

**RESOLVING THE INTEREST RATE PREMIUM PUZZLE:
CAPITAL INFLOWS AND BANK INTERMEDIATION IN
EMERGING ECONOMIES**

by

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Abstract

This paper develops a simple bank-based analytical framework to explain why and how capital inflow surges and lending booms could lead to higher real interest rates in the domestic economy, even after adjusting for country/currency risk premia and exchange rate changes. While this phenomenon of ever-rising capital inflows and sustained - possibly, even widening - interest rate spreads is an important stylized fact in East Asia prior to the 1997-98 crisis, it may be more generally applicable to emerging economies experiencing lending booms.

Key words: banks, currency crisis, East Asia, financial liberalization, interest rates, Thailand

JEL Classification: F30, F32, F41

1. Introduction

Emerging economies have experienced a boom and bust pattern of capital flows. Financial liberalization leads to an initial inflow of capital. However, lax prudential supervision, along with the difficulty of discriminating between good and bad risks during a boom, means that resources may be allocated inefficiently. At some point, a change in market sentiment is triggered that then results in a currency and banking crisis. Indeed, where domestic liabilities have been accumulated in foreign currencies, and are unhedged¹, the currency and banking crisis can rapidly turn into economic and financial collapse, as happened in East Asia².

To understand the period of bust, where most attention has fallen, it is also necessary to understand the period of boom which acts as a precursor. Conventionally, two explanations have been offered. First, that the trade liberalization that almost certainly accompanies financial liberalization is viewed as temporary (due to “time inconsistency” problems), encouraging consumers to bring forward consumption of imported durables (Calvo, 1989 and Dornbusch, 1982). Second, that capital is attracted by high interest rates in liberalizing economies relative to those on offer in the rest of the world.

However, there are problems with each of these explanations. Certainly there was little reason to believe policies would be reversed in East Asia, and, in any case, capital inflows were used to finance investment rather than consumption. This seems to suggest that an explanation based on interest rates is to be preferred. But there is another difficulty, since arbitrage should eliminate any interest rate differential and

¹ This *de facto* “liability dollarization” occurs because of the maintenance of a credible peg prior to the crisis, on the one hand, and the relatively high costs of hedging in emerging economies, on the other.

² Kaminsky and Reinhart (1999) have documented the high correlation between banking and currency crises (so-called “twin crises”) since the late 1980s and 1990s. More generally, based on data for that broad time period, the IMF (1998, pp.115-6) has observed that banking crises led currency crises by one year on thirteen occasions and by two years ten other times. Currency crises preceded banking crises by a year only seven times and by two years four times. The two crises were contemporaneous in twelve instances.

rule out sustained inflows. In the East Asian case, an interest rate advantage persisted. Indeed, domestic interest rates actually increased following financial liberalization. Moreover, the persistent interest rate advantage in favor of East Asian economies was associated with rising domestic interest rates rather than falling world interest rates. In other words, capital was “pulled” rather than “pushed”.

But why did capital inflows fail to eliminate interest rate differentials? Why were inflows associated with rising domestic interest rates that then perpetuated the inflows and made the bust that much more severe when it occurred? It is these questions that are analyzed in this paper.

2. Capital Inflows and Lending Booms in East Asia

There are a number of noteworthy features of the 1990-96 lending boom in East Asia. First, as shown by Table 1, total capital inflows generally exceeded current account deficits, allowing international reserves to be accumulated³. Reserve accumulation was particularly high in the cases of Malaysia and Thailand, which, along with Indonesia, were among the ten largest emerging market recipients of net private capital flows during the period under consideration (Lopez-Mejia, 1999). This period also saw the regional economies liberalizing their domestic financial sector and decontrolling their capital accounts. In Thailand, for instance, the establishment of the Bangkok International Banking Facility (BIBF) in early 1993 authorized financial institutions to accept deposits and loans from abroad in foreign currencies, extend loans to both overseas and local markets, and engage in cross currency foreign exchange (forex) trading and loan syndication.

