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Capital Flight from Thailand, 1980–2000

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6. Capital Flight from Thailand, 1980–2000

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INTRODUCTION

We measure capital flight from Thailand from 1980 to 2000 and analyze the relationships between capital flight and capital inflows, economic growth, crisis, and financial liberalization. We define capital flight as net private unrecorded capital outflows from a capital-scarce developing country, measured as the difference between the recorded sources and uses of funds. This definition is commonly referred to as the 'residual' definition of capital flight (see, for example, Erbe 1985; Morgan Guaranty 1986; World Bank 1985).

As discussed in Chapter 3, there are several definitions of capital flight: capital flight as the undeclared stock of external assets of domestic residents (Dooley 1986); capital flight as only 'hot' money (Cuddington 1986); capital flight as illegal activities like trade faking (see, for example, Bhagwati 1964; Gulati 1987); and capital flight as a 'mirror' statistic of domestic residents' deposits abroad (BIS 1984). In this particular case study, we choose to use the residual definition and measure of capital flight because net unrecorded capital outflows suggest the extent of lost funds that could have been invested in the domestic economy to generate additional output and employment.

Many studies investigate capital flight because of its link with external debt (see, for example, Lessard and Williamson 1987; Boyce 1992). Highly indebted countries like Mexico, Brazil, Argentina, or the Philippines have experienced significant capital flight. Thailand, however, is not a highly indebted country, so presumably capital flight would not be an important concern for the country. Yet our research shows that Thailand experienced a sizeable amount of capital flight in real terms for most of the period covered in the study.

To the best of our knowledge, there are no studies specifically on capital flight from Thailand. Studies like Morgan Guaranty (1986) and Schneider (2003), for example, contain estimates of capital flight, including from

Thailand, but they do not discuss capital flight specifically from this country. We illustrate in this chapter why capital flight is an important concern for Thailand; to this end, we explore five issues linked to capital flight.

The first issue we explore is the link between capital inflows and capital flight. While capital inflows can directly influence capital flight, it is possible that these inflows will be accumulated, especially when the economy is expanding, but will exit in the future when economic conditions are no longer favorable to capital (such as an economic crisis). In this latter scenario, we would expect capital flight to be substantial. In the case of Thailand, our study confirms this contention: when there was an economic expansion, capital inflows were larger than capital flight; when there was an economic crisis, capital flight exceeded capital inflows.

The second issue is the relationship between economic growth and capital flight. Conventional analysis suggests that economic growth implies high returns to capital, both domestic and foreign, and an attractive investment environment in general. As such, we expect capital not to flee in a high growth environment. In the case of Thailand, our research confirms this argument: economic growth and capital flight are inversely related.

Furthermore, we explore the relationship between economic crises or shocks, in particular the 1983–87 banking crisis and 1997–98 Asian financial crisis,[1] and capital flight. In both cases, our research supports the notion that economic crisis induces capital flight. In the case of Thailand, capital flight was especially high during these economic crises.

We then go on to explore the relationship between financial liberalization and capital flight. Conventional analysis suggests that favorable policy changes (like opening the capital account and financial market integration) will discourage capital from fleeing. The alternative view is that financial liberalization produces an environment that is relatively volatile for capital flows, creating uncertainty, and making the economy vulnerable to economic crises and thus capital flight. Our research supports the latter argument: in the case of Thailand, financial liberalization resulted in high and volatile levels of capital flight.

Finally, we explore the potential contribution of capital flight if it were instead invested in the domestic economy. Put another way, how much additional output and employment could have been generated in Thailand if the capital that fled had been repatriated, or if capital had not fled but had been invested in the country? Our research demonstrates that there would have been substantial potential gains for the Thai economy if capital flight had been repatriated or invested in the country.

This chapter has five sections. Following this introduction, Section 2 presents a description of the methodology, and Section 3 presents the data and results. Section 4 presents our analysis, particularly presenting relationships between capital flight and capital inflows, economic growth,

economic shocks or crises, and financial liberalization policies. Section 5 draws conclusions.

DESCRIPTION OF THE METHODOLOGY

We measure capital flight as the residual of total capital inflows and recorded foreign exchange outflows. The sum of net additions to external debt ($\Delta DEBT$) and net foreign investments (NFI) constitute total capital inflows, and the current account balance (CA) and international reserves accumulation (ΔRES) constitute recorded foreign exchange outflows.[2] Thus,

$$KF_t = \Delta DEBT_t + NFI_t - (CA_t + \Delta RES_t). \quad (6.1a)$$

Estimates from equation 6.1a are called baseline capital flight. Positive estimates imply capital flight; negative estimates imply 'reverse' capital flight (i.e. net unrecorded capital inflows).

Data used to estimate Equation 1a might contain errors, in particular errors in the capital account and in the current account. Some adjustments are therefore needed to correct them.

In the capital account, one adjustment concerns total external debt. Long-term debts are acquired from different countries and expressed in their respective denominations; as such, currency fluctuations will affect their respective values across periods. Accordingly, we compute the foreign exchange adjusted external debt in time *t–1* (FX_DEBT) to obtain adjusted external debt ($\Delta DEBTADJ$) in time t.[3]

$$\Delta DEBTADJ_t = DEBT_t - FX\_DEBT_{t-1} \quad (6.2)$$

All other things constant, the appreciation of a hard currency relative to the US dollar increases estimates for equation 2. Since $DEBT_t$ is what is normally reported, $\Delta DEBTADJ_t$ captures unreported debt inflows. Accordingly, Equation 6.1a is re-estimated as

$$KF_t = \Delta DEBTADJ_t + FDI_t - (CA_t + \Delta RES_t). \quad (6.1b)$$

Estimates from Equation 6.1b are called baseline capital flight with adjusted external debt.

The other adjustment concerns the current account. Specifically, export and import data could be inaccurate because of systematic trade misinvoicing either through import overinvoicing or export underinvoicing. As such, capital flight also takes place through these means. Import underinvoicing represents technical smuggling undertaken to evade custom duties and

restrictions, which can be interpreted as a form of reverse capital flight. Export overinvoicing may be a response to government incentives that reward industries based on performance indicators like export revenues.

Three steps are required to compute trade misinvoicing. The first is to compute export and import discrepancies for Thailand in its trade with major trading partners.

$$DX_t = PX_t - CIF \cdot X_t \tag{6.3a}$$

$$DM_t = M_t - CIF \cdot PM_t \tag{6.3b}$$

where DX_t and DM_t are the total export and import discrepancies, respectively; PX_t is the value of the trading partners' imports from Thailand as reported by trade partners, and PM_t is the value of the trading partners' exports to Thailand as reported by trade partners; X_t and M_t are Thailand's exports to and imports from major trading partners, respectively, as reported by the country.[4] *CIF* is the c.i.f./f.o.b. factor to adjusting export data for cost of freight and insurance.

The second step is to calculate the global export and import discrepancies for trade misinvoicing by multiplying these discrepancies with the inverse of the shares of the major trading partners in Thailand's exports and imports.

The last step is to find the sum of export and import discrepancies from the second step to get total trade misinvoicing; that is,

$$MIS_t = DX_t + DM_t \tag{6.4}$$

We then add this calculation to Equation 6.1b to obtain total adjusted baseline capital flight (*Adj KFlight*),

$$Adj\ KFlight_t = KF_t + MIS_t \tag{6.1c}$$

We also compute real capital flight (*RKF*) in order to make estimates comparable across periods by deflating Equation 6.1c using the United States producer price index (PPI) with a base year of 1995,[5]

$$RKF_t = Adj\ KFlight_t / PPI_t \tag{6.5}$$

We note that capital flight is like capital invested abroad, thus such capital will earn some return. We compute the stock of capital flight (*SKF*), which is accumulated capital flight and the interest earnings on capital flight.

$$SKF_t = [SKF_{t-1} \cdot (1 + r_t)] + Adj\ KFlight_t \tag{6.6}$$

where r is the interest rate on the 90-day United States Treasury bill.[6] Equation 6.6 is an estimate of the total opportunity cost of capital flight at time t.

