

Economic Crises and the Debt-Deflation Episode in Thailand

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A fixed exchange rate regime can create an illusion of a zero-exchange rate risk, while premature relaxation of capital controls can encourage overborrowing in foreign currencies. Currency and maturity mismatching of Thai commercial banks generated their overexposure to external shocks. The export shortfall in 1996 and widening current account deficit raised doubts concerning the sustainability of the baht currency peg. With the baht succumbing to speculative attacks, the Bank of Thailand decided to float it on 2 July 1997. Without a nominal anchor and given the lack of policy credibility, the value of the baht fell by 56% through to January 1998. This large currency depreciation aggravated the foreign debt burden, causing a credit crunch, high interest rates, bankruptcy, and financial disintermediation. The loss of consumer and business confidence stemming from the expected recession exacerbated the contraction in investment and consumption. Until the exchange rate rebounds to a level determined by economic fundamentals, the economy will continue this debt-deflation episode.

Introduction

After the baht float in July 1997 and its subsequent contagion effects, there has been a growing volume of research on the causes of the financial and currency crises in Asia. Obvious proximate causes of the crises are unproductive investment financed by short-term capital flows, overvalued exchange rates, overlending and asset price bubbles, inadequate supervision and moral hazard in the financial sector, herd behaviour, panic and self-fulfilling speculative attacks.¹ In a mild cyclical downturn, caused by policy shocks, the financial system usually remains stable. However, in a deep recession financial stability is always threatened. Thailand has been struggling through

the banking and currency crises, followed by a severe recession. This paper examines the causes of Thailand's economic crises and explains why Thailand has shifted dramatically from a high growth path before the economic crises to a sharp and protracted recession.

Thailand's total foreign debt in July 1998 stood at US\$87 billion, 68% of which was private debt. The amount of foreign debt created by the bank and financial companies totalled US\$33 billion. The massive depreciation of the baht resulted in a reduction of banks and firms' net worth that led to a sharp fall in private investment. It is argued here that the baht float has aggravated the private sector's over-indebtedness that had accumulated during the booms in the early 1990s. The

deflationary pressure on the Thai economy has been going on since 1995, when the contractionary monetary policy was initiated to restrain the overheated economy. Additional tight fiscal and monetary policies employed to satisfy the IMF's bailout conditionality in 1997 aggravated liquidity problems and exacerbated output contraction.

Loss of confidence and growing pessimism caused by bank failures and layoffs forced households to revise downward their permanent income and cut back consumption spending. A further fall in the value of the baht triggered by regional disturbances would raise the debt burden and propagate the debt-deflation mechanism. The new flexible exchange rate regime has created foreign exchange risks and uncertainties, which Thailand had never experienced before. The need to establish exchange rate stability precludes a significant fall in the domestic interest rate and prolongs the economic recovery.

The origin of the financial crisis is presented in the next section, while section 3 explains the causes of the export slowdown that triggered speculative attacks on the baht and led to the subsequent currency crisis. Section 4 investigates contractionary effects of devaluation followed by a discussion of the debt-depression episode in Thailand in Section 5. Section 6 describes further developments after the crisis and provides concluding remarks.

The Root of the Thai Financial Crisis

The effectiveness of monetary policy is limited under a fixed exchange rate regime, as long as capital mobility is perfect. The Bank of Thailand, before July 1997, still adhered to fixing the value of the baht via a basket of currencies in which the U.S. dollar had a very high weight, more than 80%. At the same time, there was an attempt to call on the market mechanism to determine domestic interest rates. Financial liberalization in Thailand was undertaken in the early 1990s by gradual abolition of ceiling interest rates. Competition within the financial sector was promoted

by increasing the number of financial institutions. To establish Bangkok as a financial centre in the region, capital controls were relaxed on the grounds that Thailand would be able to attract foreign capital if capital mobility prevailed. The Bangkok International Banking Facilities (BIBF) were created in 1993 to lure foreign funds by providing tax incentives. Commercial banks were permitted to hold net foreign assets up to 25% of their capital funds, while the maximum percentage of net foreign liabilities was raised to 20%. The process of gradual financial liberalization ended in 1995, when the degree of overheating of the economy became increasingly intensified by an unsustainable current account deficit and rising price levels. By 1996, the BIBFs' lending to domestic sectors amounted to 1.8 times the size of the monetary base. Warr (1998) argued that the vulnerability of the Thai economy had increased dramatically long before July 1997, as captured by the rapidly rising ratio of accumulated short-term capital inflows to international reserves.

