heavily in and controlled (through state-owned industries) heavy industries, petrochemicals, and mining. Falling oil revenues from 1982 to 1985 motivated a change away from import substitution towards export promotion. Indonesia's recent liberalization, starting around 1988, can be divided into four periods: the first wave, the second wave, the Asian crisis, and post crisis/recovery.

The First Wave (1988-1992)

The initial objective of Indonesia's liberalization was to attract foreign investment and promote exports in order to diversify from its heavy dependence on oil. The strategy consisted of three main components: trade liberalization, investment reform, and industrial policy changes. Together these are believed to have significantly contributed to Indonesia's strong economic growth in the late 1980s and early 1990s.

Although Indonesia joined several regional and global liberalization initiatives such as AFTA² and WTO, much of Indonesia's liberalization was unilateral (Ismalina 2002). In May 1986, the government deregulated tariff schemes and phased out non-tariff barriers. The government lowered tariff ceilings to 60 per cent, reduced the number of tariff levels

¹ According to Pangestu (1996), the new government in 1960 implemented liberalization reforms. The *first phase* was between 1966 and 1972. During this period Law 1/1967 on Foreign Investment was passed, marking the beginning of the Indonesian investment regime. While the law was intended to attract foreign investors, it was still viewed as having too many restrictions. In addition to prohibiting foreign capital to enter several strategic and basic industries, they were discriminately treated. Import licensing was dismantled and a new 'export bonus' scheme was introduced. In 1970, the Government introduced a major trade policy package, which included simplification of exports and import procedures. The elimination of international capital controls marked an important change in Indonesia's capital account policy (Aswicahyono and Feridhanusetyawan 2003). It was followed by the *second phase*, from 1973 to 1981 when the government received great windfall profit from the oil boom. The government was unwilling to institute further trade liberalization reforms as increased foreign exchange reserves could be used to finance development. The protective regime emphasized self-supply domestic consumption by adopting an import-substitution policy.

² The Association of East Asian Nations (ASEAN) began moving towards the ASEAN Free Trade Area (AFTA) at the Fourth ASEAN Summit in Singapore in January 1992. When the AFTA agreement was originally signed, ASEAN had six members (Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand). Four countries subsequently joined: Vietnam (1995), Laos (1997), Myanmar (1997), and Cambodia (1999).

from 25 to 11 and converted several import licenses (which at their peak covered 43 per cent of tariff lines) into tariff equivalents. Under the new system, the government also abolished non-tariff barriers, such as import monopolies, simplified customs and outsourced substantial customs responsibilities, which included the November 1988 deregulation package that removed import monopolies for plastic and steel. Although the deregulation efforts seemed as a partial treatment, the psychological effect in business circles was strong and also increased the confidence that the Government had a serious commitment to implement deregulation. Figure 1 illustrates the change in Indonesia's average tariff rate relative to world tariff rates.³

The 1985 Plaza currency realignment accord quickly realigned industrialized country currencies, resulting in a restructuring of regional manufacturing capacity. Japanese investment was joined in the late 1980s by labor-intensive garment and footwear firms from Korea, Taiwan, Hong Kong, and Singapore (Pangestu 1996). The government complemented these investments by relaxing trade barriers. In textiles and apparel, the government applied a more transparent quota allocation system (in 1987) and removed import monopoly for cotton (in 1989). Furthermore, in May 1990, non-tariff barriers of several commodities, such as consumer electronics and electronic components were eliminated, such that these were allowed to be imported under the non-restrictive general importer license. The simple average tariff rate was reduced from 27 percent in 1986 to 20 percent in 1991. As a result, the spirit of liberalism that induces various deregulation policies has boosted the export and import boom and eventually generated a rapid economic growth during period 1987 to 1992. In addition to the increase in labor productivity, the liberalization-induced growth of manufacturing led to an increase of its share of value added from 12 percent during the late 1980s and early 1990s to 20 percent (Aswicahyono and Mairid 2003), and also represented a shift of resources towards sectors receiving FDI.

The influx of FDI, particularly from Japan, South Korea, Taiwan, Singapore, and Hong Kong, brought the technical, managerial, and marketing skills needed to produce goods for the world markets. These links connected Indonesia into the world trade system almost overnight by incorporating local producers into the manufacturing and trading

³ These falling tariffs seem to be broad-based. Fane and Condon (1996) use real effective rates of protection (RERP) to quantify Indonesian trade liberalization between 1987 and 1995. The RERP for manufacturing, including oil refining, fell from 27 percent in 1987 to 11 percent in 1995, and from 59 percent to 16 percent, excluding oil refining. For agriculture, RERP fell from 9 percent to 4 percent over the same period.

chain of foreign buying agents and intermediaries. This increase in investment was followed by a three-fold increase in garment (apparel) exports (World Bank 1996).

Trade liberalization was accompanied by other domestic reforms. Domestic and international exchange, which had been relatively heavily regulated, was largely deregulated in late 1997 and early 1998. Imports were the most affected, with a large reduction in tariffs and the removal of BULOG's monopoly rights concerning all commodities under its control (except rice, for social reasons). Obstacles to domestic trade were also being removed and export controls substantially relaxed. In telecommunications, aviation, and financial services, Indonesia gradually reduced government control and public monopolies. Financial services were deregulated in the late 1980s and early 1990s. Competition was introduced in certain segments of the telecommunications and air transport market. These reforms set the stage for further diversification of foreign investment portfolios in the second wave.

The Second Wave

The second wave began with a surge of foreign investment approvals in 1994-1995 that began to be realized in 1995 and 1996. This increase was mainly in chemicals. The World Bank (1996) reports that foreign investment became increasingly export-oriented during the first half of the 1990s, reinforcing the earlier correlation between investment and exports.

Although foreign investment was increasing, the government made limited progress in removing the array of non-tariff barriers (NTBs). Import monopolies, restrictive licensing, and export controls continued to affect up to 10 percent of imports, 40 percent of non-oil exports and 30 percent of production. In the sectors concerned, NTBs and export measures were often combined with other forms of assistance, including restrictions on domestic trade, price fixing, and subsidies, all of which were aimed at providing implicit or explicit protection on various grounds (including infant industry protection, security of food supply, resource management, and favoritism). As a result, the list of products benefiting from some form of protection or assistance was still extensive when the crisis occurred in 1997, covering most strategic food commodities, mining and wood resources, key intermediate industrial goods (fertilizers, cement, iron and steel) and transport equipment. Notably, these were not the sectors that dominated international trade and FDI inflows.

During the mid 1990s, FDI averaged US\$ 4 billion a year. Indonesia ranked among the top twelve recipients of FDI inflows among developing and transition economies in the first half of the 1990s (UNIDO 1997). As seen in Table 1, FDI accelerated in the second half of the 1990s. More than 250 new foreign establishments were added in 1996-97 alone, the year before the economic crisis, or equal to the total number of foreign firms in the three year intervals 1990-93 and 1993-96.

By the mid 1990s, foreign firms were operating in almost all sub-sectors, but were mainly concentrated in three sub-sectors: textiles, chemicals, and fabricated metal and machinery (20-30 percent each). The sub-sectoral composition of foreign establishments⁴ also became more diversified after 1993. During 1990-93 period, most foreign establishments entered just two sub-sectors, textile, garment and footwear (46 percent) and fabricated metals and machinery (36 percent). After 1993, the proportion of new foreign firms entering the textile sub-sector fell to 10 percent while that in the chemical sub-sector increased from 2 percent to 24 percent during 1993-96 period and to 10 percent during 1996-97 period. Other sectors such as infrastructural services (telecommunications, water supply, electricity) were also opened to FDI in 1994 and 1995.

Foreign firms also invested in furniture (from 1 percent to 6-10 per cent) and basic metals (from 2 percent to 5 percent). Nevertheless, the textile sub-sector still attracted approximately 30 new foreign firms in each of these two periods, while the fabricated metal and machinery sub-sector continued to attract the most (100 new firms, or 38 percent and 40 percent of the total during 1993-96 and 1996-97 periods).

As is many countries, foreign firms tend to be large. Foreign manufacturing establishments employed one in six workers in medium and large-scale establishments, or 0.8 per cent of the 88 million total Indonesian workers. Foreign establishments average four times the size of domestic establishments. Their labor productivity, as measured by value-added per worker, was double that of domestic establishments, as seen in Table 2. Higher productivity arises partly from economies of scale and division of labor, and partly from concentrating in capital-intensive industries. Controlling for size, however, this labor productivity differential falls to zero in large textile firms.

⁴ Here "foreign" is defined as PMA companies in the Statistics Indonesia manufacturing surveys, or any establishment with foreign equity, either wholly foreign owned or in joint venture with domestic private or government firms.

Employment in foreign manufacturing establishments grew by 20 percent per annum, from 0.2 to 0.7 million between 1990 and 1996 (Table 2), while the share increased from 9 percent to 16 percent of the total during the period. Domestic firms employed just under 80 percent of the total, while public firms employed the remaining 6 percent of total employment in 1996. The average foreign establishment and public sector establishment employed about 600 workers, or four times as many workers as the average 150 workers per establishment in domestic firms in 1996-98 period.

The growth of the manufacturing sector and of manufacturing exports slowed down considerably as a result of structural and institutional weaknesses in the subsequent 1993-1997 period, even before the crisis. A continuously high dependence on imported raw materials and components, low value-added in resource-based industries (e.g., palm oil, wood, paper, oil and gas), and a virtually non-existent capital goods sector limited possibilities for upstream integration. Furthermore, limited range in export products and markets, singular specialization in labor-intensive products, and fierce international competition in the export markets from lower cost producers limited possibilities for expansion in export markets. Firms also suffered from internal problems. Low productivity small and medium industries, high market concentration in many segments of industry, weak human resources, weak technology support system, and weak manufacturing capabilities of domestic firms also limited growth. Given the nature and extent of import dependence and low-value added in the industrial sector, Indonesia ran a persistent deficit in manufacturing goods (\$5 billion per year) and an increasingly large deficit in the current account of the balance of payments (\$2 billion to \$8 billion) in the 1985-6 to 1996-97 periods, which were offset by large inflows of private capital and external public borrowing.

The Asian Crisis

The Asian crisis, which marked the beginning of the third period, hit Indonesia very hard. Investment flows quickly and sharply reversed in 1997 and 1998. By 1999, gross domestic capital formation declined from 32 percent to 19 percent of GDP. FDI inflows fell from US\$ 6.5 billion in 1996/97 to \$ 1.6 billion in 1997/98, and zero in 1998/1999. Figure 2 shows the pattern of foreign investment and trade over the 1990 and 2004, in which the effects of the Asian crisis are clearly evident.

Manning (2000a) finds that the crisis induced significant inter-industry shifts. Specifically, the crisis induced a contraction of the manufacturing sector and a fall in real

wages. At the same time, agricultural employment expanded. This result is important in terms of the shift between globalization and working conditions, where FDI helped expand the manufacturing sector by drawing people out of agriculture prior to the crisis and, the reversal of foreign investment following the crisis sent people back to agriculture.

