

# CAPITAL-MARKET LIBERALIZATION, GLOBALIZATION, AND THE IMF

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*One of the most controversial aspects of globalization is capital-market liberalization—not so much the liberalization of rules governing foreign direct investment, but those affecting short-term capital flows, speculative hot capital that can come into and out of a country. In the 1980s and 1990s, the IMF and the US Treasury tried to push capital-market liberalization around the world, encountering enormous opposition, not only from developing countries, but from economists who were less enamoured of the doctrines of free and unfettered markets, of market fundamentalism, that were at that time being preached by the international economic institutions. The economic crises of the late 1990s and early years of the new millennium, which were partly, or even largely, attributable to capital-market liberalization, reinforced those reservations. This paper takes as its point of departure a recent IMF paper, to provide insights both into how the IMF could have gone so wrong in its advocacy of capital-market liberalization and into why capital-market liberalization has so often led to increased economic instability, not to economic growth.*

## I. INTRODUCTION

The recent IMF Board paper by the IMF's former chief economist, Ken Rogoff, and his coauthors (Prasad *et al.*, 2003) and the *Financial Times* article summarizing some of their findings (Rogoff and Prasad, 2003) are remarkable in many ways. The authors should be commended for the seriousness with which they addressed the task of assess-

ing the consequences of financial-market integration, and with their willingness openly to question the orthodoxy. They conclude, 'it becomes difficult to make a convincing connection between financial integration and economic growth once other factors, such as trade flows and political stability, are taken into account'. And they find that 'those countries that made the effort to become financially integrated . . . faced more instability'. What makes

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this noteworthy is not *what is said*—much of the economics profession had long come to this view<sup>2</sup>—but who was saying it. Indeed, it would have been truly striking if they had come to any other conclusion.

The report should be read seriously by past and present policy-makers—including those in the US Treasury who have in the past pushed, and continue to push developing countries headlong into capital-market liberalization, who attempted to impose demands for capital-market liberalization as part of the Investment Agreement (one of the so-called ‘Singapore issues’) in recent trade negotiations, and who insisted on capital-market liberalization as part of bilateral trade agreements with Chile and Singapore.<sup>3</sup>

The belatedness of the study itself provides commentary on the IMF, but as the aphorism has it: ‘better late than never’. Moreover, the *Financial Times* article is more than a little disingenuous in suggesting that the report is more ‘evolutionary than revolutionary’. Rogoff and his co-authors cannot so easily sweep under the rug the attempt by the IMF to change its charter at the Hong Kong meeting in September 1997 to force capital-market liberalization on reluctant developing countries; or even the IMF’s Managing Director’s continued call for capital-market liberalization 2 years later—even after the global financial crisis had so vividly demonstrated the risks of capital-market liberalization.<sup>4</sup>

Perhaps, isolated in the research department at the IMF, they did not fully appreciate the pressure that the IMF had put on countries to liberalize their capital markets, or the fears that East Asia’s finance ministers expressed to me at the Hong Kong meeting of what the IMF might do if they did what

they needed to do (that is, impose capital controls) in the event that the brewing crisis materialized, as they rightly feared it would. Only Malaysia was willing to stand up—and it was its prime minister, not its finance minister, who did so, realizing that the risks of *not* imposing capital controls exceeded the risks of doing so.

When the IMF made the proposal to change its Charter, I asked a simple question: where was the evidence that capital-market liberalization would be good for the countries on which it was being imposed? Research at the World Bank had already shown that such liberalization was systematically associated with instability—this was not polemics (as Rogoff and his colleagues seem to suggest), but solid econometric evidence.<sup>5</sup> Coming as I was from academia, to me the Fund’s failure to produce the evidence that it was good for growth, or to refute the evidence that it was bad for stability, was deeply disturbing. Seemingly, it did not believe that policy should be based on theory or evidence; either it had an agenda that was different—perhaps promoting the interests of the financial markets—and/or policies were based more on ideology, not economic science: an ideology which coincided with interests. Of course, modern economics had increasingly turned to questions of political economy—of the relationships between political processes and government policies—and these outcomes were, accordingly, perhaps not surprising, given the governance structure of the IMF.<sup>6</sup>

## II. IMPLICIT ASSUMPTIONS AND HIDDEN AGENDA

What is perhaps most striking about the report are not its conclusions—it would have been a

<sup>2</sup> See, for instance, Bhagwati (1998), Furman and Stiglitz (1998), Rodrik and Velasco (2000), Stiglitz (2000, 2002), Rodrik (2001), and the host of papers cited in those studies.