When the euphoria of the BIBFs evaporated, the Bank of Thailand realized that the liberalization policy had been premature. Various capital control measures were reintroduced to increase the cost of short-term borrowing, in order to increase the proportion of long-term capital flows. However, the measures were too late and insufficient to undo the damage caused by the so-called hot-money capital flows. Although low inflation and high growth rates were basic characteristics of the Thai economy in the early 1990s, sound economic fundamentals alone were not sufficient to guarantee successful liberalization. Prudential banking regulations and supervision were inadequate to deal with increasingly complex financial transactions permitted by financial liberalization.

The expansion of credit from banks and finance companies became dangerously large, since they were able to borrow from international markets at relatively low interest rates. The fixed exchange rate gave them the perception of low foreign exchange risks. Bank credit expanded more than

30% in 1994 and 1995. Apparently, those loans were channelled to non-productive sectors such as property and assets speculation. The financial system remained weak due to fundamental mismanagement via credit concentration, maturity and currencies mismatching, and insider loans. Had strict banking rules and a close monitoring system been established before financial liberalization, the Thai financial institutions would not have been so fragile and vulnerable to the subsequent currency crisis. Thus, weaknesses in the Thai banking system preceded the currency attack that began in July 1996.

The problems of Finance One Company and Bangkok Bank of Commerce had surfaced long before the exchange rate crisis. The Bank of Thailand's failure to write down their capital and change the management of these two financial institutions at an early stage led to a system wide banking failure. Pumping money into these ailing financial institutions is justified only if there is a system-wide crisis. If there were no bailouts for a few mismanaged institutions at the very beginning, contagion effects to other domestic banks could have been avoided. During the bank panic in late 1997, the Bank of Thailand, through the Financial Institutions Development Fund (FIDF), injected an enormous amount of liquidity to weak financial institutions to prevent bank runs. The FIDF borrowed heavily from the short-term money market, thereby raising the domestic interest rate. In the end, 56 finance companies, which borrowed from FIDF more than the amount of their capital funds, were closed in December 1997. The bank panic subsided after the government announced a guarantee of deposits in all commercial banks. The promissory notes issued by the defunct 56 financial companies were converted into the government-owned bank's non-negotiable certificates of deposits with five-year maturity. Four banks were nationalized, and some of them could be merged with other larger banks. Some of the remaining banks were able to raise their capital funds by selling new shares to foreign banks at discount prices to ensure survival after debt write-offs.

Lack of stringent financial rules and regulations has been suggested as a cause of the failure of financial institutions in Thailand. To comply with the IMF's conditions, acceleration of the definition of non-performing loans from 12 months of unpaid interest loans to three months must begin on 1 January 1999. Non-performing loans would naturally increase because the private sector's ability to repay debt is reduced during the downturn.² In addition, to comply with the BIS standard, the Capital Adequacy Ratio was raised from 7 to 8.5. It has been suggested that the minimum capital fund should be raised to 12% of risk assets. This suggestion seems plausible only during the expansion path of the economic cycle, but it is inappropriate during recession. To raise the CAR from 8.5 to 12% would reduce the lending capacity of the financial institutions by almost 30%. If this measure is imposed, the economy will contract further because of widespread liquidity problems, particularly when the trough of the cycle is unforeseen in the near future.

