

FOREIGN DIRECT INVESTMENT IN CRISIS AND RECOVERY: LESSONS FROM THE 1997–1998 ASIAN CRISIS

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Is foreign direct investment more resilient at the onset of an economic crisis and the subsequent economic collapse in a host country compared to other forms of foreign capital inflows? Are affiliates of multinational enterprises in a crisis-hit country better equipped to withstand a crisis and aid the recovery process by readjusting their investment, production and sales strategies compared to local firms? This article examines these issues in the context of the 1997–1998 economic crisis in Thailand, Malaysia, Indonesia, Korea and the Philippines. The findings suggest that foreign direct investment was a relatively stable source of foreign capital in the crisis context and that the affiliates of multinational enterprises were instrumental in ameliorating the severity of economic collapse and facilitating the recovery process.

INTRODUCTION

The string of economic crises in emerging-market economies in the 1990s and the global reverberations that followed them have added new impetus to the debate on how to reconcile international capital mobility with domestic economic stability and developmental priorities in investment-receiving developing countries. The unqualified enthusiasm for promoting capital flows to aid economic advancement in these countries has given way to a new emphasis on finding ways and means of reconciling international capital mobility with domestic economic stability and developmental priorities. At the heart of this new policy focus is a renewed emphasis on the conventional wisdom about the need to treat foreign direct investment (FDI) flows separately from other forms of capital flows (mostly hot money) in designing national policies to monitor capital flows.¹

* This paper has benefited from comments by Bart van Ark (the discussant) and the other participants of the session *Financial Institutions and Economic Crisis in Asia* at the XIII International Economic History Congress (Buenos Aires, July 2002).

1 For useful critical assessments of the debate, with extensive listings of the related literature, see Eichengreen (2002) and Lamfalussy (2000).

This article aims to inform this debate by examining the behaviour of FDI flows compared to other major forms of capital flows in the context of the 1997–1998 East Asian crisis. The experiences of the five countries in the region that were directly affected by the crisis – Thailand, Indonesia, Malaysia, the Republic of Korea (henceforth referred to as Korea) and the Philippines – are examined from a comparative perspective, focusing on the following questions: Have FDI flows been more stable relative to the other forms of capital flows? What has been the contribution of FDI firms in the adjustment process? What has been the impact of crisis management policies on future flows? Related to the latter question, has Malaysia's unique approach to crisis management placed the country in a disadvantageous position compared to the other countries? These questions have not yet been adequately addressed in the already sizeable literature on the East Asian crisis. The discussion has primarily been limited to journalistic commentaries, which have come up with conflicting inferences based on circumstantial evidence.

Unlike some other contributions to this *AEHR* issue, no attempt is made here to compare the experiences of the Asian countries in the 1997–1998 and 1929–1931 crises. While paucity of data preclude a systematic comparative analysis anyway, the focus on the former period is justified by the fact that the behaviour of international capital in the two crises was fundamentally different. The 1997–1998 crisis was a modern-style capital account crisis characterised by a boom of international capital inflows followed by a sudden withdrawal of such funds because of loss of confidence by investors in the country's currency. By contrast, the worldwide financial and macroeconomic crisis of 1929–1931 originated in the West, and was then propagated to East Asian economies and other countries in the colonial periphery primarily (if not solely) through trade linkages (Kindleberger 1987, 1996). In other words, from the perspective of the countries on the periphery, it was fundamentally a conventional current account crisis. There was no evidence of a reversal of foreign investment in these countries in the wake of economic collapse (Jenks 1944; Nurkse 1954).² Interestingly, there was some capital inflow to these countries during the crisis from the countries at the centre (mostly Great Britain) through the gold trade. Precarious economic conditions in the West produced a substantial hoarding demand for gold (the traditional medium in which saving was held in those days) resulting in a steep rise in the price of gold in terms of the currencies in the East. Thus, a large part of the gold held by hoarders in the East passed into the hands of hoarders in the West and the reverse capital flows (mostly in the form of pound sterling) facilitated balance of payments adjustment in the former countries.

2 Much (perhaps about three-quarters) of British colonial investment took the form of long-term loans to governments and investment in public utilities. The rest included direct investment in banking, insurance and manufacturing as well as investments directly in raw-material extraction (Nurkse 1954: 747). Unlike in the 1990s, there were few 'hot money' movements (e.g. private bank lending and investment in stocks and shares).

The paper is organised as follows. The next section discusses the a priori reasoning on differences between FDI and other forms of foreign capital flows in the context of an international financial crisis. Two sections then examine the behaviour of FDI flows compared to other forms of capital flows in the wake of the crisis and in the recovery process, and the role of the affiliates of multinational enterprises (MNE) in adjustment to the crisis. The final section contains some concluding remarks.