<sup>3</sup> For a critique of this provision in these treaties, see the testimonies given by Jagdish Bhagwati, Daniel Tarullo, Joseph E. Stiglitz, and Nancy Birdsall at the House Committee on Financial Services, Subcommittee on Domestic and International Monetary Policy, Trade and Technology, ‘Opening Trade in Financial Services—The Chile and Singapore Examples’, 1 April 2003 (available at <http://financialservices.house.gov/>). The testimony of Treasury Secretary John Taylor in those hearings shows either that he has not fully absorbed the lessons, and/or that ideology and interests still dominate at US Treasury (available at [www.imf.org/external/np/speeches/1999/092899.htm](http://www.imf.org/external/np/speeches/1999/092899.htm)).

<sup>4</sup> Address by Michel Camdessus, Chairman of the Executive Board and Managing Director of the IMF, to the Board of Governors of the Fund, 28 September 1999 (available at [www.imf.org/external/np/speeches/1999/092899.htm](http://www.imf.org/external/np/speeches/1999/092899.htm)).

<sup>5</sup> See Demirgüç-Kunt and Detragiache (2001) and Honohan (2001).

<sup>6</sup> I delve into these issues briefly in Stiglitz (1999, 2003a). See also Wade (2002). Not surprisingly, many at the IMF did not take kindly to this kind of political analysis. Though such an analysis might be appropriate to understanding government (public) failure at the national level, it was seemingly out of place at the international level!

remarkable achievement of intellectual dishonesty had the authors come to any other conclusion—but its starting point.

### (i) What Does ‘Theory’ Say?

The study begins by repeatedly asserting that ‘theory’ predicts that capital-market liberalization should be good for economic growth and reduce the volatility of consumption. It takes for granted that the reader will understand what is meant by ‘theory’: the neoclassical model, with perfect information, perfect capital markets, and perfect competition. But that is a model that provides a poor description of developed economies, and an even poorer description of developing countries and international capital markets. Rogoff, himself, should have been well aware of the limitations of this ‘theory’: he has published a paper (Obstfeld and Rogoff, 2000) in which he details several stylized facts that are hard to reconcile with this ‘theory’, including the home bias in trade and portfolios, the dependence of investment on national savings,<sup>7</sup> the low international consumption correlations, the high volatility and high persistence of real exchange-rate shocks, and the weak relationship between the exchange rate and macroeconomic aggregates. Others have noted other failings: the seeming failure of the interest arbitrage equation and the pro-cyclical nature of capital movements (see, for example, Lewis, 1995; World Bank, 2000).

### (ii) Imperfect Information

‘Theory’—theoretical developments in imperfect capital markets over the last quarter century, most of which are not cited in the extensive bibliography—provide an explanation for why capital-market liberalization may lead to instability and not promote growth. The failure to take on board these theoretical developments, which contradict in so many ways the market fundamentalism which has underlain so much of the policy of the IMF, says as much about the institution as its earlier policy stances,

in which it seemingly saw no need to look for evidence, when ‘theory’ (or more accurately, ideology and interests) provided such clear guidance. Given the central role that information imperfections, leading to credit and equity rationing, have played in modern finance, the obliviousness to such concerns seems particularly striking, coming from an institution which is supposedly concerned with international finance.