As the Bank of Thailand had not successfully solved the banking crisis, it had to face another crisis triggered by currency speculators. The two problems are closely related since Thai commercial banks and corporations have substantial amounts of dollar-denominated debts. As Miller (1998) points out, the financial crisis is associated with weak currencies and the causation runs in both directions.

Foreign Exchange Crisis

Thai exports increased at the spectacular rate of 22.2% in dollar terms in 1994, followed by an even higher growth rate of 24.7% in 1995. In the following year, exports suddenly declined by 1.9% and 0.2% in dollar and baht terms, respectively. The sharp decline in Thailand's exports growth in 1996 stemmed mainly from the three largest export destinations: the United States, Japan, and Singapore. The loss in competitiveness of Thai exports was partly due to the appreciation of the real exchange rate, which

had begun in 1988, when the inflation rate in Thailand rose above the inflation rate of the United States. Under the basket system of currencies, the depreciation of the yen against the U.S. dollar in early 1997 implied that the baht appreciated against the yen and depreciated against the dollar, but not by as much as the percentage of the yen depreciation *vis-à-vis* the dollar.

The sudden decline of exports in 1996 cannot be attributed solely to misalignment of the exchange rate. The main culprit was the recession in Japan and its increased consumption tax that led to a decline in Japanese demand for imports. The semiconductor shock also hit Singapore and reduced its demand for imports from Thailand. The income effect of a slowdown in the world economy had more damaging effects on Thai exports than the negative substitution effects produced by the overvaluation of the baht.

Nevertheless, the sudden slump in Thai exports provided opportunities for the speculative attacks on the baht, which began in earnest on 29 July 1996, following a rumour in Hong Kong about a baht devaluation in response to the large current account deficit and poor export performance. Foreign speculators started selling baht for dollars in the Hong Kong market, while some Thai banks borrowed from money markets to purchase the dollars, sending the interbank rate up to 25%. The one-month forward premium rate also increased to a rate as high as the level in January 1995 during the Mexican peso crisis. The strengthening of the dollar above 125 yen in early 1997 led to anticipation of baht devaluation. Several large U.S. banks and hedge funds started taking short positions on the baht, while some large Thai corporations started hoarding the dollar offshore. Massive attacks on the baht took place on 14 and 15 May 1997, forcing the Bank of Thailand to sell dollars in the forward markets in Singapore and Hong Kong. To prevent speculators closing their positions, the Bank of Thailand controlled the outflow of baht. In effect, a two-tier system of exchange rates was created between onshore and offshore markets.

Notwithstanding the huge amount of intervention in the spot foreign exchange markets, the Bank of Thailand employed more than US\$23.4 billion, out of almost US\$39 billion of total international reserves, in its swap transactions to defend the baht before giving up on 2 July 1997. More than 75% of these swap obligations had long-term maturity, indicating that the Bank of Thailand mistakenly anticipated that the baht would have regained its strength by 1998.³ This conjecture proved to be wrong and jeopardized the whole economy by sinking the value of the baht after the float far more than its purchasing parity value. It is a classical case of the principal-agent problem: the baht defenders, who made decisions on the forward obligations, would not have suffered from losses but would have been rewarded if their strategies had been successful. During the long fierce fight, they attempted to gamble for survival by adopting the high-risk high-return strategy. The ramifications of the Bank of Thailand's squandered international reserves had negative externalities by forcing Thailand into a recession after three decades of growth and stability.

If the baht had been floated earlier in 1994, when the balance of payments was in a very strong position supported by large capital flows, the baht could have appreciated and possibly mitigated the degree of overheating of the economy. The baht float was carried out when there were no other alternatives left after Thailand depleted almost all the available international reserves.⁴ The harder the Bank of Thailand tried to inflict wounds on speculators, the faster was the depletion of the international reserves. Those who believed in the government's promise not to devalue the baht were the ones who suffered most from devaluation, including some commercial banks and large corporations that did not hedge against currency risks when they borrowed in the U.S. dollar. Those who anticipated the inevitable devaluation could alleviate their foreign debt burdens or obtain substantial windfall gains by purchasing dollars from both onshore and offshore forward markets. In this sense, the Bank of

Thailand subsidized the losses of firms that had previously involved themselves in excessive unhedged foreign borrowing and rewarded currency speculators in a one-way-bet game.

