

The IMF and the Liberalization of Capital Flows

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Abstract

We evaluate the claim that the International Monetary Fund precipitated financial crises during the 1990s by pressuring countries to liberalize their capital accounts prematurely. Using data from a panel of developing economies from 1982-98, we examine whether the changes in the regime governing capital flows took place during participation in IMF programs. We find evidence that IMF program participation is correlated with capital account liberalization episodes during the 1990s. We verify the robustness of our results using alternative indicators of capital account openness. To determine whether decontrol was premature, we compare the economic and financial characteristics of countries that decontrolled during IMF programs with those of countries who did so independently and find some evidence of IMF-led premature liberalizations.

Key Words: IMF programs; capital account liberalization.

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The IMF and the Liberalization of Capital Flows

1. Introduction

The Asian financial crisis of 1997/98 was followed by a wave of analyses that sought to determine its causes. One charge that emerged frequently was that the IMF had indirectly precipitated the crisis by pressuring countries to liberalize their capital accounts prematurely. Desai (2003, p. 217), for example, wrote: "...the IMF encouraged a disaster-prone policy gamble of capital account liberalization in these economies before they had put their "structural house" in order." Similarly, Stiglitz (2002, p. 15) states that "...many of the policies that the IMF pushed, in particular, premature capital market liberalization, have contributed to global instability."

The IMF did play a role in the movement towards capital account decontrol that took place during the 1990s. Fund economists, like others, pointed out the advantages to developing economies of access to global capital markets. In September 1997, the IMF's policy-making Interim Committee proposed that the liberalization of capital flows be made a goal for the Fund's members—a proposal that was relegated to the sidelines and then dropped as the IMF sought to stem the massive capital outflows from East Asia.

However, the liberalization of capital flows was part of a global reaction against the Keynesian ideology of the post-World War II period. Under the Bretton Woods system, fixed exchange rates and capital controls protected countries from destabilizing external shocks. The counter-movement that began with the breakdown of the Bretton Woods system in the 1970s and accelerated in the 1980s sought to remove government controls and allow markets to operate freely. This trend in the developing economies was called the "Washington Consensus" by Williamson (1990), who included the decontrol of foreign direct investment (but not portfolio flows) in the list of policy measures

Whether or not the IMF was indeed directly associated with the wave of capital account liberalization is an empirical issue that can be examined. This paper offers an analysis of the determinants of the decontrol of capital accounts in developing economies. We use data from a panel of developing economies during the period 1982-98 to determine whether the changes in the regime governing capital flows took place during IMF programs. We also investigate the impact of other factors, such as currency crises, that may have affected the decision to decontrol. In addition, to assess whether liberalization was premature we compare conditions in countries that liberalized while participating in IMF programs with those that decontrolled independently.

While other studies have investigated the conditions that accompany the use (or absence) of capital controls, this paper explicitly addresses the issue of the timing of the change from a closed to an open capital regime, and is the first to use rigorous testing methods to investigate the linkage between that decision and the IMF. Our results are significant for a clearer understanding of the role of the Fund in capital account liberalization as well as economic reform in general.

The next section reviews the IMF's position on the use of capital controls. Section 3 summarizes the literature on the determinants of capital controls. Section 4 outlines the data and methodology used in the empirical analysis. Section 5 presents our results, including tests of robustness, and also a comparison of economic conditions in countries that liberalized with and without IMF programs. The last section offers our conclusions.

2. IMF and Capital Controls

The IMF's Articles of Agreement (Article VI, Section 1a) allowed countries to retain capital controls, and stipulated that countries could not draw upon the Fund's resources to meet a "...large or sustained outflow of capital." Private capital movements, however, began to grow in size and

importance in the late 1950s, and private capital flows were an important component in the adjustment process to the oil shock of 1973. The developed countries removed their restrictions on capital flows during the 1970s and 1980s. A number of countries in Asia moved in the same direction during this period, and were followed in turn by several South American economies at the end of the 1980s. African and Middle Eastern countries did not move as far in opening their capital accounts.¹

Using archival sources, Abdelal (2007) has traced the evolution of the IMF's position on this issue, which he shows emanated from the IMF's management with the support of the U.S. and the United Kingdom. Within the IMF, the leading advocates of decontrol were former Managing Director Michel Cadmessus and Manuel Guitián, then director of the Monetary and Exchange Affairs Department. Guitián (1995, p. 86), for example, wrote that "...a strong case can be made in support of rapid and decisive liberalization of capital transactions."²

While capital decontrol was never an explicit goal of the IMF and therefore could not be made part of the conditions associated with Fund programs, the IMF did at times advocate movement towards liberalization. An IMF Occasional Paper (1995, p. 6) by a staff team, for example, observed:

While generally eschewing an activist policy of urging rapid liberalization, the institution has in some cases encouraged developing countries to open their economies to foreign capital inflows and to liberalize restrictions on capital account transactions.

The IMF's Independent Evaluation Office has examined the Fund's position on capital account liberalization in a sample of developing countries during the 1990s. The IEO (2005, p. 51) found that "...a number of IMF-supported programs with some of the sample countries included references to aspects of capital account liberalization in the letters of intent (LOIs) or accompanying policy memorandums..." But the IEO's report (2005, p. 92) concluded that "In none of the program cases

examined did the IMF require capital account liberalization as formal conditionality, although aspects of it were often included in the authorities' overall policy package presented to the IMF."

Leiteritz (2005) ties the shift in the IMF's position on capital account decontrol to the U.S. policy of promoting access for U.S. financial firms to foreign markets. Similarly, DeLong and Eichengreen (2002, p. 237) claim that the Clinton administration's "...support for capital account liberalization flowed naturally from its belief in free and open markets...", as well as a belief that controls provided opportunities for corruption and were difficult to administer. Abdelal (2007), however, points out that the private financial sector in the U.S. (Wall Street) and the Institute for International Finance, which represents major banks, were much less enthusiastic than the Clinton administration about the transition towards capital decontrol.

This movement culminated in the proposal at the IMF's 1997 Annual Meeting to make the liberalization of capital movements one of the IMF's goals and to extend the Fund's jurisdiction to this area. The events in Asia, however, overshadowed the discussion, and increased challenges to the proposed Amendment. U.S. Congressional opposition and the Russian crisis combined to terminate the proposal in 1998.

3. Determinants of Capital Controls

There have been a number of studies of the determinants of capital controls since Epstein and Schor's (1992) pathbreaking work.³ The dependent variable in the majority of these studies was a binary indicator of the presence of capital controls available from the IMF, and an appropriate estimation model (probit, logit) was utilized to test the significance of proposed determinants of capital controls. The results have varied by period and by level of development.

However, a number of empirical relationships seem robust to alternative specifications. Richer countries, as measured by per-capita GDP, are less likely to maintain controls, as are countries with independent central banks. Countries with larger trade sectors are more likely to have liberalized capital flows, as have been countries with larger reserve/import coverage. Some of the earlier studies reported that left-wing governments were more inclined to maintain controls, as were governments with large consumption/GDP shares.

A change in regulation may also occur in response to some discrete event, such as a crisis. The direction of the change in such an occurrence, however, is ambiguous. On the one hand, a government may impose controls in order to stem capital outflows; on the other hand, capital account liberalization may serve as a signaling device for government officials to establish their reliability with global capital markets.

