APPENDIX
2 Staff Research

The IMF staff prepared more than 100 research papers on capital account issues between the early 1990s and the early 2000s. The volume of research output in this area increased significantly in the second half of the 1990s. The findings of staff research in this area broadly corresponded to the views expressed in multilateral surveillance (see Chapter 2, the section "Multilateral Surveillance"), indicating that there was considerable synergy between these two areas of activity. Research consistently found that permanent capital controls were ineffective, while staff research began to see the temporary use of capital controls in a more favorable light over time, at least as a short-term measure. The review of staff research provided below is not meant to be comprehensive, but to cover only those studies that either reflected or influenced the evolution of ideas within the IMF.

Early Work on Capital Controls and Capital Flow Management

Mathieson and Rojas-Suarez (1990), Mendoza (1990), and Calvo and others (1992) were among the first to analyze capital controls. Mathieson and Rojas-Suarez (1990) showed that exchange rate policy would be affected by the removal of capital controls as the economy would become more vulnerable to foreign shocks, but that there was no single optimal exchange rate regime consistent with a particular process of liberalization. Mendoza's theoretical study (1990) showed that the use of capital controls had little, if any, impact on the output, consumption, and welfare of a small open economy facing balance of payments problems. Calvo and others (1992) argued that a case could be made for the policy mix of a tax on short-term inflows, exchange rate flexibility, and an increase in marginal reserve requirements, and noted that capital controls could be effective only in the short run because investors could find a way to evade them over time.

Two significant policy-oriented papers were issued as Occasional Papers during 1993.[1] First, Mathieson and Rojas-Suarez (1993) advanced the idea that capital controls had lost effectiveness in the 1980s with the liberalization of exchange and trade controls. They identified channels of evasion such as under- and over-invoicing, transfer pricing policies, and leads and lags. This does not mean that capital controls cannot affect certain types of capital transactions and market participants, but the authors argued that, given the distortionary effects, adjustment of macroeconomic policies was generally more appropriate than imposition of capital controls when faced with large capital movements. They then concluded that, in order to support capital account convertibility, efforts should be made to strengthen the prudential supervision of financial institutions, establish more flexible interest rates, and restructure and recapitalize domestic financial institutions. The "consistency of macroeconomic, financial, and exchange rate policies is more important for sustaining an open capital account than is the sequencing of the removal of capital controls."

The other Occasional Paper, by Schadler and others (1993), was an analysis of how countries had responded to surges in capital inflows. In particular, it used the recent experiences of Chile, Colombia, Egypt, Mexico, Spain, and Thailand to document the policies adopted and the effectiveness of these measures. It argued that tight fiscal policy was the only means to prevent overheating and avoid a real appreciation "regardless of [the] cause" of the inflows. Its assessment of sterilization, the most common policy tool, was generally negative because its quasi-fiscal cost and its effect on the level of interest rates made it infeasible on a sustained basis. The authors were cautious toward exchange rate flexibility because a

[1]Compared with Working Papers, Occasional Papers tend to be more department driven and less individually motivated, and have greater internal status and outside visibility. Some Occasional Papers are initially written as Board papers and are discussed by the Executive Board in a formal meeting or an informal seminar before they are published.

change in the equilibrium real exchange rate might not be warranted. They recognized a case for capital controls when "bandwagon effects are important or there are doubts about the capacity of the economy to absorb inflows efficiently," but found little evidence to argue for their effectiveness. Instead, they argued that the easing of the external constraint provided an ideal opportunity to address structural weaknesses by liberalizing trade, moving toward capital account convertibility, and reforming the financial sector.

Later Work on Capital Controls

Studies that appeared in 1994 and later reinforced the argument that capital controls were ineffective. For example, Johnston and Ryan (1994) argued that capital controls were not effective in developing countries, and caused problems in macroeconomic management with little effect on the balance of payments. The authors then advocated rapid capital account liberalization, given its positive impact on capital inflows and domestic financial development. A review of theoretical and empirical literature by Dooley (1996) concluded that controls were somewhat effective in creating a wedge between domestic and international interest rates, but there was little evidence to show that they were effective in significantly affecting the volume of capital flows. At the same time, the study noted that capital controls previously employed by many industrial countries had been effective (relative to developing country experience), and concluded that administrative capacity was a critical factor in determining the effectiveness of controls. Once the apparatus of control was removed, however, reintroducing controls in a liberalized regime would be unlikely to be effective.

As the experience of Chile with market-based controls became widely known (see Boxes 1.2 and 2.2), some on the IMF staff began to see temporary use of controls in a more favorable light. In 1996, Galbis (1996) argued that there were grounds for the temporary use of a tax on capital inflows, while noting that quantitative controls on capital flows were inefficient and discriminatory and should be the first to be removed. Laurens and Cardoso (1998), however, stressed that Chilean-style controls could be a policy option only for a limited number of developing countries because of the high level of enforcement capacity required for its implementation. On the other hand, Lopez-Mejia (1999) argued that the capital controls in Chile, Colombia, and Malaysia had proved useful in lengthening the maturity of capital inflows.

Determinants of capital controls received some attention in IMF research. The seminal work of Grilli and Milesi-Ferretti (1995) used a large sample of over 60 countries to find that capital controls were more likely to be present in a country if it was less open, its income lower, its public sector larger, its central bank less independent, its exchange rate less flexible, and its current account deficit larger. The authors found little evidence that capital controls were associated with higher economic growth, but controls tended to be associated with higher inflation and lower real interest rates. Likewise, Johnston and Tamirisa (1998) identified additional factors to explain the imposition of capital controls by governments, including balance of payments reasons, macroeconomic management, weak domestic regulatory systems, and the stage of economic development.