Contractionary Effects of Devaluation

Devaluation can be thought of as a policy tool for correcting external disequilibrium and to revive the economy through expenditure-switching and idle-resource effects. Devaluation can reduce the trade deficit if undertaken during boom periods, but tight fiscal and monetary policies must be employed simultaneously to reduce the pressure from its impact on the price level. Otherwise, the gain from nominal devaluation can be wiped out by wage and price increases following the devaluation. Experience in developing countries shows that, although the trade balance can be improved, real output growth may decline owing to the accompanying tight macroeconomic policy. This was the situation in Thailand after devaluing the baht by 14.7% in November 1984; real GNP growth rate slowed down to 3% in the following year.

Nevertheless, devaluation undertaken from a large trade deficit position without monetary and fiscal restraints can also lead to a fall in real income in the short run if both export and import quantities do not adjust instantaneously. The larger the initial trade deficit, the greater the fall in real income since the net exports in domestic currency would fall by the percentage of the devaluation. Krugman and Taylor (1978) envisaged various possibilities of contractionary effects of devaluation. Devaluation may lead to a budget surplus through enhanced tax revenues from traded goods. Since the private sector's marginal propensity to consume is higher than the government's, the redistribution of income tax from the private sector to the government leads to a fall in aggregate demand. Similarly, if devaluation redistributes income from workers to capital income earners, whose marginal propensity to consume is lower, the resulting fall in aggregate consumption would have a

contractionary effect on output. These theoretical scenarios are not relevant to the case of Thailand, where both labour and capital income earners suffered from income losses after the float and the Thai Government had difficulty balancing the budget.

The contractionary effect of devaluation is caused by reductions in both consumption and investment. After the massive devaluation and rising foreign debt in terms of baht, uncertainties about the prospect of future employment and gloomy sales resulted in a downward adjustment in permanent income and expected profit. Exports have not responded sufficiently to the large real depreciation of the baht. There are several reasons for the failure of exports to stimulate the economy, despite abundant idle resources and a real wage cut. Devaluations by Thailand's competitors have made Thai products less attractive than they would have been. More importantly, contagion effects around the world have caused a slowdown in economic activity in major trading partners. The reduction of imports from Thailand seems to stem mainly from the income effect, which outweighs the gain from the substitution effects of baht depreciation. The fact that exporters cannot gain access to export credit has aggravated the export slump. Thai banks have become more cautious in lending because of rising levels of non-performing loans.

Furthermore, export prices in terms of baht have not increased proportionately to the depreciation, because the excess capacity built up over the boom years in Asian countries has put downward pressure on the prices of manufactured goods.⁵ On the other hand, the import prices in terms of baht have not risen as much as the depreciation rate of the baht, for foreign exporters may reduce their dollar prices in order to maintain market shares in Thailand. In other words, the substitution effect of the exchange rate depreciation on the trade balance may not yield a substantial improvement in the trade balance in the short run. Furthermore, the introduction of the floating exchange rate also exposes traders to uncertainties that they have never experienced

before, thereby causing them to behave cautiously. The fact that manufactured export products require imported raw materials also explains why the impact of devaluation on the level of net exports is insufficient to offset the aggregate demand fall caused by contractionary monetary policy. Consequently, devaluation has aggravated the deflationary pressure and led the Thai economy into a severe recession in 1998.

Debt-Deflation Episode

Devaluation undertaken when the banking sector is overlending domestically and overborrowing internationally is likely to result in a recession, rather than creating an economic stimulus. The three decades of uninterrupted economic expansion are long enough to create a perception of continued rising asset prices fuelled by the credit extended by the financial sector. Competition among financial institutions, both domestic and foreign banks, accelerated credit expansion to finance non-viable investments in the property and manufacturing sectors. The share of capital goods in total imports rose above 40% in the early 1990s. Therefore, excess capacity can easily become a severe problem during a downturn.