Haggard and Maxfield (1993) describe a sequence in which a populist government enacts expansionary economic policies, which result in capital flight. The government attempts to assuage the situation through the imposition of trade and capital controls, but a crisis ensues. A new team of policymakers emerges, and they seek to enhance the credibility of their government, using the liberalization of the capital account as a tool for doing so. Convertibility signals the government's intention to undertake reforms, and also constrains its ability to engage in budget deficit financing.⁴

Haggard and Maxfield (1996) point out that there will be domestic coalitions on both sides of the issue of capital account liberalization. Crises are likely to increase the power of those in favor of liberalization. They find evidence in favor of the proposition that balance of payments crises can prompt an increase in the openness of domestic financial markets.

Rowlands (1999) tested Haggard and Maxfield's (1993, 1996) hypothesis. He used data for the period 1970-1994, which showed that liberalization occurred when the current account balance was

improving, foreign reserves rising and the exchange rate appreciating. He interpreted these results as refuting the hypothesis, but also attributed the disparity in results to differences in the definition of liberalization and measurement issues.

Simmons and Elkins (2004), on the other hand, used a definition of currency crises based on Eichengreen, Rose and Wyplosz (1995), and found that such crises were associated with capital account liberalization. Abiad and Mody (2005) studied financial reform more broadly using an index of measures that included restrictions on international financial transactions. They reported that crises result in changes in the status quo, but the nature of the change depended on the type of crisis. Balance of payments crises increased the likelihood of reform, but banking crises had the opposite effect.

There has been relatively little econometric evidence on the impact of the IMF on the process of decontrol. Simmons and Elkins (2004) found that the use of IMF credit was associated with capital account restrictions, which they attribute to the existence of capital flight at the times of the adoption of a Fund program. Abiad and Mody (2005) reported that IMF programs have a strong impact on financial reform in countries that are highly repressed, but this effect declines as repression is diminished.

These two hypotheses—that decontrol takes place during an IMF program *or* that decontrol is a form of signaling during a crisis—are not mutually exclusive. Governments may adopt IMF programs in response to crises in the external sector, and the program itself serves as a type of commitment device. On the other hand, not all countries facing crises adopt Fund programs, and not all IMF programs are put into place in response to currency crises.

In the analysis below, we differentiate between these two accounts of the process of capital decontrol. Our paper distinguishes between the impact on liberalization of IMF programs and the consequences resulting from the occurrence of currency crises. We also interact the two variables to determine whether the nature of the effects varies in the presence of the other phenomenon.

4. Data and Methodology

We begin the sample period in 1982 and obtained data for 53 developing and emerging market economies.⁵ As this paper's focus is on the linkages between participation in IMF programs and the liberalization of the capital account, we first discuss the data on IMF programs and capital account controls. We then outline the methodology we use in order to identify the impact of the IMF on the decision to liberalize. Details on the sources of the remaining data are listed in Appendix A.

IMF Programs

The main IMF facilities designed to meet balance of payments stabilization needs are the Stand-By Arrangement (SBA) and the Extended Fund Facility (EFF), while those designed for longer-term development goals have been the concessionary programs, the Structural Adjustment Facility and Enhanced Structural Adjustment Facility (SAF and ESAF), which have been renamed as the Poverty Reduction and Growth Facility (PRGF). In general, Fund members can access credit tranches beyond the first 25% of their allowed quota only after a program agreement is signed between the IMF and the member's government. Conditionality ties the disbursement of credit in phases to the fulfillment of policies that the government has agreed to implement. We therefore define an IMF program as a signed agreement between the IMF and a sovereign government for a future distribution of resources.⁶

The distribution of IMF programs by type (nonconcessionary/concessionary), by region, and by decade is shown in Table 1. There were 241 nonconcessionary and 74 concessionary programs initiated and approved for our sample between 1982 and 1999. The nonconcessionary stabilization programs were primarily directed to Latin America (27% of program approvals) and Africa (35%). Predictably, given the poverty in the region, African recipients dominate the long-term concessionary structural programs with 61% of those programs.

Capital Controls

We conduct our initial analysis using the binary measure for restrictions on the capital account taken from the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions (AREAR)*. This measure is the only internationally comparable indicator of the legal framework that governs the capital account available for a large sample of countries on an annual basis. The IMF changed its methodology after 1996 to provide a more detailed measure of the rules and restrictions governing the capital account. Glick and Hutchison (2005) extended the original *AREAR* series through 1998, using the descriptions of country practices provided in the IMF's annual reports, and we incorporate their data into ours.⁷ As already noted, this is by far the most frequently used measure for capital controls. In Tables 2 and 3 we use the *AREAR* data to construct a binary indicator of capital account liberalization that equals zero in the preliberalized capital accounts and unity in the year of liberalization and the previous year (t and $t-1$).

To examine the robustness of our results, we also used two other measures of capital account openness. The first was developed by Miniane (2004), who utilized the new criteria developed by the IMF, and extended these backwards to 1983 for a set of developing and developed countries. From this detailed data, Miniane (2004) constructed an index of openness that ranges from zero to one. We transformed this index so that one signifies a completely unrestricted capital account. There are data for 14 developing countries in this data set.

The second indicator of capital account openness was developed by Chinn and Ito (2006a, 2006b). They used the data reported in the *AREAR* on the existence of multiple exchange rates, restrictions on the current and capital accounts (where the latter is measured as the proportion of the last five years without controls) and requirements to surrender export proceeds in order to capture the intensity of controls on capital account transactions. Their index of openness is the first standardized

principal component of the four variables above, and ranges from -2.5 in the case of full control to 2.5 in the case of complete liberalization. The data is available for 108 developed and developing countries for 1970-2000. Given our interest, we utilize only data for developing countries for 1982-1998.

Descriptive statistics for the *AREAR*, Miniane and Chinn-Ito data are provided in Table 2. We note that the Middle East appears to be the most open while Africa has by far the most restrictive capital accounts. Appendix B in the working paper version (Joyce and Noy 2005) lists the countries that decontrolled capital flows and the dates of liberalization in the three data sets. Alternative measures that examine the *de facto* openness of the capital account are also occasionally used in research on openness in international capital markets, but these are not directly relevant to our interest in the impact of the IMF on a government's decision to change its *de jure* treatment of capital flows.

Estimation Methodology

The *AREAR* data on capital account controls and our indicator of capital account liberalization, which is the measure we focus on, is binary. Since we are interested in isolating the IMF's impact on the decision to liberalize the capital account, we estimate a multivariate probit specification of the determination of the openness of the capital account. We postulate a probit model of this form:

$$[\text{prob}(CAPLIB_u = 1)] = F(\alpha_i + \beta X_u + \gamma P_u + \delta IMF_u) \quad (1)$$

where *CAPLIB* is a binary variable denoting the *de jure* openness of the capital account, α_i is the country-fixed-effect, *X* is a vector of macroeconomic and financial variables, *P* is a vector of political and institutional measures and *IMF* is a measure denoting participation in an IMF program. In order to make the signs of the coefficients using the data sets comparable, we transform the IMF's *AREAR* data so that the dependent variable takes the value of unity when there is an unregulated capital account and zero otherwise.

We first specify a series of benchmark regressions with macroeconomic and political control variables, based on previous work. We started with a full set of control variables, and incrementally delete the least significant variable verifying each step with a reduction in the Akaike Information Criterion (AIC). We then augment these variables with various measures of participation in IMF programs. The estimations include country fixed effects (not reported) and a correction for heteroscedasticity. The pseudo R^2 is computed using the definition from Zavoina and McElvey (1975).