ANALYTICAL CONTEXT

Foreign direct investment originates from the decision of an MNE to enter into international production – and relocate part of its activities in a selected host country. This decision is underpinned by the desire to reap benefits from its specific advantages (in the form of technology, managerial expertise, marketing know-how, etc.), which cannot be effectively leased or purchased through ‘arms length’ market dealings with unrelated firms. In other words, FDI is a flow of long-term capital based on long-term profit considerations involved in international production (Caves 1996). Thus it can be hypothesised that FDI tends to be less responsive to short-term aberrations in general economic conditions in host countries.

Viewed from this perspective, one would expect FDI inflows to be much more resilient than other forms of private capital – portfolio investment, banks lending and other related forms of foreign capital (broadly known as ‘financial investment’) – in the wake of an international financial crisis. Financial investment essentially involves acquisition of financial assets rather than direct involvement in international production. Returns from such investment depends on variables such as the exchange rate, interest rates and share prices, which are usually subject to short-term fluctuations. Moreover, these assets can be easily disposed of at short notice, although of course at a cost.³

A financial crisis generates both positive and negative impacts on the profitability of MNE operations in the crisis-affected economy. On the positive side, currency collapse can have a positive impact on FDI in at least three different ways. First, large exchange rate depreciations reduce domestic production costs and asset values, making foreign investment more profitable. Since depreciation of the exchange rate of host country currencies makes the firms wealthier in terms of their purchasing power within the country, investment can increase. Second, the cost of investment may also be significantly reduced by falling asset prices

3 A large number of studies investigating the determinants (or early warning indicators) of currency crises have found that a higher ratio of FDI to total capital flows normally reduces vulnerability of a country to an exodus of capital (Frankel & Rose 1996; Radelet & Sachs 1998; Kim & Hwang 2000; Lipsey 2001).

because of the contraction in domestic demand propelled by the crisis. Third, revisions to FDI laws as part of the crisis management package in crisis-affected countries can open up new opportunities for cross-border mergers and acquisitions ('fire-sale' investment, *à la* Krugman (2001)). On the negative side, domestic demand contraction caused by output collapse and lowered immediate growth prospects can have a negative effect on domestic market-orientated foreign investment.

There are reasons to believe that significant involvement of MNE affiliates – the tangible reflection of FDI inflow – in the domestic economy of a given country can act as a facilitator of the adjustment process following a financial crisis, or other economic disruption caused by an external economic shock (Blomstrom and Lipsey 1993; Lipsey 2000, 2001). MNE affiliates have already set up international markets to supplement external markets. They also presumably have greater access than local firms to market information, distribution channels and international marketing skills. For these reasons, affiliates of MNE should find it easier to switch markets than other firms in response to a collapse of domestic demand as well as to benefit from newly gained competitiveness from exchange rate depreciation. On the supply side, MNE affiliates are also presumably better equipped to face domestic credit contraction (the credit crunch) that usually follows an exchange rate collapse and the exodus of short-term capital in the wake of a financial crisis. When domestic bank credit dries up and/or the cost of credit increases in the crisis context, it is still possible for these firms to obtain financing in international capital markets, or to receive credit from affiliated firms. Local firms do not have that advantage, although large exporting firms might still find it possible to obtain financing in the international capital markets, or receive credit from upstream firms (Krueger and Tornell 1999: 33). Thanks to their parent firms, unlike purely domestically owned firms, MNE affiliates in crisis-affected countries do not generally suffer lowered credit ratings.

CAPITAL FLOWS DURING THE CRISIS

An important development in the global economy in the 1990s was the enormous increase in private capital flows to emerging markets, that is, developing countries and transition economies. Net private capital flows to these emerging markets increased from an annual average of less the US\$10 billion in the latter half of the 1980s to nearly US\$200 billion by the mid-1990s.⁴ Korea, Malaysia, Thailand and Indonesia were among the eight countries that received more than \$15

4 Data reported in this section, unless otherwise stated, comes from the standard IMF sources, in particular various issues of *International Financial Statistics* and *World Economic Outlook*. Unless otherwise stated, denomination in dollars refers to US dollars.

billion in net long-term private capital inflows during this period. Flows to the Philippines continued to remain low by international standards, but they increased from less than \$10 million to over \$5 billion by the mid-1990s. The total net inflow to the five countries increased sharply from an average annual level of \$2.5 billion in the second half of the 1980s to \$78 billion in 1996. In that year, net capital inflows relative to GDP stood at 10% in the Philippines, 9.2% in Thailand, 6.9% in Malaysia, 5.4% in Indonesia and 4.7% in Korea.

What have been the implications of the onset of the financial crisis in 1997 for the process of global integration through capital mobility in these countries? Did FDI behave differently from other forms of capital flows in the crisis context? The remainder of this section examines these issues using Tables 1 and 2, and Figure 1. It is important to note that the FDI series reported in Table 1 and Figure 1 provide only partial coverage of FDI in these countries. According to the standard definition, FDI has three components: equity capital, intercompany debt and reinvested earnings. As in many other countries, data series on FDI in these countries (reported as part of the balance of payments accounts on which Table 1 and Figure 1 are based) capture only equity capital and intercompany debt. The omission of the third component (retained earnings) can lead to a considerable underestimation of the actual magnitude of FDI in a given host country depending on the history of MNE involvement and the source country profile of FDI.⁵ For this reason, we also make use of data on outflows of FDI from the United States (Table 2) to examine the sensitivity of inferences. This is the only available source of time series data on FDI encompassing all three components for the period under study.