The baht float in July 1977 produced an initial shock, which was magnified by the debt-deflation mechanism — the term coined by Irving Fisher (1993) 65 years ago, during the Great Depression. It is defined as a propagation mechanism, which multiplies small shocks into substantial reduction in aggregate demand and output. Fisher argued that the over-indebtedness, caused by over-confidence of households and firms during the boom periods, turned out to be a great burden to them after the slump that originated from a small exogenous shock. Bankruptcy and liquidation lead to distressed sales of assets and cause a price deflation, which in turn raises the real value of debt. In effect, households and firms cut spending due to declining net worth and rising real interest rates. When profit and output fall, the resulting layoffs lead to loss of confidence and pessimism. Hoarding is reflected in a decline in the velocity of money, which further depresses the economy.

All these events, in Fisher's view, occur through a contraction in the demand deposits, or in his own terminology — "checkbook money". Incidentally, the growth rate of M1 in Thailand has been declining from 16.9% in 1994 to 9.1% in 1996, and 1.2% in 1997. It is expected that the M1 in 1998 will actually contract by more than 5%.

The indebtedness of the Thai economy is enormous: by the end of 1997, the total short-term debt was US\$39 billion, while the long-term debt amounted to US\$67.2 billion, including US\$8.7 billion from the IMF. The unexpected devaluation of the baht has tremendously increased the level of debt of firms whose debts are dollar denominated. What had started as a mild business cycle initiated by contractionary monetary policy employed in 1995 has become a full-blown recession. In addition to its negative impact on investment and durable consumption via the interest rate effect, a contractionary monetary policy can also cause output reduction via both the bank lending and the balance-sheet channels (Mishkin 1995). Investors and consumers, who have cash-flow problems, do not have access to bank credit because of the reduced net worth. Both the unwillingness of consumers to spend and the unwillingness of banks to lend cause financial disintermediation during the economic downturn.

While Thailand's consumer price index had gone up by 10% in 1998, the situation can still be described as a debt-deflation episode. Without devaluation, Thailand could have experienced an episode of price deflation, similar to China in 1998. The debt-deflation mechanism is now operating in Thailand, but its effect has been largely obscured by the devaluation. As argued by King (1994), a fall in the absolute price level is not a necessary condition for debt deflation. The vital symptom of a debt-deflation episode is the reduction in the asset values relative to the unit of account in which debts are denominated. The nominal price of property, land, and stock market prices indeed have declined sharply in 1998, but it is the plunge in their dollar terms that properly indicates the depth of the asset price deflation in Thailand. The bull market run of Thailand's stock exchange market raised the index by 26% and

88% in 1992 and 1993. It created new investment opportunities and euphoria, which led to over-indebtedness. However, when the sign of fundamental weakness started appearing, the index fell by 35% in 1996 and plunged further by 56% in 1997. In terms of U.S. dollars, the Thai stock index fell by 70% one year after the baht float.

The depressed stock market contributes to a substantial reduction in the real wealth of households, resulting in a sharp decline in consumer spending. The growth rate of private consumption expenditure declined from 11.2% in 1995, to 6% in 1996, and contracted by 1.1% in 1997. When households revise their future expected income downward, spending on both durable and non-durable consumer goods are drastically curtailed to provide precautionary savings.⁶ Blanchard (1993) provides evidence showing that the negative consumption shocks caused the U.S. economy to experience negative growth during the recession of 1990–91. The decline in consumption was due to a drop in consumer confidence coming from the expected recession.

During the economic downturn, there are a growing number of liquidity-constrained firms. Small firms, whose working capital is obtained through simple means of financing such as loans and overdraft, will no longer gain access to bank credit. Since bank credit can be considered an important input in the production process, the liquidity shortage of small firms translate into a reduction in output and employment. These small firms, which employ more than half the manufacturing labour force, suffer at the hands of the tight monetary policy.⁷ Hence we observe a considerable decline in consumption expenditures from workers with a high propensity to consume and a slump in investment from liquidity-constrained firms.