CAPITAL FLIGHT FROM THAILAND: DATA AND RESULTS

Description of the Data

In this section, we describe the data on Thailand's external debt, net foreign investment, current account and international reserves accumulation. The data we use were compiled from the IMF's Direction of Trade Statistics CD-ROM (2003), International Financial Statistics (online) and the World Bank's Global Development Finance CD-ROM (2002) and World Development Indicators CD-ROM (2003).

External debts outstanding

Thailand's total external debt grew from $8.3 billion to $23.3 billion during the 1980s (Table 6.1). In 1990 total external debt stood at $28.1 billion and grew swiftly to $100 billion by 1995. For the period 1995 to 1999, Thailand's total debt averaged $103.8 billion. By 2000, total external debt had declined to $79.7 billion.

Table 6.1 presents a breakdown of total external debt according to long-term and short-term loans as well as the use of IMF credits. Thailand's long-term external debt grew significantly over the years and remained a significant share of total external debt in the period 1980 to 2000. In 1980, long-term debt stood at $5.6 billion. It increased to $13.1 billion in 1985 and expanded further, reaching $17.1 billion in 1989. Following a jump in 1991 to $25.2 billion, long-term debt expanded throughout most of the 1990s, peaking at $72 billion in 1998, with significant increases throughout the period 1994 to 1998. Only in 1999 did external debt show some decline. In 2000, long-term external debt was $61.7 billion. For both decades, long-term debt was a significant portion of total external debt.

Short-term debt saw significant increases from 1980 to 2000, especially in the early 1990s, falling gradually after 1995. Short-term debt, however, never reached 50 percent of total external debt. From 1980 to 1987, it remained fairly steady, averaging about $3 billion. This value began to accumulate gradually beginning in 1988, growing to $14.7 billion by 1992, with its peak at $44.1 billion in 1995. In 2000, Thailand's short-term debt decreased to $14.9 billion.

Table 6.1 External debt and other capital flows

Year	Long-term debt	Short-term debt	Use of IMF credits	Total debt	Net foreign investment	Current account	Change in reserves
1980	5,645.8	2,303.0	348.3	8,297.1	244.0	(2,076.3)	(73.5)
1981	7,115.6	2,878.0	858.0	10,851.6	304.0	(2,571.1)	(305.9)
1982	8,347.9	3,041.0	846.3	12,235.2	220.0	(1,003.1)	(46.5)
1983	9,544.0	3,305.0	1,040.4	13,889.4	366.0	(2,873.5)	(118.0)
1984	10,535.5	3,551.0	903.4	14,989.9	436.0	(2,108.6)	131.5
1985	13,187.0	3,200.0	1,121.6	17,508.6	205.0	(1,537.3)	316.0
1986	14,583.0	2,840.0	1,069.3	18,492.3	360.0	247.0	773.2
1987	16,693.7	2,664.0	972.4	20,330.1	1,021.0	(366.5)	1,429.2
1988	16,247.5	4,800.0	331.0	21,378.5	1,573.0	(1,654.4)	1,906.6
1989	17,104.3	6,112.0	45.3	23,261.6	3,249.0	(2,497.9)	3,395.9
1990	19,771.4	8,322.4	0.7	28,094.5	3,024.0	(7,281.1)	3,750.1
1991	25,210.8	12,492.2	0.0	37,703.0	2,218.0	(7,571.5)	4,134.4
1992	27,057.1	14,726.9	0.0	41,784.0	2,715.0	(6,303.4)	2,790.4
1993	30,003.8	22,634.2	0.0	52,638.0	4,716.0	(6,363.6)	4,256.2

1994	36,354.4	29,178.8	0.0	65,533.2	1,475.0	(8,085.4)	4,841.0
1995	55,943.5	44,095.0	0.0	100,038.5	5,079.0	(13,553.9)	6,658.5
1996	65,122.5	42,613.1	0.0	107,735.6	4,472.0	(14,691.5)	1,705.9
1997	69,434.2	37,836.0	2,428.7	109,698.9	8,383.0	(3,021.1)	(11,747.3)
1998	72,017.6	29,659.9	3,238.5	104,916.0	7,713.0	14,242.5	2,639.7
1999	69,919.3	23,418.0	3,421.3	96,758.6	7,395.0	12,427.9	5,243.8
2000	61,733.4	14,880.0	3,061.8	79,675.2	4,397.0	9,369.3	(2,115.4)

Notes:

a. Sources of raw data: Global Development Finance CD-ROM (2002) and International Financial Statistics (online).

b. Positive number suggests an inflow; a negative suggests an outflow. A positive change in reserves means an accumulation of (or increase in) reserves. External debt data are stock volumes. The other columns are flows.

Net foreign investment

Net foreign investment (NFI) was $244 million in 1980 and grew to $436 million in 1984, with a decrease in 1982 of $84 Million (Table 6.1). Following another decline in 1985, NFI picked up again and rose to $1 billion in 1987. From 1988 to 1997, NFI averaged $3.7 billion, reaching its peak of $8.4 billion in 1997. Thereafter, NFI began a downturn, dropping as low as $4.4 billion in 2000.

Current Account

The current account (CA) was in deficit over the course of the period considered, with the exceptions of 1986 and from 1998 to 2000 (Table 6.1). The average deficit between 1980 and 1985 was $2 billion; between 1987 and 1997, it was $6.5 billion. In 1986, there was a surplus of $247 million; however, the following year, the deficit on the current account returned and steadily worsened, reaching $7.3 billion in 1990. The deficit reached its highest levels in 1995 and 1996, when it stood at $13.6 billion and $14.7 billion, respectively, due to substantial reductions in exports. In 1997, the deficit contracted to $3 billion and in 1998, Thailand witnessed a surplus of $14.2 billion. Although the current account remained in surplus to 2000, in that year, the surplus decreased to $9.4 billion.

Accumulation of foreign reserves

From 1980 to 1983, there were outflows in foreign reserves of about $543.9 million (Table 6.1). From 1984 to 1996, there was a steady accumulation of foreign reserves starting with an increase of about $131.5 million in 1984 and peaking at $6.6 billion in 1995. Table 6.1 shows that there was a large decline in foreign reserves in 1997 ($11.7 billion) and again in 2000 ($2.1 billion).

Description of the results

Using Equation 6.1b, we compute estimates of baseline capital flight with adjusted external debt (Table 6.2). Figure 6.1 shows the trend of adjusted baseline capital flight as a share of gross domestic product (GDP), which relates capital flight to the size of the economy. Notice that the pattern shows a cyclical movement in capital flight; on the whole, however, the trend suggests overall flight. Notice also that between the 1980s and 1990s, there is an apparent difference in the character of the trend, with the latter decade exhibiting some systematic volatility.