### (iii) Cognitive Dissonance

Beginning the analysis from the maintained hypothesis of a neoclassical economy with full employment, full information, and full rationality is even more striking, given the events occurring as or shortly before the paper was being written. An outflow of capital, as a result of worries about the outcome of an election, forced Brazil not only to turn to the IMF for help, but also to raise interest rates to very high levels, helping precipitate a marked slowdown in the economy and leading to high unemployment. Note that Brazil had done nothing to justify these fears; and the country’s economic management after the election further showed how unjustified they were. On the other hand, the high interest rates which Brazil felt necessary to stop the outflow of funds had the predictable adverse effect on output and employment.<sup>8</sup> Two of the standard criticisms of capital-market liberalization, that it is systematically associated with a higher likelihood of a crisis and that it impairs the ability of the government to respond to negative macroeconomic shocks, because it inhibits the ability to lower interest rates, can hardly be dealt with in a ‘theory’ which assumes away problems of unemployment.

In the East Asia crisis, the IMF and Treasury complained loudly about problems of lack of transparency—imperfections of information. The crisis, itself, was in part precipitated by lenders refusing to roll over loans, not just their demanding higher interest rates reflecting a changed risk perception, providing a dramatic illustration of the problems of

<sup>7</sup> The so-called Feldstein–Horioka puzzle (see Feldstein and Horioka, 1980). For a survey of studies on the Feldstein–Horioka puzzle see, for example, Coakley *et al.* (1998).

<sup>8</sup> In 1998, government interest rates reached 28.6 per cent, or in real terms, 25.4 per cent. Private-sector borrowers, of course, had to pay considerably more. Growth slowed to 0.1 per cent in 1998 and 0.8 per cent in 1999, and unemployment increased to 9 per cent in 1998 and to 10 per cent in 1999. The average real interest rate between November 1998 and April 1999 was 33.7 per cent. See IMF, *International Financial Statistics*; World Bank, *World Development Indicators*; Independent Evaluation Office of the IMF (2003).

credit rationing to which the theories of imperfect and asymmetric information had called attention much earlier. The IMF had complained, at the same time, about excessive leverage, yet in the neoclassical model, the ‘theory’ upon which the paper rests, financial structure does not matter at all. Of course, the IMF was right about the problem of excessive leverage, but that is because financial structure does matter: there are real costs associated with bankruptcy. The neoclassical model, the ‘theory’ to which Rogoff and his colleagues repeatedly appeal, provides little insight into these issues.<sup>9</sup>

#### (iv) Beyond Rationality

Further, recent research in behavioural macroeconomics and finance (see, for example, Akerlof, 2002) has highlighted the importance of irrationalities. As Charles Kindleberger (2000) has noted, reviewing the long history of crises, these, together with market imperfections (including the exploitation of information asymmetries) have been central in the economic fluctuations that have marked capitalism since its origins.<sup>10</sup> While these fluctuations may not fit neatly within the IMF ‘theory’, they are none the less real. Even in the 1990s, Alan Greenspan, the Chairman of the Federal Reserve Bank, called attention to the role of ‘irrational exuberance’, an irrationality that the subsequent events confirmed. And on more than one occasion, even the IMF has referred to overshooting, the seeming irrational pessimism that follows a crisis, and which seemingly provided one of the main rationales for their interventions in exchange rates.

#### (v) Foreign Direct Investment versus Capital-market Liberalization

There is another fundamental failing in the IMF paper. It talks about financial-market integration, measured by gross capital flows, but does not sufficiently distinguish between types of capital flows. Most of the critics of capital-market liberalization are not as concerned about foreign direct

investment (FDI) as they are about short-term financial flows. It is the latter which many fear as particularly destabilizing—and not conducive to growth. The fact that total flows (which include both short-term and long-term flows) have failed to produce the desired effects is perhaps particularly condemning: it has long been presumed that FDI has a positive effect on growth. If total flows, long term and short term, have a negligible effect, it suggests that short-term flows may have a negative effect. This is, of course, consistent with ‘theory’—not the naïve theory underlying the IMF paper’s analysis, but modern financial theory. But the analysis would have been greatly enriched if more effort had been put into parsing out the effects of different kinds of capital flows (including differentiating between different types of FDI, in particular between greenfield investments and privatizations, and between natural resource investments and others). I return to this later in the paper.