Insert Table 1

Of total private capital flows, and with the exception of Malaysia, the largest single component was “other investment”, comprising a range of short and long term credits (including the use of IMF credit) and currency transactions. The heavy

³ Official flows were only significant in the Philippines, without which there would have been a drain on reserves, as private capital inflows were, on average, insufficient to offset the persistent current account deficits that were run.

dependence on short term debt flows resulted in a dramatic rise in the ratio of such debt to forex reserves. As Table 2 shows, most of the debt inflows took the form of inter-bank lending, and there was a corresponding boom in bank lending to the private sector. As a consequence, broad money (M2) rose sharply⁴.

Insert Table 2

While many of the East Asian economies continued to experience rapid economic growth during the boom period of capital inflows, this appeared to be based on an increase in investment rather than an increase in consumption, as had been the case prior to the Tequila crisis in Mexico (Table 3)⁵. The related current account deficits were, therefore, not widely perceived as cause for concern, a view encouraged by the fact that there were no obvious signs that the economies were “overheating”. Inflation was not accelerating and real exchange rates (REERs) were not appreciating⁶.

Insert Table 3

3. The Interest Rate Premium Puzzle

What was happening to interest rates over this period? The expectations might be that financial liberalization would lead to an increase in interest rates that would then encourage capital inflows. However, by increasing the supply of domestic credit, these inflows would drive down domestic interest rates, and, in the longer term, capital inflows would fall back. Although the evidence on monetary and credit growth is consistent with this story, Table 1 shows that in East Asia, capital inflows

⁴ There is a large body of empirical evidence that suggests that a high and growing M2 to reserves ratio may be an early warning of impending monetary and financial difficulties (see, for instance, Kaminsky and Reinhart, 1999 and Rodrik and Velasco, 1999). This is not surprising, as the ratio of M2 (broad money) to international reserves is, after all, the inverse of the degree to which liquid domestic liabilities of the banking system are supported by foreign reserves.

⁵ Of course, a significant part of the investments in Thailand were channeled into the real estate sector.

⁶ The nearly 50 percent nominal appreciation of the US\$ relative to the yen between June 1995 to April 1997, led to a rise in the value of the regional currencies relative to the yen. This in turn contributed to a marked appreciation of the REERs of most of the East Asian economies by end December 1996 and into mid 1997 over 1995 (Rajan, 1999).

continued unabated. What was the reason for the sustained capital inflow into East Asia?

Table 4 provides an important clue. Note not only were East Asian currencies stable against the US dollar, but also this stability was accompanied by a fairly high interest rate premium throughout the period. The rapid monetary growth in the region suggests that capital inflows were not being fully sterilized, and the persistence of the interest rate premium remains something of a puzzle. If the persistence of capital inflows may be explained by a combination of exchange rate expectations and interest rate premia, the issue becomes that of explaining the durability of interest rate premia.

Insert Table 4

One possible explanation is that while exchange rates were pegged, the possibility of a large devaluation remained. In other words, there was a “peso problem”, i.e. a small probability of a large devaluation (Corden, 1999 and McKinnon, 1999). However, this explanation is far from universally accepted, with an alternative view being that East Asian currency pegs carried “excess credibility”⁷. This is particularly true of Thailand, which had a recent history of sound macroeconomic policies, with the last two devaluations of the baht against the US dollar being in 1981 and 1984 (by about 10 and 15 percent, respectively)⁸. Accordingly, the explanation of

⁷ For instance, Chang and Velasco (1998) have noted that:

there was, as we know ex-post, a non-trivial risk of nominal and real devaluations, but government words and deeds lead investors to underestimate such a risk. Economists often fret about exchange rate pegs that lack credibility; by contrast, Asian pegs seem to have enjoyed too much credibility (p.34).

⁸ On the other hand, the peso problem was probably of relevance in the case of Indonesia, which had experienced five major double-digit devaluations between the late 1960s and 1980 (Cole and Slade, 1996). This is reflected in the much lower average private capital inflows into the country (Table 3) despite having the highest interest differential over the LIBOR among the countries in question (Table 4). Additionally, Indonesia followed an explicit exchange rate policy of allowing the rupiah to depreciate by an average of about 4 to 5 percent relative to the US dollar in order to compensate for inflation rate differentials between Indonesia and the US. Malaysia was the only exception, with direct investment constituting some 70 percent of total capital flows on average (see Table 3). This is entirely consistent with the fact that the interest spread in Malaysia was negligible once exchange rate variability is accounted for (see Table 4).

the interest rate premium puzzle probably lies elsewhere.