The Miniane (2004) and the Chinn and Ito (2006a, 2006b) capital account openness indices, which we use to examine the robustness of our results, are continuous. The continuous measures of capital account openness (the 0 - 1 Miniane index and the Chinn-Ito -2.5 - $+2.5$ index) ignore differences in the degree of openness or repression that occur for those observations that occupy the extreme ends of these measures. For these indices, we use similar specifications to those in the previous tables for the *AREAR* measures but with a Tobit estimation methodology since the data are censored.

5. Results

Determinants of Liberalization

Table 3 reports the results for the benchmark regressions, using the indicator of capital control liberalization derived from the *AREAR* data as the dependent variable and incrementally reducing the list of control variables as described in the previous section. In the final specification, eq. 2.3, few of the variables were significant for the standard 10% threshold. A higher level of government consumption was found to be linked to the use of controls, which is most likely due to the government's need to levy taxes. This result was consistent with those reported by Brune et al. (2001), Glick and Hutchison (2005), Grilli and Milesi-Ferretti (1995) and Milesi-Ferretti (1998).

Coefficients for the other economic variables were not statistically significant in the determination of liberalization. However, if the original AREAR data indicating the existence or absence of controls are used as the dependent variable (as in table 4), a number of economic variables were significant in line with previous research.⁸ An increase in the reserve coverage of imports is associated with a liberalized capital account; Leblang (1997) and Rowlands (1999) reported similar results. Trade openness is associated with unregulated capital flows, as Brune et al. (2001), Grilli and Milesi-Ferretti (1995), Milesi-Ferretti (1998), Rowlands (1999) and Simmons and Elkins (2004) also found and a rise in short-term debt is associated with an open capital account.

The binary indicator of a currency crisis is not significant in any of the specifications. Several other economic variables that have been mentioned in the literature were also not significant in any of our results. These included a foreign interest rate (weighted average of G3 rates), the current account scaled by GDP, per-capita GDP, an indicator of banking crises, the government budget surplus, and the type of exchange rate regime.

Several political variables were also initially included in the benchmark regression. An increase in government unity, measured by the sum of the squared seat shares of all parties in the government (a Herfindahl index), was associated with lower likelihood of liberalization, and this effect was significant at the 1% level. This result suggests that decontrol occurs when the government is divided, and may not be able to withstand external pressure. This may also be related to the finding reported by Glick and Hutchison (2005), Grilli and Milesi-Ferretti (1995) and Milesi-Ferretti (1998) that an increase in the number of government changes was inversely related to the presence of capital controls.

Corruption was not statistically associated with the act of liberalization, but in results not reported (see Joyce and Noy, 2005) was found to be inversely related to the level of openness to capital flows and significant at the 5% significance level, indicating that a government can extract rents from

these controls. The remaining political variables, including indicators of left-wing partisanship, democracy and the holding of elections, were never significant and were subsequently dropped. A dummy variable for the 1990s was positive but insignificant in the initial benchmark regression.

Table 3 uses the same dependent variable as in Table 2. Observations in which the capital account was already open for more than two years were discarded. To the specification reported in eq. 2.3 we now add our focus variables, the indicator of currency crises and various variables that proxy for IMF influence.

The 1990s variable continues to have a positive but insignificant coefficient, while the currency crisis coefficient is negative and insignificant. These results do not change in subsequent specifications. In equation 3.1, we add a measure of participation in an IMF program, NEWIMF, which indicates the initiation of an IMF program. The coefficient is positive and significant at the 1% level; a country was more likely to liberalize its capital account immediately after an agreement was signed with the IMF. The sample used for the estimation of equation 3.2 consisted of developing countries with a GDP per capita of at least \$1,500. The coefficient on the IMF program variable is again positive, only slightly bigger and significant at the 5% level. The sample period is restricted to the 1990s for equation 3.3, and the IMF program variable is now larger and significant at the 5% level.

We introduced the size of the IMF program scaled by GDP (IMFSIZE) as an independent variable in equation 3.4 to test whether the IMF had more leverage in cases of larger programs or a larger stake in pushing for reform. The coefficient has a 'plausible' positive sign and is almost significant at the conventional 10% level. In equation 3.5, we used two interactive variables, the new IMF program and the currency crisis variable, and the IMF program and a no-crisis variable. The coefficient on the latter is more than three times as large and statistically significant at the 1% level, suggesting that countries were more likely to liberalize during an IMF program in the absence of a crisis.

In Table 4, we test the robustness of our results using a different dependent variable, the nature of the capital account regime in levels using the *AREAR* data. The pseudo R^2 rises in the levels equations from 0.36-0.42 (in Table 3) to 0.63-0.86 in the specifications in Table 4. However, using the *AREAR* data in levels to capture the effect of IMF programs on the actual transition to a liberalized capital regime is an imprecise procedure. The existence of IMF programs can be consistent with such a regime, but may not have been a direct determinant of the changeover. Therefore, we treat these specifications only as an examination of the robustness of our results even though the goodness of fit measure of these equations is much higher.

We again report only the results for the variables of interest. In equation 4.1, a dummy variable reflecting the existence of an IMF program is added, and appears with a positive sign: those countries that adopted IMF programs were less likely to have controls. The 1990s variable now has a significant negative coefficient, which indicates that after controlling for all the other effects we identified, there were many countries that maintained controls during the 1990s despite an apparent wave of deregulation. The coefficient of the indicator of currency crises is generally insignificant and negative.

In the following equation we replaced the one IMF variable with two indicators, one for IMF programs in the 1980s and one for programs in the 1990s. The coefficient associated with the latter variable is significant at the 1% level and is almost 2.5 times bigger than the IMF program coefficient in the previous specification, whereas the 1980s program variable is not significant. Countries with IMF programs in the 1990s were significantly *less* likely to have controls, even though the negative coefficient on the 1990s variable shows that controls were more common in other countries during the decade.

In equation 4.3, we limit the observations to the 1990s. The IMF program variable continues to be positive and strongly significant, and maintains the same magnitude as that reported in equation 4.2.

Moreover, the currency crisis variable, which was not significant in either of the first two specifications, has a negative sign here which is significant. Countries with currency crises during the decade of the 1990s were more likely to maintain controls.

We interact the IMF program variable with currency crisis and non-crisis indicators in equation 4.4. Neither has a significant coefficient, although the IMF-crisis variable has a coefficient that is twice as big as the IMF-non-crisis variable.

In equation 4.5 we differentiate between the non-concessional IMF programs, such as the Stand-by Arrangements, and the long-run facilities, such as the Enhanced Structural Adjustment Facility. Both coefficients are positive, but the coefficient of the concessional programs is significant at the 10% level and is three times as big as the coefficient on the non-concessional program indicator, which is not statistically significant. This result is plausible, as capital account liberalization is consistent with the structural adjustment policies that are part of the concessional facilities.

In equation 4.6 we add the size of the IMF program relative to GDP as a variable. The coefficient is not significant for program size but the binary IMF program variable retains its magnitude and significance.

Tests of Robustness

In the remaining tables we use the two other indicators of liberalization, those of Miniane (2004) and Chinn-Ito (2006a, 2006b). Table 5 replicates the benchmark specifications of Table 2 using the Miniane data in equations 5.1 and 5.2 and the Chinn-Ito data in equations 5.3 and 5.4. A Tobit estimation is used to deal with the bias inherent in the least squares estimation procedures with censored data.

The specification we arrive at in equation 5.2 is similar to the one in equation 2.3. However, as discussed before, the estimation in levels has higher explanatory power, as is evident in the substantial number of statistically significant coefficients. These include reserve coverage and trade openness (- for the Miniane data but + for the Chinn-Ito data), government consumption(-), short-term debt (-), the fiscal surplus (+), per capital GDP (+), the current account (+), and foreign interest rates (-).