Work on Sequencing

As early as 1994, staff research, while supporting capital account liberalization, was already aware of the need for sequencing, which was well known from the literature on the order of economic liberalization. For example, Quirk (1994) argued that capital account liberalization should be implemented with credible fiscal policy. Galbis (1994) argued that "a pragmatic approach to the sequencing issue [was] necessary as there [were] only a few general principles valid for all countries." He added that a case could also be made from the literature that an early introduction of capital account liberalization in the reform process could promote acceleration of domestic financial reforms. The conventional wisdom from the literature was reiterated by the previously cited work of Galbis (1996), who listed fiscal consolidation, noninflationary finance of public deficits, macroeconomic stability, an appropriate monetary-fiscal policy mix, and a strong domestic financial sector as preconditions for capital account liberalization. Surprisingly, however, exchange rate flexibility was not accorded the same emphasis it receives today as desirable for an open capital account.[2]

An Occasional Paper by Quirk and others (1995) was much more explicit on sequencing. The paper included the idea that one must consider a set of preconditions and the sequencing of liberalization in moving toward capital account convertibility, and highlighted the danger of opening the capital account too rapidly without supporting policies. It then noted that the most important precondition was domestic financial market reforms, including

[2]An earlier expression of the view intimating the need for exchange rate flexibility under high capital mobility is found in Goldstein and Mussa (1993), who argued that greater capital flows have "made the conditions more demanding for operating durably and successfully a fixed exchange rate arrangement."

strengthened prudential regulations. In terms of sequencing, it suggested that (1) with a strong balance of payments position, exchange rate pressure could be minimized by liberalizing capital outflows before inflows; and (2) one might also want to limit potentially more destabilizing short-term inflows by first liberalizing long-term inflows, such as direct investment. The authors, however, added that "such fine-tuning" might be difficult in practice as "liberalization of one component of the capital account" would create pressure to liberalize all capital transactions.

Toward the end of the 1990s, even before the East Asian crisis, staff research began to focus on the pace and sequence of capital account liberalization in a more explicitly operational way. Johnston and others (1997) documented the sequence of financial sector reforms and capital account liberalization followed by Chile, Indonesia, Korea, and Thailand, and suggested that the speed should depend on macroeconomic and exchange rate policies. Likewise, Johnston (1998) argued that prudential measures should not be considered to be equivalent to capital controls because they were not meant to restrict capital flows directly, but were designed to support the gains achieved in moving toward capital account convertibility by providing safeguards. These and other contributions were later compiled as a book, which was published by the IMF (Johnston and Sundararajan, 1999). An influential Occasional Paper by Eichengreen and others (1998) discussed the role of sequencing in a broader context of discussion on the risks of capital account liberalization and the need for sound macroeconomic and prudential policies to minimize those risks.

In the early 2000s, there was a proliferation of work on pace and sequencing. For example, Karacadag and others (2003) considered hierarchy and interlinkages among financial markets, and made a proposal on the modality of sequencing. In particular, the authors emphasized the importance of undertaking central banking reforms and other measures that would allow a more effective conduct of monetary and exchange rate policies, and the need to implement technically and operationally connected measures simultaneously. Kaminsky and Schmukler (2003) were skeptical of the need to follow a particular order of liberalization, but nevertheless acknowledged the importance of doing institutional reforms before opening the capital account. Duttagupta and others (2004) used country experience to argue that attaining exchange rate flexibility before capital account liberalization had the advantage of enabling the economy to absorb capital account shocks at a lower cost to the real economy. The authors also argued that a transition to exchange rate flexibility should involve a gradual elimination of existing asymmetries (if any) in capital account openness between outflows and inflows in order to facilitate an orderly correction of any potential misalignment in the exchange rate.

More Recent Work

The areas of research on capital account issues also expanded in the early 2000s. We review here two strands of research covering (1) the impact of capital account liberalization and (2) analyses of market dynamics. First, among recent studies to quantify the effect of capital account liberalization on economic growth or policy discipline, Edison and Warnock (2003) supported the view that removal of restrictions provided developing countries with increased access to international capital markets, but found no evidence that capital controls created a bias in favor of domestic capital. An Occasional Paper by Prasad and others (2003) found no strong relationship between capital account openness and growth (but suggested the importance of the quality of domestic institutions in defining that link), while Tytell and Wei (2004) suggested no robust or causal relationship between liberalization and fiscal discipline (although there was a weak discipline effect on inflation).

A number of recent studies have investigated the working of financial markets, particularly as it relates to international linkages through capital flows. For example, Arora and Cerisola (2001) provided a quantitative indication of how U.S. monetary policy influenced sovereign bond spreads in emerging market economies, and concluded that the spreads were influenced not only by country-specific fundamentals but also by the stance and predictability of U.S. policy. Herding among international institutional investors was the topic of empirical studies by Borensztein and Gelos (2000) and Gelos and Wei (2002); a literature review on herd behavior was provided by Bikhchandani and Sharma (2001). More recently, Chan-Lau (2004) analyzed, among other things, the main determinants of the emerging market asset allocation of pension funds in industrial countries, while Ong and Sy (2004) showed the importance of foreign investor presence in securities markets in emerging market economies and how asset allocation decisions by mature market funds could possibly affect emerging market countries.