Table 6.2 presents other capital flight calculations, namely real capital flight (RKF) and stock of capital flight (SKF). In 1980, RKF was $399.2 million. Real capital flight rose to $2.2 billion by 1982, dipping back down to $802.7 million in 1983, with a jump in 1985 and again in 1986 to $5.1

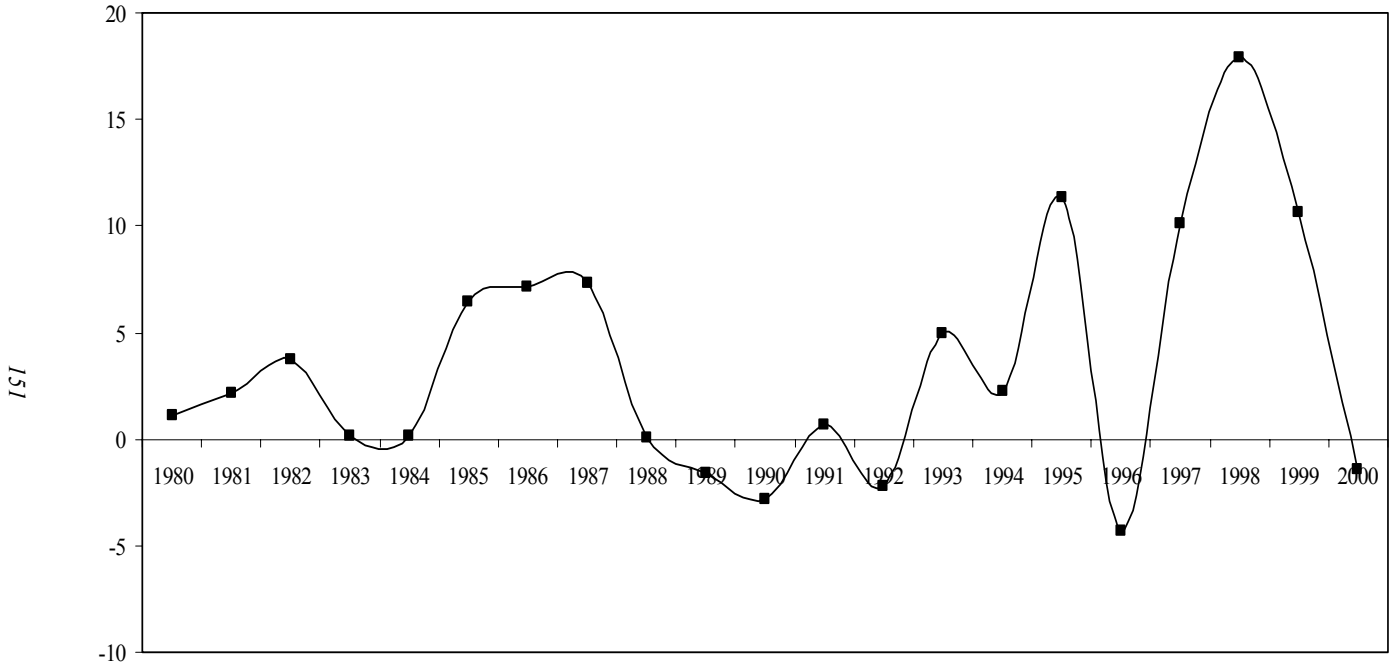

Figure 6.1 Capital flight with adjusted debt (using Equation 6.1b) as a percentage of GDP

Table 6.2 Capital flight computations (in $ millions)

Year	Baseline Kflight	Adj. Kflight (Equation 6.1c)	Real Kflight	Stock Kflight
1980	(106.5)	287.4	399.2	287.4
1981	593.2	1,250.7	1,591.2	1,578.6
1982	647.0	1,722.3	2,150.2	3,470.3
1983	(735.3)	651.0	802.7	4,420.4
1984	(703.5)	962.3	1,158.0	5,797.8
1985	870.4	3,616.6	4,373.2	9,848.6
1986	817.5	4,093.5	5,097.8	14,530.1
1987	1,063.1	3,869.3	4,695.8	19,246.6
1988	(608.4)	1,590.9	1,856.3	22,121.2
1989	(865.6)	(67.2)	(74.7)	23,850.2
1990	(3,401.6)	(1,973.6)	(2,117.6)	23,667.7
1991	120.7	1,700.5	1,820.6	27,122.0
1992	(2,297.8)	(622.9)	(663.3)	27,437.5
1993	4,950.2	10,240.5	10,745.6	38,556.1
1994	1,443.8	6,810.0	7,057.0	47,012.5
1995	19,371.8	21,809.8	21,809.8	71,412.7
1996	(4,228.2)	(3,387.3)	(3,311.2)	71,610.3
1997	19,072.5	18,980.9	18,554.1	94,221.8
1998	14,532.9	21,675.4	21,740.6	120,438.7
1999	6,431.6	18,907.8	18,795.0	144,958.9
2000	(1,211.7)	1,789.4	1,681.8	155,213.9
Ave. 1980s	97.2	1,797.7	2,205.0	
Ave. 1990s	5,478.4	9,593.1	9,611.2	
Total	55,756.3	113,907.4	118,162.3	155,213.9
Average	2,655.1	5,424.2	5,626.8	

Note: US PPP 1995 = 100.

Source: Computations of the authors.

billion. There was a decline in RKF from 1987 to 1990. Average RKF in the 1980s was $2.2 billion. In the 1990s, RKF increased, reaching around $21.8 billion in 1995 and $21.7 billion in 1998. Average RKF in the 1990s was $9.8 billion, which is more than four times the average in the previous decade. During the 1997–98 Asian Financial Crisis, total RKF was $42 billion. Total RKF for the two decades was $118.1 billion, which represents

Table 6.3 Trade misinvoicing (in $ millions)

Year	Export misinvoicing	Import misinvoicing	Total trade misinvoicing
1980	(35.0)	(35.0)	(70.0)
1981	19.9	479.0	498.8
1982	96.1	273.2	369.4
1983	(39.1)	628.7	589.7
1984	(110.3)	1,016.5	906.3
1985	365.0	743.9	1,108.9
1986	395.5	603.7	999.2
1987	28.0	162.3	190.3
1988	(315.5)	1,847.5	1,532.0
1989	(667.7)	1,780.5	1,112.8
1990	(899.8)	1,370.5	470.7
1991	(1,358.1)	2,411.9	1,053.8
1992	(774.0)	2,573.9	1,799.9
1993	69.4	4,021.8	4,091.2
1994	1,056.4	2,467.1	3,523.4
1995	1,040.8	1,753.4	2,794.2
1996	2,490.9	1,988.8	4,479.7
1997	2,497.1	1,211.5	3,708.6
1998	2,243.6	(638.4)	1,605.3
1999	2,802.6	3,058.5	5,861.2
2000	2,088.9	1,474.8	3,563.7
1980s ave	(26.3)	750.0	723.7
1990s ave	916.9	2,021.9	2,938.8
Total	10,994.8	29,194.2	40,189.0
Average	523.6	1,390.2	1,913.8

Note: For exports, positive numbers mean underinvoicing and negative numbers mean overinvoicing. For imports, positive numbers mean overinvoicing and negative numbers mean underinvoicing.

Source: Authors' computations

a substantial loss of capital to Thailand. SKF in 2000 was $155.2 billion.[7] This estimate represents the opportunity cost of capital flight.[8]

In addition, we take note of trade misinvoicing. Average misinvoicing in Thailand for the two decades was $1.9 billion.[9] Estimates in Table 6.3 show that overall trade misinvoicing increased over the two decades. In the 1980s,

average total trade misinvoicing was $723.7 million and in the 1990s, it was $2.9 billion.

Table 6.3 suggests that export underinvoicing and import overinvoicing are regular sources of capital flight through trade. But it is interesting that there was some export overinvoicing in some years in the 1980s and early 1990s. This finding may illustrate the notion that trade misinvoicing was undertaken to cover price uncertainties and risks in the export market. But more interestingly, export underinvoicing is large particularly in the latter part of the 1990s, while import overinvoicing is large particularly in the early 1990s.

CAPITAL FLIGHT FROM THAILAND: ANALYSIS

Capital Inflows and Capital Flight

We further examine the link between capital inflows and capital flight. In Figure 6.2, we find that Thailand experienced a swift expansion of capital inflows beginning in the late 1980s, as the country became increasingly outward-oriented and integrated into global trade and finance. Following a brief slump in inflows in the early 1990s, capital inflows grew very rapidly. The turning point for capital inflows seems to have occurred in 1995, when capital inflows declined and continued to do so in 2000. Although some capital, particularly net foreign investments (NFI), continued to flow into Thailand, the total inflows were nowhere near pre-crisis levels. Total capital inflow was negative after 1999.

External debts have clearly comprised a greater share in capital inflows from 1980 to 2000. NFI only began to increase its share in capital inflows in the late 1980s, coinciding with the end of the rule of Prime Minister General Prem Tinsulanonda (1979–1988). Democracy and sound macroeconomic policies marked the economic boom that started in 1988. It is also noteworthy that after the Plaza Accord in 1985, Japanese firms started to relocate their foreign investments to Thailand, and subsequently, Taiwanese and South Korean foreign investments followed suit. While an increase in NFI is clear, change in total external debts ($\Delta DEBT$) play a much more significant role in driving capital inflows.

