Financial Crises in Asia and Latin America: Then and Now

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The devaluation of the Thai baht on 2 July 1997 generated waves of turbulence in currency and equity markets that surpassed the ''tequila'' effects in the wake of the 1994 devaluation of the Mexican peso. The crisis first spread to East Asia in the form of a string of devaluations and stock-market collapses. As the problems intensified, the currencies of other Asian countries, including Hong Kong and South Korea, came under speculative pressure. Outside the region, Argentina, Brazil, and Russia suffered sharp declines in their equity markets and periodic bouts of speculation against their currencies. As the dust settles in currency markets, many of these countries will be left with serious banking-sector problems, if not full-scale banking crises, as in Thailand and South Korea.

Our earlier work on financial crises suggested that economies behave differently on the eve of crises (see Kaminsky and Reinhart, 1996). Typically, financial crises occur as an economy enters a recession that follows a prolonged boom in economic activity fueled by credit creation and surges in capital inflows. The cycle of overlending is exacerbated by implicit or explicit deposit guarantees, poor supervision, and moral-hazard problems in the banking sector.[1] Crises are accompanied by an overvaluation of the currency, weakening exports, and the bursting of asset price bubbles.

In this paper, we extend that work by analyzing the extent to which past crises share common characteristics in Latin America, Asia, Europe, and the Middle East. In addition, we examine the recent crises in Asia and in Latin America to determine whether the con-

siderable regional differences that we find for the earlier sample have eroded.

I. Regional Differences

Between 1970 and 1995, Latin American countries (LA) suffered 50-percent more crises (per country) than the East Asian countries (EA), or the European and Middle Eastern countries (Others) in our sample.[2] This section examines whether currency and banking crises differed across regions.

We begin by examining the behavior of 15 economic indicators. The indicators used to capture the overlending cycles include the M2 multiplier, the ratio of domestic credit to nominal GDP, the real interest rate on deposits, and the ratio of lending-to-deposit interest rates. Increases in any of these indicators might signal possible financial-sector problems.[3] Other financial indicators include ''excess'' real M1 balances (to capture lax monetary policy), deposits at commercial banks (to assess whether there are runs in the midst of the crises), and the ratio of M2 (in dollars) to foreign-exchange reserves in dollars (to examine to what extent the liabilities of the banking system were backed by international reserves). The current-account indicators are exports, imports, terms of trade, and deviations of the real exchange rate from trend. Declines in exports and the terms of trade, increases in imports, and real appreciations of the domestic currency signal potential problems in the current account. The capital-account indicators are foreign-exchange reserves of the central bank and domestic–foreign real-interest-rate differentials. Reserves losses and increasing interest-rate differentials are signals of future

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[1] See Ronald McKinnon and Huw Pill (1994) on the interaction of capital inflows and liberalization.

[2] For a discussion of how the crises are defined and dated, and countries in the sample, see Kaminsky and Reinhart (1996).

[3] See Hali J. Edison and Marcus Miller (1997) on credit cycles.

problems in the capital account. Finally, we include output and stock prices (in dollars), with declines in output and stock-market crashes signaling impending crises. The interest rate, the spreads, "excess" real balances, and real exchange rate deviations from trend are in levels, and all other indicators are 12-month percentage changes.

In an earlier paper, we concluded that the behavior of most of these indicators in the months prior to the crises departed significantly from the behavior in "tranquil times," which is defined as all the months in the sample outside the 36 months around the crises. For instance, there were unusually large declines in equity prices relative to tranquil periods on the eve of the financial crises. To assess whether these pre-crisis deviations in individual indicators are larger in LA than in other regions, we measure *volatility* by calculating the mean absolute deviation from tranquil periods (as percentages) for each indicator in the 18 months prior to the crisis for the three regions separately. The first column in Table 1 lists the indicators; the second column reports the mean deviation from tranquil periods for that indicator for LA; the third and fourth columns report the comparable mean absolute deviations for EA and Others, respectively. An asterisk denotes that the regional difference from LA, which is the benchmark, is statistically significant at the 5-percent confidence level. If we compare EA and LA currency crises (Table 1A) 10 of the 15 indicators are significantly more volatile for LA, including all the financial and capital-account indicators. The regional patterns for banking crises paint a similar picture, as the amplitude of the pre-crisis cycles relative to tranquil times is larger for LA than elsewhere. However, regional differences in volatility are diminishing. For instance, the decline in Thai equity prices (in U.S. dollars) since their 1995 peak exceeds 80 percent; the magnitude of this deviation from the norm during tranquil periods is more in line with those observed in the LA crises than in previous EA crises. Similar anomalies are evident in other indicators, such as credit.

