THE AUSTRALIAN NATIONAL UNIVERSITY

Working Papers in
Trade and Development

Industrialization after a Deep Economic Crisis: Indonesia

Haryo Aswicahyono

Dionisius Narjoko
and
Hal Hill

August 2008
Working Paper No. 2008/18

The Arndt-Corden Division of Economics
Research School of Pacific and Asian Studies
ANU College of Asia and the Pacific

Industrialization after a Deep Economic Crisis: Indonesia

Haryo Aswicahyono
and
Dionisius Narjoko
Centre for Strategic and International Studies
Jakarta, and
Visiting Fellows, Indonesia Project

And

Hal Hill
The Arndt-Corden Division of Economics
Research School of Pacific and Asian Studies
College of Asia and the Pacific
The Australian National University

Corresponding Address :
Hal Hill
The Arndt-Corden Division of Economics
Research School of Pacific & Asian Studies
College of Asia and the Pacific
The Australian National University
Email: **Hal.Hill@anu.edu.au**

August 2008
Working paper No. 2008/18

This Working Paper series provides a vehicle for preliminary circulation of research results in the fields of economic development and international trade. The series is intended to stimulate discussion and critical comment. Staff and visitors in any part of the Australian National University are encouraged to contribute. To facilitate prompt distribution, papers are screened, but not formally refereed.

Copies may be obtained from WWW Site
http://rspas.anu.edu.au/economics/publications.php

Industrialization after a Deep Economic Crisis: Indonesia•

Haryo Aswicahyono and Dionisius Narjoko,
Centre for Strategic and International Studies, Jakarta.
Hal Hill, Australian National University.
(Corresponding author, hal.hill@anu.edu.au)

September 2008

Abstract

Indonesia experienced a deep economic contraction as a result of the 1997-98 Asian crisis. This paper examines trends and patterns in the country's industrial sector in the wake of the crisis, and against the backdrop of the changed policy and institutional environment. Prior to the crisis Indonesia was one East Asia's fastest industrializers, whereas its industrial growth is now one of the slowest. Moreover, prior to the crisis, manufacturing was a 'leading sector' in the economy, whereas it is now growing at about the average. We examine how and why the record within manufacturing is diverse. Also unit labour costs rose sharply immediately following the crisis. In consequence, industrialization has also become less employment elastic, and employment in the formal sector has hardly increased. Foreign ownership has risen substantially, while concentration levels remain largely unchanged. Industrial exports have performed indifferently, notwithstanding the large boost to competitiveness following the sharp depreciation of the Rupiah in 1997-98. The process of small firms 'graduating' to larger units has slowed, and most of the output growth is now coming from existing firms rather than new entrants. We link these outcomes both to general, economy-wide factors as well as a range of particular policy interventions that have had sector-specific effects.

Key words: Indonesia, industrialization, economic crises.

JEL codes: L16, O14

• For helpful comments on earlier drafts we thank seminar participants at the Australian National University; the Fourth Australasian Development Economics Workshop, Canberra 2008; and the Australia Indonesia Governance Research Project (AIGRP) conference, Jakarta, 2007. We also thank the AIGRP for financial support, and the Central Board of Statistics (BPS), Jakarta, for access to unpublished industrial survey data.

1) Introduction

What happens to the industrial sector and patterns of industrialization after a deep economic crisis? As with an earlier paper on the effect of liberalization on industrialization (Aswicahyono, Bird and Hill, 1996), both theory and the empirical literature provide limited guidance. There is a large literature on crises, their origins, effects, and recovery trajectories (see for example Glick et al, 2001; Krugman, 2001). This literature emphasizes both the common elements – a sharp decline in economic activity, combined with financial and exchange rate collapses – as well as the role of country-specific factors. Appropriately, the main focus is on economy-wide features of the crisis and its impacts, and therefore much less is known about sector-specific dimensions. These may vary for a number of reasons. First, relative prices change as a result of exchange rate movements, and thus the degree of 'tradability' of the sector will be a factor. Second, ownership patterns vary across sectors, for both policy and industrial organization reasons, and these too typically change as a result of a crisis. Third, the policy regime often changes significantly as a result of a crisis, and here too there may be sector-specific impacts.

The purpose of this paper is to examine this question with reference to a detailed study of Indonesian industrialization after the 1997-98 economic crisis. Indonesia is well suited to such a study. It experienced a deep economic crisis in 1997-98, with the economy contracting by almost 14%. Beginning in 2000, it then began to recover, and income per capita now exceeds pre-crisis levels. The general policy settings remain broadly similar, though at the microeconomic level the changes have been more substantial. Moreover, it is now a decade since the crisis, and thus post-crisis trends may be clearly identified. In addition, and crucially important for studies of this genre, the country's industrial data base is among the most comprehensive in the developing world, and it is possible to trace firm-level dynamics over time. Inevitably the story is in part sui generis, but we argue that Indonesia shares several common features with other post-crisis developing economies, and that therefore the results of our study are of wider analytical and policy interest.

Our organization is as follows. By way of background, section 2 briefly reviews the record of Indonesian industrialization, pre and post-crisis, surveys the main features of the 1997-98 economic crisis and the subsequent recovery, and highlights key aspects of the post-crisis policy environment. Section 3, the major part of the paper, examines post-crisis industrial growth and structure, export and employment performance, and firm-level dynamics. The concluding section summarizes the main arguments and draws out some broader implications.

2) Indonesia: Growth, Crisis and Policy Settings

2.1) Rapid Industrialization, 1966-96

In the mid-1960s, Indonesia had barely commenced the process of modern industrialization. It then experienced very rapid industrial growth and structural

change through to 1997 (Hill, 1997). Annual industrial growth was at least 9% in all but two of the 27 years, 1970-96. Initially, catch-up and import substitution were the principal drivers. From the mid 1980s, labour-intensive exports became a significant engine of growth. Accompanying this growth was rapid structural change, as the industrial sector evolved from the production of simple consumer goods and basic resource processing to a wide range of manufactures of increasing technological sophistication. Indonesia's emergence as a significant industrial exporter from the mid 1980s was the result of a highly successful reform program involving the lowering of protection, a more open foreign investment regime, and simplified trade procedures, combined with effective macroeconomic and exchange rate management (Aswicahyono, Bird and Hill, 1996).

The country's industrial ownership patterns have been characterized by high levels of ownership concentration, both in the sense of corporate conglomeration and seller concentration. Among major industry groups, these ownership patterns reflect the interplay of history, policy and industrial organization factors. By the mid 1960s, no foreign capital was present, and the 'commanding heights' of the economy were in state hands. The SOE sector continued to be important throughout the Soeharto era. Foreign investment returned to the country from the late 1960s in response to the newly liberal policy regime and generous fiscal incentives.

2.2) Deep Crisis, 1997-99

Indonesia's economic crisis of 1997-98 was the most serious among the four East Asian economies. Internationally, it ranks with that of the Philippines in 1985-86, Mexico in 1994-95, and Argentina in 2001. Triggered initially by the collapse of the Thai Baht, Indonesia began to experience large-scale capital flight in the second half of 1997, resulting in a sharp depreciation of the Rupiah and deep financial distress.[1] At the peak of the crisis, the dollar exchange rate had fallen from Rp2,500 to Rp17,500, and credit in the modern financial sector had effectively dried up. In the first half of 1998, there was a loss of macroeconomic control, as inflation on an annualized basis exceeded 100%. The economy contracted sharply from late 1997, by over 13% in 1998. The economic crisis in turn precipitated a political crisis, culminating in May 1998 in the end of the 32-year authoritarian Soeharto regime. Investment, both domestic and foreign, also collapsed. In the six years prior to the crisis, net annual FDI inflows averaged $2.7 billion, whereas there were net annual outflows of $1.4 billion for the five years after the crisis. As a result of these 'twin crises', Indonesia also recovered more slowly than its East Asian neighbours (World Bank, 2000). Growth was negligible in 1999, but recovered to nearly 5% in 2000. For the period 2000-05, growth averaged 4.5%, in contrast to the 7.3% recorded in the pre-crisis period 1990-96.

Table 1 records this sharp turnaround by sector over the period 1990-2006. Economic growth was averaging over 7% before the crisis (indeed for the period 1967-96), but since 2000 the figure has fallen to around 5%. The slowdown in manufacturing has been more pronounced, with output growing

[1] For detailed analyses of the crisis, see the four-monthly 'Survey of Recent Developments' in the Bulletin of Indonesian Economic Studies.

at about 5.5%, a little over half the pre-crisis rate. The sector also experienced one of the largest contractions during the crisis, exceeded only by the construction and finance sectors. Thus, manufacturing has slipped from being a leading sector, to a growth rate at about the economy-wide average.

(Table 1 about here)

Table 1: GDP growth by sector, 1993-2006
(% pa)

	1990-93	1994-96	1997-99	2000-02	2003-06
Tradable	**6.3**	**6.5**	**-2.8**	**4.2**	**3.6**
Agriculture	3.1	2.8	0.7	2.9	3.1
Mining & Quarrying	4.3	4.6	-0.9	2.0	-0.1
Manufacturing	10.4	9.5	-5.1	5.9	5.2
Non-Tradable	7.9	8.4	-5.5	5.1	3.6
Electricity, Gas & Water Supply	13.7	15.1	7.3	8.4	5.6
Construction	11.9	13.5	-10.3	5.2	7.5
Trade, Hotel & Restaurant	7.1	7.8	-4.2	4.6	6.4
Transport & Communication	9.3	8.9	-3.1	8.5	13.0
Financial	13.3	9.6	-10.9	6.1	6.7
Services	4.4	3.9	0.7	3.2	5.3
GDP	7.0	7.4	-4.1	4.6	5.2

Source: CEIC Database.

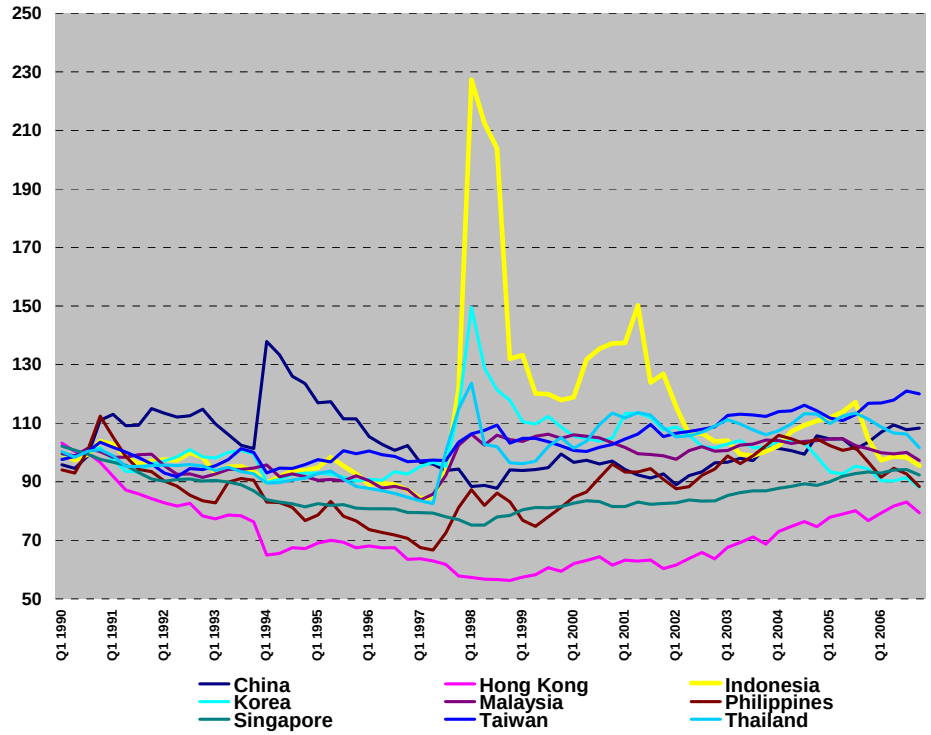
2.3) The Post-Crisis Policy Framework

There are both continuities and changes in Indonesia's post-crisis commercial policy environment. This is a large topic, and the purpose here is to provide a brief sketch, in order to make sense of the subsequent analysis of the industrialization patterns. Five general features are relevant.