Table 1 shows that total capital inflows to the five crisis-hit countries reversed from a net inflow of \$6.8 billion in 1996 to a net outflow of \$25.5 billion in 1997 and \$16.0 billion in 1998. Total net inflows started to recover from about the third quarter of 1998, but the annual figures remained well below the precrisis level in 1999 and 2000. At the individual country level, the sharpest reversal in net inflow was experienced by Thailand, with recorded negative inflows for four consecutive years from 1997. The total net outflow of capital from Thailand during the 4 years from 1997 to 2000 amounted to \$45 billion or almost half of the net inflows during the seven boom years from 1990 to 1996. Capital flows to Indonesia reversed from a net inflow of over \$10 billion in 1996 to a net outflow of \$1.1 billion in 1997 and the value of net outflows continued to widen in the ensuing years, reaching \$8 billion in 2000. Net inflows to Korea contracted by \$24.5 billion between 1996 and 1997 but began to recover much quicker (from about

5 There is evidence that the component 'retained earnings' in FDI is positively related with the age of operation of firms in a given country, and that US MNE have a general tendency to rely more on retained earnings for investment expansion compared to MNE from other countries (Lipsey 2000).

Table 1. Capital flows in Asian crisis countries, 1990–2000 (US\$ million)

Capital flow	1990–1994†	1995	1996	1997	1998	1999	2000
Indonesia							
FDI inflow	1,693	4,346	6,194	2,702	-356	-2,745	-4,550
FDI outflow	193	603	600	151	44	72	150
FDI (net)	1,500	3,743	5,594	2,551	-400	-2,817	-4,700
Portfolio flows (net)	1,098	4,100	5,005	-3,558	-1,878	-1,792	-1,909
Bank credit and other (net)	2,561	2,416	-758	-117	-2,270	126	-1,420
Total (net)	5,158	10,259	9,841	-1,123	-4,548	-4,483	-8,029
Korea							
FDI inflow	819	1,776	2,326	2,053	5,412	9,333	9,283
FDI outflow	1,501	3,551	4,671	3,438	4,739	4,197	4,998
FDI (net)	-682	-1,775	-2,345	-1,385	673	5,136	4,285
Portfolio flows (net)	5,110	11,711	15,102	9,917	-1,224	9,190	12,177
Bank credit and other (net)	1,782	7,459	1,778	-18,848	736	1,215	-5,757
Total (net)	6,211	17,395	14,535	-10,316	185	15,541	10,704
Malaysia							
FDI inflow	17,330	26,874	12,048	7,680	7,504	8,463	9,178
FDI outflow	11,986	19,269	4,121	1,686	2,255	3,572	3,622
FDI (net)	5,343	7,605	7,927	5,994	5,249	4,891	5,556
Portfolio flows (net)	4,396	2,226	3,498	-7,021	-353	264	-2,294
Bank credit and other (net)	2,657	4,456	2,300	2,698	-2,936	-2,021	-992
Total (net)	12,397	14,287	13,724	1,671	1,960	3,135	2,271