While Table 1 presents evidence on the volatility of individual indicators, we now focus on their behavior as a group. As to the *fragility*

TABLE 1—REGIONAL DIFFERENCES, 1970–1995: VOLATILITY

A. *Currency Crises*

Indicators	Volatility		
	Latin America	East Asia	Others
M2 multiplier	28.1	8.0*	11.1*
Domestic credit/GDP	21.4	12.6*	5.6*
Real interest rate on deposits	4.3	0.9*	0.8*
Ratio of lending-to-deposit interest rate	16.6	8.9*	9.7*
"Excess" real M1 balances	3.3	0.4*	0.6*
Bank deposits	321.4	6.9*	20.1*
M2/foreign-exchange reserves	76.4	35.0*	22.3*
Exports	28.4	24.9	17.4*
Imports	35.9	27.4	21.9*
Real exchange rate	36.1	38.2	7.8*
Terms of trade	19.6	14.3	4.7*
Foreign-exchange reserves	71.7	42.5*	33.6*
Domestic–foreign real-interest-rate differential	4.3	0.9*	0.9*
Output	10.4	8.9	6.1*
Stock prices	64.7	36.1*	30.6*

B. *Banking Crises*

Indicators	Volatility		
	Latin America	East Asia	Others
M2 multiplier	18.1	5.3*	9.5
Domestic credit/GDP	13.3	5.7*	7.0
Real interest rate on deposits	2.1	0.7*	0.7*
Ratio of lending-to-deposit interest rate	13.9	10.4	10.1
"Excess" real M1 balances	3.0	0.3*	0.4*
Bank deposits	350.2	7.3	20.8
M2/foreign-exchange reserves	61.5	15.8*	24.0
Exports	23.1	19.2	15.6*
Imports	25.1	16.4*	16.9*
Real exchange rate	32.8	26.1	11.3*
Terms of trade	16.4	12.4	4.6*
Foreign-exchange reserves	53.6	19.2*	31.1*
Domestic–foreign real-interest-rate differential	2.2	0.7*	0.8*
Output	5.7	14.0	5.0
Stock prices	80.1	34.3*	60.3

Note: Volatility is measured by the mean absolute deviation from tranquil periods (as a percentage) for each indicator in the 18 months prior to the crisis.
  * Statistically significant at the 5-percent level.

TABLE 2—REGIONAL DIFFERENCES, 1970–1995: FRAGILITY

A. Percentage of currency crises

Percentage "anomalous"[a]	Latin America	East Asia	Others
80–100	45	29	32
60–79	39	42	39
40–59	8	29	18
20–39	8	0	11
<20	0	0	0

B. Percentage of banking crises

Percentage "anomalous"	Latin America	East Asia	Others
80–100	46	25	38
60–79	46	75	25
40–59	8	0	25
20–39	0	0	12
<20	0	0	0

[a] Percentage of the indicators showing "anomalous" behavior preceding the crisis.

TABLE 3—REGIONAL DIFFERENCES, THEN AND NOW: SEVERITY INDEX

A. *Currency Crises*

	Severity index		
Period	Latin America	East Asia	Others
1970–1994	48.1	14.0	9.0
1995–1997	25.4	40.0	NA

B. *Banking Crises*

	Severity index		
Period	Latin America	East Asia	Others
1970–1994	21.6	2.8	7.3
1995–1997	8.3	15.0	NA

Notes: See text for a description of the severity index. As to the severity of the banking crises for the 1997 crises in Asia, we rely on estimates of the bailout costs as of December 1997. NA denotes not applicable.

of an economy on the eve of a crisis, our basic premise is that the more widespread the economic problems are, the larger should be the number of indicators that exhibit "anomalous" behavior on the eve of a crisis.[4] Thus, we need to tally, crisis-by-crisis, what proportion of the 15 indicators were showing aberrant behavior in the 24 months preceding the financial crisis. This information is summarized for the three regions in Table 2. For instance, in the 24-month period prior to Venezuela's currency crisis in May 1994, 10 of the 15 (67 percent) of the indicators were exhibiting "anomalous" behavior; this crisis gets counted in the second row of Table 2, labeled 60–79 percent. Hence, the top row of each panel in Table 2 provides information on the share of the crises in our sample that were preceded by abnormal behavior in at least 80 percent of the indicators. Quite clearly, LA economies were more frail on the eve of crises than were economies in other regions. In 45

[4] For a detailed description of the methodology used to classify what is considered "anomalous" behavior in an indicator and what is not, see Kaminsky and Reinhart (1996).

percent of the currency crises in LA, 80–100 percent of the indicators were indicating problems. Only 29 percent of the EA crises were preceded by so many flashing red lights. A similar regional disparity is evident on the eve of past banking crises.

To measure the *severity* of a currency crisis, we focus on a composite measure that averages reserve losses and the real exchange-rate depreciation. For reserves, we use the six-month percentage change prior to the crisis month, as reserve losses typically occur prior to the devaluation (if the attack is successful). For the real exchange rate, we use the six-month percentage change following the crisis month, because large depreciations occur after, and only if, the central bank concedes by devaluing or floating the currency. This measure of severity is constructed for each currency crisis in our sample, and the regional averages are reported in Table 3. For banking crises, we use the bailout costs, as a percentage of GDP, as the measure of severity; regional averages are also reported.