Government unity is significant here, again with a negative sign. Democratic regimes are now found to be less likely to have liberalized international capital account in the Chinn-Ito data set. The other controls that were insignificant in Table 2 remain insignificant with both the Miniane and Chinn-Ito data, and are consequently dropped from the specifications reported in Tables 6 and 7. The results in Tables 6 and 7 are remarkably similar, even though the dependent variable is different and therefore the sample size is considerably different also.

In Table 6 we add variables regarding IMF programs to the benchmark specification for the Miniane data, equation 5.2 of Table 5. In equation 6.1, the IMF variable appears with an insignificant coefficient, while the 1990s variable is positive and significant. In the following equation we distinguish between IMF programs of the 1980s and those that occurred in the 1990s. The former has a negative coefficient significant at the 10% level, whereas the latter has a positive coefficient, which is significant at the 5% level. These results corroborate our conclusion from equation 4.2 that the IMF had a bigger impact on eliminating capita controls in the 1990s.

In equations 6.3 and 6.4, we introduce the interactive IMF and currency crisis variable that we had used in Table 3. It appears here with a positive coefficient that is insignificant. We conclude we cannot find credible evidence that the IMF's impact on the existence of capital controls depended on whether the country underwent a financial crisis.

Finally, we use the Chinn-Ito index as the dependent variable, and in equations 5.3 and 5.4 we report the results of estimations with the control variables. In Table 7 we add the program and other variables to the benchmark equation, equation 5.4. The results in the first two equations are identical to those reported in Table 6: the 1990s dummy has a positive significant coefficient, while the IMF program variable for the 1990s is again positive and significant at the 10% level. In equation 7.3, where we again interact the IMF program variable with the crisis and non-crisis variables, the coefficients are not significant.

Initial Conditions and Consequences

Desai (2003) and Stiglitz (2002) and other critics of the IMF have charged that not only did the IMF pressure countries to decontrol the capital account, but that this was done before the countries were ready for capital flows. Both writers point to this premature liberalization as the main cause of the financial crises that hit many emerging economies in the 1990s. As a preliminary step in examining this second charge, we determined which liberalization episodes were followed by financial crises in the four years following liberalization. We use the occurrence of sudden stops, i.e., reversals in capital flows, from Honig (2005) to ascertain the dates of financial crises. The liberalization episodes which were followed by crises are marked in Appendix B of the working paper (Joyce and Noy 2005). Crises do not seem to be more prevalent among the IMF-led liberalizing countries than in those countries that liberalized without IMF intervention.

To test the ‘premature liberalization’ hypothesis more systematically, we distinguish between the *ex ante* and *ex post* conditions in the countries that liberalized.⁹ We compare the characteristics of countries that decontrolled before and during their participation in IMF programs with those that liberalized without the IMF. Table 8 reports the mean values of several macroeconomic indicators for

these two groups in the year before liberalization (t-1) as well as the year of liberalization (t). We used the Chinn-Ito measurement of capital decontrol to identify the countries that liberalized, as that measurement yielded the largest number of episodes of liberalization.

The countries that decontrolled capital flows during an IMF program had on average larger current account deficits, smaller reserve coverage, higher inflation and larger budget deficits in the year before liberalization than the countries which removed capital account restrictions independently. The average current account deficit in the former group, for example, was 5.5% of GDP versus 2.6% for the latter, and this difference is significant at the 10% level. Reserves covered an average 2.5 months of imports for the IMF group and 4.2 months for those that liberalized without the IMF, and this difference is significant at the 1% level. Inflation for the first group averaged 204% versus 178% for the second, while the government budget showed an average deficit of -4.3% of GDP for the IMF group as opposed to -2.8% for the independent group. These two pairs of mean values were not significantly different.

However, the countries that decontrolled during participation in IMF programs showed markedly larger improvements in economic conditions in the year when the program began and capital restrictions were removed. The current account deficit fell to an average 3.5%, and the two means are no longer significantly different. Reserve coverage increased to an average of 3 months in the IMF-affiliated group, while reserve coverage for the second group declined somewhat; the difference is only significant at the 10% level. The rate of inflation in the group with programs declined to 31.4%, which is substantially lower than the rate of 124.8% in the non-program group. Finally, the government budget deficit came down to -3.3% in the group with the programs, while declining only very slightly in the other group.

In addition to the macroeconomic environment for liberalizing countries described in Table 8, we also report details on the financial systems of those countries in Table 9. Once again, we distinguish

between IMF supported liberalizations and non-IMF ones. There are few noticeable differences between the two groups. The non-IMF observations tend to have somewhat deeper financial systems (higher ratios of liquid liabilities, deposit bank assets and private credit to GDP) while IMF liberalizing countries have a higher ratio of central bank assets (to GDP). Only the differences in the mean values of central bank assets and private credit ratios are significant. All of the first four measures increase slightly after liberalization in the IMF program countries. We also notice a decrease in a concentration index of the financial sector following liberalization, and an increase in stock market capitalization that is only apparent for the non-IMF liberalizing countries.

The countries that liberalized during the IMF programs, therefore, did record adverse macroeconomic conditions before they liberalized. However, the domestic authorities adjusted their policies, apparently in response to the IMF program, and as a result a stronger macroeconomic environment accompanied capital decontrol. There was no immediate adverse impact resulting from the liberalization of the capital account on other macroeconomic indicators.¹⁰

Another interesting hypothesis is that premature liberalization might lead to the re-imposition of capital controls.¹¹ In practice, this appears to be an infrequent occurrence. In Miniane's data set, only one country re-imposed capital controls, Turkey in 1996. This specific case could be associated with the global fallout following the Tequila crisis in Mexico, yet this is a unique event. Even among the East Asian countries most affected by the crisis of 1997-8, only Malaysia changed its capital account policies by imposing some limits on capital outflows; a very public but temporary policy shift.

6. Conclusions

The empirical evidence reported in this paper is consistent with the hypothesis that capital account decontrol in developing countries took place within the context of IMF programs, particularly

during the 1990s. There is some evidence that the change in the capital account regime was more likely to occur during the IMF's concessionary programs. However, Fund programs were also significant determinants of capital account decontrol in countries with higher incomes that are generally not the typical clients for concessionary loans.

There is also evidence that liberalization was less likely to occur during a currency crisis. In addition, we find little evidence relevant to the accusation that IMF-related liberalization were more likely to occur in countries experiencing a financial crisis; when we interact the IMF program variable with the crisis variable, the nature of the relationship depends on the choice of indicator of capital account openness.

There is nothing in our findings to suggest that countries liberalized against their will. Since capital controls were permissible under the Articles of Agreement, the IMF could not explicitly pressure countries to remove them. However, governments could voluntarily include them in their Letters of Intent. Cho (2003), Nasution (2003) and Nidhiprabha (2003), in studies of liberalization and reform in South Korea, Indonesia and Thailand, found that domestic advocates, including commercial bankers and government economists, were influential in the process of deregulation.

The IMF's Independent Evaluation Office (2005, p. 94), in its examination of the IMF's policy stance on this issue, concluded: "In summary, the IMF undoubtedly encouraged countries that wanted to move ahead with capital account liberalization, and even acted as a cheerleader when it wished to do so, especially before the East Asian crisis, but there is no evidence that it exerted significant leverage to push countries to move faster than they were willing to go."