The structure of Thailand's total external debts is shown in Figure 6.3 (see Table 6.1). From 1980 to 2000, long-term external debt unambiguously comprised a greater share of Thailand's external debt position. The share of short-term external debt increased from 1986, reaching a maximum of approximately 44 percent in total external debt in 1995 and 1996.

There is clearly a rise in short-term indebtedness as the country experienced sustained economic growth from 1986 to 1995. This finding is

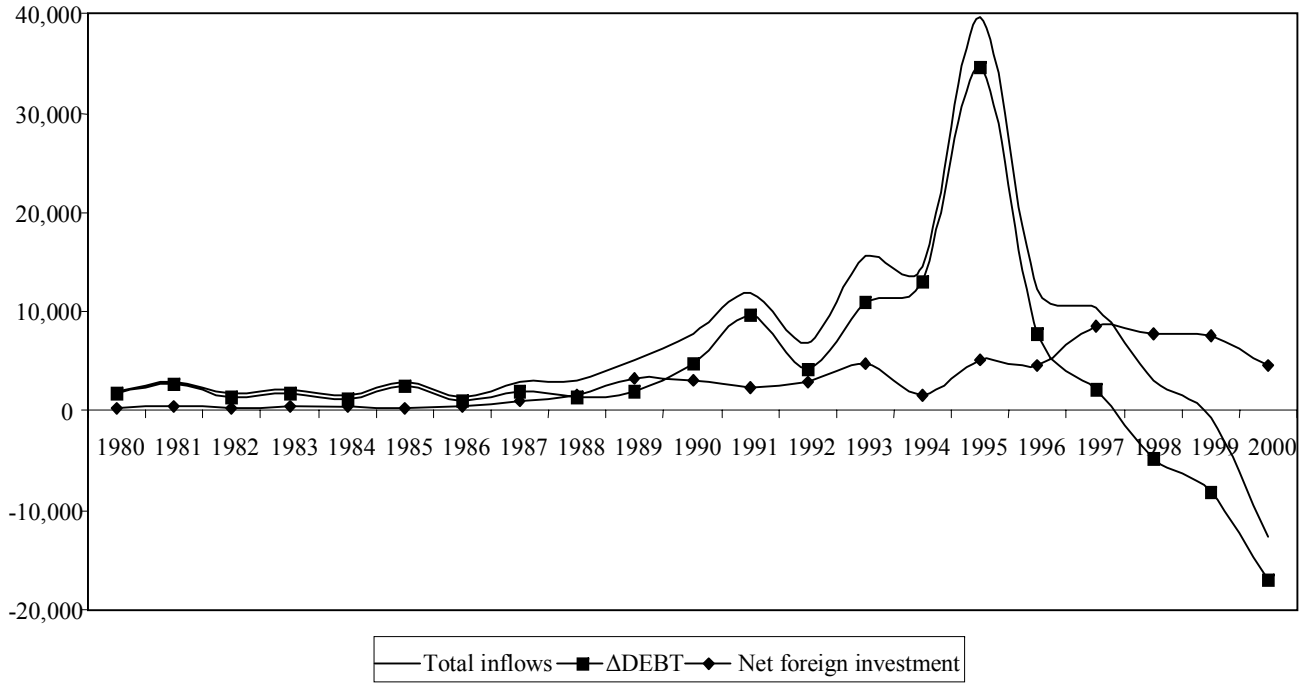

Figure 6.2 Composition of capital inflows (in $ millions)