Large currency depreciations such as that experienced by Indonesia during the economic crisis should have increased exports within one to two years after the depreciation. Indonesia's export performance, however, remained anemic two years after the crisis began: exports collapsed at the start of the fall buying season in the second half of 1998 and showed almost no sign of recovery in 1999, while non-oil and gas exports for the first nine months of 1999 were down 9.1 per cent over the same period of previous year. Exports resume growth by 2002, as shown in Figure 2.

The situation with Indonesian imports, which consisted mainly of spare parts and industrial raw materials that were used for processing by Indonesian industries, was even worse. Imports began to decline immediately with the start of the crisis, and were about 60 percent of pre-crisis levels throughout 1998. Because of the lead time between the date raw materials were imported and the date finished goods were exported, imports served as an indicator of future exports.

There was abundant anecdotal information on why Indonesia exports were performing poorly during the crisis period. Among the problems mentioned in the press were the lack of trade finance, shortages of containers, and supply disruptions. But probably the single most important factor causing Indonesia's weak export performance has been declining international prices. After deflating by prices, Indonesian exports appeared to have been increasing at a healthy pace through mid 1998 when they went into decline for about six months. In March 1999, real exports recovered to above pre-crisis levels.

In early 1998, the government adopted the Program of Economic and Financial Reform and Restructuring covering financial sector restoration, fiscal consolidation, monetary issues, the exchange rate, and structural adjustment in the form of broadening and deepening the deregulation program. Furthermore, during the crisis, the government committed itself to removing all import licenses, including import licenses that fell outside previous WTO commitments. The Indonesian Government's decision to reduce import barriers reflected a more fundamental policy goal of an outward-oriented trade policy, and led to mounting concerns about increased imports due to the lack of

competitiveness of Indonesian industries. A gradual reduction of import tariffs was undertaken, including those on chemical products and iron/steel to 10 percent in the year 2003, and for a large number of chemical products from 10-20 percent to 5 percent starting on January 1998. In addition, various commodities, such as wheat, wheat flour, soybean and garlic could be imported freely under General Importer status, and the administered retail price of cement was also abolished.

Sensitive products whose production was closely connected to the Government – chemicals, motor vehicles and steel – continued to be largely untouched by the major trade liberalization (see Table 3). Tariff peaks occurred in agriculture and manufacturing areas for different reasons. Agriculture protection reflected concerns over food security where the Government aimed to achieve self-sufficiency in staple commodities, especially rice (WTO 2003). Agriculture was relatively important to the Indonesian economy, employing 45 percent of the labor force but producing only 17 per cent of national output (Banerjee and Siregar 2002). Agricultural bound tariffs were very high, approximately 65 percent in trade-weighted terms, and significantly exceeded applied tariffs, which average 7 percent before the recent increases in sugar and rice. There were high applied tariffs on rice (around 30 percent), meat (around 20 percent), bananas (20 percent), skimmed milk powder (25 percent), tomatoes (25 percent) and roasted coffee (25 percent) (UNCTAD 2003). Because bound tariffs were often more than twice applied levels, negotiated reductions of 50 percent or less were likely to have little economic impact in the agricultural sector. Changes in agriculture, therefore, are likely to be due to the indirect effects coming from changes in the manufacturing sector.

Post-crisis Recovery

The post-crisis years (2000-2006) comprise the fourth period. After the crisis period, Indonesia traded predominantly with developed countries. In 2006, around 38.21 percent of Indonesia's goods and services imports (non-oil and gas) and 74 percent of Indonesia's exports were from (to) developed countries (Statistics Indonesia 2006). A rather sustainable distinguishing feature of Indonesian trade –as compared with that of other developing countries –was its reliance on the export of oil and gas. As the only Southeast Asian member of OPEC, Indonesia exported US\$ 21.2 billion oil and gas.

In services, Indonesia had a deficit of approximately US\$11.24 billion in 2006 (Bank of Indonesia 2007), an increase of approximately 7 percent from the 2002 deficit of \$10.5 billion (UNCTAD 2003). The decline in international investment affected the textile/apparel sector, but it remains important in Indonesian manufacturing. Indonesia

imported about USD 0.96 billion worth of textile products in 1990, USD 1.6 billion in 2000, approximately USD 0.9 billion in 2004. The share of imported textile and textile products is relatively small, averaging 2.83 percent during 1986-2005 period. In absolute terms, Indonesian textile and textile product exports increased from USD 3.6 billion in 1990 to about USD 10.1 billion in 2000. The exports then decreased modestly to an estimated USD 9.5 billion in 2005. The decline reflects higher competition in the textile market, including the end of the Multi-fiber Agreement. Nevertheless, the textile and apparel sector has always been a significant component of Indonesian exports, growing from 13.9 percent of total exports in 1990, to 16.2 percent in 2000, and 12.1 percent in 2005 (estimation). Textiles have consistently been the largest source of non-oil and gas foreign exchange for Indonesia.

Even with extensive reforms, investor confidence remains problematic for Indonesia. Not all of the investor's concerns are linked to the Asian crisis. Indonesia is still poorly rated internationally with the average number of days to start a business being high at 151 days (World Bank and the International Finance Corporation 2006). In terms of the degree of ease in doing business, Indonesia's rank fell from 131 in 2006 to 135 in 2007 (World Bank and the International Finance Corporation 2007). Regional competition, delayed reform, and several high-profile investment disputes continued to inhibit investor confidence.

Net FDI in 2004 (ADB 2006) was positive for the first time after the crisis. Although still only 22 percent of the pre-crisis record of US\$ 4,677 million, both net and gross investment is increasing. The year-on-year growth during the first quarter of the foreign investment realization is 15.4 percent or increased from US\$2,609 to US\$3,011 (Indonesia's Investment Coordinating Board 2007). Overall investment also remains around 24 percent of GDP in 2006, far less than consistent pre-Asian financial crisis level of 30 percent. Figure 3, however, shows that foreign investment outpaces domestic investment in terms of level and manpower absorption, suggesting that changes in foreign investment continue to have important labor-market effects.

As a result, the government continues to try to attract foreign investment. Under the 2007 investment law, the government will treat foreign and domestic firms equally and provide better law enforcement and security from the starting up stage to closing down a business. Small and medium enterprises, however, remain protected. In contrast with the previous law, the new law prohibits the government from nationalizing foreign firms. The new law also prioritizes and facilitates labor-intensive investment. Along with this

development, the government plans to reduce the negative investment lists. Other concerns, however, such as reforming customs regulation, taxation, and manpower have yet to be addressed.

Although important issues remain, Indonesia's experience globalization experience has several key characteristics. First, throughout the recent era of reform, trade and investment policies were designed to complement each other and to promote exports. Second, Indonesia experienced distinct periods of inflow and outflow of foreign capital. These periods can be contrasted to provide at least heuristic evidence of the effects of globalization on working conditions. In the next section, we analyze factors that have shaped working conditions in Indonesia.

2. Working Conditions in Indonesia

Several papers have focused on Indonesia's globalization experience and, in particular, how globalization has affected wages and working conditions. Working conditions are affected by both economic and political factors, and the combination of these factors depends on the level of enforcement at the firm level. The following sections discuss each of these aspects in turn. The section concludes with two case studies that illustrate how the economic and political factors interact at the firm level.

2.1. Economic Studies

Economic studies of Indonesia's experience tend to define globalization as either foreign direct investment or trade liberalization. The studies of foreign direct investment often focus on manufacturing and find that foreign investment increases wages in the sense that plants that have some foreign capital pay higher wages than other firms (in particular, see Lipsey and Sjöholm 2004a, 2004b). These results remain after controlling for size, industry, and other factors. To the extent that overall employment is not significantly affected (Sjöholm and Lipsey 2006, suggest that it is not), these results suggest that foreign firms increase labor demand.

Amiti and Konings (2005) and Arnold and Javorcik (2005) find that trade liberalization in Indonesia contributed to increased productivity in manufacturing plants. Productivity gains come from falling tariffs on imported inputs and the pressure of rising competition from falling tariffs on final goods. The former effect is more important. These results may suggest that firms could share gains with workers in the form of higher wages and

better working conditions, although they may choose not to. Suryahadi (1999) finds that trade liberalization corresponded with a fall in wage inequality between skilled and less-skilled workers, which is predicted by the Heckscher-Ohlin framework.

Suryahadi et al. (1999) shows that trade liberalization led to an expansion of manufacturing, as resources shifted into the expanding sectors. Suryahadi (2003) shows that between 1988 and 1999, the share of workers in agriculture fell from 55.4% to 43.2%, while the share in manufacturing increased over the same period from 10% to 13%. During the crisis, as foreign investment left and exports fell, the share employed in manufacturing fell and the share employed in agriculture rose. These shifts have implications for working conditions, as shown later in the paper.

2.2. Legislative Framework

Indonesia's labor law has been described as one of the most labor friendly in South East Asia.⁵ Indonesia's current labor law traces back to 1948, during Sukarno's regime (1945-1967). Sukarno, the first president of Indonesia, codified many worker protections. These laws defined and established minimum working standards, including outlawing employment of children under 15 years old, limited night work for women, allowed for maternity leave, and emphasized job security (Kaur 2004).

Sukarno's successor Suharto (1967-1998) was driven to eliminate communists, and union affiliation was a key component of his strategy. Rather than change the labor laws to achieve his goal, Suharto enacted 197 executive decrees, all favoring employers and business. At the same time, however, Suharto's government implemented minimum wage laws in the mid 1970s. As a result, real minimum wages doubled between 1988 and 1995 (Cox Edwards 1996).

When Suharto stepped down, reversing these decrees became an important part of the return to democracy. Reversing these decrees, however, left the labor-friendly labor laws established by Sukarno. Having these labor laws in place gave labor unions, which were neither generally affiliated with political parties nor unified, strength in dealing with both the government and business, allowing them to achieve several victories. In particular, they were able to block moves to reduce employment protections that would have increased employer flexibility in the labor market (Caraway 2004).

⁵ Caraway (2004), p.44.

As part of the return to democracy, the new government moved quickly to ratify all of the core ILO conventions between June, 1998 and May 1999. The government also enacted social protection programs, although these did not cover the majority of the poor (Suryahadi 2003).

International pressures played a very significant role in enacting laws to improve working conditions in Indonesia. International pressure, mainly from the U.S. and the E.U. contributed to changes in legislation starting from the late 1980s when economic liberalization began. Both the ILO and the U.S. government criticized Indonesia for violating labor standards in the late 1980s, contributing to Indonesia increasing workers' statutory rights and facilitating collective bargaining (Cox Edwards 1996). When Bacharuddin Jusuf Habibie succeeded Suharto in May 1998, he moved quickly to ratify ILO Convention 87 (Freedom of Association and Protection of the Right to Organize) in June 1998. Caraway (2004) suggests that this move was designed to signal meaningful reform to a world that was very wary following the Asian financial crisis in September 1997. The Habibie administration seemed resistant to additional labor reform, but the ILO, which had been advocating labor reform in Indonesia since the onset of reforms, now had the backing of the international financial community, including the U.S. Treasury and the International Monetary Fund (Caraway 2004). Caraway (2004) attributes a significant portion of the force behind subsequent labor reforms, including the adoption of the rest of the core ILO conventions, to international pressure.