The IMF's decision to advocate decontrol seems to have been taken without placing sufficient emphasis on the necessary financial conditions to ensure stability after capital flows were deregulated. Advocates of decontrol may have thought that these flows would themselves create these conditions.

Gutián (1995, p. 85), a forceful advocate of liberalization within the IMF, wrote “An open capital account will constrain domestic policies to the extent necessary to bring about balance and stability to the economy...” DeLong and Eichengreen (2002, p. 251) found that within the U.S. administration, “...there was a hope that by forcing the pace of financial liberalization, countries might be compelled to more quickly upgrade their domestic regulations and institutions...”

In retrospect, those hopes were overly optimistic. The events of 1997 and 1998 caused a reassessment of the benefits and costs of capital flows, and the IMF now has a much more nuanced stance on this issue. Prasad et al. (2003), for example, found little evidence that financial globalization was associated with higher output growth, and may have contributed to increased consumption volatility. They conclude that financial integration should be done cautiously. Another recent paper by the IMF (2002) has presented a sequencing methodology that includes achieving macroeconomic stability and promoting financial supervision in the first stage.

The IMF’s position on capital controls will continue to evolve as circumstances change. As reported by the World Bank, Private capital flows to developing economies increased to a record \$491 billion in 2005. Meanwhile, the US has pursued its goal of capital decontrol within bilateral trade agreements with Singapore and Chile. The movement towards liberalization may have been halted, but it will reemerge in future years, and the IMF will undoubtedly have a key place in the ensuing discussions.

Endnotes:

¹ See Quinn (2003) for an overview of the record of capital account liberalization.

² Guitián presented this paper at a conference in Korea in 1992. Edwards (2003) writes that the paper was one of the first to express the change in the IMF's view on capital account convertibility.

³ Eichengreen (2001) surveys the literature on capital controls.

⁴ Bartolini and Drazen (1997) also treat capital liberalization as a signaling device.

⁵ According to the IMF (1995), it began to encourage capital account convertibility in the mid-1980s.

⁶ Precautionary programs, which are signed to have an agreement in place should a country require the funds, are included in our definition. In addition, in some cases disbursements beyond the first tranche are not made because they are no longer necessary or the IMF decides its conditionality has not been met. In either case, we include these in our list of programs.

⁷ A thorough description of this data and a comprehensive discussion of alternative measures are found in Edison et al. (2004), particularly Table 1, p. 224-5.

⁸ Results are available from the authors.

⁹ For an empirical analysis of the controversy surrounding IMF-led policy choices following financial crises, see Hutchison, Noy and Wang (2006).

¹⁰ A comprehensive analysis of economic performance and crisis occurrence ex post capital decontrol, including an accounting for differing policies with and without IMF programs, is beyond our scope here.

¹¹ We thank the anonymous referee for pointing out this possibility.

Table 1

Sample Descriptive Statistics for IMF and Liberalization Variables

| | Non-concessionary programs | Concessionary programs | Liberalized Capital Account | Average for Miniane Index | Average for Chinn-Ito Index |
|---------------|----------------------------|------------------------|-----------------------------|---------------------------|-----------------------------|
| Latin America | 65 | 6 | 31% | 0.16 | -0.24 |
| East Asia | 20 | 4 | 34% | 0.42 | 0.91 |
| Middle East | 7 | 1 | 48% | | 0.55 |
| Africa | 85 | 45 | 1% | | -0.67 |
| Other | 64 | 18 | 11% | | -0.46 |
| 1980s | 74 | 32 | 16% | 0.21 | -0.56 |
| 1990s | 67 | 42 | 19% | 0.28 | 0.08 |

Note: Nonconcessionary programs include Stand-By Arrangements and Extended Fund Facilities. Concessionary programs include the Structural Adjustment Facility and the Enhanced Structural Adjustment Facility. The third column reports the number of country/year observations with liberalized accounts as a percent of total observations. The fourth and fifth columns present averages for the Miniane and Chinn-Ito Indices on the degree of capital account liberalization (see text for details).

Table 2

*Political and Economic Determinants of Capital Controls
(onset AREAR Data)*

| | <i>Eq. 3.1</i> | <i>Eq. 3.2</i> | <i>Eq. 3.3</i> |
|-----------------------|------------------|-------------------|--------------------|
| RES | -0.05 (1.07) | -0.05 (1.09) | -0.04 (1.07) |
| TRAD | -0.01* (1.68) | 0.00 (1.48) | 0.00 (0.87) |
| GCON | -0.04 (1.10) | -0.04 (1.18) | -0.06** (2.35) |
| STDBT | -0.02* (1.59) | -0.03* (1.92) | -0.02 (1.44) |
| UNITY | -0.71* (1.64) | -0.75** (2.01) | -0.78*** (2.69) |
| GBUD | 0.07* (1.85) | 0.07* (1.91) | 0.04 (1.46) |
| GDPCAP | 0.06 (1.07) | 0.06 (1.15) | 0.07 (1.53) |
| FINT | -0.12* (1.80) | -0.14** (2.22) | -0.06 (1.29) |
| 1990s | 0.44 (1.42) | 0.46 (1.54) | 0.34 (1.50) |
| CURCR | 0.13 (0.42) | 0.16 (0.58) | |
| CORPT | 0.15 (0.92) | 0.16 (1.04) | |
| CURAC | 0.00 (0.16) | | |
| INF | 0.00 (0.56) | | |
| BANCRI | 0.25 (0.88) | | |
| EXREG | -0.20 (0.73) | | |
| LEFT | -0.13 (0.45) | | |
| DEM | 0.02 (0.07) | | |
| ELECT | 0.01 (0.34) | | |
| Observations | 503 | 516 | 769 |
| Pseudo R ² | 0.54 | 0.48 | 0.39 |
| Akaike IC | 0.33 | 0.30 | 0.27 |

Note: The dependent variable denotes the onset of capital account liberalization: 0 = non-liberalized capital account or 1 = liberalization during a two year window. For definitions of variables, see Appendix. T-statistics in parentheses; significance levels are 10% *, 5% ** and 1%***.

Table 3

*The IMF and Capital Controls
(onset AREAR Data)*

| | <i>Eq. 4.1</i> | <i>Eq.4.2</i> | <i>Eq. 4.3</i> | <i>Eq. 4.4</i> | <i>Eq. 4.5</i> |
|-----------------------|-------------------|------------------|------------------|-------------------|-------------------|
| CURCR | -0.15 (0.59) | -0.23 (0.76) | 0.00 (0.01) | -0.06 (0.21) | 0.00 (0.06) |
| 1990s | 0.22 (0.89) | 0.10 (0.38) | | 0.23 (0.92) | 0.23 (0.92) |
| NEWIMF | 0.73*** (2.61) | 0.79** (2.49) | 0.91** (2.52) | 0.81*** (2.83) | |
| IMFSIZE | | | | 0.01 (1.54) | |
| NEWIMF*CURCR | | | | | 0.30 (0.70) |
| NEWIMF*NOCURCR | | | | | 1.07*** (2.99) |
| Observations | 623 | 494 | 281 | 623 | 623 |
| Pseudo R ² | 0.40 | 0.38 | 0.36 | 0.42 | 0.42 |
| Akaike IC | 0.30 | 0.34 | 0.45 | 0.30 | 0.30 |

Note: The dependent variable denotes the onset of capital account liberalization: 0 = non-liberalized capital account or 1 = liberalization during a two year window. Additional control variables are those of Eq. 3.3. The sample in Eq. 5.2 is restricted to countries with a GDP per capita of \$1500 and above (PPP adjusted), while the sample in Eq. 5.3 is restricted to the 1990s.