The excessive build-up of debts by consumers and business firms during the boom period makes it very difficult for them to service these debts during the economic slowdown. Rising interest rates as well as cash flow problems arising from falling profits exacerbate the debt burden of the private sector. Firms are not willing to borrow more because of the decline in their net worth,

while financial institutions are worried about their non-performing loans and are therefore are not willing to extend credit. Banks suffer from losses due to the fall in the value of loan collateral.

The debt-deflation mechanism has magnified the depressed consumption expenditures, causing a considerable reduction in private investment. The growth rate of private investment expenditure dropped from 10.9% in 1995 to 2% in 1996 and fell by 24% in 1997. Corporate income tax revenues also dropped sharply because of losses and bankruptcy of business firms, while personal income tax revenue also fell substantially due to layoffs. Similarly, tariff revenues dropped sharply because of the decline in imports. The only way to maintain the IMF fiscal budget target is to cut spending. Ironically, the target of balancing the budget would have never been achieved, since the more public spending was cut, the more income and revenue from taxation contract. The 1998 fiscal budget was reduced by 18.5%, while the value-added tax rate was raised from 7% to 10% as a part of the IMF conditionality. The growth rate of public investment declined from 20.8% in 1996 to only 8.4% in 1997. The cut in government spending has put much pressure on the liquidity of the private sector.

With the contraction in investment and consumption, in both private and public sectors, inflation, which previously was expected to be a major problem, does not pose a serious threat to the real depreciation of the baht. If devaluation can stimulate the economy through expenditure switching and the better allocation of resources, the upward pressure on wage and domestic price levels can become more apparent. The price level increased by only 10% in July 1998 compared with a 38% depreciation of the baht on a year-to-year basis. This implies a real depreciation of at least 28%, but the competitiveness of Thai exports may not rise that much since other Asian countries have also depreciated their currencies.

The currency crisis is reflected in a widening current account deficit, which was as high as 8% of GDP in both 1995 and 1996. In 1997, it dropped sharply to only 0.8%. Thailand is expected to have a current account surplus of

along the lines of the U.S. Federal Reserve Board.

After the tight fiscal and monetary policy stance was relaxed, the short-term interest rate (that is the interbank rate) declined, from 25% in 1997 to 8% by September 1998, indicating that the lending rate will inevitably be reduced. The possibility of a decline in the banks' minimum lending rates will be enhanced by the decision of the Federal Open Market Committee to cut the Federal Funds rate to prevent a world economic recession. The absence of downward rigidity in money wages during a period of high unemployment helps restrain the upward pressure from imported inflation after the baht depreciation. Wages and salaries have been reduced sharply in the manufacturing and financial sectors.

If the real interest rate declines enough to ease the debt burdens, and the exchange rate becomes stable, firms and consumers can regain confidence and resume their normal spending patterns. To get out of the recession, consumer confidence must be restored, including public confidence in the banking system and in the stability of the baht. Firms and households' debt burdens must be reduced. This is why debt restructuring and the sales of domestic banks' shares to foreign banks are crucial for the economic turnaround. The road to economic recovery will be long and traumatic because of the high level of debts. More than two million Thais are unemployed and the unemployment rate in 1998 will reach 5%. The prolonged recession also means millions of people will be pushed below the poverty line.

The narrowing interest rate differentials between domestic and foreign interest rates indicate declining foreign exchange risks and expected inflation. The share of short-term foreign currency debt of the private sector declined from 37% in 1997 to 32% in July 1998. In addition, foreign direct investment in the first seven months of 1998 rose to US\$3.3 billion compared with US\$1.8 billion in the corresponding period in 1997. Nevertheless, a large part of the inflows was for recapitalization of banks instead of business expansion. Moreover, the 1998 fiscal deficit was just under 3% of GDP — the limit set by the IMF. The same target will be maintained for the 1999 fiscal year. These positive new developments have raised some hope about an early recovery from the economic crisis. The baht has gained a certain degree of stability above 36 baht to the dollar, despite ongoing regional foreign exchange instability.