International pressure on specific firms may also have contributed to improving conditions. Harrison and Scorse (2004) use wages as a measure of working conditions. Their results suggest that external pressure on Indonesian manufacturing (both from the U.S. government and anti-sweatshop campaigns) led to a 50 percent increase in real wages for unskilled workers at targeted plants and the employment effects were limited or offset by expansions of other plants.

2.3. Enforcement

Labor-friendly laws do not improve working conditions if they are not enforced. Indeed, Pangestu and Hendytio (1997) argue that a lack of effective trade unions or worker representation in the workplace led to a lack of enforcement and therefore poor conditions. To investigate the prevalence of enforcement (or lack thereof), Pangestu and Hendytio (1997) surveyed 300 women in garments, textiles, and footwear. One of their main results was that there is a significant difference in enforcement across firm sizes. In

particular, small and medium-sized enterprises seem to have less enforcement than large firms.

The pattern of compliance varies with the measure of working conditions. The study found relatively high compliance for maternity leave (96%), hours worked per week (91%), compensated maternity leave (89%), access to clean water (97%), first aid (91%), sanitation facilities (82%), and training (76%). Other measures were not quite so high. Examples include fire drill training (17%) and safety equipment (64%). The main issue with low compliance, however, was that workers lack of knowledge of benefits. The minimum wage was most familiar to workers, but only 41% indicated accurate knowledge of minimum wage regulations. The authors suggest that compliance seemed to rise as workers were more informed about benefits.

2.4. Two Case Studies

This section discusses two firm-level case studies; a textile company and a garment company. Both are located in Yogyakarta, a province in the middle part of the most populated island, Java. Yogyakarta's unemployment rate is the lowest amongst all provinces in Java, and easy mobility across the island has made working in this area highly desirable. The data were collected in January 2007 and are based on in-depth interviews with the top management and possibly the trade union leaders.

2.4.1 A textile company

This company was selected because we believe that it typifies the experience of Indonesian textile firms responding to liberalization and how these changes have affected working conditions.

This company is a mid-size firm that began to operate in 1972 in Yogyakarta. It was established in response to Law No.9/1969, which induced a rearrangement of state enterprises. With this Law, overseas in-kind grants had to be owned by the state and made shares (contribution) for a joint ownership a private entity. The grants consisted of advanced spinning and weaving machinery. These were actually given to the partnering entity as part of the Dutch government to sustain domestic high quality cambric from this former sole importer. The firm produces semi-finished products: yarn, grey fabric and cambric. The raw material (cotton) is spun to yarn of which all is woven into grey fabric.

Some of the grey fabric is sold as intermediate products and some is reprocessed to cambric.

The firm has engaged in imports and exports since its inception. The raw material is fully imported due to the limited supply of domestic cotton as well as the quality requirement. Australia is currently the major source of imports (nearly 50 percent of total imports of cotton) surpassing United States and China. Similar to the trend in the national exports, the main export destination is Japan. The United States was recently delisted from its export destination due to the increasingly competitive US market following the end of Multi Fiber Agreement in early 2005. This largely confirms Aswicahyono and Mairid's (2003) argument that Indonesia may have benefited from this agreement particularly in protecting from established exporting countries.

The Japanese textile market, however, has been slowly eroded by China and other emerging economies. Although struggling, the firm remains confident that its earlier effort to move to serve the higher segment would prevent their downfall. This may be true as those new entrants have been seen as eroding the low level market. In the mean time, the firm could cling onto its temporary competitive advantage. While in the domestic market, it has been argued that the firm has to compete with illegal products from overseas that have also worsened the already sluggish textile market.

With regards to the human aspect of the firm, the firm currently employs 1150 workers (virtually all males) and given the abundance of workers seeking work, the firm frequently recruits overqualified workers. The firm's working conditions seem to be above the minimum standard. While many firms still pay under the provincial minimum wage (the 2006 minimum provincial wage for Yogyakarta is about USD50 per month), this export-oriented FDI-linked firm pays employees above this standard. Owing to the collective bargaining agreement between the management and the trade union, there is also a guarantee for inflation-based annual wage increases. Permanent employment status also provides employees with a set of relatively lucrative benefits particularly in comparison with other domestic firms moreover those within the region (Yogyakarta and Central Java). In terms of medical benefits, for example, some elements are even extended to the workers' family.

Problems began to arise in the last three years when the firm's performance began to decline. Finding credit for expanding became difficult, competition increased, the cost of living rose, and profits fell. Difficulties in obtaining credit are common for Indonesian

companies as the banking sector has failed to play its intermediary role. For the firm, this has created serious problems in renewing and replacing firm assets such as outdated machinery. On the other hand, the firm is forced to keep up with the technology in textile production in order to secure its position in the mid to upper segment market.

As China grew and the MFA ended, pressure for efficiency increased. In response, the management turned to the workers. National labor law makes layoffs unaffordable, so the company increased working hours. The industrial relations of the firm, which used to be harmonious, changed in January 2007. For the first time in the company history, the workers went on strike to protest against this particular company's policy. Although this has been discussed and even stipulated in the collective agreement, the strike was unfortunately unavoidable.

In short, the firm's response to rising competition and other labor market constraints was to increase hours. No evidence was found that the firm attempted to adjust other dimensions of working conditions, but the fact that facilities and benefits have been stagnant since early 2000 has begun to raise concern among workers. That is, it is possible that the firm may respond to increasing competition by not improving conditions at the same rate as it might have in the past.

2.4.2 A Garment Company

This company was established in early 1980s as a fully domestic private-owned firm. It exports 100 percent of its product and imports all its raw materials. It plays as a 'tailor' role (make-cut-trim): buyers carefully define product specifications and usually place their quality control officer at the firm. So far the company has been able to maintain its increasingly demanding customers. With the entrance of the lower-quality products from some developing economies, the firm had no choice but to push itself to serve a higher market segment – a similar phenomenon as that observed in the textile firm.

Unlike the previous firm, this garment company has a relatively stable number of customers. Yet uncertainty remains similar because long term job orders have never been offered to this firm. Given that this situation has been anticipated since its establishment, the firm prefers to only hire contract workers. If the workers fulfill the firm's requirements, the firm may upgrade the status of these workers to permanent. Production workers, however, are at the bottom of the priority list. Instead, they would be hired based on the estimated length of time needed to fill particular orders.

The firm employed 1900 workers in early 2007: 1800 are females who concentrate in the Department of Production. Firms respond to increasing market competition by reducing labor costs. Hiring and training new contract workers is cheaper than upgrading the status of contract workers to permanent workers because most work does not require advanced skills. Contract workers do not receive medical benefits, pension contributions, and job security.

Continuously hiring new contract workers requires circumventing labor law. Workers are supposed to be considered permanent if they work for more than three years. The Law No.13/2003 on Manpower stipulates that a work agreement for a limited specified time is permitted if the work is temporary in nature, seasonal, can be completed no longer than 3 years, or related to new product development. The work agreement can be made up to two years and only be extended for one year. The common practice in the industry seems to be to claim work to be seasonal so that firms can avoid workers becoming permanent after a three-year extended contract. If the worker is considered to have good performance, the firm would still discontinue the contract. This particular worker would be advised to 'lapse' for sometime before getting her job back at the firm. There is implicit sign that the firm may collaborate with another similar firm nearby to swap workers during their lapse.

Cutting labor costs, such as training, may adversely affect product quality. The firm admitted that reworking is becoming more frequent. In this situation, the firm has to bear the cost of sending the products by air to meet the agreed schedule. The management implicitly blames the inability of the average lower skill of the workers to follow the increasing product quality (i.e. style, level of difficulties, finer finishing). At the same time, technical assistance from US buyers has fallen in recent years.

The case studies reveal several important concerns. First, export-oriented firms are likely to offer higher wages, have better technology, and have better access to markets. These firms are no exceptions. On the other hand, foreign exposure involves risk. The rise of foreign competitors or changes in partners' trade policies (e.g. ending the MFA), can pose serious shocks to globally-engaged firms. These changes may exert downward pressure on working conditions, meaning that the future of the link between globalization and working conditions is far from certain.

3. Empirical Analysis of Working Conditions with Labor-force Surveys

The previous sections suggest that the liberalization induced a move from agriculture towards manufacturing, and, in particular, towards textiles, apparel, chemicals, and machinery. This move would improve working conditions on average if working conditions were higher in these manufacturing sectors than in agriculture. Furthermore, changes in trade and foreign investment over time might also be linked to working conditions. While the previous literature and case studies suggest that this is the case, empirical analysis of labor force surveys might reveal more definitive results.

3.1. Data

Indonesia conducts two main labor force surveys. To measure unemployment, the government relies mainly on the National Labor Force Survey (SAKERNAS) that contains demographic information (age, gender, education, and other variables) and employment-related statistics (employment status, industry, occupation, and wages). Statistics Indonesia, which collects the data, had conducted the survey once per year (in August) but then increased to twice a year (in February and November) since 2005. The available data cover 1989 to 2004, with the exception of 1995 and 1997.

Table 4 contains sample characteristics, which reveal several important features of the survey data. The first column contains the sample size, which depicts much variation, and indicates the number of workers in the sample who are between 10 and 65 years old (inclusive) and have positive earnings from wages. Starting with the Asian crisis in 1997, sample sizes fall and may reflect the difficult economic times following the crisis. Sample sizes are the smallest in 2000, and increase thereafter. The average age is relatively constant. There is a very weak positive trend in the age, suggesting the lack of large waves of younger entrants into the labor force. The female share of our sample is relatively constant as well, at approximately 30 percent.

The main change over the sample period is the increase in the average education levels. The education variable takes on ten values⁶ and rises steadily through the sample period, along with the share of workers with high school or more education. During the same

⁶ 1 Not yet in school, 2 Still in school, 3 Primary School, 4 Junior High School, 5 Vocational Junior, 6 Senior High School, 7 Vocational Senior High School, 8 Diploma I and II, 9 Academy/ Dipl. III, and 10 University/Diploma IV.

period, the returns to education also increase, suggesting an overall increase in the demand for education.

These data also reveal other important trends in the Indonesian labor market. Figure 4 presents the evolution of the natural log of the average real wage from 1989 to 2004. The real wage is rising over the sample period possibly due to rising education levels (Table 4), with the notable exception of the Asian financial crisis in 1997. The data illustrate a relatively strong recovery by 2001, at least in terms of real wages, and depict a slow down in the growth rate at the end of the sample.

The data also can be used to track employment shares within the survey over time. Figure 5 shows the employment shares of the three largest sectors in Indonesia: manufacturing, agriculture, and commerce (retail and wholesale trade). The share of workers in manufacturing appears relatively constant over the sample period, rising from 1989 until 1999, and then falling. The share of workers in agriculture follows the opposite pattern, basically falling until the middle of the 1990s and then rising afterwards. These patterns reflect Manning's (2000a) findings of the post-crisis resurgence of agriculture following the crisis-induced contraction of FDI, exports, and employment in manufacturing.