First, the exchange collapsed and in for a few years after the crisis it displayed considerable volatility. Four months after the crisis hit, the Rupiah/dollar rate had fallen from 2,500 to 17,500, by far the largest depreciation among the Asian crisis economies. With the partial restoration of political and macroeconomic stability in 2004, the rate has stabilized somewhat, generally within the 9,000-10,000 range. There has also been a shift in the formal exchange rate regime, from fixed but adjustable to a managed float. However, the improved competitiveness was not as great as might have been expected, principally because of the country's higher inflation. Hence, since around 2000 Indonesia's real effective exchange rate has been largely similar to that of its East Asian competitors (Figure 1).

(Figure 1 about here)

Figure 1: East Asian real exchange rates, 1990-2006



Source: Asian Development Outlook 2007 (updated).

Second, with regard to trade policy, Indonesia was a broadly open economy at the time of the crisis: average levels of import protection had declined since the major 1980s reforms, and most sectors received quite low protection, except where politically influential lobby groups and individuals were able to resist the liberalization. There was further liberalization in 1997-98 as part of the LOI with the IMF, and in general the country has not turned inward since exiting the program in late 2003. Nevertheless, Indonesia is what may be termed 'precariously open', and trade policy has become both an issue of ideological debate and political patronage. Tariffs, which are under the control for the Ministry of Finance, have remained low, while certain non-tariff barriers, particularly in agriculture, have increased.[2]

Third, foreign direct investment (FDI) flows to Indonesia have lagged significantly behind practically all major East Asian economies since 1997. Indonesia was the only crisis-affected economy to register negative FDI flows for several years after the onset of the crisis. The comparison with Thailand, where 'fire-sale' FDI was significant in the wake of the crisis, is particularly pronounced (see Ramstetter and Sjoholm, eds, 2006). Moreover, the foreign investment approvals data, which are not comparable to the balance of

[2] See Basri and Soesastro (2005) and Bird, Hill and Cuthbertson (forthcoming).

payments estimates of realized flows, shed light on the changing nature of FDI after the crisis. In addition to much reduced investor interest, with approvals running at about one-third of pre-crisis levels, the proportion of FDI taking the form of 'greenfields' investment has declined, with both expansions and M&As rising.[3] This is consistent with the theory of post-crisis, 'fire-sale' FDI behaviour more generally (Lipsey, 2001): there is excess capacity, and asset prices fall sharply owing to the effects of the exchange rate depreciation and the crisis.

Fourth, there have been major changes in Indonesia's labour market policies in the wake of the crisis. During the Soeharto era, labour market outcomes more or less accorded with 'East Asian norms'. Rapid economic growth generated rising real wages, with a lag. Trade unions existed, but were heavily managed. Minimum wages were prescribed but they were generally below market levels in the formal sector, and were not enforced systematically. During the crisis, and given the relatively unregulated nature of the labour market, real wages fell sharply, by more than in any other crisis-affected economy, but unemployment rose only modestly (Manning, 2000). After the crisis, powerful pro-labour pressures emerged. The constraints on trade unions were largely removed. Under successive Ministers of Manpower, the government strongly supported worker entitlements and wage claims. The regulated minimum wage series increased by over 90% in the three years 1999-2002. The regulatory environment has also introduced rigidities into hiring processes that discourage firms from taking on additional labour, with the result that Indonesia's labour policy has become one of the most restrictive in Asia (Manning and Roesad, 2006).

Fifth, several other aspects of the business environment have changed as a result of the crisis and its aftermath.[4] Indonesia's business regulatory regime continues to be complex, opaque and costly. The World Bank's 2008 Doing Business Survey ranks Indonesia 123rd out of 178 economies for ease of doing business, with particularly poor rankings in categories dealing with licences, employing workers, enforcing contracts, and closing a business. While corruption has always been a serious problem in Indonesia, under the Soeharto regime the process and outcomes were largely predictable, whereas in the new environment, the links between bribes and 'outcomes' are much weaker and more uncertain. The financial sector has also experienced major changes. Financial health has been restored as the major financial institutions were rescued, merged or shut down after the crisis. However financial institutions are now considerably more prudent and cautious, particularly towards SME borrowers with limited or ill-defined collateral.

---

[3] For example, Investment Board (BKPM) FDI approvals data show that, prior to the crisis, at least 60% of FDI, and often much more, was 'greenfield' in nature. Following the years of negative FDI, 1998-2003, FDI increasingly took the form of M&A and expansions, such that the greenfield share fell to 40% for the years 2004-07.

[4] For general surveys of Indonesia's post-crisis business environment and its links to the changing political system, see Basri and van der Eng (eds, 2004) and McLeod and MacIntyre (eds, 2007).

3) Indonesian Industrialization since the Crisis

3.1) An Overview

There has been considerable inter-industry variation in growth rates both before and especially after the crisis (Table 2).[5] Food processing and related products (ISIC 31) was the only manufacturing sector not to record negative growth during the crisis. This reflects both the inelastic demand for food staples and the fact that some of the export-oriented food processing activities benefited from the exchange rate decline. TCF (ISIC 32) have grown more slowly than the industry average, and they also declined less sharply during the crisis. The slower export growth of these labour-intensive activities in the wake of the exchange rate decline is an issue to which we return below. The resource-based sectors, wood products (ISIC 33) and paper products (ISIC 34), have grown slowly after the crisis, again in spite of the boost to competitiveness. In both cases, notwithstanding higher international prices, the problems are on the supply-side, as access to reliable natural resource supplies has become a serious constraint. After the crisis, corruption and mismanagement of the country's timber resources have become even more serious problems (see Resosudarmo, ed, 2005). Moreover, the removal of the prohibition on log exports significantly increased input costs for firms in these sectors.

(Table 2 about here)

Table 2: Industrial growth by sector, 1994-2006
(real value added, % pa)

ISIC	Sector	1994-96	1997-99	2000-02	2003-06
31	Food, beverages, and tobacco.	17.5	5.6	1.6	3.5
32	Textile, clothes and leather industry.	8.7	-3.4	4.9	3.2
33	Wood and wood products	4.0	-14.0	2.7	-0.6
34	Paper and paper products	11.4	2.2	1.0	5.1
35	Chemicals and chemical products	10.7	-0.8	4.1	8.2
36	Non metalic mineral products	16.9	-7.0	10.4	5.2
37	Basic metal industries.	11.1	-9.2	3.6	-2.4

[5] A note here on our data sources is warranted. We use the national accounts series for the aggregate series, down to the 2-digit ISIC classification. At higher levels of disaggregation, and for all firm-level data, we use the annual industrial surveys (Statistik Industri). The SI series is intended to enumerate all manufacturing units employing at least 20 workers, except for those in oil refining and gas processing. In practice, the SI survey is known to be incomplete, but the degree of under enumeration is modest and reasonably consistent, as indicated by the fact that the output growth rates of the two series are very similar. For such a large sample of firms (over 20,000 annually), it is thought that the sampling error from this under enumeration is very small. Note also that the firm-level export statistics are also incomplete (Takii and Ramstetter, 2005), and thus we have not utilized this potentially valuable data source.

38	Fabricated metal , machinerie, and eq.	7.3	-21.2	26.3	11.6
39	Other manufacturing industries.	10.3	-10.2	4.8	9.2
	Non-Oil and Gas Manufacturing	**10.5**	**-6.3**	**7.4**	**6.2**

Source: CEIC Database.

Among the mineral-resource based activities, chemicals and related products (ISIC 35) experienced only a mild decline during the crisis. This was partly due the close connection with the resilient agriculture sector for major sub-sectors such as the fertilizer industry. By contrast, non-metallic mineral products (ISIC 36) contracted sharply, reflecting the collapse of the construction industry in 1997-99. Basic metals (ISIC 37) and machinery and equipment products (ISIC 38) also contracted sharply. The former is dominated by inefficient state enterprises selling most of their output to firms in the latter sector. ISIC 38 is dominated by two industries, automotive products and electronics. The auto industry has a history of high levels of protection and was thus dependent on the domestic market up to the crisis. As demand collapsed in 1997-98, the industry came to a stand-still. Electronics weathered the crisis more effectively, primarily owing to its export-oriented components assembly activities. However, these exports remain small in aggregate (see below), with thin domestic value added. Output then recovered strongly after 2000. Protection for the auto industry was reduced quickly as part of the government's agreement with the IMF, and the resulting rationalization, combined with some technological learning during the period of high protection, forced firms towards more economic production runs and an increased focus on exports (Aswicahyono et al, 2000).

What are the general correlates of industry growth and survival during the crisis, as indicated by the Indonesian experience? Narjoko (2006) provides a detailed analysis through to 2000. Three correlates stand out. First, those industries (and firms) that have high levels of foreign ownership were generally able to navigate the crisis. Their foreign partners had deeper pockets, stronger connections to international financial markets and, with superior knowledge of export markets, they were able to take advantage of the major boost to competitiveness following the exchange rate depreciation. Second, industries in which Indonesia has a comparative advantage – that is, labour and some resource-intensive activities – and where there were established exporters, also benefited from the more competitive exchange rate. Third, industries producing 'essentials', mainly food products, were less adversely affected by the crisis. Some of these activities are also export-oriented and therefore benefitted in addition from the depreciation.

As a result of the crisis, Indonesia parted company with its East Asian neighbours in its industrialization trajectory. This is illustrated in Table 3. Before the crisis, Indonesia had one of the fastest industrial growth rates in East Asia, marginally higher even than China. Since 2000 it has recorded one of the slowest growth rates, along with the Philippines at about half the rate of the region's fastest industrializer, Vietnam.

(Table 3 about here)

Table 3: East Asian Industrial growth, 1990-2006 (% pa)

	1990-93	1994-96	1997-99	2000-02	2003-06
Indonesia	11.0	11.6	-0.8	4.9	5.5
Philippines	0.3	5.8	1.6	4.0	4.8
India	3.7	12.2	2.7	5.7	8.1
Malaysia	12.7	13.6	2.8	5.6	7.6
Thailand	13.7	9.3	0.8	4.9	7.5
Vietnam	6.7	12.4	10.3	11.5	9.8
China	11.1	8.3	7.0	7.2	8.0
Korea	6.9	9.8	6.2	8.9	8.0

Source: United Nations Statistics, various years

3.2) Ownership Patterns

Ownership patterns are typically quite stable in the short run, though a deep economic crisis may generate major changes. Here too the literature provides limited guidance. For example, foreign ownership may rise in response to attractive buying opportunities and a (forced) more liberal FDI regime (Lipsey, 2001). However, it could also fall as foreign capital is deterred by a collapsing economy and an uncertain political outlook. Similarly, producer concentration could either rise or fall, depending on which firm size segments are most adversely affected by the crisis.

The Indonesian evidence points to rising foreign ownership but little change in concentration over the period 1990-2005 (Table 4). The share of manufacturing output produced by firms with foreign equity rose from 22% in 1990 to 37% in 2005. It rose more or less continuously throughout the period, but particularly immediately before and after the crisis, 1993-99. Thus the crisis had no major impact on this secular trend of rising foreign ownership. This outcome also serves as a caution about drawing strong inferences from FDI trends generated from the balance of payments statistics, since the latter typically understate FDI through M&A activity funded from domestic sources, such as retained earnings and local borrowings. The increase in foreign ownership is evident in most industries, except for paper and chemical products, where local firms have become more active. As expected, the foreign presence is greatest in the two most MNE-intensive industries, automotive products and electronics.