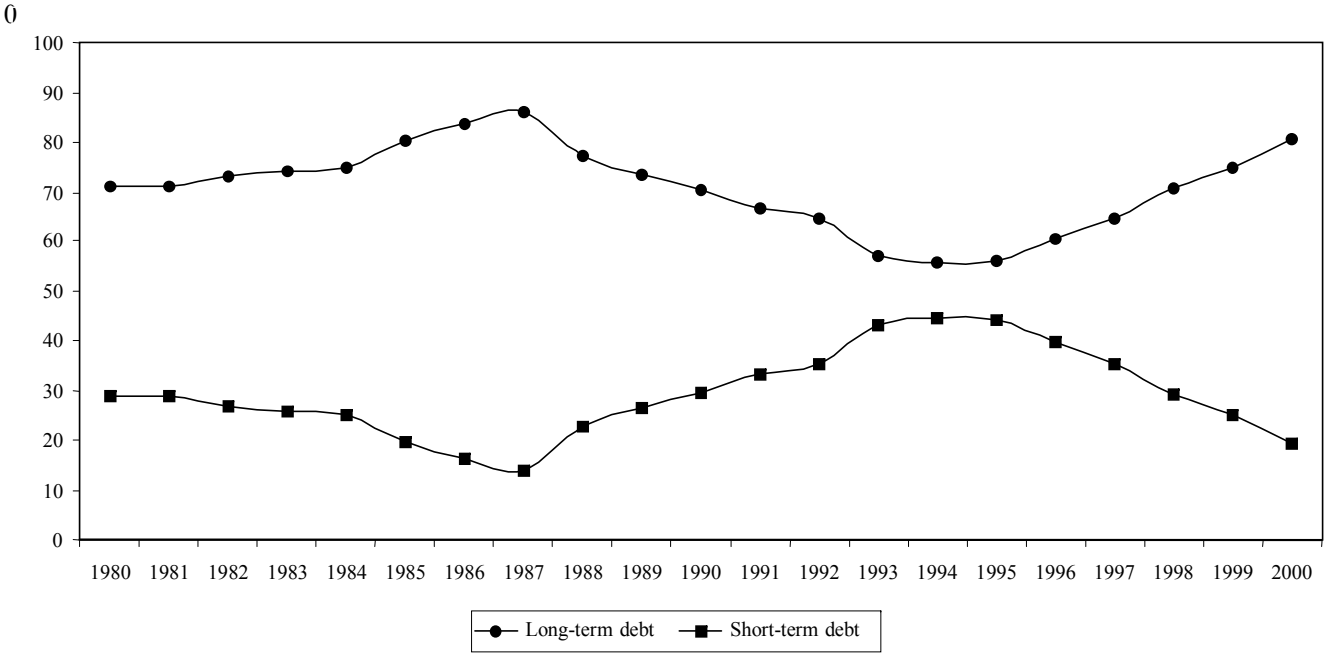

Figure 6.3: Share of long- term and short-term debt to total external debt

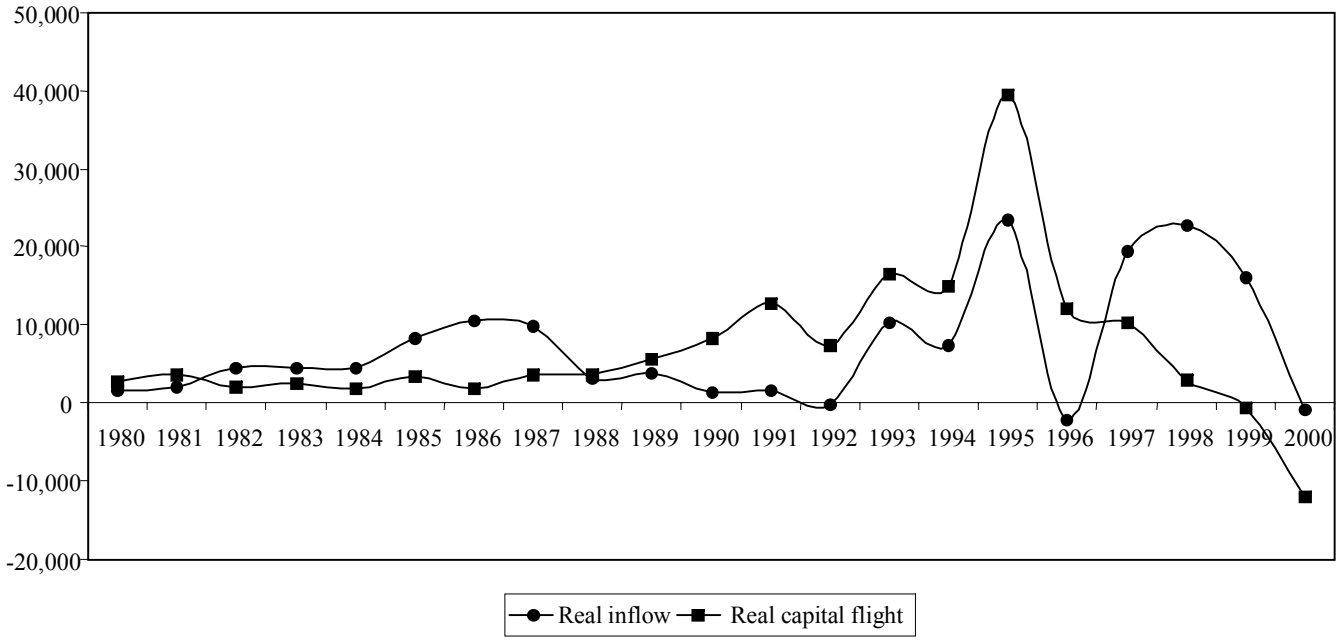

Figure 6.4 Real capital inflows and real capital flight (in $ millions)

consistent with the common notion that financial liberalization leads to the acquisition of more short-term debt (see, for example, Wade 1998; Wade and Veneroso 1998). Large short-term debt creates vulnerability: an economic shock could drive debtors to reclaim or refuse to reissue debt. If that happens, we have a precondition for an economic crisis.

Figure 6.4, which shows trends in real capital inflows and real capital fight (RKF), tells an interesting story. We observe that in some periods, RKF exceeded real capital inflows (1985–87 and 1997–2000) and in other periods, real capital inflow was greater than RKF. We think that this situation illustrates that RKF is not only fueled by real capital inflows. Such a situation is possible when capital flight is driven by capital already in the domestic economy that is fleeing. This suggests that it is possible for foreign capital to be accumulated in a country for an undetermined period only to flee in the future when, for instance, economic conditions deteriorate.

Indeed Figure 6.4 illustrates that there is a close year-to-year trend between RKF and real capital inflows.

Does Economic Growth Discourage Capital Flight?

We explore the question of whether economic growth dampens capital flight. The relationship is expected to be negative since economic growth raises incentives for capital to remain in the domestic economy, and consequently, discourages flight. To examine this link, we obtain growth rates of real gross domestic product (RGDP) and the share of real capital flight (RKF) to RGDP (RKRGDP). RGDP allows a comparison of growth rates over time, while RKRGDP shows the relative burden of capital flight to the economy over time.

Figure 6.5 shows the trends. From 1980 to 1985, growth declined while RKRGDP was increasing, a trend that became most pronounced in 1985. Between 1986 and 1995, there was sustained high growth as RKRGDP declined and remained low; growth declined, beginning in 1996 and becoming negative as the financial crisis deepened, reaching an unprecedented low point in 1998. During this period, RKRGDP rose, also reaching an unprecedented and alarming level in 1998. There was a recovery in 1999, but with little capital coming into Thailand, RKRGDP and growth declined in 2000. Therefore, we argue that there is a negative relationship between growth and capital flight.[10]

Three periods, 1985, 1986–1990 and 1997–1998 are of interest in Figure 6.5. In the first and third periods, there was an economic slowdown and a severe recession, respectively, in Thailand. Both periods are associated with the banking crises in Thailand (see, for example, Jansen 2000). Of course, these periods are qualitatively different. But it appears that when a recession takes place, capital is pushed to flee. More importantly, when the recession

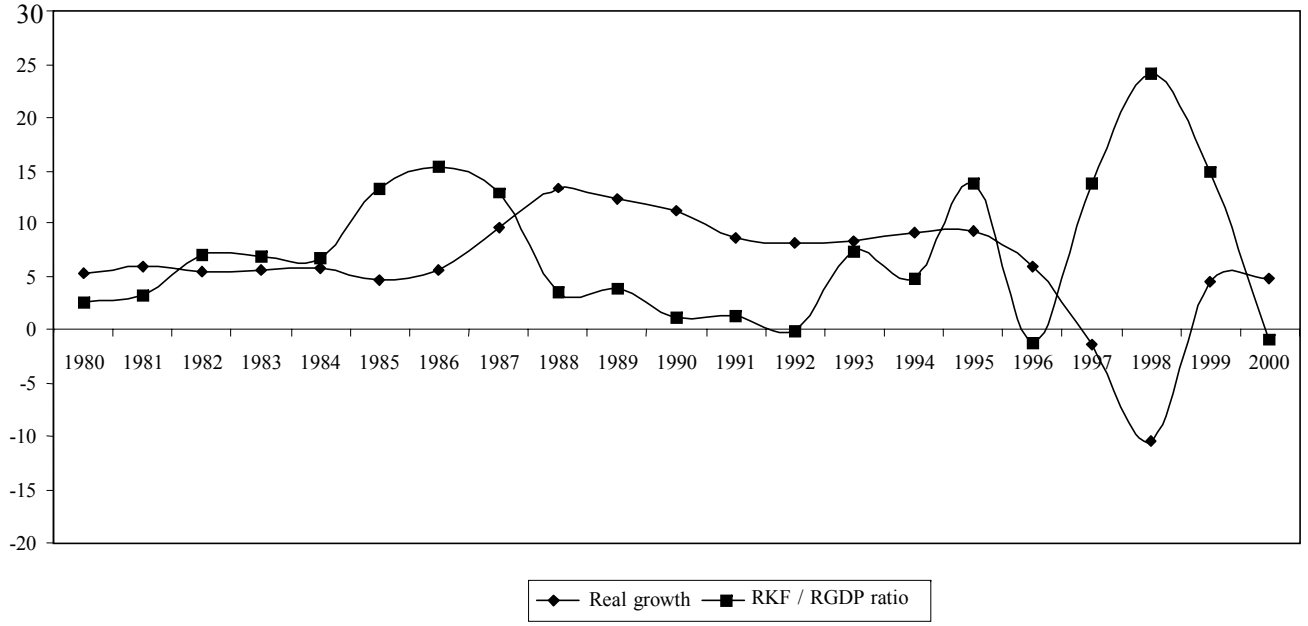

Figure 6.5 Real growth (in percentages) and real capital flight as a share of real GDP

is severe and intensifies or is prolonged, even more capital is pushed to flee. From 1986 to 1990, there was sustained high growth and it appears that capital was discouraged from fleeing.

Figure 6.5 also shows an interesting trend in RKRGDP between the 1980s and the 1990s. In the 1980s, there appeared to be no systematic pattern in RKRGDP, except that the highs coincided with economic shocks like the devaluations in 1981 and the 1983–87 Banking Crisis. However, after 1992–93, the trend appears to be different. In particular, the trend in the 1990s appears to be a systematic cycle, with each swing becoming wider over time. We argue below that the wider swings in RKRGDP were linked to financial liberalization.

Again, we confirm that economic growth reduces capital flight, and vice versa. But the pattern is more complex than it seems. In the case of Thailand, we hypothesize the following relationships between growth and capital flight.