The trends in Figure 5 hide heterogeneity within manufacturing. Figure 6 shows the evolution of employment shares of sectors within manufacturing; with sharply rising employment shares of textiles and "other manufacturing" (which includes machinery and chemicals) during the period of the recovery from the Asian crisis. Food products and the wood sector remain relatively constant or fall. Note that after the initial sharp increase in 2000, the trend afterwards in these employment shares has been negative. This is important because it shows that the export-oriented, foreign-investment receiving industries expand relative to other manufacturing industries (and relative to agriculture).

The various industries have very different demographic characteristics. Table 5 contains the demographic characteristics broken down by industry for 1991 and 2004, and shows that, in particular, the average education level in apparel is below the national sample average. Agriculture, not surprisingly, has very low average education levels. Utilities, public administration and FIRE (finance, insurance, and real estate) have relatively high education levels.

One of the main characteristics of textiles and apparel is the large concentration of women, with over 52 percent in 1991 and a slight decrease to 50 percent in 2004. The female share of employment in apparel is nearly double that in the “other” manufacturing industry, and the workers in textiles and apparel are younger than other sectors. Indeed, Table 5 shows that the average age in apparel is lower than in all other sectors in 1991. Thus, as in other countries, apparel in Indonesia is characterized by relatively young women.

Table 5 also shows that, over time, several changes are evident. First, the share of employment in textiles and apparel rises from approximately 5.4 percent to 7.8 percent. The share of employment in “other manufacturing”, which includes chemicals and other FDI-intensive sectors, rises from about 6.6 percent to nearly 10.4 percent. The average age and education level rises relative to the mean, and the share of females falls. The first two seem consistent with an increase in demand for skill in FDI-intensive manufacturing industries. Interestingly, the relative shares of non-FDI intensive sectors do not change as much as textiles/apparel and other manufacturing. Construction, for example, falls slightly – from 8.69 percent to 7.34 percent. Employment shares in Wood fall from 3.98 percent to 3.15 percent. Finally, the sample share of Food Agriculture falls from 7.80 percent to 4.46 percent. Again, these shifts are consistent with Manning (2000a) and the hypothesis that FDI induced a between-industry shift.

3.2. Inter-industry Wage Differentials

Since globalization in Indonesia has coincided with an expansion of sectors that have attracted export-oriented FDI, it is important to first compare wages in these sectors with other sectors within Indonesia. The labor-market surveys described above contain information about monthly income from different sources, and wage income, which is reported as monthly income from remunerated employment, is analyzed. Monthly wage income is divided by hours worked in the week prior to the survey (the only measure of hours available in the survey) times 4.3 to get an estimate of the hourly wage.⁷

To get an idea of how wages differ across industries, the natural log of hourly earnings is chosen as the wage variable, which is customary in labor market analysis because the natural log of wages is usually approximately normally distributed. The technical details

⁷ The results presented here are robust to using monthly earnings (not adjusted for hours) as the earnings variable. The correlation between differentials estimated with monthly earnings and differentials estimated with hourly earnings is above 0.9.

of the estimation of the inter-industry wage differentials are found in the technical appendix. The first column of Table 6, using 1991 data, presents the overall average of log wages and the percent difference from this overall average that workers earn in each industry. This percent difference (the log difference) is the wage differential (or wage premium) earned in each industry. The corresponding results for 2004 are presented in column three.

Normally, studies of wage differentials limit the sample to workers in the private sector (non-military and non-government), workers who are not self-employed, and workers who work a certain number of hours (for example, full-time workers). Here we limit the sample to workers who are between 10 and 65 years of age, inclusive, and have positive earnings. We include all sectors because we are interested the most comprehensive comparison.

The first column of Table 6 shows that the overall average log wage is 7.48 in 1991. Four of the five primary industries (food agriculture through mining) earn less than average. Food agriculture workers, for example, earned nearly 53 percent less than the average wage (without controlling for demographic characteristics). Workers in food beverages, and tobacco (which is a manufacturing industry) also earn below-average wages. Workers in utilities (electric, gas, and water), construction, Finance (with Insurance and Real Estate, or FIRE), and public administration, however, earn above-average wages.

Interestingly, workers in apparel earned about 30 percent less than the average wage in 1991. Since textiles and apparel generally have more females and less educated workers, it is likely that differences in demographic composition affects these average wages. For example, if a sector hires more educated workers on average, and workers with more education earn higher wages, then wages in that sector will be higher than average. A second regression, which controls for demographic characteristics (gender, age and age squared, and years of education) is estimated, and wage differentials, after controlling for demographic characteristics, are recalculated for each sector and compared to the average wage.

The second column in Table 6 illustrates the wage differential results, after controlling for demographic characteristics. The impact of demographic characteristics presented in Table 6 indicate that in 1991 females earn about 26 percent less than other workers when

controlling for sector, age, and education, while older and more educated workers earn higher wages when controlling for other characteristics.

Once these demographic characteristics are controlled for, the wage premium in the textile and apparel industry in 1991 increases to about -1.5 percent, and is not statistically different from the overall mean wage. This is not surprising given the fact that the sector is primarily comprised of workers who are less educated than average. Workers in food agriculture, however, still earn significantly less than other workers, even after demographic controls are included. Furthermore, the large premiums in other industries, such as public administration and social services, fall, because these sectors tend to employ more educated, older, male workers.

Although the workers in textiles and apparel do not seem to earn any significant wage premium in 1991, it is possible that they have been affected by the rise in foreign investment and exports in the apparel sector. A similar possibility exists for the other manufacturing sectors that have attracted FDI. To get an idea of how these premiums have changed over time, the same regression is estimated for each year between 1991 and 2004, including the same demographic controls described above.⁸ The results for 2004 are illustrated in the last two columns of Table 6.

Although the economics literature on inter-industry wage differentials suggest that they are "remarkably stable" over time (especially in developed countries), the last two columns of Table 6 show important changes in wage differentials. In particular, the negative unadjusted differential in textiles and apparel is now much closer to zero. More importantly, however, the adjusted differential is positive and significant. The adjusted wage differential for "other manufacturing" increases from 0.050 to 0.121. The increase in relative employment in these industries coincided with a rise in their average wage, which suggests that the demand for these workers increased. Furthermore, the premium for workers in food agriculture also rose. Since this increase, however, coincided with a fall in relative employment share, these changes are most consistent with a fall in the supply of labor. These results are consistent with the hypothesis that export-oriented FDI increased the demand for workers and, as workers left agriculture, the supply of workers in agriculture fell.

⁸ We exclude 1995 and 1997 from the analysis due to lack of data.

To get an idea of how the differential has changed over the entire sample period, Figure 7 illustrates the results by graphing the annually-estimated apparel wage premium and the share of total employment in the apparel sector. The two rise together, suggesting an increase in demand for these workers. The increase in demand for these workers seems to have resulted in a rising wage premium in this sector as this sector has expanded.

3.3 Qualitative Measures of Working Conditions

The results of the previous section are consistent with the idea that export-oriented FDI induced a between-industry shift out of agriculture and into certain manufacturing sectors. The effect that this movement has on non-wage working conditions, however, depends on whether or not conditions are better in manufacturing or agriculture. If conditions are worse in manufacturing, then an export-oriented FDI-induced shift from agriculture to manufacturing cannot be said to improve working conditions in Indonesia.

Starting in 1998, the SAKERNAS surveys contain specific questions about working conditions. These conditions include income, facilities, medical benefits, safety, transport, and an overall assessment. Workers are offered four categories with which to assess working conditions in their job, and are asked whether each condition is better, just as good, just as bad, or worse than the conditions a year ago.

The strategy is to estimate an ordered probit, described in the technical appendix, using industry dummy variables and the demographic characteristics that were included in the wage differential analysis. The main concern about this approach is that one may take issue with the ranking of the responses. In particular, “better” than a very bad situation a year ago is not necessarily “better” than “just as good” as a year ago. A more complete analysis of the comparison of these choices would certainly be relevant for future research. Here, however, it is useful to apply these given categories under the possibly strong assumption that the given ordering is meaningful. The years 1998-2004 are pooled and a linear time trend is included to control for overall changes in attitude.

Table 7 contains the ordered probit estimates. All of the industry coefficient estimates represent the difference between that industry and the textile and apparel sector. Positive coefficients suggest that workers in that sector were more likely to respond with a higher number than workers in the textile industry, and is interpreted to suggest that conditions in that industry are better than in the textile industry. Although the ordering is certainly subject to discussion, the overall results seem (perhaps surprisingly) sensible. For

example, relative to textiles and apparel, agriculture workers are much more likely to rank “income” lower. Workers in FIRE are much more likely to rank facilities higher. Construction workers and Mining workers are more likely to rank safety lower than textile workers. Interestingly, workers in other manufacturing industries rank conditions in their industries above textiles/apparel in every dimension, and the differences are statistically significant in all but one dimension (safety). These results suggest that conditions are better in other manufacturing sectors than in agriculture.

One main concern is whether or not wage differentials analyzed earlier represent *compensating differentials*. That is, wages might be higher in textiles and apparel to compensate workers for worse conditions. If this is the case, then the correlation between wage differentials and the estimates in Table 7 would be negative. On the other hand, wage differentials may be positively correlated with working conditions, suggesting that wages may not be a poor proxy for overall working conditions.

Table 8 contains the comparison of the ordered probit coefficients in the “overall” column and the estimated inter-industry wage differentials (both numbers relative to textiles and apparel). There are two main results from this comparison. First, in general, the numbers seem to be positively correlated. In fact, the overall correlation coefficient is 0.443. The correlation between wage differentials and every measure of working conditions is positive, ranging from just under 0.25 for facilities to over 0.70 for transportation. This result suggests that, in fact, wage differentials are positively correlated with working conditions and that they do not serve as a compensating differential in Indonesia.

The other result, which is relatively minor, is that there is some evidence that wages do compensate for adverse conditions within manufacturing. In particular, wages in textiles and apparel are higher than in food, beverages, and tobacco (Table 6), but working conditions are worse (Table 7). In other industries, however, both working conditions and wages are higher than in textiles and apparel. These differences are small, however, relative to the overall strong positive correlation between wages and working conditions.

The main message here is that the manufacturing industries that have expanded (textiles/apparel and other manufacturing industries) have much higher wages and much better working conditions than food agriculture. To the extent that export-oriented FDI induced a shift out of agriculture into these industries, there is no evidence to support the hypothesis that globalization has made working conditions worse for Indonesian workers.

On the contrary, it seems likely that conditions improved for workers who changed industries. Of course, these data do not formally test the link between FDI and wage differentials or working conditions. We present some initial evidence of such a test in the next section.

3.4 Wage Differentials and Foreign Direct Investment

Ideally, one would like to formally test the hypothesis that the wage differentials are related to globalization measures. One problem in the Indonesian case is that the main liberalization period spanned 1988-1996. Globalization measures that vary by year and industry from that period are difficult to find. One measure that is available, however, is the *approvals* of FDI. These are not realizations of FDI. Presumably, all or less than this amount of FDI was actually realized in the years following approval. Table 9 contains the available data for FDI *approvals* by industry and year. There is significant variation in FDI approvals across industry and time.