Folkerts-Landau and Associates (1995), in their - almost prescient - review of capital flows and the domestic financial sectors in the region, drew the following conclusion:

(t)he ability of banks to accumulate foreign liabilities or domestic liabilities denominated in foreign currency was improved as part of the early deregulation process. Capital inflows were...encouraged by the relatively high interest rates that prevailed in the region. Although specific causes differed among countries, high interest rates were a direct result of such factors as monetary tightening, interest rate deregulation, the encouragement of competition among financial institutions, and the relatively high costs of intermediation (p.41).

Their emphasis on banks is warranted, given that a large part of the capital inflows into the region occurred through banks, as noted in the previous section. This emphasis on banks, bank inefficiencies and financial liberalization, motivates the simple analytical framework developed in the next section.

4. A Simple Framework of Banks and Capital Inflows

The starting point for our analysis is a bank-centered loanable funds framework in a closed economy. For our purposes, we follow Knight (1998) in assuming specifically the case of a single monopoly bank; the simplest imperfectly competitive structure⁹ (which allows us to abstract from issues arising from oligopolistic competition). Banking structures in the East Asian economies can be broadly classified as imperfectly competitive. Based on data for 1993-94, for instance, six of the largest commercial banks in Thailand accounted for about 70 percent of total commercial banking assets (Table 5). Indeed, imperfectly competitive banking structures are a general characteristic of emerging market economies (Fischer and Reisen, 1992).

Insert Table 5

⁹ Knight's (1998) focus was on comparing an imperfectly competitive banking structure with a perfectly competitive one with particular reference to the loan and deposit rate spreads. Given the emphasis on the loan market, we assume no cash/reserve requirements and that banks do not hold excess reserves.

We assume that the bank lends to firms only and that firms in turn can borrow only from the bank. We abstract from the possible roles of the consumer/household and the government as net debtors. This assumption is highly tenable in the case of East Asia, where fiscal balances were positive and aggregate private savings rates had been running at over 30 percent. We also assume that deposits are made by households. Rojas-Suarez and Weisbord (1995, p.4) have noted that bank deposits have formed the most important form of household savings in emerging economies, while bank loans have been the most important source of external finance for firms. Thus, the specific assumptions used in the framework linking consumers and firms to the banking sector have a strong empirical basis. Also, since our focus is on the pre-crisis boom period, we maintain the assumption of a credibly fixed exchange rate, which is normalized to one.

The economy-wide supply of funds relies on lending by the bank, which in turn takes in demand deposits from consumers. The supply of funds schedule is upward sloping, representing the marginal cost curve of the bank (Knight, 1998). The economy-wide demand for funds is “derived demand” for external finance. To be precise, we assume the existence of a “credit-in-advance” constraint, such that the firm self-finances a $(1 - \lambda)$ share of factor costs (through accumulated profits, for instance), with the remainder (λ) being financed through bank loans (Edwards and Vegh, 1997)¹⁰. We assume that the demand schedule is downward sloping in interest rates, an attribute of all factor demands¹¹.

¹⁰ Survey data of firms in East Asia for the period 1996-98 reveal that bank lending constituted some 35 percent of total working capital in Thai firms and about 20 percent in the cases of Indonesia and Malaysia (Hallward-Driemeier et al., 1999).

¹¹ The microfoundations of the loan market have been carefully derived by Edwards and Vegh (1998).

4.1 International Financial Liberalization

Referring to Figure 1, it is clear that domestic financial market equilibrium is given by point 0, which corresponds to Z_0 of credit at loan rate, i_0 . Assume now that the economy undertakes international financial liberalization (IFL). In the absence of bank intermediation, i.e. international macroeconomics without institutions, IFL simply refers to the removal of capital restraints, such that domestic interest rates converge to the international level (assuming the case of a small and open economy)¹². Thus, absent any frictions or imperfections, if capital is completely free to enter and leave the economy, domestic interest rates (i_d) may be written as follows:

$$i_d = i^* + \varepsilon_t + rp_t = i_f \quad (1)$$

where: i^* = international interest rates; ε = expected exchange rate depreciation (foreign currency per US dollar); and rp = (emerging) country/currency risk premium¹³.