Table 4

The IMF and Capital Controls
(level AREAR Data)

| | <i>Eq. 5.1</i> | <i>Eq. 5.2</i> | <i>Eq. 5.3</i> | <i>Eq. 5.4</i> | <i>Eq. 5.5</i> | <i>Eq. 5.6</i> |
|-----------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| CURCR | -0.26 (1.47) | -0.26 (1.43) | -0.65** (2.15) | -0.42 (1.46) | -0.26 (1.46) | -0.26 (1.45) |
| 1990s | -0.28** (1.98) | -0.76*** (3.61) | | -0.28** (1.98) | -0.28** (2.09) | -0.28** (1.99) |
| IMF | 0.27** (1.96) | | 0.67*** (3.26) | | | 0.30** (2.06) |
| IMF80s | | -0.18 (0.89) | | | | |
| IMF90s | | 0.70*** (3.56) | | | | |
| IMF*CURCR | | | | 0.50 (1.45) | | |
| IMF*NOCURCR | | | | 0.23 (1.54) | | |
| SRIMF | | | | | 0.12 (0.88) | |
| LRIMF | | | | | 0.37* (1.81) | |
| IMFSIZE | | | | | | -1.04 (0.65) |
| Observations | 649 | 649 | 361 | 649 | 649 | 649 |
| Pseudo R ² | 0.67 | 0.63 | 0.86 | 0.67 | 0.64 | 0.65 |
| Akaike IC | 0.76 | 0.75 | 0.80 | 0.77 | 0.77 | 0.77 |

Dependent variable is either 0 (full controls) or 1 (no controls). T-statistics in parentheses; significance levels are 10% *, 5% ** and 1%***. Additional control variables included in all specifications are RES, TRAD, GCON, STDBT, CORPT, UNITY, and INFL. For definitions of variables, see Appendix. The sample in Eq. 4.3 is restricted to the 1990s.

Table 5

*Political and Economic Determinants of Capital Controls
(Alternative Indices)*

| | <i>Miniane Index</i> | | <i>Chinn-Ito Index</i> | |
|--------------------|----------------------|--------------------|------------------------|--------------------|
| | <i>Eq. 6.1</i> | <i>Eq. 6.2</i> | <i>Eq. 6.3</i> | <i>Eq. 6.4</i> |
| RES | -0.04*** (6.08) | -0.05*** (6.87) | 0.04** (2.13) | 0.04*** (2.72) |
| TRAD | -0.00*** (2.94) | -0.00*** (3.90) | 0.01*** (8.32) | 0.01*** (10.27) |
| GCON | -0.01*** (2.98) | -0.02*** (3.70) | -0.06*** (4.01) | -0.07*** (7.08) |
| STDBT | -0.01*** (3.99) | -0.01*** (3.88) | 0.03*** (4.14) | 0.03*** (7.03) |
| UNITY | -0.19*** (3.72) | -0.21*** (4.68) | -0.27 (1.44) | -0.28** (2.30) |
| GBUD | 0.01** (2.04) | 0.01** (2.44) | -0.01 (0.45) | |
| GDPCAP | 0.02** (2.41) | 0.02*** (2.66) | 0.02 (0.53) | |
| FINT | -0.03*** (4.75) | -0.03*** (4.97) | -0.14*** (4.68) | -0.11*** (6.07) |
| 1990s | 0.06* (1.60) | 0.05* (1.60) | 0.35*** (2.78) | 0.29*** (3.19) |
| CURCR | -0.04 (0.97) | -0.04 (1.17) | -0.21 (1.49) | -0.27** (2.52) |
| CORPT | -0.01 (0.81) | | -0.07 (1.08) | |
| CURAC | 0.00 (0.32) | | 0.02* (1.65) | 0.01 (1.46) |
| INF | 0.00 (0.45) | | 0.00* (1.72) | 0.00** (2.46) |
| BANCRI | -0.01 (0.46) | | 0.03 (0.22) | |
| EXREG | -0.02 (0.52) | | 0.16 (1.33) | |
| LEFT | -0.02 (0.54) | | -0.04 (0.30) | |
| DEM | 0.00 (0.42) | | -0.03*** (2.62) | -0.03*** (4.04) |
| ELECT | 0.00 (0.14) | | -0.05 (0.42) | |
| Observations | 152 | 152 | 478 | 705 |
| Sigma | 0.15 (17.44) | 0.15 (17.44) | 1.20 (28.68) | 1.13 (35.48) |
| DECOMP fit measure | 0.49 | 0.49 | 0.39 | 0.32 |

Note: Dependent variable for 6.1-6.2 is an ordinal measure of the degree of capital controls ranging from 0 (full controls) to 1 (no controls); see Miniane (2004) for details. Dependent variable for 6.3-6.4 is an ordinal measure of the degree of capital controls ranging from -2.5 (full controls) to +2.5 (no controls); see Chinn and Ito (2006a) for details. All specifications estimated with a Tobit methodology. For definitions of all other variables, see Appendix. T-statistics in parentheses; significance levels are 10% *, 5% ** and 1% ***.

Table 6
The IMF and Capital Controls (Miniane Index)

| | <i>Eq. 7.1</i> | <i>Eq. 7.2</i> | <i>Eq. 7.3</i> | <i>Eq. 7.4</i> |
|--------------------|------------------|------------------|------------------|------------------|
| CURCR | -0.04 (0.95) | -0.04 (1.04) | -0.12* (1.63) | -0.12* (1.63) |
| 1990s | 0.08** (2.00) | -0.03 (0.58) | 0.08** (2.05) | 0.08** (2.05) |
| IMF | 0.02 (0.52) | | | -0.00 (0.06) |
| IMF80s | | -0.09* (1.86) | | |
| IMF90s | | 0.11** (2.47) | | |
| IMF*CURCR | | | 0.12 (1.43) | 0.12 (1.34) |
| IMF*NOCURCR | | | -0.00 (0.06) | |
| Observations | 152 | 152 | 152 | 152 |
| Sigma | 0.18 (14.78) | 0.18 (14.76) | 0.18 (14.79) | 0.18 (14.79) |
| DECOMP fit measure | 0.52 | 0.52 | 0.52 | 0.52 |

Note: Dependent variable for is an ordinal measure of the degree of capital controls ranging from 0 (full controls) to 1 (no controls); see Miniane (2004) for details. Model estimated with a Tobit methodology. Additional control variables are those of Eq. 6.2. T-statistics in parentheses; significance levels are 10% *, 5% ** and 1%***.

Table 7
The IMF and Capital Controls (Chinn-Ito Index)

| | <i>Eq. 8.1</i> | <i>Eq. 8.2</i> | <i>Eq. 8.3</i> | <i>Eq. 8.4</i> |
|--------------------|-------------------|--------------------|--------------------|--------------------|
| CURCR | -0.26** (2.43) | -0.25** (2.34) | -0.42*** (2.59) | -0.42*** (2.59) |
| 1990s | 0.32*** (3.41) | 0.02 (0.17) | 0.32*** (3.46) | 0.32*** (3.46) |
| IMF | -0.12 (1.34) | | | -0.17* (1.75) |
| IMF80s | | -0.37*** (3.23) | | |
| IMF90s | | 0.22* (1.66) | | |
| IMF*CURCR | | | 0.11 (0.54) | 0.28 (1.27) |
| IMF*CURNOCR | | | -0.17* (1.75) | |
| Observations | 705 | 705 | 705 | 705 |
| Sigma | 1.13 (35.48) | 1.12 (35.48) | 1.13 (35.48) | 1.13 (35.48) |
| DECOMP fit measure | 0.32 | 0.32 | 0.32 | 0.31 |

Note: Dependent variable is an ordinal measure of the degree of capital controls ranging from -2.5 (full controls) to +2.5 (no controls); see Chinn and Ito (2006a) for details. Model estimated with a Tobit methodology. Additional control variables are those of Eq. 6.4. T-statistics in parentheses; significance levels are 10% *, 5% ** and 1%***.