The Capital Investment Coordinating Board (BKPM) is the central processing point for most investment applications, and is the source for these data. The data do not include investments in the following sectors: oil and gas, finance, banking, non-bank finance, insurance, and leasing. BKPM approval reports should be treated with caution, because the agency performs little monitoring of investment project implementation. Some investors may inflate the value of their investments to maximize government incentives. For example, the mid-1990s approvals were inflated for several years by a surge of interest in oil product refineries, most of which were never constructed. In addition, year-on-year comparisons of domestic approvals after the rupiah began to decline in mid-1997 are difficult because of the currency's fluctuating value.

As a first pass to testing the hypothesis that FDI has a positive effect on wage differentials, we construct a panel of wage differentials (the difference in average wage in each industry from the mean, controlling for demographic characteristics). Using these differentials as the dependent variable, we estimate three regressions using the natural log of FDI approvals as the independent variable differentiated by specification.

The results from this admittedly crude first-pass estimation are shown in Table 10. Log FDI approvals are included as the current period and four lagged values. The lagged values are important because we would not expect that current FDI approvals would affect differentials. Indeed, it may take several years for FDI approvals to become

realized to the point at which they could affect wages. The three specifications vary in their inclusion of fixed time and industry effects.

In all three specifications, the third lag of FDI approvals is statistically significant and positive, which is a very reasonable result. These results suggest that inflows of FDI increase the sector-specific wage differential, which is consistent with the circumstantial evidence presented in the previous sections. To the extent that working conditions are positively correlated with wages, the shift into these industries suggests that FDI positively contributed to rising working conditions. .

4. Conclusion and Policy Options

Globalization holds both promise and peril for workers in developing countries, and this study focuses on two specific aspects of working conditions: inter-industry wage differentials and several other qualitative measures of working conditions. The study finds that reform policies successfully attracted export-oriented foreign investment, and the resulting investment concentrated in a limited number (two or three) manufacturing sectors. As FDI increased, the employment shares and inter-industry wage differentials in these industries increased relative to other manufacturing sectors and, importantly, agriculture. An analysis of working conditions in these sectors suggests that conditions in the expanding sectors are better than in agriculture, which is often the relevant alternative for many Indonesian workers. When the crisis hit, these results reversed: as FDI fell, wages in FDI-linked sectors fell and the share of employment in agriculture rose. Overall, these results are consistent with the hypothesis that FDI and liberalization contributed to a shift in workers from low-wage, poor-condition sectors to high-wage, better-condition sectors.

References

- ADB (2006) *Key Indicators 2006: Measuring Policy Effectiveness in Health and Education*,
http://www.adb.org/Documents/Books/Key_Indicators/2006/xls/INO.xls,
accessed on September 20, 2006.
- Amiti, Mary and Konings, Jozef 2005. "[Trade Liberalization, Intermediate Inputs, and Productivity: Evidence from Indonesia](#)," *IMF Working Papers* 05/146, International Monetary Fund.
- Arnold, Jens and Javorcik, Beata Smarzynska (2005) "Gifted Kids or Pushy Parents? Foreign Acquisitions and Plant Performance in Indonesia" CEPR Discussion Paper 5065.
- Aswicahyono, H. and Feridhanusetyawan, T. (2003) 'Indonesia's Strategy for Industrial Upgrading', paper presented in *Why Trade and Industry Policy Matters* Jakarta 14-15 January: UNSFIR
- Aswicahyono, H. and Maidir, I. (2003) *Indonesia's Textiles and Apparels Industry: Taking a Stand in the New International Competition*, Working Paper Series, Jakarta: CSIS.
- Banerjee, S. and Siregar, H. (2002) *Agriculture as the leading sector: An industrial policy framework*, Jakarta: UNSFIR.
- Bank of Indonesia (2007) *Statistics*, Jakarta: www.bi.go.id, March 29, 2007.
- Biro Pusat Statistik (BPS) (2002), "Welfare Indicators", BPS-Indonesia.
- Brown, Drusilla K. 2007. "Globalization and Employment Conditions Study" SP Discussion Paper 0708, World Bank.
- Caraway, Teri L. (2004) "Protective Repression, International Pressure, and Institutional Design: Explaining Labor Reform in Indonesia" *Studies in Comparative International Development* vol. 39, no. 3, Fall, pp. 28-49.
- Cox Edwards, Alejandra (1996) "Labor Regulations and Industrial Relations in Indonesia" Policy Research Working Paper 1640, World Bank, Poverty and Social Policy Department, August.
- Fane, George; Condon, Timothy (1996) "Trade Reform in Indonesia, 1987-95" *Bulletin of Indonesian Economic Studies*, vol. 32, no. 3, December 1996, pp. 33-54
- Gittleman, M. and Wolff, E. "International Comparisons of Inter-industry Wage Differentials" *Review of Income and Wealth* 39(3) (1993): 295-312.

- Harrison, Ann; Scorse, Jason (2004) "Moving Up or Moving Out? Anti-Sweatshop Activists and Labor Market Outcomes" NBER Working Paper 10492.
- HDI (2001) *Towards a new consensus: Democracy and human development in Indonesia*, Jakarta: UNDP.
- Helwege, J. "Sectoral Shifts and Inter-industry Wage Differentials" *Journal of Labor Economics* 10(1) (1992) : 55-84.
- Ismalina, P. (2002) 'How to sustain Indonesia's economic development through export-led growth strategy: Building productive capacity and equal economic opportunity', paper presented in *Seminar Nasional "Peningkatan Daya Saing Ekspor Non-Migas"*, (*Improving the export competitiveness of non oil and gas*) *Dies Natalis ke-43 Fakultas Ekonomi Universitas Diponegoro in collaboration with Bank of Indonesia Semarang*: April 3.
- Katz, L.F. and Summers, L.H. "Can Inter-industry Wage Differentials Justify Strategic Trade Policy?" in Feenstra, Robert C., ed., *Trade Policies for International Competitiveness*. National Bureau of Economic Research Conference Report Series Chicago and London: University of Chicago Press, (1989a): 85-116.
- Katz, L.F. and Summers, L.H. "Industry Rents: Evidence and Implications" *Brookings Papers On Economic Activity, Microeconomics* (1989b): 209-275.
- Kaur, Amarjit (2004) "Workers, Employment Relations, and Labour Standards in Industrialising Southeast Asia" in Cribb, Robert (ed), *Asia Examined: Proceedings of the 15th Biennial Conference of the ASAA, 2004, Canberra, Australia.* ISBN 0-9580837-1-1.
- Kühl, Bianca (2003) "Social Standards in Indonesia - A Review of Existing Tools and Regulations" Occasional Papers: International Development Cooperation, Global Trade Union Program, April.
- Lipsey, Robert E; Sjöholm, Fredrik (2004a) "Foreign Direct Investment, Education and Wages in Indonesian Manufacturing" *Journal of Development Economics*, 73(1), February, pp. 415-22.
- Lipsey, Robert E; Sjöholm, Fredrik (2004b) "FDI and Wage Spillovers in Indonesian Manufacturing" *Review of World Economics/Weltwirtschaftliches Archiv*, 140(2), pp. 321-32.
- Manning, Chris (1998) *Indonesian labour in transition: An East Asian success story?*, Cambridge: Cambridge University Press.
- Manning, Chris (2000a) "Indonesian Labour Markets: Adjusting to Crisis and Slow Recovery" *Indian Journal of Labour Economics*, 43(3), July-Sept., pp. 545-64.

- Manning, Chris (2000b) 'Labour market adjustment to Indonesia's economic crisis: Context, trends and implications', *Bulletin of Indonesian Economic Studies*, 36: 105-136.
- Manning, Chris (2003) "Labor Policy: Lessons from East Asia" in R. Hasan and D. Mitra (eds.) The Impact of Trade on Labor Issues, Perspectives, and Experiences from Developing Asia North Holland/ Elsevier, pp.159-185.
- Pangestu, Mari. (1996) *Economic reform, deregulation and privatisation: The Indonesian experience*, Jakarta: Centre for Strategic and International Studies.
- Pangestu, Mari and Hendytio, Medelina (1997) "Survey Responses from Women Workers in Indonesia's Textile, Garment, and Footwear Industries," World Bank Policy Research Working Paper no. 1755, April 1997.
- Papola, T. and Bharadwaj, W. "Dynamics of Industrial Wage Structure: An Inter-country Analysis" *The Economic Journal* 80, (1970): 72-90.
- Robertson, Raymond (2007) "Globalization and Working Conditions: A Guideline for Country Studies" mimeo, World Bank.
- Sjoholm, Fredrik and Lipsey, Robert E. (2006) "Foreign Firms and Indonesian Manufacturing Wages: An analysis with Panel Data" *Economic Development and Cultural Change*, 55(1), pp.201-221.
- Suryahadi, Asep (1999) "Wage Inequality between skilled and unskilled labor in Indonesian Manufacturing" *Economics and Finance in Indonesia* 47, pp. 271-288.
- Suryahadi, Asep; Chen, P. and Tyers, R. (1999) "Openness, technological change, and labor demand in pre-crisis Indonesia" Working Papers in Economics and Econometrics No. 377, Canberra: Australian National University.
- Suryahadi, Asep (2003) "International Economic Integration and Labor Markets: The Case of Indonesia" in R. Hasan and D. Mitra (eds.) The Impact of Trade on Labor Issues, Perspectives, and Experiences from Developing Asia North Holland/ Elsevier, pp.275-302.
- Tobing, E. (1993) *Masalah struktural peningkatan kesempatan kerja*, Jakarta: Bisnis Indonesia:
- UNCTAD (2003) *World Investment Report 2003-FDI Policies for Development: National and International Perspective*, New York and Geneva: UNCTAD.
- UNIDO (1997) *Annual Report*, Geneva and New York: United National Industrial Development Organisation.
- World Bank (1996) "Indonesia Dimensions of Growth" Report No. 15383-IND, May.

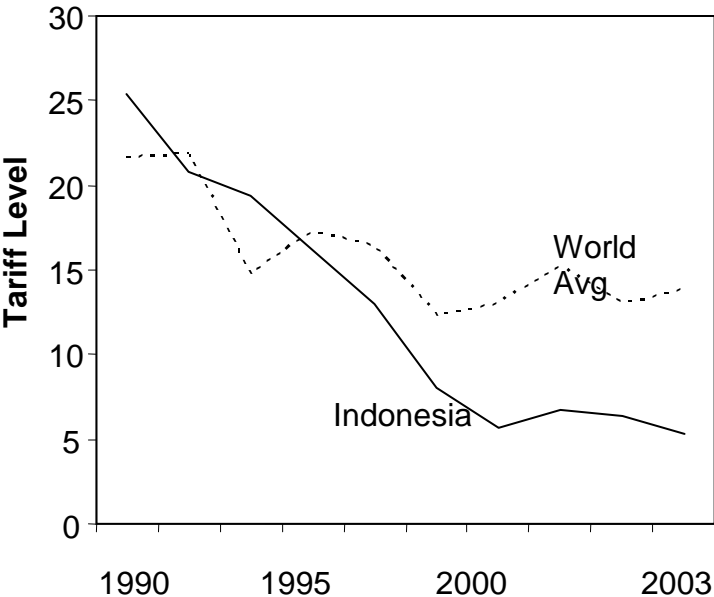
World Bank (2005) *Doing business in 2005: removing obstacles to growth*, Washington DC: World Bank.