Insert Figure 1

However, with banks acting as intermediaries of capital flows, IFL actually involves two distinct but related components, viz. capital account deregulation and internationalization of financial services. The relation between international capital flows and financial services may be succinctly and effectively captured by the following matrix borrowed from Kono and Schuknecht (1999). While Cell I on the uppermost left-hand corner refers to the case of financial autarky, i.e. neither financial services trade nor an open capital account. Cell IV on the bottom right-hand

¹² We are abstracting here from various other factors that could hinder the extent of effective capital account mobility for emerging economies (see Willett and Ahn, 1998). However, empirical analysis by Huang and Li (1999) suggests that there was a high level of capital mobility in the East Asian economies pre-crisis.

¹³ For the remainder of our analysis, we assume that the initial risk premium and expected exchange rate depreciation in the liberalizing economy equal zero (i.e., credibly fixed exchange rate pre-crisis), such that $i_f = i^*$.

side denotes the case of “complete” IFL, i.e. liberal capital account and bank internationalization. The remaining two cells may be broadly classified as “partial IFL”. Specifically, Cell II involves the case of bank internationalization with capital restrictions; while Cell III is the case of capital account deregulation but with restrictions on trade in banking services maintained. Of course, in reality, the two elements of IFL are related and cannot be cleanly separated. However, the assumption of total separability is useful conceptually, with Cells II and III best being seen as matters of degree of the two elements of IFL.

Insert Matrix

We now ask the following questions. First, starting from Cell I, what are the effects for an emerging economy of moving to Cells II and III, followed by complete IFL (Cell IV). Second, what is the “best” or “optimal” way of sequencing the transition from Cell 1 to Cell IV, i.e., should an economy first move to Cell II before Cell I, or vice versa?

4.2 Bank Internationalization

Internationalization of the banking sector is broadly defined as the elimination of barriers to entry and discriminatory treatment of foreign competition and cross-border provision of financial services. This in turn ought to lead to a decline in the cost structure of the domestic banking sector, due to the pro-competitive gains brought about by free trade in financial services, including that of permitting foreign institutions to establish subsidiaries domestically¹⁴. This conclusion is not dissimilar to that of the conventional trade literature, which argues that international trade can act as a disciplining device (i.e. antitrust mechanism).

¹⁴ We have also made the assumption that marginal costs of the domestic monopolist are everywhere above the world price, thus precluding the theoretical possibility of “export-inducing protection”. See Pomfret (1992) for a comprehensive and highly readable survey of some of these issues with regard to trade theory. Of course, the big difference between trade in goods and services, is that, in a number of instances, the latter requires the right of establishment of foreign suppliers.

Referring to Figure 1, *ceteris paribus*, bank internationalization should lead to a new equilibrium at point 1, which corresponds to interest rates at i_f and a credit supply of Z_1 . This is, of course, an “extreme” case of complete bank liberalization. In reality, bank internationalization tends to be gradual, political compulsions precluding a “cold turkey” or “big bang” approach (Dobson and Jacquet, 1999 and Kroszner, 1998). Indeed, there is a sound economic rationale for undertaking a careful and graduated move towards bank liberalization, so as to ensure that appropriate preconditions - such as the modernization of regulatory institutions and supervisory systems (Goldstein and Turner, 1996 and Kono and Associates, 1997) - are met (also see section 4.3)¹⁵.

Consider the case where internationalization involves continued maintenance of a monopolistic market structure, with foreign banks forming joint ventures with the domestic monopolist. This is broadly consistent with the East Asian pre-crisis approach towards liberalization (Claessens and Glaessner, 1998), and in emerging economies more generally (Kroszner, 1998)¹⁶. Entry into the domestic market by foreign banks can be expected to gradually drive down the cost structure of the domestic banking sector, as state of the art technology and best practices are introduced (Levine, 1996). Using bank level data for 80 countries during the period 1988-95, Claessens et al. (1997) found that the greater was the degree of foreign bank penetration, the lower was the domestic bank profitability and overall expenses. Similarly, using aggregate accounting data for 14 developed countries for 1976, Terrell (1986) found that domestic banks in countries that allowed the entry of foreign banks had lower profits and greater efficiency.

¹⁵ On the other hand, the danger of a gradualist approach to internationalization is that it may eventually “run out of steam”, as opponents of the program will have an opportunity to block it. As such, Dobson and Jacquet (1999) have emphasized the importance of making “credible and binding commitments to pursue full reform...(as)..a necessary complement to any gradual sequence, as it helps contain hostile domestic interests.”