Table 8

*Comparison of Macroeconomic Conditions at Time of Liberalization,
With and Without IMF Programs*

Year t-1

| Liberalizations with IMF Programs | | | | | Liberalizations without IMF Programs | | | |
|-----------------------------------|--------|---------|--------|--|--------------------------------------|--------|---------|--------|
| | Mean | Std Dev | Number | | | Mean | Std Dev | Number |
| CURAC* | -5.51 | 9.22 | 64 | | CURAC* | -2.58 | 7.51 | 58 |
| RES*** | 2.46 | 2.07 | 65 | | RES*** | 4.21 | 4.39 | 56 |
| INF | 204.60 | 1422.63 | 68 | | INF | 178.26 | 1023.12 | 74 |
| GBUD | -4.31 | 4.52 | 43 | | GBUD | -2.76 | 5.45 | 55 |

Year t

| Liberalizations with IMF Programs | | | | | Liberalizations without IMF Programs | | | |
|-----------------------------------|-------|---------|--------|--|--------------------------------------|--------|---------|--------|
| | Mean | Std Dev | Number | | | Mean | Std Dev | Number |
| CURAC | -3.46 | 8.20 | 64 | | CURAC | -2.65 | 8.42 | 64 |
| RES* | 3.02 | 2.31 | 66 | | RES* | 4.07 | 3.90 | 62 |
| INF | 31.36 | 49.39 | 67 | | INF | 124.82 | 875.37 | 73 |
| GBUD | -3.27 | 4.69 | 43 | | GBUD | -2.66 | 5.30 | 56 |

Note: *, **, and *** indicate whether the means of the variables with and without and IMF program are significantly different at the 10%, 5%, and 1% confidence levels, respectively.

Table 9

*Comparison of Financial Conditions at time of Liberalization,
With and Without IMF Programs*

Year t-1

| Liberalizations with IMF Programs | | | | | Liberalizations without IMF Programs | | | |
|-----------------------------------|------|---------|--------|--|--------------------------------------|------|---------|--------|
| | Mean | Std Dev | Number | | | Mean | Std Dev | Number |
| LIQG | 0.29 | 0.18 | 65 | | LIQG | 0.33 | 0.19 | 70 |
| CBASG** | 0.12 | 0.09 | 64 | | CBASG** | 0.08 | 0.09 | 62 |
| DBASG | 0.23 | 0.16 | 65 | | DBASG | 0.26 | 0.18 | 67 |
| CREDITG** | 0.20 | 0.13 | 64 | | CREDITG** | 0.26 | 0.18 | 66 |
| CONCNT | 0.72 | 0.21 | 25 | | CONCNT | 0.76 | 0.25 | 13 |
| STOCKG | 0.20 | 0.27 | 26 | | STOCKG | 0.20 | 0.31 | 22 |

Year t

| Liberalizations with IMF Programs | | | | | Liberalizations without IMF Programs | | | |
|-----------------------------------|------|---------|--------|--|--------------------------------------|------|---------|--------|
| | Mean | Std Dev | Number | | | Mean | Std Dev | Number |
| LIQG | 0.30 | 0.18 | 64 | | LIQG | 0.34 | 0.20 | 69 |
| CBASG** | 0.14 | 0.17 | 64 | | CBASG** | 0.08 | 0.09 | 62 |
| DBASG | 0.24 | 0.16 | 65 | | DBASG | 0.27 | 0.19 | 69 |
| CREDITG** | 0.21 | 0.14 | 63 | | CREDITG** | 0.27 | 0.19 | 68 |
| CONCNT | 0.69 | 0.21 | 28 | | CONCNT | 0.73 | 0.24 | 18 |
| STOCKG | 0.20 | 0.26 | 26 | | STOCKG | 0.24 | 0.36 | 25 |

Note: *, **, and *** indicate whether the means of the variables with and without and IMF program are significantly different at the 10%, 5%, and 1% confidence levels, respectively.

Appendix A: Data

| Variable | Definition | Source |
|----------|---|--|
| BANCRI | Banking Crisis | Caprio and Klingebiel (1999) ^a |
| CBASG | Central bank assets (% of GDP) | Beck et al. (2000) ^a |
| CHINITO | Capital Account Liberalization Index (-2.5 - +2.5) | Chinn and Ito (2006a) |
| CONCNT | Concentration (of financial sector) | Beck et al. (2000) ^a |
| CORPT | Corruption | <i>International Country Risk Guide</i> |
| CREDITG | Private credit by deposit money banks and other financial institutions (% of GDP) | Beck et al. (2000) ^a |
| CURAC | Current Account (% of GDP) | <i>World Development Indicators</i> |
| CURCR | Currency Crisis | Glick and Hutchison (2005) |
| DBASG | Deposit money bank assets (% of GDP) | Beck et al. (2000) ^a |
| DEM | Democratic Regime | <i>Polity IV</i> dataset |
| ELECT | Elections (0/1) | <i>Database of Political Institutions</i> ^a |
| EXREG | Exchange Rate Regime | <i>AREAR</i> dataset |
| FINT | Foreign Interest Rate | <i>International Finance Statistics</i> |
| GBUD | Government Budget Surplus | <i>World Development Indicators</i> |
| GCON | Government Consumption (% of GDP) | <i>World Development Indicators</i> |
| GDPCAP | GDP per capita (PPP\$) | <i>World Development Indicators</i> |
| IMF | IMF Program | <i>IMF Annual Reports</i> |
| IMFSIZE | IMF Program Size (% of GDP) | <i>IMF Annual Reports</i> |
| INF | Inflation (% Change in CPI) | <i>International Finance Statistics</i> |
| KAL | Capital Account Liberalization (0/1) | <i>AREAR</i> dataset |
| LEFT | Left Wing Executive | <i>Database of Political Institutions</i> ^a |
| LIQG | Liquid liabilities (% of GDP) | Beck et al. (2000) ^a |
| LRIMF | Long-Run IMF Program (SAF, ESAF) | <i>IMF Annual Reports</i> |
| MINIANE | Capital Account Liberalization Index (0 - 1) | Miniane (2004) |
| NEWIMF | New IMF Program | <i>IMF Annual Reports</i> |
| NOCURCR | No Currency Crisis | Glick and Hutchison (2005) |
| RES | Foreign Exchange Reserves (in Months of Imports) | <i>International Finance Statistics</i> |
| SRIMF | Short-Run IMF Program (SBA, EFF) | <i>IMF Annual Reports</i> |
| STDBT | Short-Term Debt (% of Total Debt) | <i>World Development Indicators</i> |
| STOCKG | Stock market capitalization (% of GDP) | Beck et al. (2000) ^a |
| TRAD | Exports plus Imports (% of GDP) | <i>World Development Indicators</i> |
| UNITY | Government Unity (Herfindhal Index) | <i>Database of Political Institutions</i> ^a |

^a Available at www.worldbank.org

REFERENCES:

Abdelal, Rawi, *Capital Rules: The Construction of Global Finance*, Cambridge, MA: Harvard University Press (2007).