World Bank and the International Finance Corporation (2006) *Doing business in 2007: creating jobs*, Washington DC: World Bank.

World Bank and the International Finance Corporation (2007) *Doing business in 2007: how to reform*, Washington DC: World Bank.

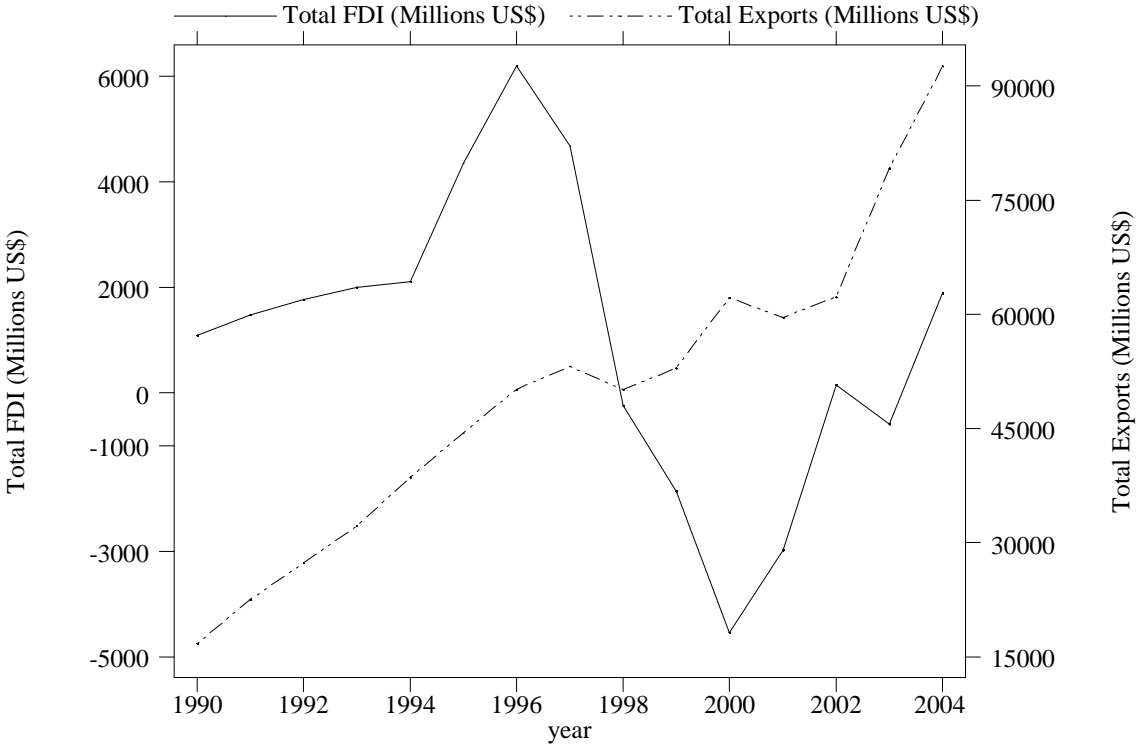
WTO (2003) *Trade Policy Review - Indonesia*, Report by the Secretariat WT/TPR/S/117, Geneva

Figure 1: Average Tariffs Indonesia and the World

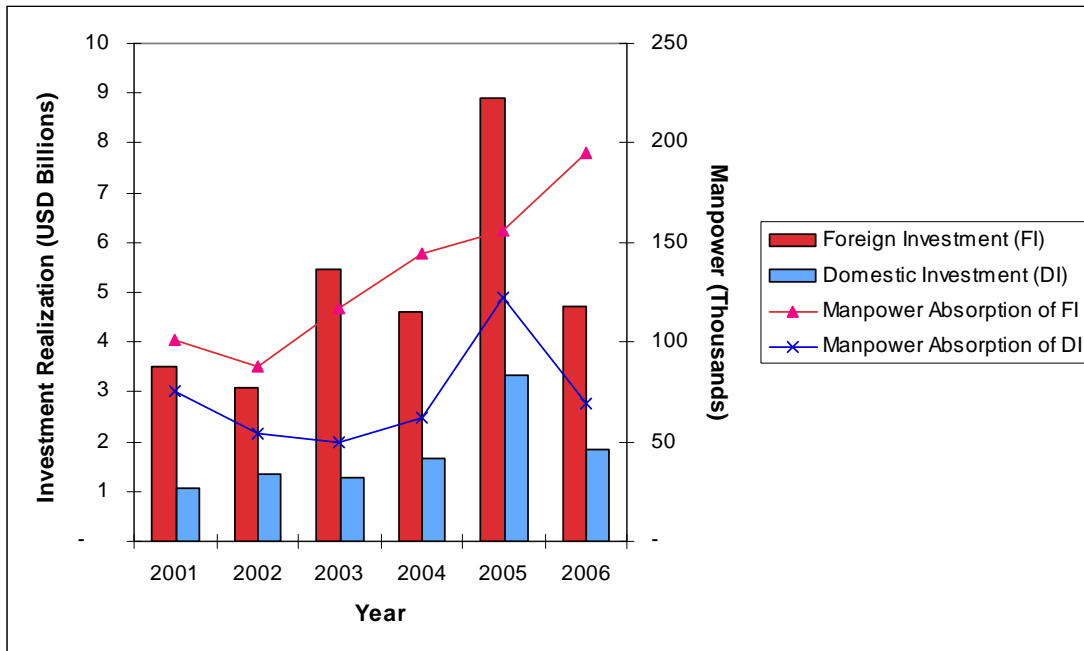


Notes: These are the overall average reported tariffs in the TRAINS database. These averages are the simple (unweighted) tariffs across all 10-digit HS entries.

Figure 2: Indonesian Foreign Direct Investment and Exports

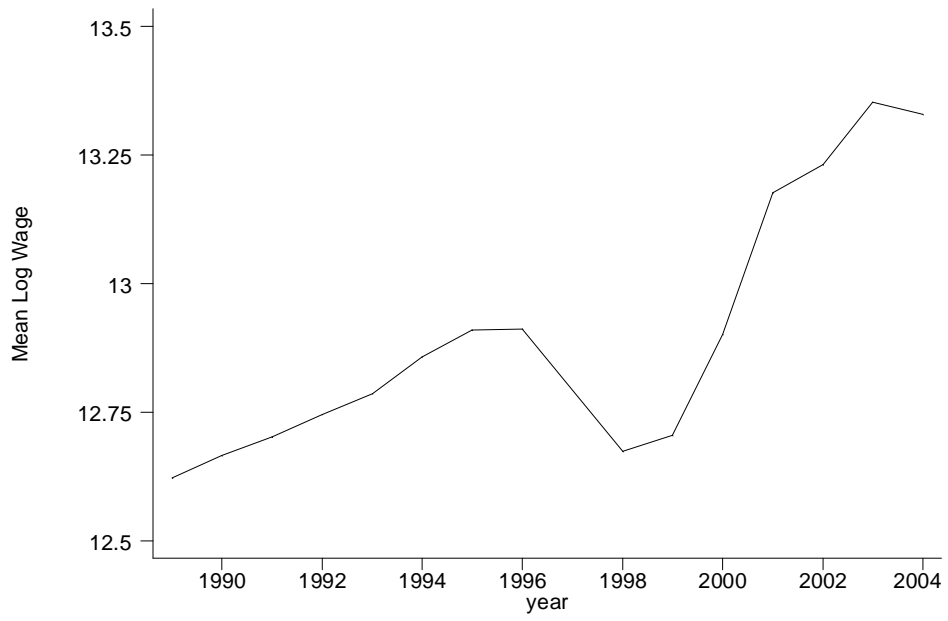


**Figure 3 Realization of Investment and Manpower Absorption
2001-November, 2006**



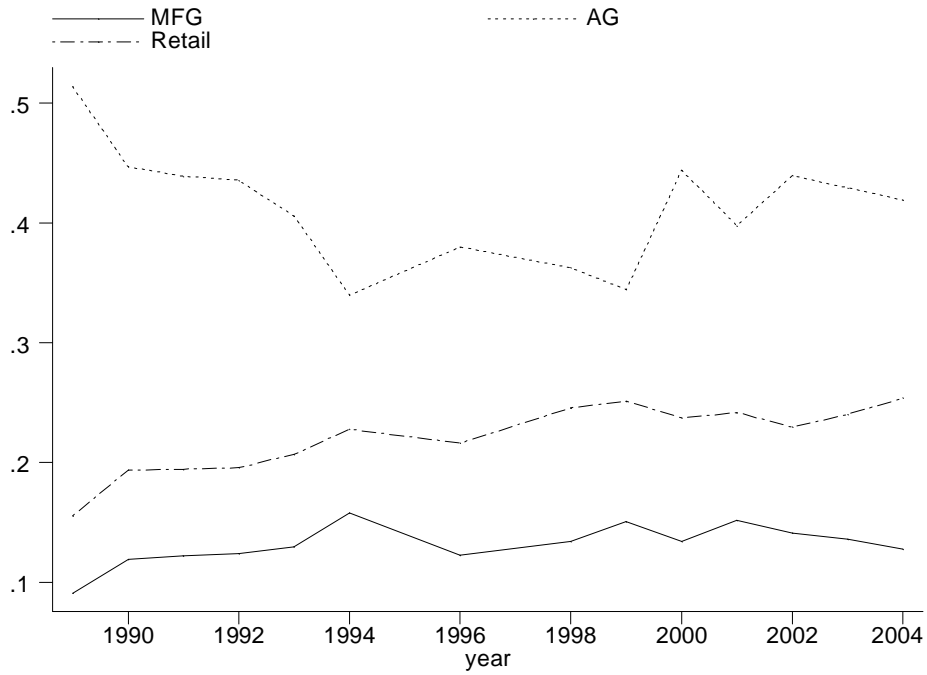
Notes: Data are from Indonesia's Investment Coordinating Board (bkpm), www.bkpm.go.id. The data do not include investment in oil and gas, finance, banking, non-bank finance, insurance, and leasing.