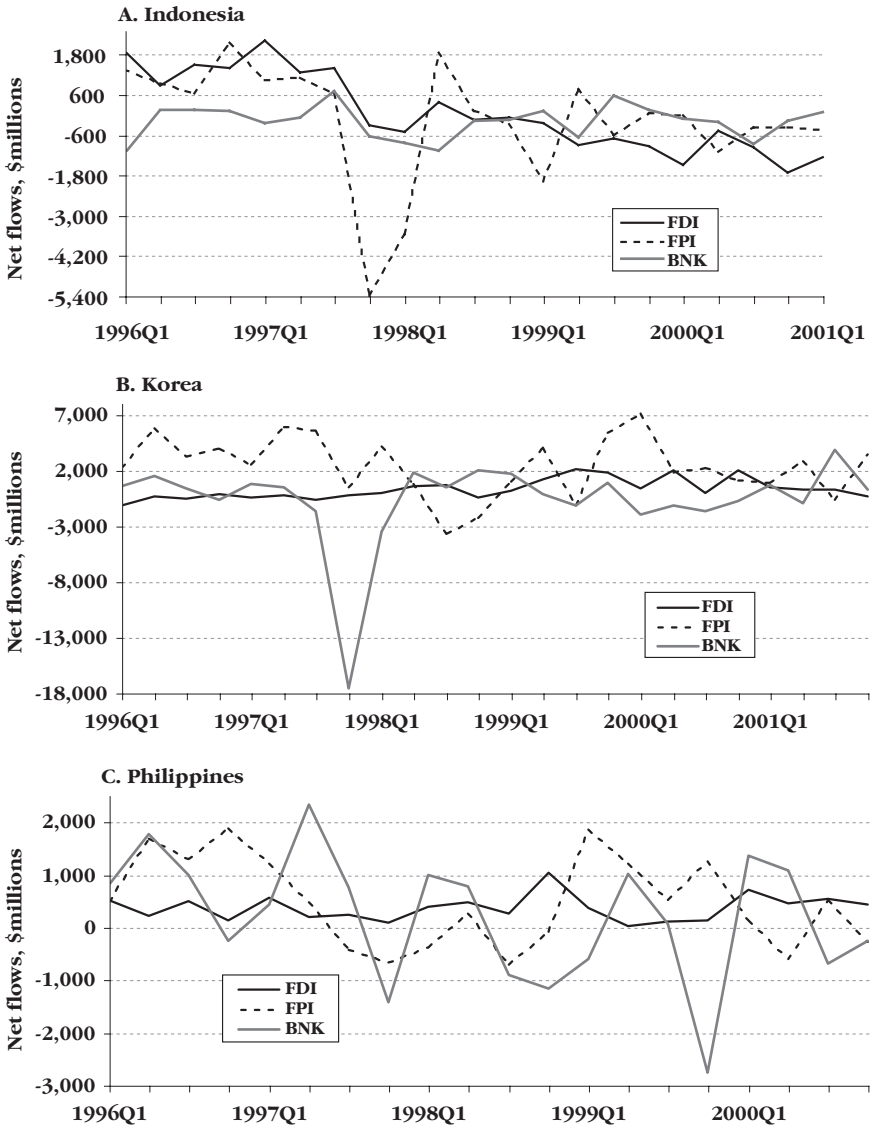


Figure 1. Net Capital Flows to Indonesia, Korea, Malaysia, Philippines and Thailand, 1996q1–2001q1.

FDI, foreign direct investment; PFI, portfolio investment; BNK, bank credit.

Source: As for Table 1.

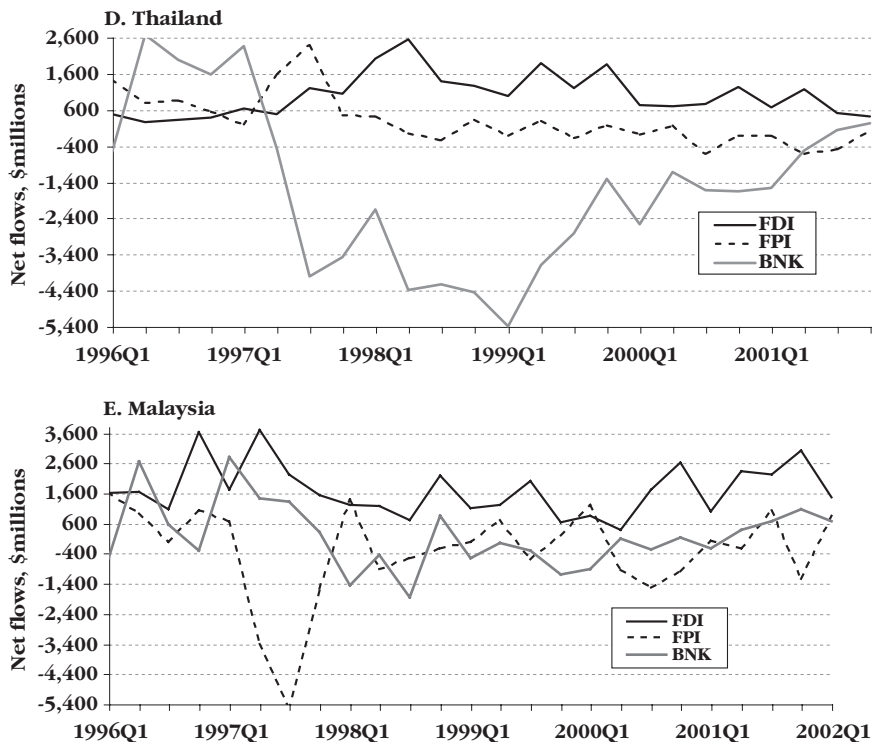


Figure 1. continued.

the first quarter of 1998) than in the other countries. Malaysia and the Philippines, too, suffered massive contractions in capital inflows (\$12 billion in Malaysia and \$8.8 billion in the Philippines between 1996 and 1997) but total net inflows remained positive throughout.