(Table 4 about here)

Table 4: Concentration and Foreign Ownership by sector, 1990-2005

Concentration (CR4)

		1990	1993	1996	1999	2002	2005
31	Food, beverages, and tobacco.	59	69	59	57	56	60
32	Textile, clothes and leather industry.	29	32	28	29	30	42
33	Wood and wood products	22	24	26	25	29	33

34	Paper and paper products	61	57	61	70	73	64
35	Chemicals and chemical products	58	58	57	63	59	56
36	Non metalic mineral products	61	59	59	63	66	66
37	Basic metal industries.	80	73	79	79	74	66
38	Fabricated metal , machinerie, and eq.	74	75	74	67	69	71
39	Other manufacturing industries.	61	66	61	62	73	79
1-ULI	Unskilled Labour Intensive	30	33	29	30	32	43
2-RLI	Resource Based, Labour Intensive	48	57	51	50	51	57
3-RCI	Resource Based, Capital Intensive	65	62	64	67	66	61
4-ELE	Electronics	74	68	68	57	55	67
5-FCI	Footloose Capital Intensive	73	78	78	75	72	72
	Non-Oil and Gas Manufacturing	**54**	**56**	**56**	**54**	**57**	**58**

Foreign ownership (share, in %)

		1990	**1993**	**1996**	**1999**	**2002**	**2005**
31	Food, beverages, and tobacco.	8.5	9.7	14.0	15.8	9.4	24.9
32	Textile, clothes and leather industry.	17.8	21.8	29.3	37.4	32.1	32.8
33	Wood and wood products	10.1	11.7	22.9	15.8	11.6	11.2
34	Paper and paper products	30.2	14.9	33.8	23.5	46.4	29.0
35	Chemicals and chemical products	33.1	36.6	43.0	44.8	29.7	26.3
36	Non metalic mineral products	18.0	23.3	33.4	34.6	28.3	35.9
37	Basic metal industries.	24.8	35.3	24.3	43.1	29.4	30.5
38	Fabricated metal , machinerie, and eq.	46.1	36.4	42.4	58.0	67.6	68.3
39	Other manufacturing industries.	19.5	44.4	51.9	56.1	33.7	46.9
1-ULI	Unskilled Labour Intensive	16.2	21.1	27.3	35.4	28.8	30.0
2-RLI	Resource Based, Labour Intensive	9.0	10.2	16.8	15.9	9.8	22.8
3-RCI	Resource Based, Capital Intensive	29.5	32.5	35.9	40.0	34.9	29.9
4-ELE	Electronics	41.7	43.0	48.7	82.4	71.5	68.9
5-FCI	Footloose Capital Intensive	47.2	34.7	39.5	44.0	66.0	68.1
	Non-Oil and Gas Manufacturing	**21.9**	**23.4**	**30.9**	**35.5**	**33.5**	**37.2**

Source: *Statistik Industri* (SI), various years.

There has been very little change in concentration, as measured by the share of the four largest firms in each industry's output. These ratios are generally high, with figures of at least 60 in more than half the industry groups. Such levels are typical for developing economies at a relatively early stage of industrialization. It is important to emphasize that, notwithstanding these high figures, Indonesian industry does not necessarily have a 'competition problem', as it is an open economy, almost all manufacturing output is tradable, and most sectors are contestable. The exception is those few industries such as steel that are protected, and also dominated by a small number of state enterprises.

3.3) Indifferent Export Performance

As Indonesia liberalized its economy in the 1980s, it became a more trade-exposed economy. From 1979/80 to 2005/06, its share of global non-oil exports almost doubled, from 0.5% to 0.9%, at about the rate for Southeast Asia and East Asia as a whole (3% to 6.9%, and 16.5% to 32% respectively).[6] In the immediate post-crisis period, exports responded significantly to the exchange rate depreciation, with a lag. However, in spite of buoyant commodity prices in the early years of the 21st century, export growth since 1998 has been sluggish, compared to both neighbouring East Asian economies and the country's pre-crisis record.

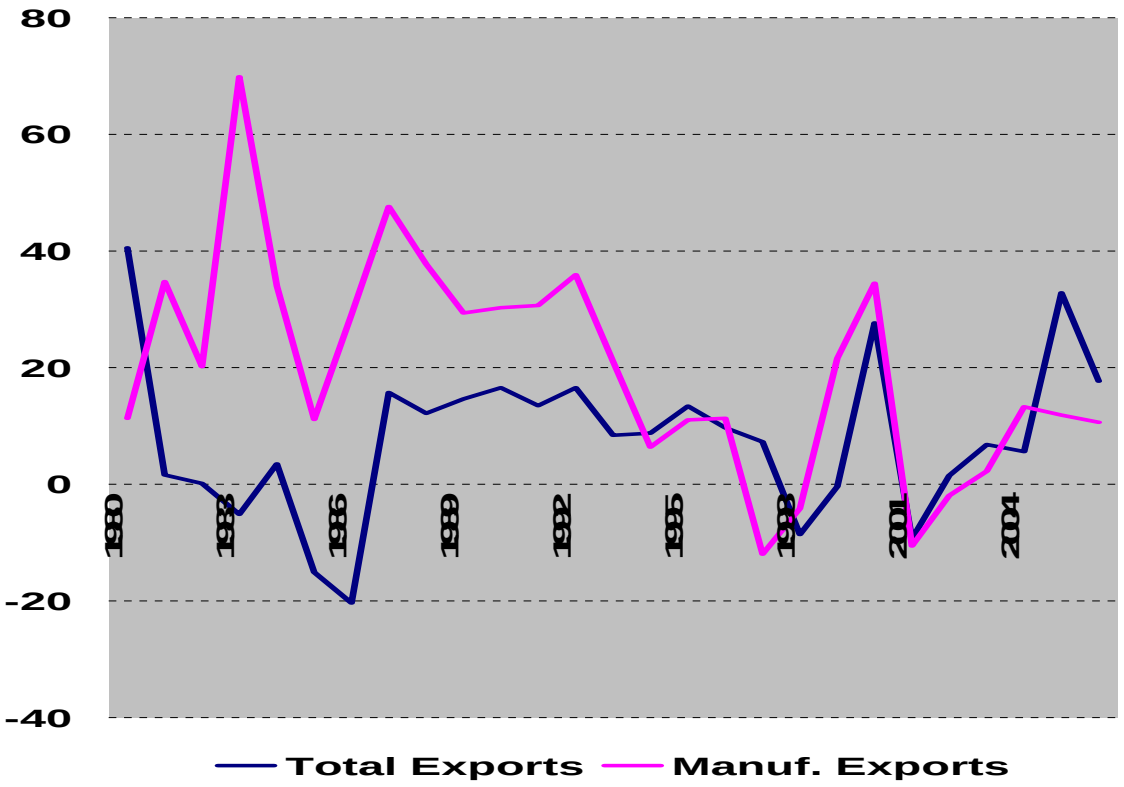
Figure 2 documents these trends, for both total merchandise and manufactured exports. The data refer to the growth in nominal dollar exports. For manufactures, they therefore obviously understate the growth in domestic currency terms, and also in volumes.[7] For total exports, by contrast, the price data overstate the volume growth from 2001, since the growth rates are inflated by increased international prices for commodities (Athukorala, 2006). Thus the overall picture for manufactured exports is a clear 'bounce' in the wake of the sharp exchange rate depreciation in 1997-98, followed by a trend growth rate that is substantially lower than the decade after the mid 1980s reforms.

(Figure 2 about here)

[6] Unless otherwise indicated, these comparative export data are sourced from Athukorala and Hill (2008), based on UN COMTRADE data.

[7] There were also problems with the export data in 1999, which led to a probably over-statement of the total in that year. See Rosner (2000).

Figure 2: Aggregate export growth, 1980-2006
(% pa, based on nominal US$)



Looking at the manufacturing data in more detail, we classify exports into five main categories, broadly corresponding to factor intensity groupings (Table 5). These are unskilled labour intensive, resource-based (labour and capital intensive), footloose capital intensive, and electronics. The latter is a separate category owing to its size and the ambiguity of its factor proportions.[8] In each

[8] The five categories are based on the following ISIC groups (and corresponding SITC groups for export statistics):
Unskilled labour-intensive: ISIC 32 (textiles & garments), 332 (furniture), 342 (printing and publishing), and 39 other manufacturing).
Resource based, labour-intensive: ISIC 31 (food & beverages) and 331 (wood products).

case, the four largest exports at the SITC level are identified. There are significant differences in performance across these major product groups, and these reflect the interplay of external and domestic policy factors. The two labour-intensive product groups have performed very poorly. The resource-based group, mainly wood products, shrank for most of the period, reflecting mainly supply mismanagement. For the footloose group, export growth was also slowing before the crisis, but there was no recovery in response to the large exchange rate depreciation. The declining growth rates were evident in both quota-constrained products (eg, most garments) and products for which quotas do not apply (eg, footwear). Thus the outcome points to a general competitiveness problem.

(Table 5 about here)

Table 5: Export growth by sector, 1990-2006
(% pa, based on nominal US$)

		1990-93	1994-96	1997-99	2000-02
1-ULI	**Unskilled Labour Intensive**	**37.7**	**6.0**	**-0.8**	**0.5**
821	Furniture and parts thereof	44.7	12.1	10.1	7.6
651	Textile yarn	41.7	35.3	9.7	1.8
851	Footwear	74.2	9.5	-9.3	-9.5
843	Womens, girls, infants outerwear, textile, not knitted or crocheted	35.4	-0.8	3.0	4.2
845	Outerwear knitted or crocheted, not elastic nor rubberized	21.8	-1.6	2.4	3.9
2-RB-LI	**Resource Based Labor Intensive**	**19.9**	**-1.7**	**-9.7**	**-4.6**
634	Veneers, plywood, "improved" wood and other wood, worked, nes	17.9	-4.4	-12.3	-6.9
635	Wood manufactures, nes	53.6	16.8	-2.5	0.7
663	Mineral manufactures, nes	53.4	18.5	35.5	8.2
662	Clay and refractory construction materials	74.6	5.6	117.8	10.8
667	Pearl, precious and semi-precious stones, unworked or worked	27.0	-5.5	19.3	-8.4
3-RB-CI	**Resource Based Capital Intensive**	**8.4**	**19.0**	**18.8**	**4.6**

Resource based, capital-intensive: ISIC 341 (paper & paper products), 35 (chemicals, rubber, & plastics), 36 (non-metallic minerals), and 37 (basic metals).
Electronics: ISIC 383 (electrical machinery).
Footloose capital-intensive: ISIC 381 (metal products), 382 (non-electrical machinery), 384 (transport equipment), and 385 (professional & scientific equipment).
Note that electronics is typically classified as a high value added (R&D-intensive) activity. However, it is one of the few industries whose factor intensity ranking clearly shifts between low and high-income countries. In countries like Indonesia, electronics exports are dominated by labour-intensive assembly and packaging activities. To include it as a high value added activity leads to the puzzling conclusion, for example, that the Philippines has the most 'high-tech' export structure in East Asia (see Lall, 2000).

641	Paper and paperboard	34.1	22.3	38.2	-2.9
625	Rubber tires, tire cases, inner and flaps, for wheels of all kinds	10.5	45.7	0.9	12.1
674	Universals, plates, and sheets, of iron or steel	-2.8	38.1	1.6	0.4
511	Hydrocarbons, nes, and derivatives	205.8	39.8	55.2	31.8
522	Inorganic chemical elements, oxides and halogen salts	3.0	44.2	-9.3	37.2
4-ELE	**Electronics**	**93.5**	**36.9**	**0.6**	**37.9**
752	Automatic data processing machines and units thereof	1,875.6	78.0	-10.2	182.9
778	Electrical machinery and apparatus, nes	46.6	27.6	3.1	8.7
764	Telecommunication equipment, nes; parts and accessories, nes	81.0	46.2	2.4	29.8
763	Gramophones, dictating machines and other sound recorders	441.6	36.1	-15.6	49.8
772	Electrical apparatus for making and breaking electrical circuits	702.3	27.6	0.1	107.4
5-FLCI	**Footloose Capital Intensive**	**42.7**	**22.1**	**10.7**	**8.7**
784	Motor vehicle parts and accessories, nes	50.5	35.9	46.0	27.4
582	Condensation, polycondensation and polyaddition products	23.7	115.8	18.6	13.2
583	Polymerization and copolymerization products	29.2	44.1	23.0	1.9
513	Carboxylic acids, and their derivatives	16.6	64.8	37.8	10.7
512	Alcohols, phenols etc, and their derivatives	48.3	56.4	9.9	6.2
	Manufacturing Exports	**29.5**	**9.6**	**0.8**	**9.9**

Source: UN Comtrade database.