Figure 4: Mean Log Real Wage: 1989-2004



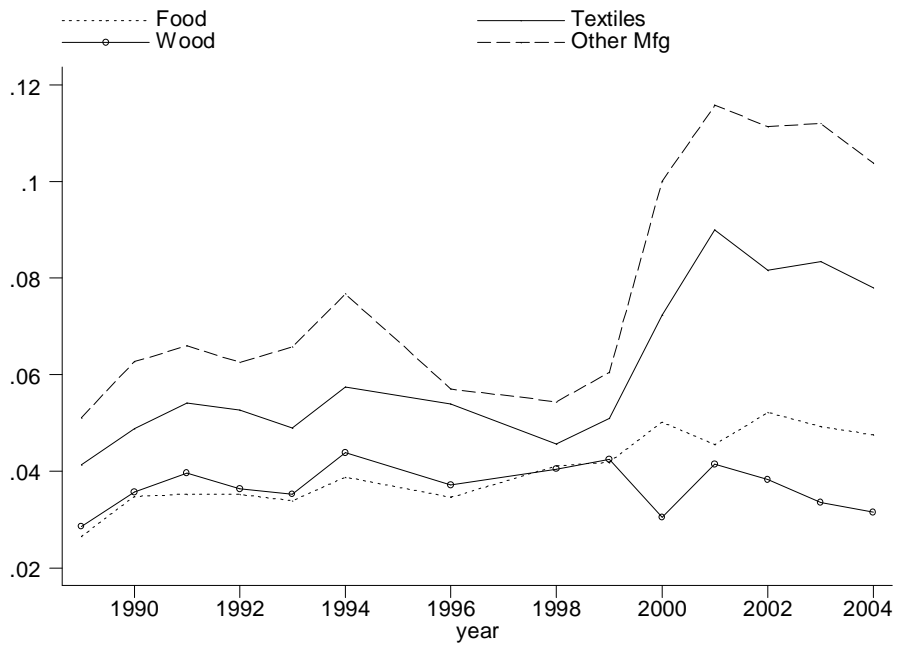
Notes: Real wages are calculated using the annual average of the current price index. The demographic-adjusted real mean log wage follows basically the same path.

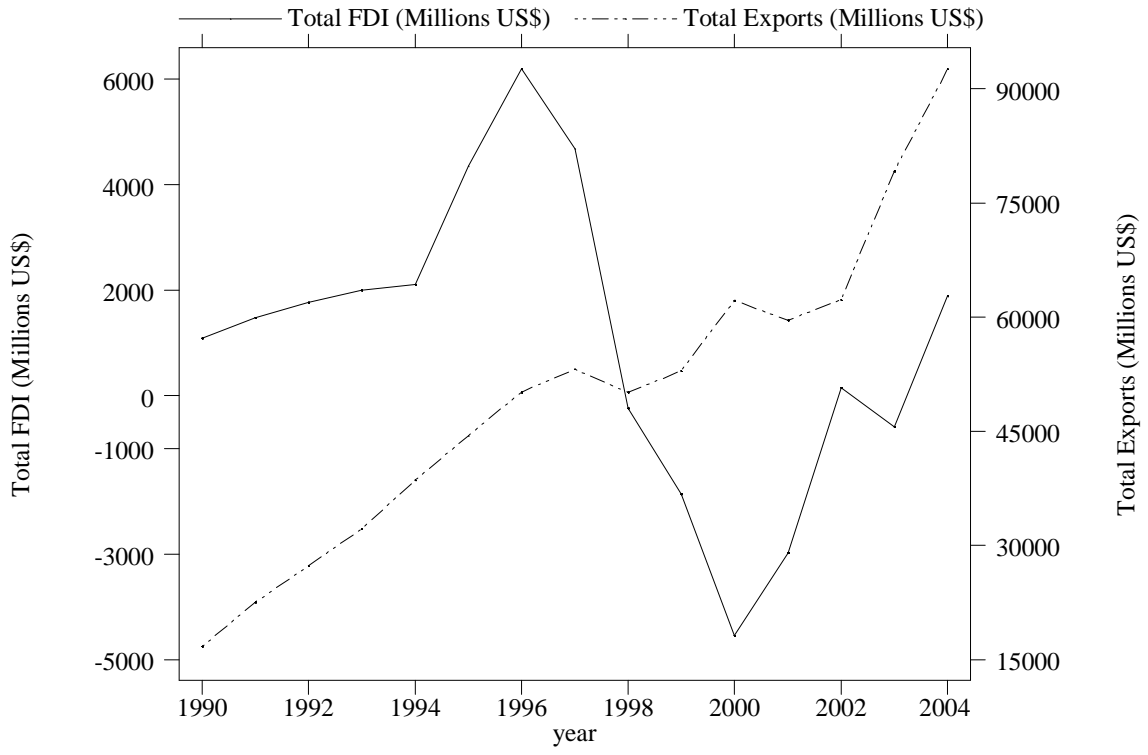
Figure 5: Labor Force Survey Industry Employment Shares



Notes: Employment shares of all workers with positive earnings. These categories are the three largest employment categories. Years 1995 and 1997 are excluded due to lack of data.

Figure 6: Within Manufacturing Employment Shares





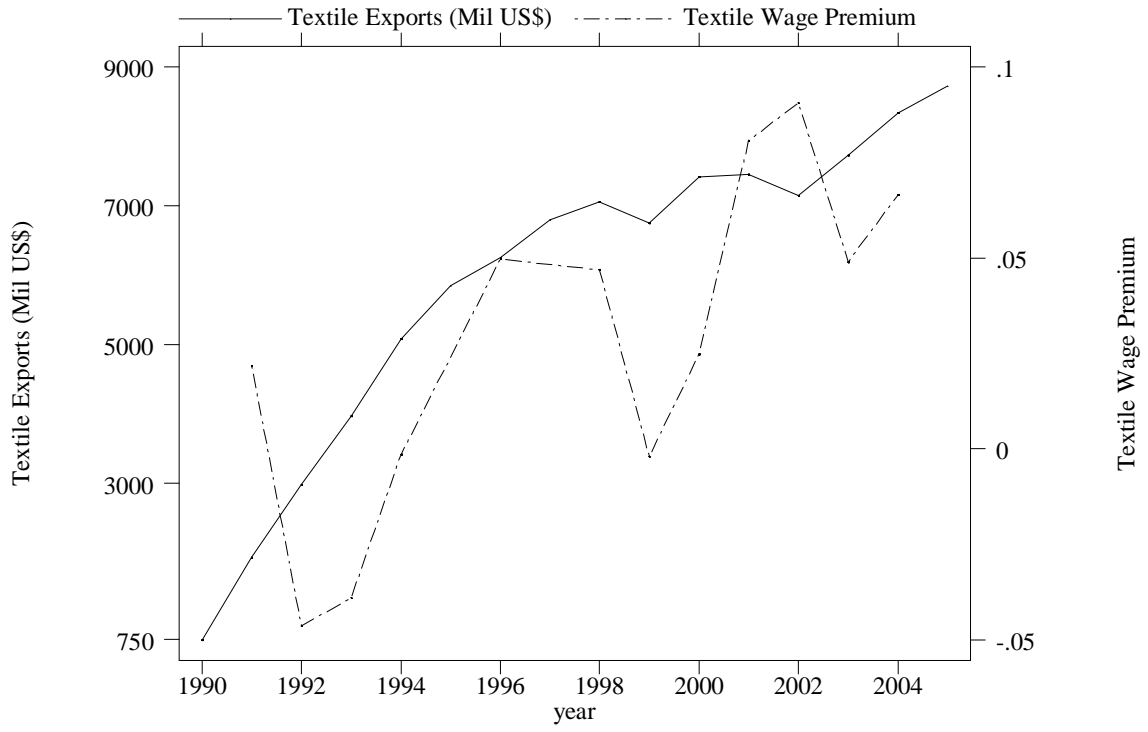


Figure 7: Apparel Employment Share and Wage Premium 1991-2004 Indonesia



**Table 1: Sub-sectoral Composition of
Foreign Manufacturing Establishments, 1990 – 1998**

ISIC	Sub Sector	All	New Establishment				Subsectoral distribution				(%)
		1997	90 - 93	93 - 96	96 - 97	97 - 98	1997	90 - 93	93 - 96	96 - 97	97 - 98
31	Food	154	12	25	24	7	11	5	9	9	-5
32	Textile	277	113	38	26	-46	19	46	14	10	30
33	Wood	111	3	17	25	-27	8	1	6	10	18
34	Paper	33	-1	12	4	2	2	-	4	2	-1
35	Chemicals	277	5	65	26	-33	19	2	24	10	22
36	Non- met.minerals	43	-13	6	16	-4	3	-5	2	6	3
37	Basic metals	44	6	10	13	3	3	2	4	5	-2
38	Fab.metal products	431	88	104	113	-50	30	36	38	44	33
39	Other manufacturing	52	31	-1	11	-4	4	13	-	4	3
Total		1,422	244	276	258	-152	100	100	100	100	100

Sources: Large and Medium Manufacturing Statistics, volume 1, various years, Statistics Indonesia

Note: A foreign establishment is any foreign establishment with foreign equity, either wholly-owned or in joint-venture with a domestic firms, private or government, and which benefits from an investment facility (*Penanaman Modal Asing* or *PMA* status)

Table 2: Employment, Firm Size and Value-added Worker by Ownership (1990-1998)

	1990	1993	1996	1998
Total employment (million)	2.66	3.57	4.21	4.12
<u>Percentage</u>	100	100	100	100
Foreign	9	13	16	19
Domestic Private	82	80	78	74
Public	9	7	6	7
<u>Workers/establishment</u>	161	197	183	192
Foreign	368	540	596	509
Domestic Private	143	168	153	158
Public	432	734	585	494
<u>Value-added/worker*</u>	9	14	22	38
Foreign	20	22	36	68
Domestic Private	8	13	17	31
Public	8	13	51	29
Ratio foreign : domestic	2.4	1.7	2.1	2.2

Notes: Data are from Large and Medium Manufacturing Statistics, volume 1, various years, Statistics Indonesia. * Million rupiah per year, current prices.

Table 3: Change in Tariff Protection in Sensitive Sectors 1996–2002

ISIC	SECTOR	1996		1998		2002	
		Simple Average Tariff (%)	Tariff Range (%)	Simple Average Tariff (%)	Tariff Range (%)	Simple Average Tariff (%)	Tariff Range (%)
3121	Food Product	15	5 – 170	13	5 - 170	6	5 – 170
3131	Distilling, rectifying, blending spirits	170	170- 170	170	170 - 170	170	170 – 170
3132	Wine industries	135	5 – 170	137	5 - 170	137	5 – 170
3133	Malt liquors and malt	17	5 - 40	17	5 - 40	17	5 - 40
3511	Industrial chemicals	6	0 - 30	5	0 - 30	4	0 - 30
3513	Resins, plastics, and man-made fibres	13	0 - 40	12	0 - 35	8	0 - 30
371	Iron and steel	8	0 - 30	8	0 - 30	7	0 - 25
3819	Manufacture of fabricated metal products	14	0 - 30	13	0 - 25	10	0 - 20
3843	Manufacture of motor vehicles	48	0 - 200	52	0 - 200	21	0 - 80
3844	Manufacture of motorcycles and bicycles	42	0 - 150	42	0 - 150	19	0 - 60
3849	Manufacture of transport equipment	30	0 - 30	25	25 - 25	20	20 - 20

Source: WITS/TRAINS (2003) Database on International Trade and Tariffs, UNCTAD, World Bank, Geneva and Washington DC.