The behaviour of FDI inflows into these countries in the context of the crisis was strikingly different from what we can observe for total net capital flows. In 1999, there was an annual contraction in total net FDI inflows to the five countries of about 15% (from \$13.9 billion in 1996 to \$11.2 billion in 1997). But these flows recovered swiftly to precrisis levels by 1998. It is therefore clear that the massive contraction of total capital flows to these countries originated in the other two components of foreign capital – portfolio flows and bank credit. Total net FDI inflow to the five countries during 1997 and 1998 (\$25.7 billion) was only 0.4% lower than the total during the two pre-crisis years 1995 and 1996 (\$25.6 billion). A similar comparison for portfolio capital and bank credit (including unclassified flows) reveals massive contractions of 161% (from \$55.7 to –\$0.7

Table 2. Announced values of mergers and acquisitions by foreign firms in Asian crisis countries, 1990–2001 (US\$ million)

Country	1990–1994 [†]	1995	1996	1997	1998	1999	2000	2001
Indonesia	747	809	530	332	683	1,164	819	3,529
Korea	676	192	564	836	3,973	10,062	6,448	3,648
Malaysia	1,221	98	768	351	1,096	1,166	441	1,449
Philippines	1,446	1,208	462	4,157	1,905	1,523	366	2,063
Thailand	778	161	234	633	3,209	2,011	2,569	657
Crisis five total	4,868	2,468	2,558	6,309	10,866	15,926	10,643	11,346

[†]Annual average.

Source: UNCTAD (2002), Annex Table B.7.

billion) and 220% (from \$55.1 to –\$66.4 billion), respectively.⁶ Interestingly, a comparison among the five countries suggests an inverse relationship between the share of FDI in total net flows in the lead-up to the crisis and the degree of contraction in net inflows in the aftermath of the crisis as Table 3 indicates.

Table 2 shows that, following the onset of the crisis, there was a significant increase in FDI coming in the form of cross-border mergers and acquisitions (M & A, or ‘fire-sale FDI’ *à la* Krugman 2001) to all five countries. Total approved (announced) average annual M & A in the five countries recorded a 120% increase between 1990 and 1996 and 1997–2001 (from \$4.5 to \$11.1 billion). The individual country increases were: Indonesia, 172%; Korea, 834%; Malaysia, 87%; Philippines, 142%; and Thailand, 269%.⁷

In Korea the crisis-driven slowdown in net FDI inflows lasted for only about two quarters, as Figure 1 shows. From then on, these flows started to increase significantly as investors began to respond to the new FDI liberalisation initiatives and started to take part in takeover and acquisition activities.⁸ Total net flows in 1999 were almost 20% higher than the levels recorded in 1996. It is important to note that the post-crisis increase in net FDI flows in Korea were aided somewhat by a decline in outward investment by Korean companies owing to their domestic financial troubles. However, the overall post-crisis increases in net inflow are not much different from that of inward flows. In Thailand, the pickup in net FDI inflows (the pattern of which is not much different from that of inward flows,

6 The data sources used here do not permit precise separation of ‘other flows’ from bank credit. But based on tentative estimates derived from other sources (in particular IMF, *World Economic Outlook*) for all emerging market economies, we believe that more than 80% of the values reported under the ‘Bank credit and other’ item in Table 1 consist of bank credit.

7 Unfortunately, the available data do not permit estimation of the relative contribution of M & A to gross FDI inflows. Announced M & A figures (Table 2) are generally believed to overstate the realised (balance of payments-based) FDI reported in Table 1.

8 As part of policy reforms undertaken in response to the crisis, all five countries liberalised their FDI regimes resulting in a considerable policy convergence among them. For details, see Kim and Hwang (2000); Athukorala (2001); and UNCTAD (1998).

Table 3. Percentage change in net capital flows during 1997–98 over 1995–96

	Indonesia	Korea	Malaysia	Philippines	Thailand	Total
FDI	-77.0	82.7	-27.6	16.5	293.0	-0.4
Contraction in net capital inflows 1997–1998 over 1995–1996 (%)	-408.7	-132.3	-161.0	-87.0	-206.9	160.5

Source: Computed from Table 1.

given small outward flows from the country) started from about the second quarter of 1998. In sharp contrast to the experiences of Korea and Thailand, in Indonesia, net FDI flows continued to contract from the last quarter of 1997 (with the exception of a mild reversal in 1998), reflecting the continued deterioration in the overall investment climate.

Net FDI flows to Malaysia declined from \$7.9 billion in 1996 to \$6.0 billion in 1997 (a 24% contraction) and have remained virtually flat at that level from about mid-1998, compared to a significant increase in flows to Korea and Thailand. It could well be that the prolonged period of policy and political uncertainty following the onset of the crisis, and widespread market scepticism about the fate of Malaysia's unorthodox reform package introduced in September 1998, may have played a role. However, one should be cautious in deriving inferences from a comparison of Malaysia's post-crisis FDI experience with that of Thailand and Korea for a number of reasons. First, in Thailand and Korea acquisition by foreign companies of assets or equity of domestic companies has been an important component of foreign capital inflows during this period. Despite the severity of the downturn, corporate distress was far less widespread in Malaysia than elsewhere, and there were simply fewer 'bargain assets' for mergers and takeovers. Moreover, unlike Korea and Thailand, Malaysia did not resort to promoting acquisition and takeovers by foreign companies as part of the ongoing process of corporate and banking restructuring. Second, compared to Korea and Thailand (particularly the former), Malaysia's foreign investment regime remained much more liberal for a long time, and in some sectors the presence of MNE had already reached very high levels by the onset of the crisis. Thus the post-crisis increase in FDI in the former countries compared to Malaysia may, to a significant extent, reflect 'catching-up' entry by foreign firms following the new FDI liberalisation initiatives. Third, in the immediate precrisis years, intraregional inflows (particularly from Korea and Taiwan) accounted for over one-third of total FDI inflows to Malaysia and these flows dwindled following the onset of the crisis.