Indonesian electronics exports have grown erratically, from a very small base in the early 1990s, and broadly following the global electronics cycle since 2000. There was some interruption to supply during the crisis, as MNE export/import operations were disrupted, and some foreign investors avoided the country owing to political instability. In any case, Indonesia is a minor player in this, the fastest growing non-resource based sector of international trade, owing to the country's inability to adapt to the industry's specific operational requirements, particularly efficient cross-border logistics, infrastructure, and a predictably open FDI environment (Athukorala, 2006; Kimura, 2006). As a result, Indonesia's share of global parts and components exports,[9] the best proxy indicator for participation in these global factory networks, was just 0.6% in 2005/06, compared to the Southeast Asian and East Asian shares of 10.5% and 39.7% respectively.

Paradoxically, Indonesia's export performance after the crisis has been strongest where it was least expected, in the capital-intensive sectors. Both the resource-based and footloose segments have performed quite well. In the case of the former, high commodity prices are the primary explanation, and these have been sufficient to overcome the increased commercial risk of operating in this sector. Among the footloose products, there has been a remarkably rapid adjustment in the automotive industry. Historically, it has

[9] Defined as SITC 75-77.

been the most heavily protected of Indonesia's major manufacturing sectors. Yet, when protection was reduced during the crisis, the major auto firms were ably to rationalize their production quite quickly, dropping uneconomic production lines, concentrating on products in which they were already quite competitive (eg, utility vehicles) and auto parts, and (among those with foreign equity participation) shifting increasingly to exports (see Aswicahyono et al, 2000). Petrochemicals and related products have also performed well.

Thus the post-crisis export story is dominated by two key features: a failure to capitalize on the benefits of a more competitive exchange rate, and the disappointing performance of labour-intensive products. Both are related to certain features of the post-crisis policy environment that we discuss further below.

3.4) Wages and 'Jobless Growth'

The crisis and associated policy responses appear to have had a fundamental effect on labour market outcomes. As noted, initially Indonesia's flexible labour market resulted in most of the sharp decline in output translating into the labour market via price rather than quantity effects, that is through falling real wages rather than increased unemployment. From 1999, the labour market regulatory environment became much less employment friendly, and hence the economic recovery since then has had little impact on employment, at least in the formal manufacturing sector.

The impact of the labour regulatory regime can also been seen in the trends in unit labour costs, ULCs. These are defined as nominal wages divided by labour productivity.

That is:
ULC = NW/LP.
Or:
ULC = (TWB/N) / (RVA/N)
In other words:
ULC = TWB/RVA
Or:
ULC = (SLNVA)(LP)

Where:
NW = nominal wages
LP = labour productivity; value added per worker
TWB = total wage bill
N = employment
RVA = real value added
SLNVA = share of labour in nominal value added

ULCs are useful as a general indicator of competitiveness, both economy-wide and sectoral. If ULCs rise quickly over a short period of time, there are likely to be labour cost and competitiveness issues, unless there has been a corresponding increase in labour productivity.

Table 6 shows ULCs for Indonesian manufacturing by sector and factor intensity groupings for the period 1991-2005. The general picture is one of continuous increase. Prior to the crisis, ULCs were growing quite strongly, for the period 1991-96 by more than 6% per annum, broadly similar to the increase in real value added per worker. However, they rose very sharply during the crisis period, 1997-99. This was primarily the result of rising nominal wages (though sharply falling real wages), combined with declining labour productivity, the latter principally the result of sharply declining capacity utilization rates as domestic demand collapsed. Since the crisis, ULCs have continued to increase, albeit at a slower rate, similar to that of the pre-crisis period. By 2005, ULCs on average were about 3.5 times that of 1990. Thus there has been a sharp increase, much faster than productivity growth, therefore further indicating that Indonesia has lost some of its labour cost competitiveness.

(Table 6 about here)

Table 6: Unit Labour Costs in Manufacturing, 1991-2006

Growth

		1991-93	1994-96	1997-99	2000-02	2003-0
31	Food, beverages, and tobacco.	12.8	8.1	19.3	17.5	6.
32	Textile, clothes and leather industry.	2.4	5.8	21.5	18.4	2.
33	Wood and wood products	10.8	6.9	28.9	6.2	12.
34	Paper and paper products	14.0	6.7	15.4	5.5	25.
35	Chemicals and chemical products	13.9	2.7	24.4	7.9	21.
36	Non metalic mineral products	12.4	10.2	21.0	0.1	6.
37	Basic metal industries.	22.0	-15.5	143.2	18.1	36.
38	Fabricated metal , machinerie, and eq.	16.1	-3.8	33.6	10.8	-2.
39	Other manufacturing industries.	6.6	6.1	24.4	30.5	-22.
1-ULI	Unskilled Labour Intensive	1.1	5.5	21.8	18.1	1.
2-RLI	Resource Based, Labour Intensive	11.2	7.3	22.0	12.2	5.
3-RCI	Resource Based, Capital Intensive	16.0	-1.5	34.4	4.7	20.
4-ELE	Electronics	14.6	-7.2	45.4	8.1	-4.
5-FCI	Footloose Capital Intensive	19.0	-1.0	30.2	20.4	2.
	Manufacturing	**10.4**	**2.3**	**26.1**	**8.2**	**4.**

Index

		1990	1996	1999	2005	2005/199 6
31	Food, beverages, and tobacco.	100.0	181.0	303.5	484.8	2.
32	Textile, clothes and leather industry.	100.0	114.4	202.7	343.1	3.
33	Wood and wood products	100.0	160.4	315.2	507.3	3.
34	Paper and paper products	100.0	176.5	162.4	330.8	1.
35	Chemicals and chemical products	100.0	148.1	251.8	318.4	2.
36	Non metalic mineral products	100.0	180.4	316.0	296.8	1.
37	Basic metal industries.	100.0	91.0	673.9	1646.7	18.
38	Fabricated metal , machinerie, and eq.	100.0	104.3	247.7	188.8	1.
39	Other manufacturing industries.	100.0	109.6	209.5	189.7	1.

1-ULI	Unskilled Labour Intensive	100.0	114.3	205.9	332.9	2.
2-RLI	Resource Based, Labour Intensive	100.0	169.1	296.2	445.5	2.
3-RCI	Resource Based, Capital Intensive	100.0	143.4	297.8	410.2	2.
4-ELE	Electronics	100.0	90.4	267.8	234.7	2.
5-FCI	Footloose Capital Intensive	100.0	109.8	227.2	172.1	1.
	Manufacturing	**100.0**	**141.9**	**278.5**	**357.3**	**2.**

Source: *Statistik Industri* (SI), various years.

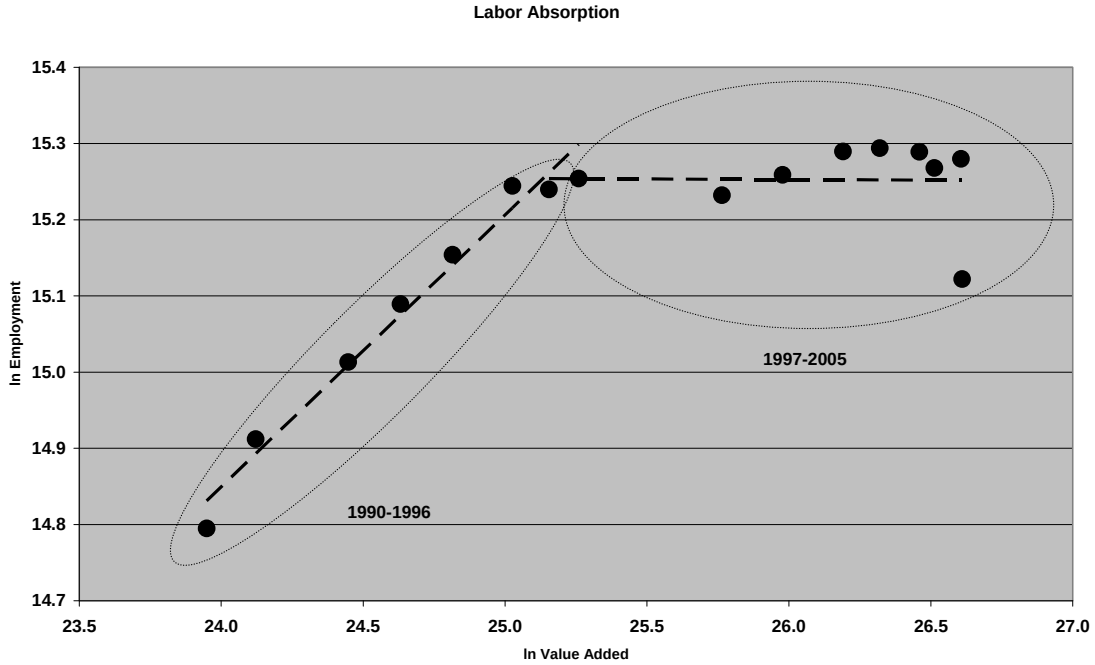
There have also been considerable inter-industry variations in ULCs. Since wage movements have been relatively constant across industries, these differences must be the result primarily of labour productivity differences. Some of the very large increases, eg, for basic metals (ISIC 37), reflect deep-seated problems in essentially uncompetitive, SOE-dominated sectors, where demand has fallen sharply and there is large under-utilization of capacity. However, it is notable that the greatest increases since 1996 have occurred in labour-intensive activities, that is, precisely the sectors most vulnerable to the changing labour market regulatory environment. Apart from the special case of basic metals, the two sectors with the fastest increase in ULCs from 1996 to 2005 are TCF, and wood products (ISIC 32 and 33 respectively). These outcomes are an important explanation of the poor export performance noted above.

Figure 3 documents labour market outcomes, with reference to manufacturing sector employment-output elasticities since 1990. The results clearly show that manufacturing employment was highly output responsive over the period 1990-96. Since 1998, however, there has been virtually no manufacturing employment growth, despite output growing at an average of 5.5%.[10] This outcome reflects both the general effects of slow employment growth in aggregate and the specific effects on major labour-intensive activities such as TCF. Since it has persisted for several years after the recovery, beyond the period when any 'labour hoarding' effects would have been felt, the primary explanation for the outcome has to be the labour policy regime. In interpreting the results, recall that the industrial survey data refer only to firms with at least 20 employees. It is possible, indeed likely, that some of the employment growth hitherto occurring in the 'formal' sector has been pushed into the less regulated (and poorly paid) informal sector of manufacturing. Employment trends in the latter are not well documented, and so this possibility remains a hypothesis pending better data. But the main outcome, of employment growth in the better-paid formal sector of manufacturing coming to a standstill, remains clear.

(Figure 3 about here)

[10] It is possible that employment has actually declined, as illustrated by the figure for 2005, but we tend to discount this outcome since the 2005 survey appears to have systematically understated employment.

Figure 3: Manufacturing employment-output elasticities, 1990-2005



Source: *Statistik Industri* (SI), various years.