#### (vi) The Pre-conditions for Successful Capital-market Liberalization

Finally, given the seeming mixed experience with capital-market liberalization, the question countries contemplating it want to know is, under what circumstances will capital-market liberalization bring the promised benefits? The IMF paper provides only modest guidance to this critical question. It argues for the *flavour of the month* in policy circles: the critical role of ‘good governance’. It neither defines precisely what good governance means, nor does it resolve the important issues of multi-collinearity and reverse causation, the fact that countries that have good governance have a host of other attributes that make them both more attractive for investors and better able to absorb the shocks and instability associated with short-term capital flows. Nor does it provide a list of countries for which capital-market liberalization, given their current governance, would be a mistake. But certainly theory—not the simplistic neoclassical theory underlying neo-liberal doctrines, but the more real-

<sup>9</sup> The IMF and other critics of East Asian financial policies were, of course, aware that higher leverage was associated with a higher probability of bankruptcy, and so long as there are costs of bankruptcy, financial structure does matter. The fact that neoclassical models ignore the costs of bankruptcy provided one of the early criticisms of the Modigliani–Miller neoclassical analysis (Stiglitz, 1969). But even more fundamental is the fact that when information is imperfect and asymmetric, decisions about financial structure convey information and affect incentives.

<sup>10</sup> In some cases, it is difficult to distinguish between behaviour which is best explained by irrationality, and that which is best explained by information imperfections (e.g. herding). See Banerjee (1992); Bikhchandani *et al.* (1992); Howitt and McAfee (1992).

istic theories to which we have referred above—does not suggest that good governance by itself will eliminate the problems to which we have called attention. Good governance does not eliminate information imperfections, nor does it eliminate either irrational exuberance or pessimism. The Scandinavian countries are typically viewed as having good governance, but that did not prevent their having major crises a little more than a decade ago; the United States, too, is typically viewed as having good governance (though recent scandals have cast some pallor over such claims), and yet it too had a bubble that eventually burst.<sup>11</sup> The American economy is strong enough to withstand such events (though recent reinterpretations of American data, including the increase in the rolls of those on disability, suggest that the downturn was indeed among the more severe of the post-World-War era);<sup>12</sup> America can engage in stimulative deficit financing, to help bring it out of the resulting recession; and short-term capital flows play a relatively small role in these macroeconomic fluctuations. By contrast, as we shall shortly see, developing countries are far weaker, and short-term capital flows that follow upon capital-market liberalization have an important role in inducing economic fluctuations, on the one hand, and in inhibiting governments' ability to offset fluctuations that arise from other sources, on the other.

### III. THE CASE AGAINST CAPITAL-MARKET LIBERALIZATION

I have discussed at length the recent IMF paper, partly because it helps illustrate how simplistic models, combined with ideology and interests, have often dominated (at least at official levels) discussions of globalization. The presumption is that free markets must be welfare enhancing. In fact, we have known for a long time that when markets are imperfect, when information is limited, or markets

incomplete, competitive market equilibria are not, in general, constrained Pareto efficient. In the theory of the second best, the elimination of one imperfection ('liberalizing capital markets') may not lead to a welfare improvement, in the presence of other market imperfections. In this part of the paper, however, I want to go beyond these general considerations, to show more specifically how capital-market liberalization may 'in theory' lead to more consumption and output variability and lower growth—in short, why it may be bad for developing countries.<sup>13</sup>

#### (i) Why Capital-market Liberalization may Lead to more Consumption Volatility

The IMF paper does make an important contribution in focusing on *consumption* volatility. Standard utility theory argues that individuals wish to smooth their consumption, and, according to 'theory', well-functioning capital markets enable individuals to do this.

If short-term capital flows were smoothing consumption, then capital would flow into a country when the economy was weak, and flow out (relative, at least, to steady-state flows) when the economy was strong. Any casual observer of capital flows recognizes, however, that capital flows (particularly short-term capital flows) in fact move pro-cyclically, not counter-cyclically (World Bank, 1999). In Latin America, during the early years of the lost decade of the 1980s, oft-cited statistics described the travails of most of the countries of the continent as they struggled to repay the loans.<sup>14</sup> *Given* the pro-cyclical movements of, especially, short-term capital flows, it is hard to see how they could perform the purported role of consumption smoothing. Had consumption volatility been reduced, Rogoff and his co-authors would have had to explain how, given the pro-cyclical nature of capital flows, this could have occurred.