First, declining growth rates can lead to declining capital flight. This condition arises because low growth rates would not attract capital into the country and therefore there is less capital flight. Second, significantly declining growth rates that steadily worsen can lead to intense capital flight. A recession can drive capital out of the country. Third, recovery can reduce capital flight because of the significant potential returns to capital within the country. Fourth, sustained growth, especially at high levels, can result in lower capital flight. Finally, negative economic shocks induce capital flight. A negative shock can increase risk and uncertainty, which make capital flee.[11]

Economic crises and capital flight

We highlight the contention raised above, namely that economic crises or shocks induce capital flight. In particular, we focus on two economic crises, namely the 1982–87 Banking Crisis and 1997–98 Asian Financial Crisis. Figure 6.5 above shows the trend in the share of real capital flight (RKF) to real gross domestic product (RGDP), or RKRGDP, during the two crises periods; we can infer from the trend that during an economic crisis, capital flight increases.[12]

In order to argue that an economic shock induces capital flight, we have to consider the historical context. In the 1980s, Thailand devalued the Baht twice, first in 1981 and later in 1985. In both periods, there was a rise in RKRGDP (Figure 6.5). These shocks resulted in relatively high levels of capital flight.

In the 1990s, the years to consider are 1993, 1995 and 1996. The year 1993 is particularly important because it was in this year that Thailand pursued full financial liberalization. With liberalized financial flows there were sudden and large swings in the flows of capital (see Figure 6.4), and in

the case of Thailand, large and volatile capital flight (see below). 1995 and 1996 are also interesting years. In 1995, China devalued the renminbi and in 1996, Japan devalued the yen. We think that successivedevaluations in China and Japan led to the export shock of 1996, when Thailand experienced negative growth in exports for the first time. Also, during this period, there was a surplus of semi-conductors (Thailand's main export) on the world market, causing prices of these exports to decline and reducing Thai export earnings (see, for example, Ito 2000). These years are important because they represent a turnaround in the Thai economy. Indeed, Ito (1999, 2000) argues that 1996 marked the turning point that eventually led to the speculative attack on the Baht in 1997. He points out that the current account deficit in 1996 (about 8 percent of GDP) was the same size as the deficit that led to the Tequila Crisis in Mexico in 1994. Suffice it to say that the speculative attack on the baht in 1997 led to the financial crisis.

Economic Liberalization and Capital Flight

Financial regulation, governance and capital flight

Figures 6.1 and 6.6 illustrate that movements in capital flight (and real capital flight) are different before and after 1992. Except in the mid-1980s, when there was a rise in capital flight due to an economic crisis, capital flight in the pre-1992 period was relatively low. In fact, the levels were below the two-decade period average.

In Figure 6.6, we see that after 1992, capital flight was more significant in size and had large fluctuations, with figures way above the average of the 1990s and the two-decade period average. We argue that the structural change in the movement of capital flight might be due to institutional changes in the country's financial system. Financial liberalization in the early 1990s allowed for large flows of capital. Accordingly, this had significant implications for the movement and size of capital flight.

In terms of financial integration, the World Bank (1997) classified Thailand in the 'high-medium' income category during the mid-1980s. Alba et al. (1999) suggest that the country already had reasonably open current and capital accounts and liberal treatment of foreign direct and portfolio investment. They point out that the foundations for significant changes in the financial sector were laid as early as 1986.

Important policy changes in the financial sector started in 1990. In that year, for example, Thailand accepted the IMF Article VIII obligations, leading to comprehensive financial reforms. Thus, for instance, there were reductions in tax treatment of dividends, royalty payments, capital gains and interest payments on foreign debentures. In 1991, the repatriation of investment funds, interest and loan repayments by foreign investors was fully liberalized. In addition, the Investment Promotion Act was amended to

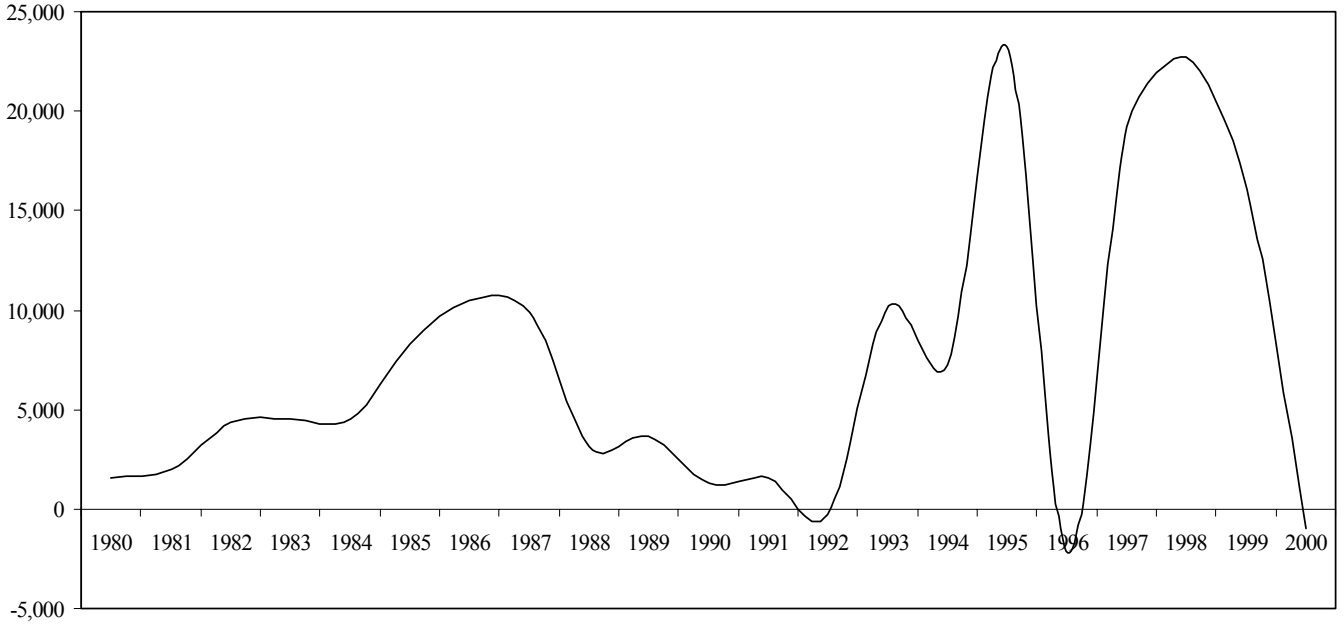

Figure 6.6 Real capital flight (in $ millions)

encourage more foreign investment. Likewise, around the same period, the Bank of Thailand (BOT) relaxed interest rate controls, having already abandoned the ceiling on the commercial bank deposit rate in 1989–91. In 1992, BOT finally abandoned the ceiling on financial and credit companies' deposit and lending rates and on commercial banks' lending rate; it also relaxed portfolio restrictions on the scope of activities and the portfolio composition of commercial banks. In addition, policies to create a competitive environment for a domestic financial market were launched. These policy changes included granting financial companies the autonomy to conduct leasing business, and permitting commercial banks to expand their operations (for example, they could undertake underwriting, issuance and distribution of debt securities, and they could act as selling agents of mutual funds, among others).[13]

Another important financial liberalization policy was the Bangkok International Banking Facility (BIBF) program in 1993. The BIBF program enabled commercial banks and firms to access foreign funds with relative ease. It also favored short-term capital (Alba et al. 1999). With high interest rates, tax breaks, and the exchange rate of the Baht fixed, foreign exchange rate risk was eliminated, encouraging large amounts of short-term and long-term capital to enter Thailand. Alba et al. (1999) point out that such policy changes resulted in a moral hazard problem because the policies favored short-term foreign borrowing and made borrowers ignore exchange rate risks because the Baht was artificially fixed. They argue that the BIBF program was indeed one important policy change that resulted in volatile and unstable financial flows. With our results, we argue that the adoption of liberalization policy can explain the higher magnitude of capital flight in the 1990s. Needless to say, financial liberalization has been identified as a major cause of the 1997 economic crisis.

As we noted earlier, Thailand faced two economic crises between 1980 and 2000. Comparing the two crises, we noted that in the 1983–87 Banking Crisis, Thailand experienced relatively lower capital flight than in the 1997–98 Asian Financial Crisis. In the latter period, there were larger swings in capital flight. We further argue that the structural difference in the levels of capital flight was the result of financial liberalization, which created high volatility and unpredictability and dependence on foreign capital.