¹⁶ Also see Dobson and Jacquet (1999) for detailed country case studies of experiences by selected emerging economies in Asia and Latin America with financial liberalization.

Within the context of our framework, the fall in the cost structure of the banking financial system will lead to a rightward movement/flattening of the loan supply curve following IFL (from L^s_0 to L^s_1). Thus, once money-centre banks are considered as the primary conduits through which funds are intermediated, one sees that, at the new equilibrium (point 2 in Figure 1), while credit expands (from Z_0 to Z_2), interest rates need not necessarily be driven down to international levels instantaneously (i.e, i_0 to $i_2 > i_f$)¹⁷.

4.3 Entry of Domestic versus Foreign Banks

As part of a graduated move towards liberalization of the banking sector, it is often the case that governments choose to liberalize the domestic banking sector before allowing foreign competition. This at least was the thinking behind the launch of the BIBF in Thailand, which allowed finance houses the opportunity to compete with the commercial banks in certain areas¹⁸.

This may be reflected in our framework as a “transformation” of the domestic banking sector from a monopolistic market structure to a perfectly competitive one. Assuming that the domestic banking cost structure remains unaltered, this implies that new domestic equilibrium is given in Figure 2 by point 3, which corresponds to higher credit flows but lower interest rates in comparison to the monopoly case ($Z_3 > Z_0$ and $i_3 < i_0$), i.e. an increase in the efficiency of financial intermediation.

Insert Figure 2

From a sequencing perspective, it would seem, therefore, that domestic banking deregulation prior to internationalization would be an appropriate

¹⁷ To the extent that an appropriately sequenced internationalization of the banking sector stimulates financial sector development, empirical studies suggest that economic growth/output should consequently be stimulated (King and Levine, 1993). Thus, a second round effect could involve a rise in output fueling investment demand, resulting in a rightward shift of the loan demand curve. We, however, ignore this second round effect. In any event, Beck et al. (1998) find that growth is stimulated because of a rise in the Solow residual (total factor productivity) rather than an increase in capital (investment demand).

“intermediate step”. However, this need not necessarily be the case. It is possible that the deregulation of the banking sector could lead to “excessive competition”, as there could be substantial disruption to the domestic financial system. Finding their margins squeezed and franchise values eroded, domestic banks may undertake increasingly risky and speculative investments, i.e. they may “gamble for redemption”¹⁹. In addition, foreign banks may be in a position to engage in “cherry picking”, i.e., choosing clients/debtors of highest quality, leaving the domestic banks with lower quality (default-prone) borrowers. In fact, Laeven (1999) finds that foreign banks took little risk relative to domestic banks in East Asia between 1992 and 1996.

Within the context of this framework, one may envisage a rise in bad loans due to these risky investments leading to steepening/leftward movement of the loan supply curve (Knight, 1998 and Peek and Rosengren, 1995)²⁰. Referring to Figure 2, if the leftward movement of the loan supply curve is “sufficiently large” (L^s_0 to L^s_2), it is possible that domestic deregulation could, in fact, raise domestic interest rates and lower the supply of credit more than the monopoly case - i.e. the new equilibrium may be at point 4, where $Z_4 < Z_0$ and $i_4 > i_0$.

For similar reasons, the opening up of financial markets to foreign competition ought to be appropriately paced and graduated. However, foreign competition brings with it additional benefits that are unlikely in the case of domestic competition. First, the lower cost structures/technological superiority of foreign banks (leading to a flattening of the marginal cost curve) has already been noted. Second, entry of foreign banks will reduce the extent of “non-commercial” or “connected” lending, as

¹⁸ Of course, the BIBF did not just involve bank liberalization, but, in fact, was also accompanied by capital account deregulation (see next section).

¹⁹ As Goldstein and Turner (1996) note of this policy dilemma:
just as too easy entry and too much competition can be harmful to risk-taking incentives, too much concentration in banking may confer monopoly advantages on incumbents (to the detriment of efficiency in banking services) (p.25).