Abiad, Abdul and Ashoka Mody, "Financial Reform: What Shakes It? What Shapes It?" *American Economic Review* 95 (2005):66-88.

Bartolini, Leonard and Allan Drazen, "Capital-Account Liberalization as a Signal," *American Economic Review* 87 (1997):138-154.

Beck, Thorsten, Asli Demirgüç-Kunt and Ross Levine, "A New Database on Financial Development and Structure," *World Bank Economic Review* 14 (2000):597-605.

Brune, Nancy, Geoffrey Garrett, Alexandra Guisinger and Jason Sorens, "The Political Economy of Capital Account Liberalization," paper presented at American Political Science Association meetings (2001).

Caprio, Gerard and Daniela Klingbiel, "Episodes of Systemic and Borderline Financial Crises," World Bank Research Dataset (1999).

Chinn, Menzie and Hiro Ito, "Notes on the Calculation of the Chinn-Ito Financial Openness Variable," <http://www.ssc.wisc.edu/~mchinn>, 2006a.

Chinn, Menzie and Hiro Ito, "What Matters for Financial Development? Capital Controls, Institutions, and Interactions," *Journal of Development Economics* 81 (2006b):163-192.

Cho, Yoon Je, "The Political Economy of Financial Liberalization and the Crisis in South Korea," in Chung H. Lee (ed.), *Financial Liberalization and the Economic Crisis in Asia*, London and New York: Routledge (2003):82-103.

Conway, Patrick, "IMF Lending Programs: Participation and Impact," *Journal of Development Economics* 45 (1994):355-391.

DeLong, Brad and Barry Eichengreen, "Between Meltdown and Moral Hazard: The International Monetary and Financial Policies of the Clinton Administration," in Jeffrey Frankel and Peter Orszag (eds.), *American Economic Policy in the 1990s*, Cambridge, MA: MIT Press (2002):191-263.

Desai, Padma, *Financial Crisis, Contagion, and Containment*, Princeton, NJ: Princeton University Press (2003).

Edison, Hali J., Michael W. Klein, Luca Antonio Ricci and Torsten Sløk, "Capital Account Liberalization and Economic Performance: Survey and Synthesis," *IMF Staff Papers* 51 (2004): 220-256.

Edwards, Sebastian, "Review of Joseph E. Stiglitz's *Globalization and its Discontents*," *Journal of Development Economics* 70 (2003):252-257.

Eichengreen, Barry, "Capital Account Liberalization: What Do Cross-Country Studies Tell Us?" *World Bank Economic Review* 15 (2001):341-365.

Eichengreen, Barry, Andrew Rose and Charles Wyplosz, "Exchange Market Mayhem: The Antecedents and Aftermath of Speculative Attacks," *Economic Policy* no. 21 (1995):45-61.

Epstein, Gerald A. and Juliet B. Schor, "Structural Determinants and Economic Effects of Capital Controls in OECD Countries," in Tariq Banuri and Juliet B. Schor (eds.), *Financial Openness and National Autonomy: Opportunities and Constraints*, Oxford: Clarendon Press (1992):136-161.

Glick, Reuven and Michael Hutchison, "Capital Controls and Exchange Rate Instability in Developing Economies," *Journal of International Money and Finance* 24 (2005):387-412.

Grilli, Vittorio and Gian Maria Milesi-Ferretti, "Economic Effects and Structural Determinants of Capital Controls," *IMF Staff Papers* 43 (1995):517-51.

Gutián, Manuel, "Capital Account Liberalization: Bringing Policy in Line with Reality," in Sebastian Edwards (ed.), *Capital Controls, Exchange Rates, and Monetary Policy in the World Economy*, Cambridge, UK and New York: Cambridge University Press (1995):71-90.

Haggard, Stephan and Sylvia Maxfield, "The Political Economy of Capital Account Liberalisation," in Helmut Riesen and Bernhard Fischer (eds.), *Financial Opening: Policy Issues and Experiences in Developing Countries*, Paris: OECD (1993):65-83.

Haggard, Stephan and Sylvia Maxfield, "The Political Economy of Financial Internationalization in the Developing World," *International Organization* 50 (1996):35-68.

Honig, Adam, "Do Improvements in Government Quality Necessarily Reduce the Incidence of Sudden Stops," manuscript (2005).

Hutchison, Michael, Ilan Noy and Lidan Wang, "The IMF and Its Critics: Fiscal and Monetary Policies and the Cost of Sudden Stops," manuscript (2006).

Independent Evaluation Office, IMF, *Report on the Evaluation of the IMF's Approach to Capital Account Liberalization*, Washington, DC: IMF (2005).

International Monetary Fund, *Capital Account Convertibility: Review of Experience and Implications for IMF Policies*, IMF occasional paper no. 131 (1995).

International Monetary Fund, *Capital Account Liberalization and Financial Sector Stability*, IMF occasional paper no. 211 (2002).

Joyce, Joseph and Ilan Noy, "The IMF and the Liberalization of Capital Flows," East-West Center working papers, economics series, no. 84 (2005).

Leblang, David A., "Domestic and Systemic Determinants of Capital Controls in the Developed and Developing World," *International Studies Quarterly* 41 (1997):435-454.

Leiteritz, Ralf J., "Explaining Organisational Outcomes: The International Monetary Fund and Capital Account Liberalisation," *Journal of International Relations and Development* 8 (2005):1-26.

Milesi-Ferretti, Gian Maria, "Why Capital Controls? Theory and Evidence," in Sylvester Eijffinger and Harry Huizanga (eds.), *Positive Policy Economy: Theory and Evidence*, Cambridge, UK and New York: Cambridge University Press (1998):217-247.

Miniane, Jacques, "A New Set of Measures on Capital Account Restrictions," *IMF Staff Papers* 51 (2004):276-308.

Naustion, Anwar, "Financial Sector Reform and Indonesia's Economic Crisis of 1997-98," in Chung H. Lee (ed.), *Financial Liberalization and the Economic Crisis in Asia*, London and New York: Routledge (2003):47-81.

Nidhiprabha, Bhanupong, "Premature Liberalization and Economic Crisis in Thailand," in Chung H. Lee (ed.), *Financial Liberalization and the Economic Crisis in Asia*, London and New York: Routledge (2003):27-46.

Prasad, Eswar S., Kenneth Rogoff, Shang-Jin Wei and M. Ayhan Kose, *Effects of Financial Globalization on Developing Countries: Some Empirical Evidence*, IMF occasional paper no. 220 (2003).

Quinn, Dennis P., "Capital Account Liberalization and Financial Globalization, 1890-1990: A Synoptic View," *International Journal of Finance and Economics* 8 (2003):189-204.

Rowlands, Dane, "IMF Resource Management in a World of Mobile Capital," *Canadian Journal of Development Studies* 20 (1999):465-87.

Simmons, Beth A. and Zachary Elkins, "Globalization and Policy Diffusion: Explaining Three Decades of Liberalization," In Miles Kahler and David A. Lake (eds.), *Governance in a Global Economy: Political Authority in Transition*, Princeton, NJ: Princeton University Press (2003):275-304.

Simmons, Beth A. and Zachary Elkins, "The Globalization of Liberalization: Policy Diffusion in the International Political Economy," *American Political Science Review* 98 (2004):171-189.

Stiglitz, Joseph E., *Globalization and Its Discontents*, New York and London: W. W. Norton (2002).

Williamson, John, "What Washington Means by Policy Reform," in John Williamson (ed.), *Latin American Adjustment: How Much has Happened?* Washington, DC: Institute for International Economics (1990):7-28.