Although the recovery of the Thai economy depends very much on the economic strength of the United States and Japan, the debt problem must be solved immediately to prevent protracted economic depression. Financing of productive investment projects should rely on domestic savings rather than short-term foreign borrowings. After a decade of extreme foreign exchange stability, Thailand has to face the reality that the era of cheap foreign capital, zero foreign exchange risks, reckless investment, and spectacular growth is gone. After the recovery, a new era of economic rationalism will begin with investment efficiency and a sustainable growth path — albeit much less impressive.

NOTES

1. See for example, Kaminsky and Reinhart (1998), Krugman (1979), Obstfeld (1996), Sachs, Tornell, and Velasco (1996).
2. In June 1998, the non-performing loans of Thai banks stood at 35.9% of total loans on a three-month accrual basis.
3. The Bank of Thailand's total outstanding swap obligations were US\$18 billion at the beginning of 1998. The offshore swap obligations were to be settled by the end of September 1998.
4. The level of net international reserves dropped sharply to only US\$2.8 billion on 2 July 1997.
5. In the first seven months of 1998, Thailand's exports declined by 4% in dollar terms on a year-on-year basis, while the export quantity rose by 13.2%.

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6. The number of automobile sales in Thailand declined by 71% in the first eight months of 1998, compared to the corresponding period a year earlier.
 7. The interbank rate increased from 11.4% at the end of 1996 to 25.6% in 1997.

REFERENCES

- Blanchard, Oliver. "Consumption and the Recession of 1990–91". *American Economic Review* 83, no. 2 (1993): 270–74.
- Fisher, Irving. "The Debt-deflation Theory of Great Depressions". *Econometrica* 1, no. 4 (1933): 337–57.
- Friedman, Milton and Anna J. Schwartz. *A Monetary History of the United States, 1987–1960*. Princeton: Princeton University Press, 1963.
- Kaminsky, Graciela L. and Carmen M. Reinhart. "Financial Crises in Asia and Latin America: Then and Now". *American Economic Review* 88, no. 2 (1998): 444–45.
- King, Mervyn A. "Debt Deflation: Theory and Evidence". *European Economic Review* 38 (1994): 419–45.
- Krugman, Paul. "A Model of Balance of Payments Crises". *Journal of Money, Credit and Banking* 11 (1979): 311–25.
- . and Lance Taylor. "Contractionary Effects of Devaluation". *Journal of International Economics* 8 (1978): 445–56.
- McLeod, Ross H. "The New Era of Financial Fragility": In *East Asia in Crisis: From Being a Miracle to Needing One?*, edited by Ross H. McLeod and Ross Garnaut, pp. 333–51. London: Routledge, 1998.
- Miller, Victoria. "The Double Drain with a Cross-Border Twist: More on the Relationship Between Banking and Currency Crises". *American Economic Review* 88, no. 2 (1998): 439–43.
- Mishkin, Federic S. "Symposium on the Monetary Transmission Mechanism". *Journal of Economic Perspectives* 9, no. 4 (1995): 3–10.
- Obstfeld, Maurice. "Model of Currency Attacks with Self-fulfilling Features". *European Economic Review* 40 (1996): 1037–47.
- Sachs, J.A., Tornell and A. Velasco. "Financial Crises in Emerging Markets: The Lessons from 1995". *Brookings Papers on Economic Activity* 1 (1996): 147–215.
- Warr, Peter G. "Thailand". In *East Asia in Crisis: From Being a Miracle to Needing One?*, edited by Ross H. McLeod and Ross Garnaut, pp. 49–65. London: Routledge 1998.
- Warr, Peter G. and B. Nidhiprabha. *Thailand's Macroeconomic Miracle*. Washington, D.C.: World Bank/Oxford University Press, 1995.

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