Volatility of capital flight

In this section, we investigate the volatility of capital flight. We use data from Tables 6.1 and 6.2. Data in Table 6.2 indicate that average real capital flight in the 1980s was $2.2 billion and in the 1990s, $9.6 billion, over four times the level of the previous decade. The average for the two decades was about $5.6 billion. Over time, there was indeed a change in the level of real capital flight (see Figures 6.1 and 6.6). We argued earlier that there is a link

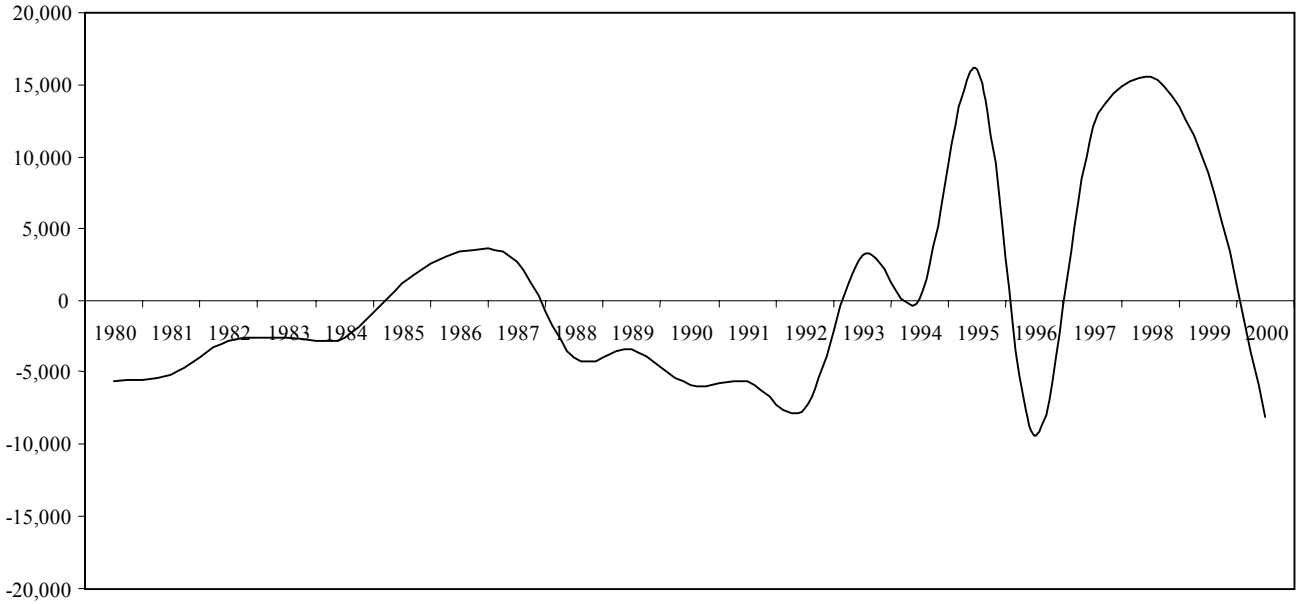

Figure 6.7 Capital flight deviations from the mean (in $ millions)

between financial liberalization and capital flight. We further argue that financial liberalization increases the volatility of capital flight.

To highlight abnormal fluctuations in real capital flight in the 1990s, we show that the expected returns on real capital flight are 'abnormal,' meaning expected returns far exceed the average return. In doing this, we follow Fatehi and Gupta (1992), who utilize the mean value of capital as proxy for the expected returns. Accordingly, we obtain the mean of real capital flight, which is $5.6 billion, and compute deviations of real capital flight from the mean. We obtain ± 1 standard deviation of real capital flight, which is $7.8 billion. Obviously, ± 1 standard deviation is somewhat arbitrary; however, our purpose is to set a marker against which we can compare the mean deviation of real capital flight and, at the same time, stress significant deviations during the period considered. When the marker is breached, we consider the level to be significant. When the marker is breached repeatedly, we consider the situation to be volatile.

Figure 6.7 shows that in the post-liberalization period (that is, post 1992–1993), the deviation of real capital flight from its mean exceeded ± 1 standard deviation. In the other periods, the mean deviation of real capital flight was within range. The figure shows that real capital flight in this period was relatively more volatile, especially in the latter part of the 1990s. Thus we argue that financial liberalization increases the volatility of capital flight.

Foregone Output and Employment

In this section, we estimate foregone output and employment due to capital flight.[14,15] If flight capital had been repatriated and invested in Thailand, or if there had been no capital flight, additional output and employment could have been generated. In other words, suppose we assume that capital flight was invested in the domestic economy, what would have been its impact in terms of output and employment? To obtain the potential additional output due to the repatriation (or investment) of flight capital, we need the incremental capital output ratio (ICOR).[16] To obtain the potential additional employment of capital flight, we need the incremental labor-capital ratio (ILCR).[17]

Table 6.4 shows that if the estimated flight capital in 1980 had been repatriated or had not fled, Thailand would have obtained an additional output of $355.1 million. If flight capital in 1981 had been invested in the country, $634 million worth of output would have been generated. These findings mean that Thailand's GDP could have been higher than what was reported for 1980 or 1981. The same logic applies to the other years.[18] Moreover, an initial investment in one year can continue to generate output until it is fully depreciated. For instance, an initial investment of $399.2

Table 6.4 Potential additional output and employment (in millions)

Year	Real capital flight	Additional output in year *t*	Ratio to GDP	Stream of output in year *t*	Stock of output by year *t*	Additional employment
1980	399.2	355.1	1.1	355.1	355.1	43.8
1981	1,591.2	634.0	1.8	728.6	1,083.6	211.3
1982	2,150.2	693.2	1.9	1,025.3	2,108.9	327.2
1983	802.7	258.8	0.6	895.3	3,004.2	90.4
1984	1,158	270.9	0.6	635.8	3,640	130.6
1985	4,373.2	1,661.2	4.3	2,272.2	5,912.3	590.7
1986	5,097.8	1,936.5	4.5	3,493.8	9,406	723.4
1987	4,695.8	4,296.7	8.5	10,152.1	19,558.1	547.6
1988	1,856.3	1,601.6	2.6	8,065.9	27,624	262.6
1989	(74.7)	–	–	3,917.1	31,541.1	–
1990	(2117.6)	–	–	2,109.6	33,650.7	–
1991	1,820.6	782.4	0.8	1,870.5	35,521.2	17.9
1992	(663.3)	–	–	1449.6	36970.8	–
1993	10,745.6	4,322.9	3.5	5,473.9	42,444.7	643
1994	7,057	3,510.9	2.4	10,183.9	52,628.6	307.1
1995	21,809.8	10,972.5	6.5	21,241.5	73,870.2	193.9

1996	(3,311.2)	–	–	11,958.6	85,828.8	–
1997	1,554.1	7,518.3	5.0	24,621.1	110,449.9	608.6
1998	21,740.6	8,709.4	7.8	33,051	143,500.9	797.1
1999	18,795	13,296.8	10.9	71,664.2	215,165.1	602
2000	1,681.8	706.9	0.6	43,286.5	258,451.6	–
Total	118,162.3	61,528	–	258,251.6	258,251.6	6.097

Note: Authors' computations using raw data from the World Development Index CD-ROM and Thailand's National Economic and Social Development Board

million in 1980 (capital flight) would continue to generate a stream of output in succeeding years, about $94.5 million in 1981. With an additional output of $634 million from 1981 repatriated flight capital, Thailand would have gained a total stream of additional output of $728.6 million in 1981, or a total stock of output of $1 billion by 1981. In 1982, repatriated flight capital from 1980 would have continued to generate some output, about $46.2 million and the same for 1981 repatriated capital, about $285.7 million. Counting additional output from 1982 repatriated capital flight at $693.2 billion, Thailand would have obtained a total stream of output of $1 billion in 1982, or a total stock of additional output of $2.1 billion by 1982. The same logic applies for the succeeding years.[19] By 2000, past capital flight would have generated $61.4 billion in output, or a total stock of additional output of $258.2 billion by 2000. As a share of real gross domestic product (RGDP), the potential output in 1980 would be 0.6 percent of RGDP; that in 1981 would be 1 percent of RGDP. Counting the streams of output by 1981, we get 1.2 per cent of GDP in 1981. The potential output in 2000 would be 0.7 percent of RGDP. As expected, during years of high levels of capital flight, the potential output would indicate significant shares of GDP. These numbers suggest large increases in potential output with repatriated capital flight.