The first row of each panel in Table 3 presents evidence of the historical patterns; it is clear that the LA financial crises were far more severe than those elsewhere. The average severity index for currency crises is more than

three times larger for LA than for EA; an even larger discrepancy is evident for the banking crises, where the average cost of the bailout is about seven times larger in LA than in EA. The second row in each panel records the readings of this index for the recent crises, Argentina and Mexico in 1994–1995 and the ongoing crises in Indonesia, Malaysia, Phillippines, and Thailand. The bailout costs of the banking sector are estimated to range from a low of about 7 percent of GDP for the Phillippines to over 20 percent of GDP for Thailand. The picture that emerges is quite distinct from the historical pattern. Both on the currency and banking side, the severity of the recent crises is at par with those recorded for LA in the past. For instance, for the Thai case, by mid-December the baht had depreciated about 80 percent while the percentage decline in reserves was of a similar magnitude, when the forward position is included. The cost of the bailout of banks has surpassed that of rescuing the Mexican banks (see Amar Bhattacharya et al., 1997).

II. Why Are Regional Differences Eroding?

We have argued that, historically, financial crises have been more frequent and severe in LA than in other regions. Yet we conclude that the severity of the recent crises in EA matches LA standards more closely than the EA historical norm. In this section, we speculate why the regional differences may be eroding.

In the early 1990's, when capital began to flow to emerging market economies, countries in East Asia were enjoying substantial amounts of foreign direct investment (FDI) and a low share of their capital inflows were short-term. By contrast, Latin America's poor track record of chronic inflation and low growth was cited as a key reason why a dominant share of the capital flowing to that region was of a short-term nature and FDI flows were comparatively scarce (Table 4). By 1996, these stark regional differences in the composition of capital flows had all but disappeared. In several East Asian countries, persistent bouts of sterilized intervention kept short-term interest rates high relative to international levels and acted as a magnet for short-term capital inflows. Indeed, the evidence

TABLE 4—EAST ASIA AND LATIN AMERICA: SIGNS OF CONVERGENCE?

Indicator	1986–1995		1996	
	East Asia	Latin America	East Asia	Latin America
Inflation rate	6.3	429.2	5.6	10.9
Real GDP growth	7.0	3.3	7.1	4.9
FDI/(short-term and portfolio flows)[a]	77.2	42.2	61.8	110.5

Note: Latin America here comprises the four largest capital importers in the 1990's: Argentina, Brazil, Chile, and Mexico.

[a] The ratio of FDI to short-term and portfolio flow, expressed as a percentage. The composition of capital flows is for 1990–1992 or the "early wave" of the capital inflow surge.

presented in Peter J. Montiel and Reinhart (1998) suggests that these policies played a key role in explaining the rising volume of short-term flows that countries such as Malaysia and Thailand attracted. At the same time, a number of Latin American countries implemented major inflation-stabilization programs, and growth in that region rebounded from its bleak performance during the 1980's. Despite the setbacks associated with the Mexican crisis of December 1994 and its "tequila" effects, the pattern of lower inflation and higher growth has persisted in 1996 and 1997. Largely owing to improved economic prospects in LA, FDI began to account for a rising share of capital flows to the region.

In EA, the rising volume of short-term flows was largely intermediated by the poorly regulated and ill-supervised domestic banking sectors. Indeed, the overlending and asset-price cycles in EA of the 1990's are reminiscent of the cycles that followed financial liberalization in many Latin American countries. The policy dilemma that has recently characterized several Asian countries, the choice between high interest rates to defend the peg and ample liquidity to help troubled financial institutions, is also reminiscent of Chile's currency and banking crises in the 1980's. It appears that the combination of volatile international capital and weaknesses in

the financial sector may be at the heart of the 1997 crises in EA and may explain their severity.

III. Concluding Remarks

Historically, there were marked differences between the fierceness of financial crises in EA and in LA. In the 1990's, LA made progress toward stabilization—although at the time of this writing LA remains vulnerable to contagion. At the same time, the severity of the 1997 EA financial crises has escalated to magnitudes not seen earlier in that region and is comparable to that of the LA financial crises of the past. Regional differences are eroding.

What accounts for convergence is food for future research. However, on the basis of our analysis, one may speculate that some of the past differences in the volatility of the capital account and financial sector have diminished in the world of mobile capital and more deregulated financial markets. Regional differences in the composition of capital flows to the two regions eroded throughout the 1990's, as an increasing volume of short-term capital was funneled into Asia. Also, the booms in lending and asset prices that characterized the EA economies before the bubble burst in 1997 are reminiscent of the post-financial-liberalization episodes in LA. It appears that, in a deregu-

lated world, the "well-behaved" Asian financial crises are a relic of the past.

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