²⁰ Berger and DeYoung (1997) find a two-way causation between loan quality and cost efficiency of bank runs in both directions, i.e. increase NPLs reduces cost efficiency and vice versa.

these banks are less politically connected and less likely to “capture” regulatory authorities (Kroszner, 1998). Third, a banking system with an internationally diversified asset base is more likely to be stable and less prone to bank runs and outright crises, since the domestic branches of foreign banks are able to obtain financing from the foreign head office, which acts as a private lender of last resort (Claessens and Glaessner, 1998 and Eichengreen, 1998)²¹. In addition, since foreign banks’ portfolios are much less concentrated in any single country, particularly in the emerging host ones, they are much less susceptible to country-specific crises. Fourth, bank internationalization may create domestic pressure for local banking authorities in the host countries to enhance and eventually harmonize regulatory and supervisory procedures and standards to international best practice levels (Kono and Schuknecht, 1999 and Levine, 1996).

4.4 Capital Account Deregulation

We now consider the case of capital account deregulation without bank internationalization. The greater availability of “cheap” foreign finance should lead to an increase in the demand for funds²². For instance, focussing on Thailand, available data suggests that the share of external finance used by Thai firms (λ) rose to about two-thirds between 1991-95, significantly above the one-third average between 1980 and 1990 (Sirivedhin, 1997, p.38). This being the case, Figure 3 shows that capital account deregulation should lead to a rightward movement of the loan demand schedule (from L^d_0 to L^d_1). The new loan market equilibrium is given by point 5, which

²¹ Thus, it is often noted that foreign banks in Argentina and Mexico were able to maintain access to offshore financing during the Tequila crisis of 1994 and 1995, while domestic banks were faced with credit squeezes.

²² Simultaneously, the low costs of funds should also reduce the cost structure of the domestic bank, leading to a rightward movement/flattening of the loan supply schedule. This is, however, a second order effect to the demand side one, and is thus ignored.

is characterized by greater domestic credit flows ($Z_5 > Z_0$) and higher interest rates ($i_5 > i_0$).

Insert Figure 3

4.5 Overall Effects of IFL within a Bank-Based Economy

The overall impact of IFL (taken to mean the simultaneous internationalization of the banking system and capital account deregulation) on domestic interest rates, depends on whether the cost reduction/efficiency gains in the financial side of the economy (which affects the loan supply curve) outweigh the procyclical effects of the domestic credit boom on the real sector (which affects the loan demand curve). *A priori*, one cannot tell what will happen to domestic interest rates, although domestic credit unambiguously rises.

However, it is likely that liberalization invariably leads to the demand-side effects in the real sector (due to domestic credit boom) dominating the supply-side effects in the financial sector (due to efficiency gains), with the result that domestic interest rates rise. This is particularly so, given that governments may find it politically more palatable to undertake the “demand-enhancing” step of capital account deregulation first. On the other hand, liberalization of the banking system is a politically contentious issue, not least because of the strong lobbying power of domestic bankers and the structural adjustments involved. Indeed, it is notable that this capital account-first sequencing was undertaken by the East Asian economies²³. This being the case, our analysis suggests that that IFL could lead to ever-rising capital inflows and sustained - possibly even widening - interest rate spreads. The analysis helps to resolve the interest premium puzzle.

²³ For instance, Claessens and Glaessner (1998) have observed that:
(m)any financial markets in Asia are still quite closed to international competition in financial services, even though these same economies have substantially relaxed their controls on capital movements in recent years (p.5).

5. Concluding Remarks

This paper has made the simplifying assumption that the bulk of capital flows in emerging economies are intermediated through banks. This seems to be a reasonable generalization. Admittedly, the framework fails to adequately capture the Indonesian experience, in which foreign debt was largely accumulated by large corporations (World Bank, 1999). But keeping this caveat in mind, the aim has been to develop a simple framework to explain why and how capital inflow surges and lending booms can lead to higher real interest rates spreads in an emerging economy, even allowing for risk premia and exchange rate changes. Increasing capital inflows and sustained - possibly even widening - interest rate spreads were important features in East Asia prior to the crisis of 1997-98, but may be more generally applicable to economies experiencing lending booms.