3.5) Slowing Firm Dynamics (I)

A feature of rapid industrialization and well functioning product and factor markets is high levels of firm mobility across size groups. In our earlier study of Indonesian industrialization (Aswicahyono et al, 1996), there was considerable evidence of this mobility, in particular of firms 'graduating' to larger size groups. We were able to examine this phenomenon through very detailed firm-level analysis, made possible by the fact that each firm in the annual survey is identified by a consistently designated code, that enables it to be traced over time. One of the results of this earlier analysis was to demonstrate that the widely discussed phenomenon that the share of small firms in industrial output was declining could actually be interpreted positively, not as a sign that these firms were being pushed out in the process of the rapid industrialization – the commonly held perception at the time – but rather that they were vacating the smaller size groups and graduating to larger groupings. This result was shown by comparing the share of total output by firm size at the 'current year', the basis for the gloomy conclusion, and the 'initial year', the basis for the positive interpretation.

In this paper, we repeat the exercise through to the year 2005. That is, we trace through each firm over the period 1990-2005, and assign it to a firm size grouping. These are chosen arbitrarily but plausibly as firms with 20-99 workers, 100-499 workers and more than 500 workers.[11] We then estimated output (and employment, though not shown here) by the three size groups, based on each firm's size in the current year and the initial year, with the latter being either 1990 or the year the firm commenced operation. The results are presented in Table 7. There is little change in the size share based on current size, with the share of small firms rising slightly pre-crisis, then falling somewhat, while the largest firms were most affected by the economic crisis. However, based on size in the initial year, the small firm share rose quite quickly through to the crisis, but then began to decline from 2001.

(Table 7 about here)

Table 7: Manufacturing output by size group, 1990-2005

Current Size (% VA)

	Small	Medium	Large
	L=20-99	L=100-499	L=500-
1990	7	27	66
1991	6	28	66
1992	7	28	64
1993	7	23	70
1994	7	23	70
1995	7	22	71
1996	7	21	73

[11] That is, approximately corresponding to small, medium and large firms respectively. Experimentation with different size groups revealed that the general conclusions are not sensitive to the definition of size groups.

1997	8	27	65
1998	8	24	68
1999	7	25	68
2000	7	24	68
2001	9	24	68
2002	7	24	69
2003	6	23	70
2004	6	25	69
2005	5	25	70

Initial Size (% VA)

	Small L=20-99	**Medium L=100-499**	**Large L=500-**
1990	7	27	66
1991	7	28	65
1992	10	31	59
1993	10	31	58
1994	11	29	60
1995	13	29	59
1996	12	31	57
1997	14	38	48
1998	14	32	54
1999	12	33	54
2000	13	31	56
2001	15	31	54
2002	13	31	56
2003	13	31	56
2004	13	32	55
2005	12	33	55

Source: *Statistik Industri* (SI), various years.

Thus the crisis and its immediate aftermath appear to have marked a turning point in this process of firm mobility. Until the crisis, smaller firms continued to display the dynamism evident in the pre-crisis period. However, after the crisis, the pace of graduation slowed, and the small firm share in both series declined. These results are not necessarily cause for concern, as they could simply reflect a longer term process of industrial consolidation. They may also simply reflect the effects of the crisis, from which smaller firms experienced greater adjustment difficulties, or the increased competitive pressures that occurred as firms sought to survive.

There are no general data to support the latter proposition. But there is presumptive evidence to advance the hypothesis that the barriers for smaller firms increasing their scale have risen, particularly in access to finance. This arises due to the credit rationing devices that are commonly put in place after crises, that invariably support larger firms with better collateral and credit histories (Stiglitz and Weiss, 1981). The underlying argument is that banks have had more difficulty differentiating between ‘good’ and ‘bad’ loan applicants after the crisis and, as a result, banks have been likely to adopt

more stringent lending policies, favouring those who were able to provide more collateral and/or an established credit history. There is some evidence from East Asia in the late 1990s supporting this view. As Gosh and Gosh (1999) and Ding et al (1998) argued, not only was there credit rationing during the crisis, but SME firms were more adversely affected than larger ones.

Indonesia's banking sector was the most severely affected among the East Asian crisis economies, resulting in a significant re-nationalization of banks and reform of the regulatory regime. However, as Rosengard et al (2007) note, these reforms have had the unintended consequence of limiting the access of small enterprises to formal sector financial institutions. Based on the questionable premise that larger financial institutions are less likely to fail than smaller ones, the country's small, community-based institutions have been instructed to merge with larger, centralized units, and among the latter '… innovative microfinance services were viewed with suspicion and hostility.' (p.87)

Transition matrices of the size distribution of firms support the conclusion that the speed of firm mobility slowed down after the crisis. These matrices are computed for the pre and post-crisis periods, defined here as 1992-96 and 2001-04 (Table 8). They show the distribution of firms for the same three size groups according to the initial and final year of each sub-period. Thus, of the small firms in 1992, by 1996 90.6% were still small, while 8.8% and 0.6% had graduated to the medium and large groups respectively. A clear result over the two sub-periods is that there is less mobility: more small firms remained small after the crisis as compared to before it. A similar conclusion holds for the medium sized firms.

(Table 8 about here)

Table 8: Transition matrices

a. Distribution of plants (% total plants), 1992 and 1996

		1996		
		S=20-99	M=100-499	L=500+
1992	S=20-99	90.6	8.8	0.6
	M=100-499	13.1	75.4	11.5
	L=500+	1.9	13.1	85.1

b. Distribution of plants (% total plants), 2001 and 2004

		2004		
		S=20-99	M=100-499	L=500+
2001	S=20-99	96.1	3.7	0.1
	M=100-499	10.9	84.3	4.8
	L=500+	0.9	11.8	87.3

Source: *Statistik Industri* (SI), 1992, 1996, 2001, and 2004.

3.6) Slowing Firm Dynamics (II)

This sub-section extends the analysis of firm-level dynamics by examining two additional aspects: the patterns of firm-level entry and exit, and the rates of expansion and contraction for 'surviving' firms. Here too we undertake this analysis by tracking the history of each firm enumerated in the survey. An earlier study by Narjoko (2006) examined these patterns in the pre-crisis and crisis periods. This analysis extends the examination through to 2004, by which time manufacturing output had returned to pre-crisis levels and was growing moderately strongly. Specifically, we examine two interrelated phenomena: the entry and exit rates of firms over time and, among the survivors, expansion and contraction rates.

First, with respect to entry and exit rates, the analysis can be conducted with reference to number of plants, employment or value added. The story is broadly similar, and so we present results only for the rates by number of firms. (The additional data for other variables are available from the authors on request.) The following definitions are used for entry and exit rates, for industry j and time periods t and t-1:

$$\text{Entry rate}_{j,t} = \frac{NEP_{j,t}}{NTP_{j,t-1}}$$

$$\text{Exit rate}_{j,t} = \frac{NXP_{j,t}}{NTP_{j,t-1}} \quad ,$$

Where:

$NEP_{j,t}$ = total number of plants that enter industry j between t and t-1,

$NXP_{j,t}$ = total number of plants that exit industry j between t and t-1,

$NTP_{j,t-1}$ = total number of plants in industry j in t-1.

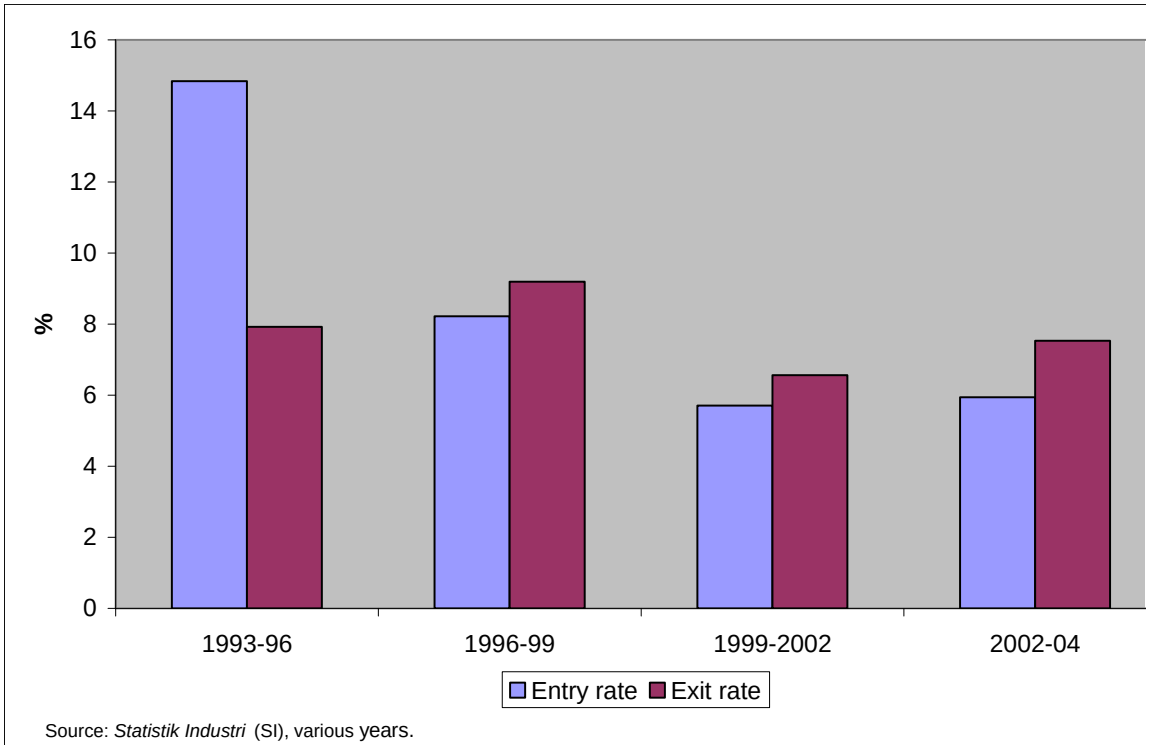
We identify four separate sub-periods, pre-crisis (1993-96), crisis (1996-99), early post-crisis (1999-2002), and return to growth (2002-04). Before the crisis, as would be expected, there were high plant entry rates, and these were almost double the exit rates (Figure 4). Note also, however, and consistent with industrial dynamism, that the exit rates were not insignificant. As the crisis hit, entry rates fell, to approximately half the pre-crisis figure, while exit rates rose, and began to exceed entry rates. These trends applied to practically all industry groups, but especially to TCF, wood products, and non-metallic minerals (respectively ISIC 32, 33, 36). They also apply to most firm and ownership groups, though with considerable variations (see Narjoko (2006) and for a summary Narjoko and Hill (2007)).

(Figure 4 about here)

Entry and exit rate, in terms of number of plant (in %): Indonesian manufacturing, 1993-2004

	Entry rate	Exit rate
1993-96	14.8	7.9
1996-99	8.2	9.2
1999-2002	5.7	6.6
2002-04	5.9	7.5

Figure 4: Entry and exit rates in manufacturing, 1993-2004
(%, based on number of plants)



Source: *Statistik Industri* (SI), various years.

While this response is as would be expected, some trends are puzzling. In particular, the immediate crisis response of exit rates exceeding entry rates has persisted through to 2004, by which time positive economic growth had resumed for four years. Moreover, entry rates have continued to decline, in contrast to what might have been the expected outcome of a sharp decline during the crisis and recovery thereafter. At least two possible conjectures are plausible here. One is that there is a delayed response of firms: the initial adjustment is to reduce output, switch output composition, extend credit lines, live off past capital and so on, in the hope that firms can trade through the difficulties. Especially for well-established firms, such strategies can endure for several years. Hence, the exit rates are spread out over several years, as

illustrated in Figure 4, rather than a single large reduction in the crisis period. The second conjecture relates to the extended decline in entry rates, for five years after the crisis. Here the likely explanation is that potential new entrants were holding back, observing the continuing exit process, in addition to the fact that there were high levels of excess capacity following the crisis. The difficulties in accessing finance and rising competitive pressures, as noted above, have arguably resulted in increased barriers to entry.