<sup>11</sup> Even before that, the United States had had its mini-financial crisis, the Savings & Loans débâcle that came to a head in 1989, and cost American taxpayers between \$100 and \$200 billion.

<sup>12</sup> There was not only massive misallocation of resources during the bubble, but the loss of output after the bubble broke—the disparity between the economy's potential and actual growth—was enormous; see Stiglitz (2003*b*).

<sup>13</sup> For more extensive and complementary discussions, see the forthcoming book on capital-market liberalization by the Initiative for Policy Dialogue, Stiglitz (2000, 2002), and Ocampo and Martin (2003).

<sup>14</sup> In Latin America and Caribbean countries the annual GDP growth rate was nil in 1982–4. Net resource transfers (given by net capital inflows minus net payments of profits and interest) as a percentage of GDP were –3.8 per cent in 1982–4 and –3.1 per cent in 1985–90. Gross fixed capital formation declined by 2.4 per cent in 1981–90. See Economic Commission for Latin America and the Caribbean (1996).

The fact that, at least in certain critical cases, capital flows, especially short-term flows, appear to be procyclical, suggests, of course, a failing in the standard ‘theory’. But it is totally consistent with standard aphorisms about bankers—that they lend only to those who do not need their money—and with modern developments (that is, developments during the past quarter-century) in finance, which emphasize credit rationing and other imperfections in credit markets. In the appendices, we provide simple models which are consistent with these observations.

There is another reason that it should come as no surprise that (short-term) capital flows do not smooth consumption: ‘theory’ predicts that those more able to bear risks—the risks of exchange rate and interest-rate fluctuations—should do so. But, in fact, developing countries are forced to bear the brunt of such fluctuations, many of which have nothing to do with what is occurring in their own country. The Fed’s raising interest rates to unheard of levels in the late 1970s and early 1980s precipitated the Latin American debt crisis; but even if it had not led to the crisis, it would have adversely affected the Latin American countries. Even if they had perfect access to capital markets, it would have led to a lowering of their ‘lifetime income’ and thus of their consumption; but with capital-market imperfections, their consumption was lowered even more.

And matters are perhaps even worse when there is perceived to be an adverse shock (of unknown duration) to a country, e.g. an instance of political difficulties. Lenders immediately cut back, forcing an immediate cutback of consumption. Thus, adverse shocks are *amplified*. Consumption volatility is increased.

Of course, there may be some validity both to the view that consumption volatility is increased and that it is decreased: financial integration may allow countries to smooth small disturbances, but lead to increased volatility in the event of a large adverse shock. Under normal assumptions of concavity, the gains from consumption smoothing in the small shocks are, of course, of an order of magnitude smaller than the losses from induced volatility in the event of a large shock.

## **(ii) Political Economy: Discipline and All That**

One of the standard arguments put forward for why capital-market liberalization is good for growth is that it provides ‘discipline’. Advocates of this position evidently have little faith in democracy; they do not believe that voters are capable of choosing economic leaders that will advance their economic interests (broadly defined, including within a broader social agenda), and that it is better to rely on the judgements of Wall Street financiers. This is called the ‘discipline of the market place’. Later, I suggest that the capriciousness of such judgements—their volatility—and their extreme myopia actually may have adverse effects on long-term growth and stability. But to the extent that there is some validity in the concerns about lack of ‘discipline’, financial-market integration may actually have even more adverse effects. During the early 1990s, for instance, throughout Latin America, capital flows (spurred on by both capital-market liberalization and privatizations) helped finance rapid increases in consumption (both public and private). Better measures of economic performance (which would have taken note of the increased indebtedness and the transfer of ownership of assets to foreigners) might have provided some warnings that things were not as rosy as GDP indicators suggested. To the extent that governments are short-sighted, they have every incentive to take advantage of the further increases in consumption and the loosening of budget constraints that financial-market liberalization provides in a boom—putting little weight on the consequences for the future. The tightening of the budget constraint when the bust that follows occurs is a problem that likely will be faced by another administration.