Standard macroeconomic theory has, by and large, either completely ignored the role of banks in the intermediation process (Calvo, 1996), or implicitly assumed it to be smoothly functioning. Neither alternative is satisfactory, particularly with regard to emerging economies. Early on, Folkerts-Landau and Associates (1995) cautioned about the inefficiencies and fragilities of the banking sectors in emerging East Asian economies, even as their macroeconomic indicators looked strong. Similarly, Edwards (1998) expressed concern about the important role played by financially weak banks in Latin America, through which a large part of capital inflows have been intermediated.

Motivated by these shortcomings, this paper has developed a simple bank-based analytical framework which suggests that the failure of interest rate to converge, even after capital decontrol, may, in large part, be due to uncompetitive domestic banking structures. An immediate policy conclusion is that the internationalization of banks should be encouraged in the advance of capital account

deregulation²⁴. Studying trade flows in banking services involving more than 3600 banks among 141 countries, Wengel (1995) finds that relaxing exchange and capital restraints by a country reduces the incentives for bank internationalization²⁵. Given this possible “substitution effect” between capital account liberalization and bank internationalization, sequencing the latter ahead of the former may mitigate the oft-noted problem of “excessive” capital inflows following international financial liberalization. Accordingly, emerging economies may be advised to maintain selective controls on the capital account while moving towards the internationalization of the banking sector. The simple framework developed in this paper provides an analytical basis for supporting this sequencing, something that has hitherto been missing in the literature.

²⁴ See Fischer and Reisen (1992) for a similar sequencing recommendation, though laid out much more informally. We assume the caveat throughout that liberalization is subject to adequate legal and prudential apparatus being in place.

²⁵ More indirect but robust evidence is provided by Klein and Olivei (1999). They find that while capital account liberalization promotes financial depth and economic growth in OECD economies, there is no evidence of this occurring in the case of emerging (non-OECD) economies.

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Table 1
Net Capital Flows (% of GDP), 1989-1996

	1991	1992	1993	1994	1995	1996	Simple Average ^b
<u>Indonesia:</u>							
Private Capital Flows	4.6	2.5	3.1	3.9	6.2	6.3	5.1
Direct investment	1.2	1.2	1.2	1.4	2.3	2.8	1.7
Portfolio Investment	0.0	0.0	1.1	0.6	0.7	0.8	0.5
Other Investment	3.5	1.4	0.7	1.9	3.1	2.7	3.0
Official Flows	1.1	1.1	0.9	0.1	-0.2	-0.7	0.7
Change in Reserves ^a	-2.4	-3.0	-1.3	0.4	-0.7	-2.3	-1.7
<u>Malaysia:</u>							
Private Capital Flows	11.2	5.1	17.4	1.5	8.8	9.6	10.2
Direct investment	8.3	8.9	7.8	5.7	4.8	5.1	7.2
Portfolio Investment	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Investment	2.9	6.2	9.7	-4.2	4.1	4.5	2.9
Official Flows	0.4	-0.1	-0.6	0.2	-0.1	-0.1	0.0
Change in Reserves ^a	-2.6	-11.3	-17.7	4.3	2.0	-2.5	-5.1
<u>Philippines:</u>							
Private Capital Flows	1.6	2.0	2.6	5.0	4.6	9.8	4.1
Direct investment	2.0	1.3	1.6	2.0	1.8	1.6	1.8
Portfolio Investment	0.3	0.1	-0.1	0.4	0.3	-0.2	0.2
Other Investment	0.2	0.6	1.1	2.5	2.4	8.5	2.1
Official Flows	3.3	1.9	2.3	0.8	1.4	0.2	2.0
Change in Reserves ^a	-2.3	-1.5	-1.1	-1.9	-0.9	-4.8	-1.8
<u>Thailand:</u>							
Private Capital Flows	10.7	8.7	8.4	8.6	12.7	9.3	11.5
Direct investment	1.5	1.4	1.1	0.7	0.7	0.9	1.6
Portfolio Investment	0.0	0.5	3.2	0.9	1.9	0.6	1.4
Other Investment	9.2	6.8	4.1	7.0	10.0	7.7	8.5
Official Flows	1.1	0.1	0.2	0.1	0.7	0.7	0.1
Change in Reserves ^a	-4.3	-2.8	-3.2	-3.0	-4.4	-1.2	-4.3

Notes: a) minus sign denotes a rise and vice versa

b) 1989 to 1996

Source: IMF

Table 2
International Bank and Bond Finance for the East Asian Economies^a
(US\$ billions), 1990–1996