The entry and exit rates across major industry groups are not presented here, but they are broadly consistent with major output trends. In particular, there are higher exit rates for plants in the major labour-intensive sectors identified above, ISIC 32, 33, and 36. This confirms the results above, and highlights the paradox that, just when Indonesia's labour-intensive exports would have been expected to grow strongly, the opposite happened, principally owing to a less supportive domestic policy environment.

What happened to firms that survived the crisis? We follow the usual definitions of expansion and contraction rates (see for example Davis et al, 1996), with reference to employment in industry j and time period t:

$$\text{Expansion rate}_{j,t} = \frac{EMPL\_POS_{j,t}}{EMPL\_T_{j,t-1}}$$

$$\text{Conraction rate}_{j,t} = \left| \frac{EMPL\_NEG_{j,t}}{EMPL\_T_{j,t-1}} \right|$$

Where:

$EMPL\_POS_{j,t}$ = total employment of plants that expanded between t and t-1,

$EMPL\_NEG_{j,t}$ = total employment for plants that contracted between t and t-1,

$EMPL\_T_{j,t}$ = total employment in year t.

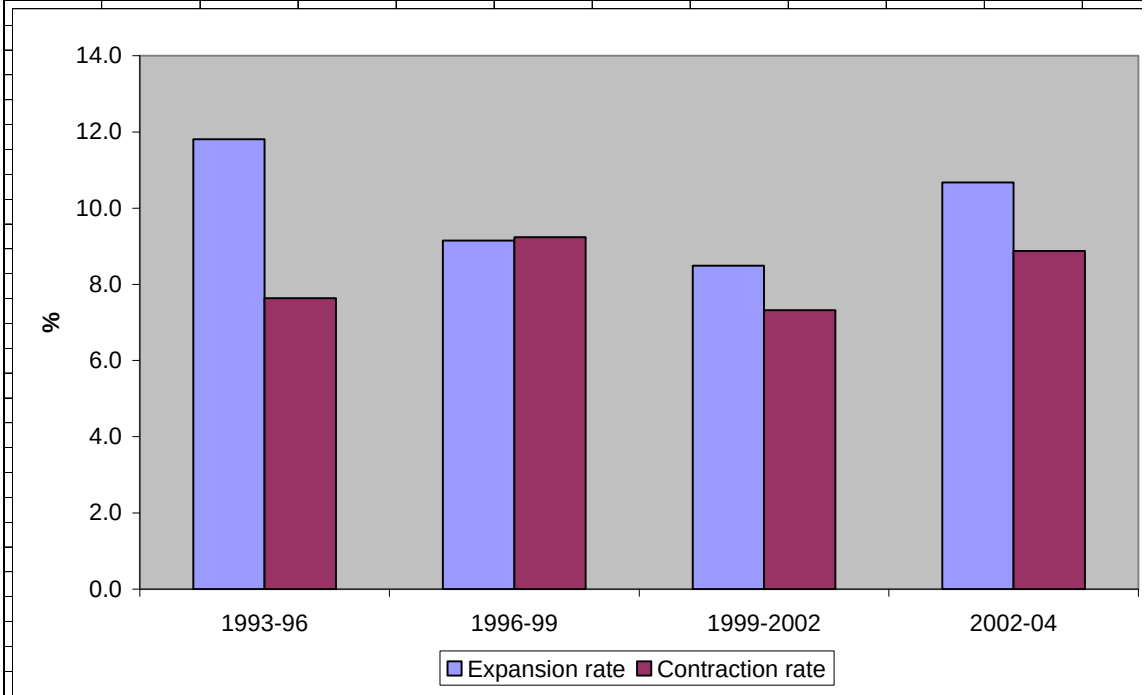
Here too, as would be expected, expansion rates exceeded contraction rates prior to the crisis (Figure 5). During the crisis, expansion rates declined but contraction rates increased, and the two rates converged. Thereafter, the pre-crisis pattern of expansion exceeding contraction resumed, although the gap between the two narrowed, ie, the net expansion rate was lower. There are also differences among major industry groups, with a similar division as for the entry and exit rates. In particular, growth has originated more from the expansion of existing plants than the entry of new ones in the resource-based and capital-intensive industries, such as food products and processing, paper products, chemicals, and machinery and equipment (respectively ISIC 31, 34, 35, 38).

(Figure 5 about here)

Expansion and contraction rate, in terms of employment (in %): Indonesian manufacturing, 1993-2004

	Expansion	Contraction rate
1993-96	11.8	7.6
1996-99	9.1	9.2
1999-2002	8.5	7.3
2002-04	10.7	8.9

Figure 5: Expansion and contraction rates in manufacturing, 1993-2004 (%, based on employment)



Source: *Statistik Industri* (SI), various years.

The picture for firm dynamics can be summarized by decomposing employment growth into that due to entry/exit on the one hand and expansion/contraction on the other. We conduct the analysis with reference to employment effects rather than plants, and thus the terms are referred to as 'Entry rate 2' and 'Exit rate 2' to differentiate them from those above. That is:

$$\text{Entry rate } 2_{j,t} = \frac{EMPL\_EN_{j,t}}{EMPL\_T_{j,t-1}}$$

$$\text{Exit rate } 2_{j,t} = \frac{EMPL\_EX_{j,t}}{EMPL\_T_{j,t-1}}$$

Where:

$EMPL\_EN_{j,t}$ = total employment of plants that entered industry j between t and t-1,
$EMPL\_EX_{j,t}$ = total employment of plants that exited industry j between t and t-1.

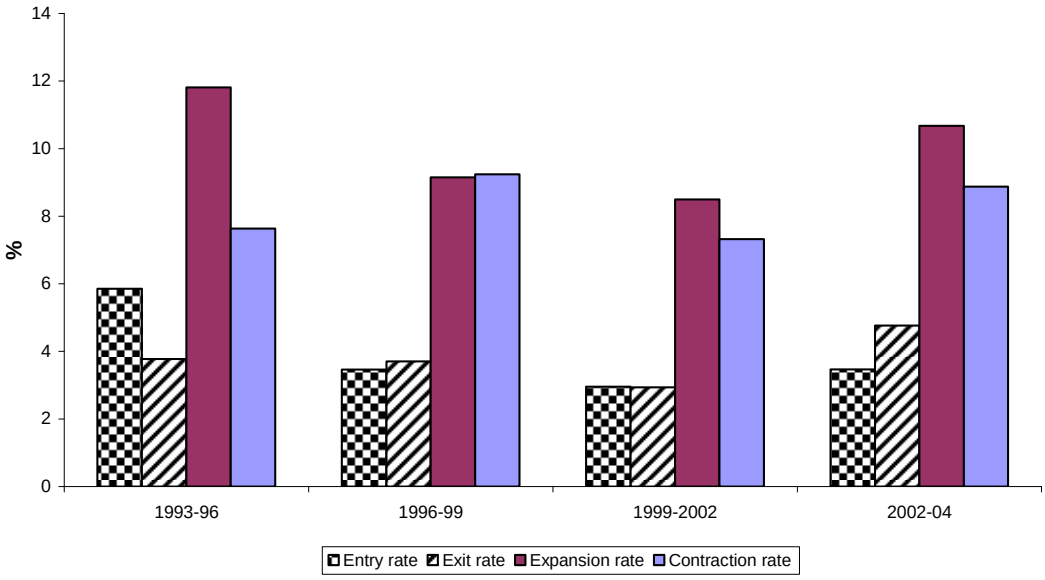
So, $\text{Employment growth decomposition}_{j,t} = \text{Entry rate 2}_{j,t} + \text{Expansion rate}_{j,t} + \text{Exit rate 2}_{j,t} + \text{Contraction rate}_{j,t}$

Figure 6 presents the results of the decomposition. The results show that, since the crisis, expansion has become more important than entry for employment over time. The inference is therefore that, in the wake of the crisis, most of the growth originated from what may be termed ‘insiders’, that is firms who were able to survive the crisis, and adapt more quickly to the significantly altered policy and commercial environment. As Narjoko (2006) demonstrates for the period through to 2000, specific firm attributes were commonly associated with these outcomes, in particular prior export orientation and foreign ownership. In addition, firms that maintained credit lines or had low debt generally survived and were able to respond more quickly to the economic recovery from 2000. Potential new entrants were apparently deterred by real or perceived barriers to entry, including the more unpredictable business and political environment, and a much more cautious financial sector.

(Figure 6 about here)

	Entry rate	Exit rate	Expansion	Contraction rate
1993-96	5.9	3.8	11.8	7.6
1996-99	3.5	3.7	9.1	9.2
1999-2002	3.0	2.9	8.5	7.3
2002-04	3.5	4.8	10.7	8.9

Figure 6: Decomposition of employment growth, 1993-2004
(%)



Note: Entry and exit rate in the figure are defined in terms of employment (i.e., Entry rate 2 and Exit rate 2, see text).

Source: Statistik Industri (SI), various years.

4) Summary and Implications

Our key findings may be summarized as follows. During and after the crisis, manufacturing output trends generally followed those of the economy as a whole, with the caveat that the former's growth declined from slightly above the economy-wide average to slightly below it. Manufactured export growth has been indifferent, though with considerable inter-industry variations. There have been no major changes in ownership patterns, apart from a continuation of rising foreign ownership; producer concentration remains high. Manufacturing employment growth has been very slow, verging on 'jobless growth'. There appears to be less firm-level mobility, with fewer firms

increasing in size and most of the growth occurring from existing firms rather than newcomers. In both respects, these outcomes differ from those of the pre-crisis period.

Within this overall picture, there are of course significant differences between industries and firms, and these differences are attributable in large part to particular aspects of the post-crisis policy regime. We illustrate this proposition with reference to four sectors.

First, the traditional labour-intensive activities, TCF, which drove Indonesia's first round of successful export-oriented industrialization, have performed poorly since the crisis, notwithstanding the boost to their competitiveness from the exchange rate depreciation. To be sure, the international environment for these products is now more competitive, especially owing to competition from China. But other countries' exports have performed well (for example, Vietnam), and in any case competitor exports of textiles and garments were quota-constrained until 2005 when the Multi-Fibre Agreement was finally phased out. Thus the explanation for Indonesia's poor performance lies primarily with domestic factors. As we have argued, the most important of these has been intensified labour market regulation, that has increased the cost of labour and deterred employers from hiring new workers. Slower and more complex export/import procedures have also contributed to the less competitive environment.

Second, Indonesia's production and exports of electronics products and components have grown quite strongly, but its global share of this industry has declined. The problem in this case is that the policy regime has not performed well in two key areas required by firms in this globally integrated, MNE-dominated industry. One is that the movement of goods across international boundaries needs to be swift and unhindered, consistent with production activities that are 'sliced up' and located across many countries. As noted, Indonesia's export/import procedures and its port infrastructures rank well below regional best-practice. The other issue relates to a clean, responsive and flexible FDI regulatory environment, that includes provision for 100% foreign ownership. Here too Indonesia lags its regional competitors.

Third, as noted, Indonesia has a strong potential comparative advantage in resource-based activities. These industries might have been expected to perform strongly in the wake of the crisis since, given their high domestic value added content, the exchange rate depreciation should have greatly boosted the incentive to invest in them. The outcomes as noted above have been mixed, with some sectors performing strongly but many growing slowly. The long-term viability of these industries requires access to a predictable, well-managed and sustainable supply of raw material inputs. A key problem here is that the evolving post-crisis political and institutional architecture (on which see McLeod and MacIntyre, eds, 2007) has not yet been able to deliver such an outcome. This is particularly the case for much of the mining industry and for forest-based products such as plywood, paper and pulp. The pre-crisis policy regime was highly centralized and corrupt, yet it did deliver predictability for the politically well-connected players. After the crisis, these centralized structures have broken down, with a weaker central government, and a decentralized policy environment comprising about 500 sub-national

governments all seeking control over lucrative natural resource rents within their jurisdiction (Resosudarmo, ed, 2005).