Table 4: Sample Characteristics

Year	Freq.	Age	Female	Education
1991	46,000	32.63	30.47%	4.50
1992	45,835	32.94	31.25%	4.56
1993	47,126	33.17	31.18%	4.56
1994	44,405	32.90	30.04%	4.59
1996	41,338	33.91	28.82%	4.81
1998	28,787	33.88	32.47%	4.89
1999	27,546	34.02	32.03%	4.90
2000	15,612	33.30	30.76%	4.60
2001	18,630	32.41	29.89%	5.14
2002	29,219	33.00	28.75%	5.15
2003	33,538	32.97	28.68%	5.47
2004	33,605	32.88	29.19%	5.38

Notes: The sample includes workers with positive earnings and who are between 10 and 65 years old, inclusive. The education variable takes on one of ten values (1-10) with 3 representing primary education and 6 representing high-school education.

**Table 5: Sample Characteristics by Industry
1991 and 2004**

Sector	1991			
	Freq	Age	Female	Education
Food Ag	7.80%	36.42	41.89%	2.29
Other Ag	7.32%	32.91	26.95%	2.77
Mining and Quarrying	1.52%	34.91	9.57%	4.60
Food Bev Tob	3.54%	29.56	45.82%	3.51
Textile App Leather	5.43%	26.82	52.98%	3.90
Wood	3.98%	29.26	20.93%	3.95
Other Industries	6.62%	29.89	25.43%	4.39
Electric Gas Water	0.65%	33.61	8.00%	5.71
Construction	8.69%	32.82	4.20%	3.59
Retail Wholesale Hotels	6.65%	29.48	33.29%	4.68
Trans Storage Comm	4.80%	32.84	4.57%	4.24
FIRE and Bus Services	2.49%	32.33	26.14%	6.35
Public Administration	19.42%	36.50	27.31%	6.51
Other services	21.08%	31.79	43.93%	4.66
Total		32.63	30.47%	4.50
		2004		
Sector	Freq	Age	Female	Education
Food Ag	4.46%	35.14	28.50%	3.53
Other Ag	3.38%	31.56	12.49%	3.63
Mining and Quarrying	2.23%	33.81	6.13%	4.80
Food Bev Tob	4.76%	31.81	40.90%	4.64
Textile App Leather	7.82%	30.05	49.45%	4.84
Wood	3.15%	30.77	20.38%	4.69
Other Industries	10.39%	32.20	21.51%	5.56
Electric Gas Water	0.82%	36.94	10.11%	6.58
Construction	7.34%	35.26	4.79%	4.76
Retail Wholesale Hotels	20.29%	29.59	35.58%	5.83
Trans Storage Comm	7.32%	34.84	10.89%	5.39
FIRE and Bus Services	5.89%	33.86	26.91%	7.31
Public Administration	11.80%	39.39	21.94%	7.04
Other services	10.33%	31.20	58.51%	4.13
Total		32.88	29.19%	5.38

**Table 6: Inter-Industry Wage Differentials
without and with Demographic Characteristics
Indonesia 1991 and 2004**

Mean Log Wage	1991		2004	
	Without	With	Without	With
	7.48	5.72	8.00	6.21
Sector	Differentials			
Food Agriculture	-0.526*	-0.195*	-0.395*	-0.135*
Other Agriculture	-0.363*	-0.091*	-0.300*	-0.029
Mining and Quarrying	0.549*	0.416*	0.353*	0.385*
Food Beverage Tobacco	-0.420*	-0.151*	-0.237*	-0.079*
Textiles and Apparel	-0.297*	-0.015	-0.083*	0.083*
Wood	-0.025	0.106*	-0.115*	0.007
Other Industries	-0.007	0.050*	0.158*	0.121*
Electric Gas Water	0.457*	0.163*	0.481*	0.181*
Construction	0.041*	0.107*	0.063*	0.078*
Retail Wholesale Hotels	-0.077*	-0.034*	-0.095*	-0.099*
Trans Storage Communication	0.168*	0.119*	0.112*	0.040*
FIRE and Business Services	0.580*	0.263*	0.542*	0.209*
Public Administration	0.533*	0.112*	0.568*	0.185*
Other Services	-0.168*	-0.132*	-0.698*	-0.402*
Demographic Characteristics	1991		2004	
Age	0.062*		0.045*	
Female	-0.269*		-0.183*	
Education	0.155*		0.157*	

Table 7: Ordered Probit Estimation of Working Conditions

Sector	(1) Income	(2) Facilities	(3) Medical Benefits	(4) Safety	(5) Transport	(6) Overall
Food Ag	-0.204 (0.000)**	-0.528 (0.000)**	-0.395 (0.000)**	-0.419 (0.000)**	-0.169 (0.000)**	-0.285 (0.000)**
Other Ag	-0.046 (0.003)**	-0.254 (0.000)**	-0.179 (0.000)**	-0.233 (0.000)**	-0.053 (0.001)**	-0.099 (0.000)**
Mining and Quarrying	0.096 (0.000)**	-0.151 (0.000)**	-0.110 (0.000)**	-0.095 (0.000)**	0.138 (0.000)**	0.018 (0.437)
Food Bev Tob	0.072 (0.000)**	0.042 (0.011)*	0.055 (0.000)**	0.039 (0.014)*	0.039 (0.012)*	0.069 (0.000)**
Wood	0.046 (0.005)**	-0.035 (0.047)*	-0.081 (0.000)**	-0.072 (0.000)**	-0.010 (0.540)	-0.004 (0.812)
Other Industries	0.065 (0.000)**	0.042 (0.002)**	0.033 (0.012)*	0.014 (0.287)	0.041 (0.002)**	0.071 (0.000)**
Electric Gas Water	0.131 (0.000)**	0.104 (0.006)**	0.144 (0.000)**	0.132 (0.000)**	0.187 (0.000)**	0.163 (0.000)**
Construction	-0.074 (0.000)**	-0.362 (0.000)**	-0.446 (0.000)**	-0.404 (0.000)**	-0.069 (0.000)**	-0.146 (0.000)**
Retail Wholesale Hotels	-0.005 (0.690)	0.018 (0.152)	-0.155 (0.000)**	-0.157 (0.000)**	0.009 (0.474)	0.033 (0.008)**
Trans Storage Comm	-0.028 (0.048)*	-0.058 (0.000)**	-0.102 (0.000)**	-0.107 (0.000)**	0.152 (0.000)**	0.018 (0.237)
FIRE and Bus Services	0.163 (0.000)**	0.214 (0.000)**	0.152 (0.000)**	0.093 (0.000)**	0.180 (0.000)**	0.210 (0.000)**
Public Administration	0.242 (0.000)**	0.214 (0.000)**	0.170 (0.000)**	0.041 (0.002)**	0.197 (0.000)**	0.232 (0.000)**
Other Services	-0.004 (0.760)	0.039 (0.003)**	-0.066 (0.000)**	-0.123 (0.000)**	-0.032 (0.008)**	0.047 (0.000)**
Linear Time Trend	0.051 (0.000)**	0.011 (0.000)**	-0.006 (0.000)**	-0.005 (0.000)**	-0.020 (0.000)**	0.045 (0.000)**
Female	-0.005 (0.431)	0.044 (0.000)**	0.030 (0.000)**	0.009 (0.136)	-0.050 (0.000)**	0.023 (0.000)**
Observations	186,937	186,937	186,937	186,937	186,937	186,937

Table 8: Comparison of Wages and Working Conditions

Sector		Wages	Working Conditions
1	Food Ag	-0.230	-0.285
2	Other Ag	-0.070	-0.099
3	Mining and Quarrying	0.323	0.018
4	Food Bev Tob	-0.136	0.069
6	Wood	-0.014	-0.004
7	Other Industries	0.030	0.071
8	Electric Gas Water	0.145	0.163
9	Construction	0.002	-0.146
10	Retail Wholesale Hotels	-0.172	0.033
11	Trans Storage Comm	-0.021	0.018
12	FIRE and Bus Services	0.130	0.210
13	Public Administration	0.135	0.232
14	Services (Private)	-0.357	0.047

Notes: The simple correlation between the two series is 0.443. The correlation of the ranks is 0.450. 8 of the 13 signs agree.

Table 9: Approved Foreign Direct Investment by Industry
Millions US\$

Year	Food Ag	Other Ag	Mining and Quarrying	Food Bev Tob	Textile App Leather	Wood	Other Industries	Electric Gas Water	Construction	Retail Wholesale Hotels	FIRE and Bus Services
1992	65.9	165.4	2313	212.7	584.3	31.5	3164.3	417.1	20.2	847.8	475.6
1993	131.9	21.3	0	141.3	423	50.4	2909.6	3411.7	103.2	394.4	579
1994	689.4	39.5	0	1240.5	396.5	68	17210.8	892.1	76.6	343.6	1029.4
1995	1074.1	227.3	37	1293.2	471.1	263	30363.6	3704.2	205.8	1797.9	1191.8
1996	1296.8	215.2	1696.8	692	513.8	101	15350.7	4890.3	295.8	1716.5	3007.5
1997	436.4	27.2	1.9	575.9	333.4	69.9	27232.6	2344.5	306.7	400.8	1397.6
1998	965.3	33.1	0.3	335.7	217	70.7	7837.2	2177.6	197.8	450.9	1270.9
1999	412.5	78.5	14.2	680.7	240.4	113.1	5997.8	2792.8	153.3	228.6	179.5
2000	389.1	54.6	1.1	701.3	400.4	156.9	10588.2	2303.4	125.3	257.2	301.5
2001	284.2	107.5	118.7	289.2	330	21.4	4877.1	1899.1	47.6	6891.6	177.5
2002	446.3	12.6	49.2	267.3	89.9	30.4	6533.8	1764.9	287.7	254.6	7.4
2003	57.2	121.7	17.8	408.5	123.1	235	9851	1106.7	787.2	488.2	10.3
2004	196.9	132.8	66.3	721.8	407.9	15.5	5775.6	1079.7	954	587.2	339.6
2005	462	144	775.9	642.6	139.5	102.2	8251	901	1777.2	259.1	124.8
2006	673.09	109.11	285.6	920.5	139.6	57.4	6738.8	2568.2	2121.8	235.1	40.1

Table 10: Estimation of Inter-Industry Wage Differentials on FDI Approvals

	(1)	(2)	(3)
	Wage Differential	Wage Differential	Wage Differential
Log FDI	0.001 (0.004)	0.002 (0.004)	0.001 (0.004)
Log FDI T-1	0.003 (0.004)	0.003 (0.004)	0.003 (0.004)
Log FDI T-2	-0.000 (0.004)	0.001 (0.004)	0.002 (0.004)
Log FDI T-3	0.007 (0.003)*	0.008 (0.003)*	0.011 (0.004)**
Log FDI T-4	-0.001 (0.004)	-0.000 (0.004)	0.003 (0.005)
Constant	0.009 (0.061)	-0.218 (0.050)**	-0.259 (0.061)**
Industry?		Yes	Yes
Year?		No	Yes
Observations	86	86	86
Number of ind	11	11	11

Standard errors in parentheses

* significant at 5%; ** significant at 1%