Table 4 provides data on direct investment by US MNE in the five countries, disaggregated by its three components – equity capital, intercompany debt and reinvested earning. The time patterns of US FDI in the five countries are by and large consistent with those revealed by the data of aggregate FDI (balance of pay-

Table 4. US direct investment in Asian crisis countries, 1994–2001 (US\$ million)

Investment	1994	1995	1996	1997	1998	1999	2000	2001
Indonesia								
Equity capital	444	-67	77	-612	616	197	-100	-1
Intercompany debt	1,729	435	-152	-234	-618	231	641	-137
Reinvested earnings	-112	151	1,031	867	463	-1,012	666	132
Total	2,061	519	956	21	461	-584	1,207	291
Korea								
Equity capital	154	282	102	337	-69	834	771	25
Intercompany debt	-78	185	-19	49	134	391	667	278
Reinvested earnings	314	584	668	295	566	304	862	651
Total	390	1,051	752	681	631	1,531	2,300	953
Malaysia								
Equity capital	197	166	179	134	63	-86	-32	32
Intercompany debt	76	243	D	91	-256	-926	500	-713
Reinvested earnings	280	628	754	509	-278	573	1,003	132
Total	553	1,037	1,298	733	-470	-439	1,471	-549
Philippines								
Equity capital	75	D	3	D	103	D	-12	2
Intercompany debt	152	D	362	D	62	D	-328	149
Reinvested earnings	187	171	373	289	122	58	241	-105
Total	414	269	738	107	287	-213	-99	47
Thailand								
Equity capital	145	97	D	D	407	883	288	-64
Intercompany debt	352	131	D	D	73	203	-12	259
Reinvested earnings	206	458	550	-42	-56	-17	773	473
Total	703	686	849	-16	424	1,068	1,050	668
Crisis five total								
Equity capital	1,015	NA	NA	NA	1,120	NA	915	-6
Intercompany debt	2,231	NA	NA	NA	-605	NA	1,468	-164
Reinvested earnings	875	1,992	3,376	1,918	817	-94	3,545	1,283
Total	4,121	3,562	4,593	1,526	1,333	1,363	5,929	1,410

D, Suppressed to avoid disclosure of data of individual companies; NA, total cannot be computed because of suppression of data for one or more countries.

Source: Compiled from the US Bureau of Economic Analysis electronic database. Available from URL: http://www.bea.doc.gov/bea/di/diacap_98.htm

ments-based) reported in Table 1. The time patterns are much closer for Korea, Thailand and Indonesia. In Malaysia and the Philippines the decline in US FDI in the aftermath of the crisis is much sharper than is revealed by data in Table 1. These differences may reflect both estimation errors (mostly in the data reported in Table 1) as well as differences in the behaviour of FDI flows from different countries. Interestingly, the disaggregated data in Table 4 suggest that the inclusion or exclusion of reinvested earnings as part of total FDI does not matter much in an intertemporal comparison of FDI; all three constituent series seem to move in unison over time. However, the data do suggest that the widely used

Table 5. Asian crisis countries: Foreign direct investment as a percentage of gross domestic investment, 1990–2001 (%)

Country	1990–1994	1995	1996	1997	1998	1999	2000	2001
Indonesia	3.8	7.6	9.2	7.7	-1.4	-9	-12.2	-11.2
Korea	0.7	1.0	1.2	1.7	5.7	8.3	7.1	7.0
Malaysia	15.7	26.0	27.9	29.0	38.0	48.3	40.0	38.2
Philippines	6.5	9.0	7.8	6.1	16.6	3.9	15.0	13.5
Thailand	4.5	3.0	3.1	7.6	29.2	24.3	12.5	13.2

Source: Compiled from UNCTAD, *World Investment Report* (various years) and Bank Negara Malaysia, *Quarterly Statistical Bulletin* (for Malaysia).

balance of payments-based FDI figures (which do not cover reinvested earnings) tend to understate significantly the level of FDI in a given host country. For instance, reinvestment earnings accounted on average for 57% of total annual US direct investment in the five countries during 1994–2001.

ROLE OF MNE AFFILIATES IN ADJUSTMENT AND RECOVERY

Did foreign-owned firms behave differently from domestically owned firms in the context of the crisis? In particular, did their response to the crisis contribute to the agility of the crisis-affected economies? A definitive analysis of this issue is not possible because of data limitations. In this section an attempt is made to piece together fragments of relevant data from various sources.