	1990-94	1995 Q1-1996 Q3
Net Interbank Lending	14	43
Bank Lending to Non-banks	2	15
Net Bond Issuance	3	17
Total	19	75
<u>Memo Item</u>		
Total Equity Flows	11	17 ^b

Notes: a) aggregate for Indonesia, Malaysia, Philippines, South Korea and Thailand

b) year-on-year

Source: BIS

Table 3
“Effects” of Capital Inflows (%), 1988-1995

	Inflow Episode	Net Private Inflows ^{a,b}	Cumulative Inflows (end of period) ^a	GDP Growth ^b	Inflation Rate ^b	CAD ^{a,b,c}	Inv. ^{a,b,d}	Cons. ^{a,b,e}	Average REER ^{b,g}
Indonesia	1990-95	1.42	8.3	2.2	1.3	0.15	5.7	-5.2	-29.4
Malaysia	1989-95	5.95	45.8	4.0	1.4	2.78	4.8	-1.8	-24.5
Philippines	1989-95	3.78	23.1	2.2	-3.1	0.66	1.7	6.1	-10.7
Thailand	1988-95	6.83	51.5	3.9	-1.1	2.31	13.4	-11.2	-18.9
South Korea	1991-95	4.20	9.3	-2.5	0.8	4.97	4.7	1.1	4.4
<u>Memo Item</u>									
Mexico	1989-94	7.17	27.1	2.9	-74.4	7.05	2.4	6.7	20.0

Notes: a) as percent of GDP

b) change from immediately preceding period of equal length

c) CAD – current account deficit

d) Inv. – investment

e) Con. – consumption

f) REER – real effective exchange rate

g) refers to percentage change in REER; positive value implies appreciation

Source: Lopez-Mejia (1999)

Table 4
Macroeconomic Conditions Leading to Unhedged External Borrowing
in East Asia, January 1991-June 1997 (%)

Country	Interest Rate Spread ^a (%)	Annual Average Appreciation v/s US\$ ^b	Exchange Rate Variability ^c
Indonesia	11.5	-3.8	0.7
South Korea	4.1	-3.2	3.4
Malaysia	1.6	1.2	2.6
Philippines	6.5	0.9	3.8
Thailand	4.0	-0.3	1.2

Notes: a) local deposit rate less LIBOR (US\$) for East Asian economies, period average
b) + implies an appreciation; - implies a depreciation
c) standard deviation of percentage deviation of exchange rate from regression time trend
Source: World Bank (1999)

Table 5
Market Structure of Banking Sectors in East Asia

	as of	<u>Number of Banks</u>		<u>Number of Branches</u>		<u>Market Concentration</u>	
		Foreign/ Joint	Total	Foreign/ Joint	Total	Number of Banks	Share of of Commercial Bank Assets (%)
Hong Kong	1995	154	185	N.A.	N.A.	N.A.	N.A.
Indonesia	1996	41	239	86	5919	7	50 ^b
South Korea	1995	9	40	N.A.	N.A.	6	65.7 ^c
Malaysia	1995	16	37	144	1433	6	59.4 ^d
Philippines	1995	14	47	4	3000 ^a	6	51.5
Singapore	1993	22	35	347	90	N.A.	N.A.
Thailand	1996	14	29	14	3039	6	68.5 ^e

Notes: a) approximate figure
b) the 7 state banks held 44% deposits of the banking system and 52% of total credits; and 50% of total banking system assets
c) the 6 banks accounted for 65% of total South Korean commercial banking system assets
d) the 6 accounted for 59.4% of total Malaysian commercial banking system assets and >80% of domestic bank assets
e) the 6 accounted for 68.5% of total Thai banking system assets and 74.8% of domestic bank assets
Source: Claessens and Glaessner (1998)

Matrix on Domestic Versus International Capital Flows and Bank Internationalization^a

	Loan provided by domestic supplier	Loan provided by foreign supplier
Loan involves domestic capital only	<u>Cell I:</u> <i>Neither financial services trade nor international capital flows</i>	<u>Cell II:</u> <i>Financial services trade only</i>
Loan involves international capital only	<u>Cell III:</u> <i>International capital flows only</i>	<u>Cell IV:</u> <i>Financial services trade and international capital flows</i>

Source: Kono and Schuknecht (1999)