Fourth, it appears that the commercial policy environment after 1998 has become less supportive of new entrants, start-up projects and risk-taking. This is perhaps to be expected after such a massive economic crisis, when several banks collapsed and complex corporate debt workouts took up to a decade to resolve. Large, capital-intensive projects require long-term financing, typically with a mix of domestic and international funding. SMEs require flexible funding, including a willingness to support sound business proposals rather than simply evidence of bankable collateral. In both cases, the financial sector needs to be underpinned by a supportive legal system. For foreign financiers, this in turn requires legal protection, yet the evidence during the post-crisis workouts is that Indonesian courts have been generally predisposed to support debtors over creditors and domestic over foreign parties. SME expansion is typically funded through retained earnings and informal funding, but the development of more formal channels has been hindered by poorly defined land titling and property rights for other sources of collateral.

References

Aswicahyono, H.H., M.C. Basri, and H. Hill (2000), 'How not to Industrialize?: Indonesia's Automotive Industry', Bulletin of Indonesian Economic Studies, 36 (1), pp. 209-41.

Aswicahyono, H.H., K. Bird, and H. Hill (1996), 'What Happens to Industrial Structure when Countries Liberalize? Indonesia since the mid 1980s', Journal of Development Studies, 32 (3), pp. 340-363.

Athukorala. P.C. (2006), 'Post-crisis Export Performance: The Indonesian Experience in Regional Perspective', Bulletin of Indonesian Economic Studies, 42, pp. 177–211.

Athukorala, P.C. and H. Hill (2008), 'Asian Trade and Investment: Patterns and Trends', paper presented to workshop at the Ninth GDN Conference, Brisbane, January.

Basri, M.C. and H. Soesastro (2005), 'The Political Economy of Trade Policy in Indonesia', ASEAN Economic Bulletin, 22 (1), pp. 3-18.

Basri, M.C. and P. van der Eng (eds) (2004), Business in Indonesia: New Challenges, Old Problems, Institute of Southeast Asian Studies, Singapore.

Berry, A., E. Rodriguez and H. Sandee (2001), Small and Medium Enterprise Dynamics in Indonesia', Bulletin of Indonesian Economic Studies, 37, pp. 363–84.

Bird, K., H. Hill and S. Cuthbertson (forthcoming), 'Making Trade Policy in a New Democracy after a Deep Crisis: Indonesia', The World Economy.

Davis, S.L., J.C. Haltiwanger, S. Shuh (1996), Job Creation and Destruction, MIT Press, Cambridge, MA.

Ding, W. et al (1998), 'Is there a Credit Crunch in East Asia?', World Bank Policy Research Working Paper, no. 1959, Washington DC.

Dwor-Frecaut, D., F. Colaco and M. Hallward-Driemeier, (eds) (2000), Asian Corporate Recovery: Findings from Firm-level Surveys in Five Countries, The World Bank, Washington, DC.

Glick, R., R. Moreno and M. M. Spiegel (eds) (2001), Financial Crises in Emerging Markets, Cambridge: Cambridge University Press.

Gosh, S.R. and A.R. Gosh (1999), 'East Asia in the Aftermath: Was there a Crunch?', IMF Working Paper no. 38, Washington DC.

Hill, H. (1997), Indonesia's Industrial Transformation, Singapore: Institute of Southeast Asian Studies.

Kimura, F. (2006), 'International Production and Distribution Networks in East Asia: 18 Facts, Mechanics, and Policy Implications', Asian Economic Policy Review, 1, pp. 326-344.

Krugman, P., (ed) 2001, Currency Crises. University of Chicago Press, Chicago.

Lall, S. (2000), 'The Technological Structure and Performance of Developing Country Manufactured Exports', Oxford Development Studies, 28 (3), pp. 337-369.

Lipsey, R. E. (2001), 'Foreign Investment in Three Financial Crises' National Bureau of Economic Research Working Paper No. 8084, NBER, Cambridge, MA.

McLeod, R.H. and A. MacIntyre (eds, 2007), Indonesia: Democracy and the Promise of Good Governance, Institute of Southeast Asian Studies, Singapore.

Manning, C. (2000), 'Labor Market Adjustment to Indonesia's Economic Crisis: Context, Trends and Implications', Bulletin of Indonesian Economic Studies, 36, pp. 105–36.

Manning, C. and K. Roesad (2006), 'Survey of Recent Developments', Bulletin of Indonesian Economic Studies, 36 (1), pp. 105-136.

Narjoko, D. A. (2006), Indonesian Manufacturing and the Economic Crisis of 1997/98, PhD thesis. Australian National University, Canberra.

Narjoko, D. and H. Hill (2007), 'Winners and Losers during a Deep Economic Crisis: Firm-level Evidence from Indonesian Manufacturing', Asian Economic Journal, 21 (4), pp. 343-368.

Ramstetter, E. D. and F. Sjoholm (eds) (2006), Multinational Corporations in Indonesia and Thailand: Wages, Productivity and Exports, Palgrave Macmillan, London.

Resosudarmo, B.P. (ed) (2005), The Politics and Economics of Indonesia's Natural Resources, Institute of Southeast Asian Studies, Singapore.

Rosengard, J.K., et al (2007), 'The Promise and the Peril of Microfinance Institutions in Indonesia', Bulletin of Indonesian Economic Studies, 43 (1), pp. 87-112.

Rosner, L. P. (2000), 'Indonesia's Non-oil Export Performance during the Economic Crisis: Distinguishing Price Trends from Quantity Trends', Bulletin of Indonesian Economic Studies, 36, pp. 61–95.

Stiglitz, J.E. and A. Weiss (1981), 'Credit Rationing in Markets with Imperfect Information', American Economic Review, 71 (3), pp. 393-410.

Takii, S. and E.D. Ramstetter (2005), 'Multinational Presence and Labour Productivity Differentials in Indonesian Manufacturing, 1975-2001', Bulletin of Indonesian Economic Studies, 41, pp. 221-242.

Thee, K. W. (2000), 'The Impact of the Economic Crisis on Indonesia's Manufacturing Sector', Developing Economies, 38, pp. 420–53.

World Bank (2000), East Asia: Recovery and Beyond, Washington D.C.: World Bank.

(020908, 8,530 words)

Comment: Ramstetter, E. D. and F. Sjoholm, eds, 2006 has not been cited in the text. Please indicate where this reference should be cited, or remove it from the reference list.

Working Papers in Trade and Development
List of Papers (including publication details as at 2008)

99/1 K K TANG, 'Property Markets and Policies in an Intertemporal General Equilibrium Model'.

99/2 HARYO ASWICAHYONO and HAL HILL, ''Perspiration' v/s 'Inspiration' in Asian Industrialization: Indonesia Before the Crisis'.

99/3 PETER G WARR, 'What Happened to Thailand?'.

99/4 DOMINIC WILSON, 'A Two-Sector Model of Trade and Growth'.

99/5 HAL HILL, 'Indonesia: The Strange and Sudden Death of a Tiger Economy'.

99/6 PREMA-CHANDRA ATHUKORALA and PETER G WARR, 'Vulnerability to a Currency Crisis: Lessons from the Asian Experience'.

99/7 PREMA-CHANDRA ATHUKORALA and SARATH RAJAPATIRANA, 'Liberalization and Industrial Transformation: Lessons from the Sri Lankan Experience'.

99/8 TUBAGUS FERIDHANUSETYAWAN, 'The Social Impact of the Indonesian Economic Crisis: What Do We Know?'

99/9 KELLY BIRD, 'Leading Firm Turnover in an Industrializing Economy: The Case of Indonesia'.

99/10 PREMA-CHANDRA ATHUKORALA, 'Agricultural Trade Liberalization in South Asia: From the Uruguay Round to the Millennium Round'.

99/11 ARMIDA S ALISJAHBANA, 'Does Demand for Children's Schooling Quantity and Quality in Indonesia Differ across Expenditure Classes?'

99/12 PREMA-CHANDRA ATHUKORALA, 'Manufactured Exports and Terms of Trade of Developing Countries: Evidence from Sri Lanka'.

00/01 HSIAO-CHUAN CHANG, 'Wage Differential, Trade, Productivity Growth and Education.'

00/02 PETER G WARR, 'Targeting Poverty.'

00/03 XIAOQIN FAN and PETER G WARR, 'Foreign Investment, Spillover Effects and the Technology Gap: Evidence from China.'

00/04 PETER G WARR, 'Macroeconomic Origins of the Korean Crisis.'

00/05 CHINNA A KANNAPIRAN, 'Inflation Targeting Policy in PNG: An Econometric Model Analysis.'

00/06 PREMA-CHANDRA ATHUKORALA, 'Capital Account Regimes, Crisis and Adjustment in Malaysia.'

00/07 CHANGMO AHN, 'The Monetary Policy in Australia: Inflation Targeting and Policy Reaction.'

00/08 PREMA-CHANDRA ATHUKORALA and HAL HILL, 'FDI and Host Country Development: The East Asian Experience.'

00/09 HAL HILL, 'East Timor: Development Policy Challenges for the World's Newest Nation.'

00/10 ADAM SZIRMAI, M P TIMMER and R VAN DER KAMP, 'Measuring Embodied Technological Change in Indonesian Textiles: The Core Machinery Approach.'

00/11 DAVID VINES and PETER WARR, ' Thailand's Investment-driven Boom and Crisis.'

01/01 RAGHBENDRA JHA and DEBA PRASAD RATH, 'On the Endogeneity of the Money Multiplier in India.'

01/02 RAGHBENDRA JHA and K V BHANU MURTHY, 'An Inverse Global Environmental Kuznets Curve.'

01/03 CHRIS MANNING, 'The East Asian Economic Crisis and Labour Migration: A Set-Back for International Economic Integration?'

01/04 MARDI DUNGEY and RENEE FRY, 'A Multi-Country Structural VAR Model.'

01/05 RAGHBENDRA JHA, 'Macroeconomics of Fiscal Policy in Developing Countries.'

01/06 ROBERT BREUNIG, 'Bias Correction for Inequality Measures: An application to China and Kenya.'

01/07 MEI WEN, 'Relocation and Agglomeration of Chinese Industry.'

01/08 ALEXANDRA SIDORENKO, 'Stochastic Model of Demand for Medical Care with Endogenous Labour Supply and Health Insurance.'

01/09 A SZIRMAI, M P TIMMER and R VAN DER KAMP, 'Measuring Embodied Technological Change in Indonesian Textiles: The Core Machinery Approach.'

01/10 GEORGE FANE and ROSS H MCLEOD, 'Banking Collapse and Restructuring in Indonesia, 1997-2001.'

01/11 HAL HILL, 'Technology and Innovation in Developing East Asia: An Interpretive Survey.'

01/12 PREMA-CHANDRA ATHUKORALA and KUNAL SEN, 'The Determinants of Private Saving in India.'

02/01 SIRIMAL ABEYRATNE, 'Economic Roots of Political Conflict: The Case of Sri Lanka.'

02/02 PRASANNA GAI, SIMON HAYES and HYUN SONG SHIN, 'Crisis Costs and Debtor Discipline: the efficacy of public policy in sovereign debt crises.'

02/03 RAGHBENDRA JHA, MANOJ PANDA and AJIT RANADE, 'An Asian Perspective on a World Environmental Organization.'

02/04 RAGHBENDRA JHA, 'Reducing Poverty and Inequality in India: Has Liberalization Helped?'

02/05 ARCHANUN KOHPAIBOON, 'Foreign Trade Regime and FDI-Growth Nexus: A Case Study of Thailand.'

02/06 ROSS H MCLEOD, 'Privatisation Failures in Indonesia.'

02/07 PREMA-CHANDRA ATHUKORALA, 'Malaysian Trade Policy and the 2001 WTO Trade Policy Review.'