Table 5 reports estimates of the relative contribution of FDI to total gross domestic investment (GDI) in the five countries. Interestingly, in Korea, Malaysia, Philippines and Thailand the FDI/GDP ratio was higher during the crisis years, compared to precrisis levels. In other words, FDI weathered the crisis far better than domestic private investment. The important inference is that FDI can act as an effective cushion against a possible collapse in domestic investment during a crisis. This inference, however, needs to be qualified owing to data problems. FDI and GDI series used here come from different data systems (balance of payments accounts and national accounts, respectively) and are presumably subject to estimation errors of different magnitudes, which are unlikely to be consistent over time.⁹

9 In particular, the FDI series capture financial flows relating to cross-border mergers and takeovers in addition to greenfield FDI, but conceptually only the latter is captured in the GDI series. Moreover, as already noted, FDI series cover only equity flows and intercompany debt, whereas GDI series should capture reinvested earnings as well. In addition to these differences in the actual coverage, these series are also subject to measurement errors of different magnitudes.

Lipsey (2001) examined the behaviour of affiliates of US MNE in East Asian countries during 1995–1998 using data from the annual publication *U.S. Direct Investment Abroad*, combined with relevant host-country data. His analysis yields a number of interesting points. Exports by US manufacturing affiliates continued to rise, overall and in all the nine individual economies (China, Hong Kong, Korea, Singapore, Taiwan, Indonesia, Malaysia, Philippines and Thailand) despite a generally negative growth in total exports. As a result, the share of US affiliates in their host country exports, which had been rising gradually, jumped from 4.3% in 1995 to 6.4% in 1998. For the four crisis-hit countries the increase was even sharper, from 3.2 to 5.2%.

Second, as local sales declined sharply following the onset of the crisis (by 17% in all East Asia countries and 30% in the crisis five between 1997 and 1998) the affiliates of US MNE in these countries were quick to redirect their sales away from host country markets in an attempt to minimise the impact of the crisis on their overall performance. Consequently, the ratio of exports to total sales of these affiliates jumped in every country except China. The largest changes were in the four crisis countries in South-East Asia. Affiliates in Singapore, Taiwan, and China, the economies less affected by the crisis, did not have significant market switching. Export sales ratios of affiliates in Korea remained virtually unchanged, but it is not possible to read much meaning into this figure because majority-owned affiliates are not representative of the overall US MNE presence in that country.

Third, total employment in US affiliates in the five crisis countries declined at a much lower rate than that recorded by total national employment in these countries. Fourth, as in the case of employment, the decline in fixed capital formation (expenditure on plant and equipment) by affiliates in 1998 in all crisis countries was far smaller than the massive contractions recorded in national fixed capital formation estimates, suggesting that, despite the crisis, the US firms continued to take an optimistic view about the long-run economic prospects for the region. All in all, these findings support the hypothesis that foreign-owned firms have behaved differently from domestic firms in their response to the crisis, aiding the adjustment process in the crisis-affected countries.

The findings of Ramstetter (2000) on the relative performance of MNE affiliates in Indonesian manufacturing following the onset of the crisis corroborate those of Lipsey (2001). Even during the depth of the crisis in 1998, MNE affiliates, particularly those with large ownership shares, were not reducing their presence in Indonesian manufacturing. The combined total employment share of MNE affiliates in fact increased from 18.5% in 1996 to 19.1% in 1998. In an interindustry comparison (at the three-digit level of the International Standard Industry Classification [ISIC]), MNE affiliates in more export-orientated sectors exhibited superior performance compared to those in domestic market-orientated sectors. In particular, the MNE-dominated machinery and equipment sector

(including electronics) played a crucial role in the recovery of manufacturing exports from Indonesia in 1999.

In Table 6, we have pieced together a data set to shed some light on the relative performance of MNE affiliates in Malaysian manufacturing during the crisis. The table covers 20 three-digit industries for which the required data are available. Manufacturing performance is measured in terms of three key variables: real output, employment and real wages. For these three variables, deviation from the overall growth trend (for the entire period 1987–2000) during the crisis years (1998–2000) was measured by fitting a least-square trend line with a slope dummy for the crisis years. The MNE presence in the manufacturing sector is measured alternatively as the MNE share in total manufacturing output and employment.

Table 6 provides support for the proposition that MNE presence has acted as a cushion against output and employment contraction during the crisis. The MNE-dominated electronics industry, which accounts for over one-third of manufacturing value added and employment, is among the 3-digit industries with the lowest measured contraction in output and employment during the crisis years. Many other industries with a higher MNE presence are also at the lower end of the ranking of industries in terms of the degree of employment and output contraction. For the 20 three-digit industries listed in Table 6, the rank correlation coefficients between the MNE share in sectoral output (column 1), and trend deviation in output and employments during the crisis (1998–2000) (columns 5 and 6) are 0.28 and 0.24, respectively. Both are statistically significant at the 5% level. Industries with greater MNE participation are also characterised generally by lower real wage compression during the crisis. The correlation coefficient between the MNE share in employment and the trend deviation in real wages during the crisis is 0.51, which is significant at the 1% level.