Also if the estimated flight capital in 1980 had been repatriated or had not fled, but was invested in the country, Thailand would have created an additional 43,800 jobs in 1980. We estimate that there were 200,000 people unemployed in 1980 (extrapolated using figures from the World Development Index), thus unemployment could have been cut by about 22 percent. In 1981, with an estimated 335,000 unemployed, 211,300 jobs could have been created; in other words, about 63 percent of the unemployed could have got jobs in 1981. For these two years, a total of 255,100 jobs could have been created with repatriation of capital flight. In 1999, about 602,000 jobs could have been created. About 986,000 people were unemployed in 1999 (International Financial Statistics Online), and again, a significant proportion of the unemployed could have found jobs if capital had been repatriated or invested in the country. Table 6.4 shows that we obtain a total of about 6 million potential jobs between 1980 and 2000.

With these results, we therefore argue that capital flight implies significant losses in jobs and output. We furthermore argue that for Thailand, the repatriation of flight capital (or the investment of this capital within the country) can be a valuable aid in realizing increased employment and development.

CONCLUSION

Using the residual method, we estimated capital flight from Thailand from 1980 to 2000. We found that during the two decades period, total real capital flight from the country was $118.1 billion. Accounting for interest earnings (assuming the amount was fully invested abroad), we arrived at a total stock of capital flight of $155.2 billion in 2000, or about 1.5 times real gross domestic product (RGDP) in 2000. By any measure, this amount suggests large opportunity costs of capital flight.

We investigated five issues in the chapter. First, we examined the relationship between capital inflows and capital flight and found a close year-to-year trend between capital inflows and capital flight. This situation illustrates that RKF is not only fueled by real capital inflows. Such a situation is possible when the capital flight is driven by capital already in the domestic economy and is fleeing. Next, we asked whether economic growth discourages capital flight and whether economic crisis induces capital flight. Our answers to the two questions were in the affirmative. In the case of Thailand, we suggested how these were linked: (1) a declining growth rate can lead to declining capital flight; (2) when the declining growth rates worsens and becomes severe, capital flees and flight intensifies; (3) economic recovery can reduce capital flight; (4) sustained growth rates, especially at high levels, can result in declining capital flight; and (5) economic shocks induce capital flight. We also explored the question of whether financial liberalization increases the volatility of capital flight. Our results indicated that in the case of Thailand, the volatility of capital flight increased under financial liberalization. Finally, we calculated the potential losses of output and employment due to capital flight. Our estimates show that capital flight from Thailand was indeed substantial. The repatriation of capital flight (or investing it in the country) could mean more output and employment. Our total estimate of foregone output is $61.5 billion by 2000, or an average of 2.3 percent of GDP for the whole period. We also estimated that total foregone employment was 6 million between 1980 and 2000, or approximately 15 per cent of total unemployment for the same period. By any measure, capital flight implies large foregone opportunities in Thailand. If capital had not fled or if capital flight had been repatriated and invested in Thailand, it could have generated more economic growth and more jobs in Thailand.

However, there remain more questions for future research. In particular, it would be worth exploring the extent to which capital flight was fueled or driven by external debt, and vice versa; that is, whether or not there is a 'revolving door' relationship between capital flight and capital inflows in Thailand (see, for example, Boyce 1992). It would also be worth exploring how changes in Thailand's trade policies and the world market have

influenced systematic trade misinvoicing.

NOTES

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1. See, for example, Alba et al. (1999) for the 1983–1987 Thai Banking Crisis, Montes (1998) for the 1997–1998 Asian Financial Crisis and Jansen (2000) for a comparison of the 1983–1984 and 1997 financial crises in Thailand.
2. Total external debt refers to long-term and short-term debt, and use of IMF credits. Long term and short-term debt covers public debt, private publicly guaranteed debt, and private non-guaranteed debt. NFI is the sum of net direct foreign investments (FDI) and net portfolio equities investments (PORT). Net FDI is FDI by non-residents into the country (inflow) and FDI of residents' abroad (outflow). PORT covers portfolio equities investments of non-residents into the country (inflow) and portfolio equities investments of residents' abroad (outflow).
3. See Chapter 3 for details of the estimation procedure.
4. We consider trade data with industrialized countries on the assumption that the information is reasonably accurate compared to trade data with developing countries (see, for example, Boyce 1993; Boyce and Ndikumana 2001).
5. Other indices can be utilized as deflator. It is important that the same index for deflating figures is used throughout the estimation procedure.
6. Of course, it is possible to get higher returns on the capital. The 90-day US Treasury Bill rate can be the minimum rate of return or guaranteed return on investment.
7. Note that the starting stock of capital flight affects the subsequent stock of capital flight. Cline (1995) follows a different approach in which the stock is not allowed to become negative.
8. Clearly, there is a private gain for those who engage in capital flight. An estimate of the private gain can be subtracted to get a more accurate estimate of the opportunity cost.
9. In the literature, trade misinvoicing is also called secondary capital flight. Primary capital flight refers to baseline capital flight (see Equation 6.1a).
10. Correlation analyses between RKRGDP and growth rates, and between real capital fight and growth rates, show a negative relationship. We ran Granger tests and results showed that movements in RKRGDP were Granger-caused by growth rates, but not the reverse. Also movements in real capital flight were Granger-caused by growth rates, but not the reverse. These findings were consistent using one to three lags. Note that we have a limited number of observations (only 21 years).
11. Positive external shocks can reduce capital flight. D'Arista (1996) discusses the pro-cyclical nature of business cycles and volatility of capital flows.
12. Note that capital flight was increasing before the crisis.
13. For a detailed discussion of this issue, see Alba et al. (1999) and Jensen (2000).
14. We acknowledge James K. Boyce for the suggestion.
15. Clearly, there can be other possible tradeoffs. If capital did not flee, there could be more resources for public services (public education, health services). To illustrate the tradeoff relationship at the aggregate level, we consider total output and employment. It is possible to disaggregate potential increases in output and employment according to sectors.
16. ICOR indicates how much output is generated per unit of capital. It is computed as the ratio of net fixed capital formation and change in GDP. The reciprocal of ICOR is the marginal product of capital. Capital flight divided by ICOR gives the potential additional output due to full capital flight repatriation. Clearly, this procedure is an approximation of the potential additional output. We assume that the repatriated capital will be invested in some productive activity and generate some positive output in the current year and a

stream of output in the future. We use the fixed capital depreciation rate as an adjustment to net fixed capital in computing the stream of output. When GDP declines or when net fixed capital formation is negative in a particular year, ICOR is also negative. To avoid this problem, we use the previous five-year average of ICOR as proxy for that year.

17. ILCR indicates how much employment is generated per unit of capital. It is computed as the ratio of change in employment and net fixed capital formation. Capital flight multiplied by ILCR gives the potential additional employment due to capital flight (full) repatriation. Clearly, this procedure is only an approximation of potential additional employment. Again, we assume that capital fight (full) repatriation will generate employment as it generates output. When GDP declines or when net fixed capital formation is negative in a particular year, ILCR is also negative. To avoid this problem, we use the previous five-year average of ILCR as proxy for that year.
18. Some years have negative capital flight and we assume no capital repatriation for those years. Table 6.4 assumes that the repatriated capital flight is used in productive investments. It is possible that some amount of repatriated capital goes into consumption. This aspect is a limitation of the calculations.
19. Excel files for ICOR and ILCR are available from the authors.

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