02/08 M C BASRI and HAL HILL, 'Ideas, Interests and Oil Prices: The Political Economy of Trade Reform during Soeharto's Indonesia.'

02/09 RAGHBENDRA JHA, 'Innovative Sources of Development Finance – Global Cooperation in the 21st Century.'

02/10 ROSS H MCLEOD, 'Toward Improved Monetary Policy in Indonesia.'

03/01 MITSUHIRO HAYASHI, 'Development of SMEs in the Indonesian Economy.'

03/02 PREMA-CHANDRA ATHUKORALA and SARATH RAJAPATIRANA, 'Capital Inflows and the Real Exchange Rate: A Comparative Study of Asia and Latin America.'

03/03 PETER G WARR, 'Industrialisation, Trade Policy and Poverty Reduction: Evidence from Asia.'

03/04 PREMA-CHANDRA ATHUKORALA, 'FDI in Crisis and Recovery: Lessons from the 1997-98 Asian Crisis.'

03/05 ROSS H McLEOD, 'Dealing with Bank System Failure: Indonesia, 1997-2002.'

03/06 RAGHBENDRA JHA and RAGHAV GAIHA, 'Determinants of Undernutrition in Rural India.'

03/07 RAGHBENDRA JHA and JOHN WHALLEY, 'Migration and Pollution.'

03/08 RAGHBENDRA JHA and K V BHANU MURTHY, 'A Critique of the Environmental Sustainability Index.'

03/09 ROBERT J BAROO and JONG-WHA LEE, 'IMF Programs: Who Is Chosen and What Are the Effects?

03/10 ROSS H MCLEOD, 'After Soeharto: Prospects for reform and recovery in Indonesia.'

03/11 ROSS H MCLEOD, 'Rethinking vulnerability to currency crises: Comments on Athukorala and Warr.'

03/12 ROSS H MCLEOD, 'Equilibrium is good: Comments on Athukorala and Rajapatirana.'

03/13 PREMA-CHANDRA ATHUKORALA and SISIRA JAYASURIYA, 'Food Safety Issues, Trade and WTO Rules: A Developing Country Perspective.'

03/14 WARWICK J MCKIBBIN and PETER J WILCOXEN, 'Estimates of the Costs of Kyoto-Marrakesh Versus The McKibbin-Wilcoxen Blueprint.'

03/15 WARWICK J MCKIBBIN and DAVID VINES, 'Changes in Equity Risk Perceptions: Global Consequences and Policy Responses.'

03/16 JONG-WHA LEE and WARWICK J MCKIBBIN, 'Globalization and Disease: The Case of SARS.'

03/17 WARWICK J MCKIBBIN and WING THYE WOO, 'The consequences of China's WTO Accession on its Neighbors.'

03/18 MARDI DUNGEY, RENEE FRY and VANCE L MARTIN, 'Identification of Common and Idiosyncratic Shocks in Real Equity Prices: Australia, 1982 to 2002.'

03/19 VIJAY JOSHI, 'Financial Globalisation, Exchange Rates and Capital Controls in Developing Countries.'

03/20 ROBERT BREUNIG and ALISON STEGMAN, 'Testing for Regime Switching in Singaporean Business Cycles.'

03/21 PREMA-CHANDRA ATHUKORALA, 'Product Fragmentation and Trade Patterns in East Asia.'

04/01 ROSS H MCLEOD, 'Towards Improved Monetary Policy in Indonesia: Response to De Brouwer'

04/02 CHRIS MANNING and PRADIP PHATNAGAR, 'The Movement of Natural Persons in Southeast Asia: How Natural?

04/03 RAGHBENDRA JHA and K V BHANU MURTHY, 'A Consumption Based Human Development Index and The Global Environment Kuznets Curve'

04/04 PREMA-CHANDRA ATHUKORALA and SUPHAT SUPHACHALASAI, 'Post-crisis Export Performance in Thailand'

04/05 GEORGE FANE and MARTIN RICHARDSON, 'Capital gains, negative gearing and effective tax rates on income from rented houses in Australia'

04/06 PREMA-CHANDRA ATHUKORALA, 'Agricultural trade reforms in the Doha Round: a developing country perspective'

04/07 BAMBANG-HERU SANTOSA and HEATH McMICHAEL, ' Industrial development in East Java: A special case?'

04/08 CHRIS MANNING, 'Legislating for Labour Protection: Betting on the Weak or the Strong?'

05/01 RAGHBENDRA JHA, 'Alleviating Environmental Degradation in the Asia-Pacific Region: International cooperation and the role of issue-linkage'

05/02 RAGHBENDRA JHA, RAGHAV GAIHA and ANURAG SHARMA, 'Poverty Nutrition Trap in Rural India'

05/03 PETER WARR, 'Food Policy and Poverty in Indonesia: A General Equilibrium Analysis'

05/04 PETER WARR, 'Roads and Poverty in Rural Laos'

05/05 PREMA-CHANDRA ATHUKORALA and BUDY P RESOSUDARMO, 'The Indian Ocean Tsunami: Economic Impact, Disaster Management and Lessons'

05/06 PREMA-CHANDRA ATHUKORALA, 'Trade Policy Reforms and the Structure of Protection in Vietnam'

05/07 PREMA-CHANDRA ATHUKORALA and NOBUAKI YAMASHITA, 'Production Fragmentation and Trade Integration: East Asia in a Global Context'

05/08 ROSS H MCLEOD, 'Indonesia's New Deposit Guarantee Law'

05/09 KELLY BIRD and CHRIS MANNING, 'Minimum Wages and Poverty in a Developing Country: Simulations from Indonesia's Household Survey'

05/10 HAL HILL, 'The Malaysian Economy: Past Successes, Future Challenges'

05/11 ZAHARI ZEN, COLIN BARLOW and RIA GONDOWARSITO, 'Oil Palm in Indonesian Socio-Economic Improvement: A Review of Options'

05/12 MEI WEN, 'Foreign Direct Investment, Regional Geographical and Market Conditions, and Regional Development: A Panel Study on China'

06/01 JUTHATHIP JONGWANICH, 'Exchange Rate Regimes, Capital Account Opening and Real Exchange Rates: Evidence from Thailand'

06/02 ROSS H MCLEOD, 'Private Sector Lessons for Public Sector Reform in Indonesia'

06/03 PETER WARR, 'The Gregory Thesis Visits the Tropics'

06/04 MATT BENGE and GEORGE FANE, 'Adjustment Costs and the Neutrality of Income Taxes'

06/05 RAGHBENDRA JHA, 'Vulnerability and Natural Disasters in Fiji, Papua New Guinea, Vanuatu and the Kyrgyz Republic'

06/06 PREMA-CHANDRA ATHUKORALA and ARCHANUN KOHPAIBOON, 'Multinational Enterprises and Globalization of R&D: A Study of U.S-based Firms

06/07 SANTANU GUPTA and RAGHBENDRA JHA, 'Local Public Goods in a Democracy: Theory and Evidence from Rural India'

06/08 CHRIS MANNING and ALEXANDRA SIDORENKO, 'The Regulation of Professional Migration in ASEAN – Insights from the Health and IT Sectors'

06/09 PREMA-CHANDRA ATHUKORALA, 'Multinational Production Networks and the New Geo-economic Division of Labour in the Pacific Rim'

06/10 RAGHBENDRA JHA, RAGHAV GAIHA and ANURAG SHARMA, 'On Modelling Variety in Consumption Expenditure on Food'

06/11 PREMA-CHANDRA ATHUKORALA, 'Singapore and ASEAN in the New Regional Division of Labour'

06/12 ROSS H MCLEOD, 'Doing Business in Indonesia: Legal and Bureaucratic Constraints'

06/13 DIONISIUS NARJOKO and HAL HILL, 'Winners and Losers during a Deep Economic Crisis; Firm-level Evidence from Indonesian Manufacturing'

06/14 ARSENIO M BALISACAN, HAL HILL and SHARON FAYE A PIZA, 'Regional Development Dynamics and Decentralization in the Philippines: Ten Lessons from a 'Fast Starter''

07/01 KELLY BIRD, SANDY CUTHBERTSON and HAL HILL, 'Making Trade Policy in a New Democracy after a Deep Crisis: Indonesia

07/02 RAGHBENDRA JHA and T PALANIVEL, 'Resource Augmentation for Meeting the Millennium Development Goals in the Asia Pacific Region'

07/03 SATOSHI YAMAZAKI and BUDY P RESOSUDARMO, 'Does Sending Farmers Back to School have an Impact? A Spatial Econometric Approach'

07/04 PIERRE VAN DER ENG, 'De-industrialisation' and Colonial Rule: The Cotton Textile Industry in Indonesia, 1820-1941'

07/05 DJONI HARTONO and BUDY P RESOSUDARMO, 'The Economy-wide Impact of Controlling Energy Consumption in Indonesia: An Analysis Using a Social Accounting Matrix Framework'

07/06 W MAX CORDEN, 'The Asian Crisis: A Perspective after Ten Years'

07/07 PREMA-CHANDRA ATHUKORALA, 'The Malaysian Capital Controls: A Success Story?

07/08 PREMA-CHANDRA ATHUKORALA and SATISH CHAND, 'Tariff-Growth Nexus in the Australian Economy, 1870-2002: Is there a Paradox?,

07/09 ROD TYERS and IAN BAIN, 'Appreciating the Renbimbi'

07/10 PREMA-CHANDRA ATHUKORALA, 'The Rise of China and East Asian Export Performance: Is the Crowding-out Fear Warranted?

08/01 RAGHBENDRA JHA, RAGHAV GAIHA AND SHYLASHRI SHANKAR, 'National Rural Employment Guarantee Programme in India — A Review'

08/02 HAL HILL, BUDY RESOSUDARMO and YOGI VIDYATTAMA, 'Indonesia's Changing Economic Geography'

08/03 ROSS H McLEOD, 'The Soeharto Era: From Beginning to End'

08/04 PREMA-CHANDRA ATHUKORALA, 'China's Integration into Global Production Networks and its Implications for Export-led Growth Strategy in Other Countries in the Region'

08/05 RAGHBENDRA JHA, RAGHAV GAIHA and SHYLASHRI SHANKAR, 'National Rural Employment Guarantee Programme in Andhra Pradesh: Some Recent Evidence'

08/06 NOBUAKI YAMASHITA, 'The Impact of Production Fragmentation on Skill Upgrading: New Evidence from Japanese Manufacturing'

08/07 RAGHBENDRA JHA, TU DANG and KRISHNA LAL SHARMA, 'Vulnerability to Poverty in Fiji'

08/08 RAGHBENDRA JHA, TU DANG, ' Vulnerability to Poverty in Papua New Guinea'

08/09 RAGHBENDRA JHA, TU DANG and YUSUF TASHRIFOV, 'Economic Vulnerability and Poverty in Tajikistan'

08/10 RAGHBENDRA JHA and TU DANG, 'Vulnerability to Poverty in Select Central Asian Countries'

08/11 RAGHBENDRA JHA and TU DANG, 'Vulnerability and Poverty in Timor- Leste'

08/12 SAMBIT BHATTACHARYYA, STEVE DOWRICK and JANE GOLLEY, 'Institutions and Trade: Competitors or Complements in Economic Development?

08/13 SAMBIT BHATTACHARYYA, 'Trade Liberalizaton and Institutional Development'

08/14 SAMBIT BHATTACHARYYA, 'Unbundled Institutions, Human Capital and Growth'

08/15 SAMBIT BHATTACHARYYA, 'Institutions, Diseases and Economic Progress: A Unified Framework'

08/16 SAMBIT BHATTACHARYYA, 'Root causes of African Underdevelopment'

08/17 KELLY BIRD and HAL HILL, 'Philippine Economic Development: A Turning Point?'

08/18 HARYO ASWICAHYONO, DIONISIUS NARJOKO and HAL HILL,
'Industrialization after a Deep Economic Crisis: Indonesia'