In sum, the data presented in this section suggest that MNE affiliates were instrumental in ameliorating the severity of economic collapse and facilitating the recovery process. This finding is consistent with the available studies on the behaviour of MNE affiliates in the 1994–1996 financial crisis in Mexico (Lipseý 2001) and a number of Latin American countries during the debt crisis in the early 1980s (Blomstrom & Lipsey 1993).

CONCLUDING REMARKS

Contrary to some pessimistic predictions, the 1997–1998 Asian financial crisis has not resulted in a major discontinuity in FDI flows to the region, apart from a modest decline in the immediate aftermath of the crisis. The mass exodus of capital from all five countries was accounted for by foreign portfolio investment and bank credit. While the net long-term national gains from FDI inflows remain a debatable subject, the evidence harnessed in this article suggests that they play a useful stabilising role in the crisis by limiting the fall in aggregate flows and

Table 6. Multinational enterprise presence and post-crisis performance in Malaysian manufacturing

ISIC code	Item	1996			Post-crisis trend deviation			
		Composition of value added (%)	Composition of employment (%)	MNE share in value added (%)	MNE share in employment (%)	Real output [‡]	Employment	Real wage [§]
311-12	Food	6.9	6.9	20.0	13.6	-12.5	-21.4	-4.7
313	Beverages	0.8	0.4	58.4	39.1	-19.5	-20.7	-2.6
314	Tobacco	1.1	0.9	69.7	24.8	-23.8	-12.6	28.3
321	Textiles	2.9	3.5	51.8	42.2	-11.3	-25.0	-5.9
322	Wearing apparel	1.5	4.3	43.7	48.2	-10.7	-15.4	-8.4
331	Wood and cork products	5.4	10.3	14.7	14.4	-14.2	-15.0	-11.0
341	Paper and paper products	1.7	1.7	13.5	10.4	-9.3	-8.0	-1.2
342	Printing and publishing	2.6	2.5	8.3	12.0	-13.9	-13.6	-16.4
351	Industrial chemicals	6.0	1.0	62.4	46.2	-0.6	-9.4	11.9
352	Non-industrial chemicals	1.8	1.3	64.2	46.1	-9.8	-8.9	6.4
355	Rubber goods	4.0	4.8	65.3	56.1	-12.6	-8.9	-5.7
356	Plastic products	3.8	5.2	63.5	57.6	-8.5	-3.9	-10.7
362	Glass and glass products	1.0	0.6	17.8	29.8	-6.7	-14.4	44.8
369	Non-metallic minerals	4.1	3.2	10.5	9.6	-15.8	-12.7	-2.2
371	Iron and steel products	2.6	1.7	8.1	10.5	-19.0	-12.7	-21.3
372	Non-ferrous metal	0.9	0.7	64.2	75.1	-4.9	-10.8	13.2
381	Fabricated metal products	4.1	4.9	35.5	31.3	-10.4	-5.3	-8.2
382	Non-electrical machinery	5.6	5.2	23.7	24.2	-20.5	-17.8	19.0
383	Electrical machinery	30.5	29.9	95.3	96.7	-8.8	-11.8	20.7
38321	Consumer electronics	5.3	5.8	93.4	88.7	-4.1	-17.5	-5.0
38329	Semiconductors and electronics	21.2	19.6	90.5	89.5	-6.3	-9.0	4.6
38391	Cables and wires	1.8	1.9	49.9	75.4	-17.6	-15.4	20.0
384	Transport equipment	6.3	3.8	6.5	11.7	-17.0	-14.5	-1.7
Total	Total manufacturing	100.0	100.0	44.4	45.4	-9.0	-11.7	0.6

ISIC, International Standard Industry Classification; MNE, multinational enterprise. †Estimated by fitting the following equation: $\text{Log } X = \alpha + \beta_1 T + \beta_2 D \times T$, where X is the relevant variable (real output, employment, real wage) for the period 1987-2000, T is time trend and D is a dummy variable, which takes value 1 for 1998-2000 and zero for other years. The post-crisis trend deviation is given by $[\beta_2/\beta_1] \times 100$; ‡Growth rate of gross output deflated by wholesale price index of domestic manufacturing; §Growth rate of nominal wages deflated by the consumer price index.

Sources: Wholesale and consumer price indices are from the Ministry of Finance, Malaysia, *Economic Survey* (various issues). The other data series are compiled from the Department of Statistics, Malaysia, *Annual Survey of Manufacturing Industries 1997* (published report and unpubl. data on output and employment of MNE affiliates) and *Index of Industrial Production* (various issues).

facilitating the adjustment process. MNE affiliates, both export- and domestic-orientated (but particularly the former), seem to contribute to the agility of an economy in the wake of a financial crisis through their ability to maintain output and export levels with the help of their global trading networks. FDI was also found to be much more resilient to a crisis compared to domestic investment, presumably because of the ability of MNE affiliates to tap international and intra-company financial resources in the face of a crisis-driven collapse of the domestic banking system. In the case of the Malaysian capital control controversy, there is no clear evidence to suggest that controls on ‘hot money’ movements adversely affected that country’s image as an attractive location for FDI.

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