## **(iii) Why Capital-market Liberalization Leads to More Overall Economic Volatility**

The previous two sections outlined why, *given* any level of output volatility, financial-market integration might be expected not to reduce consumption volatility. But we should not take output volatility as given: the major criticism of capital-market liberalization is that it has contributed to the volatility of output.

Anyone familiar with events in East Asia and Latin America in recent decades has seen the role that

capital-market liberalization has played in contributing to economic instability. Money rushed into the country, often financing a consumption binge, and then rushed out; as it left, financial institutions were weakened, often bankrupted, and exchange rates plummeted, leaving those with dollar-denominated debts hard pressed to meet their obligations. During the inflow, the exchange rate appreciates, posing problems for the import competing and export sectors. Some governments (Thailand in the mid-1990s) attempt to prevent this and, at the same time, avoid the economy overheating; this necessitates cutting back on high-return public investments and raising interest rates; investments other than in speculative real estate were accordingly dampened. During the outflow, financial institutions are devastated, and the lack of credit contributes to the economic downturn. One might have thought that the IMF paper would have begun from this oft-told tale, trying to identify the conditions which led to the outflows, including which were generated by events inside or outside the country.

In the appendices below, we describe two models in which capital-market liberalization leads to more overall economic volatility, and more volatility of consumption. The second model is a fully neoclassical model, except we use overlapping generations rather than a representative-agent model. In the model, we see how capital-market liberalization exposes the country to new shocks, and weakens the built-in shock absorbers in the economy, provided by the price system. Good years mean that wages are high, and that leads to a higher capital stock next year, which raises wages then but lowers interest rates. The latter dampens the increase in consumption from what it otherwise would have been, while the former spreads the benefits of positive shocks (and the costs of negative shocks) over many generations.

The first model represents a more fundamental deviation from the standard neoclassical model, incorporating information asymmetries which lead to credit and equity rationing. For simplicity, we embed this rationing within a standard Keynesian-style model, in which production is limited by aggregate

demand. Again, domestic shocks (e.g. those which increase productivity) are amplified with capital-market liberalization, which at the same time weakens the automatic stabilizers provided by endogenous interest-rate adjustments (which lower interest rates, and thus savings, when investment prospects are weak, and conversely when they are strong).

There is another, important reason why capital-market liberalization leads to greater economic volatility: it inhibits the use of counter-cyclical monetary policy. In the East Asian crisis, Malaysia was able to avoid imposing the high interest rates that those countries with IMF programmes had, which not only exacerbated the downturn, but led to more bankruptcies, thereby making the task of restructuring all the more difficult and costly.

#### **(iv) Why Capital-market Liberalization does not Lead to Faster Growth or Higher Investment<sup>15</sup>**

While the IMF paper attempts to identify some of the channels through which capital-market liberalization leads to faster economic growth, it does not attempt to test the alternative hypotheses, if only to ascertain the relative importance of the possible explanations. The biased viewpoint from which the paper starts is evidenced by its failure even to consider the channels through which capital-market liberalization might adversely affect growth. Since I have laid these out at greater length elsewhere (Stiglitz, 2003*c,d*), I only sketch them here.

- (a) If capital-market liberalization leads to greater output or consumption<sup>16</sup> instability (as suggested by the previous section), then it increases the risk premium firms require for investment, thereby discouraging investment. Moreover, to the extent that investment depends on cash flow and balance-sheet effects, downturns can have particularly adverse effects on investment.
- (b) These problems are compounded by higher interest-rate volatility, e.g. as noted above, required to stem outflows of capital.

<sup>15</sup> Even before the IMF report, the World Bank had come to the same conclusion (see World Bank, 1999).

<sup>16</sup> Both are independently relevant: consumption instability may be especially linked to investments in non-traded consumption goods sectors.

- (c) Both output and interest-rate volatility put severe limitations on the use of debt financing, which has large adverse effects, especially in developing countries with underdeveloped equity markets;<sup>17</sup> this both leads to less efficient resource allocations—lower output—and lower growth.
- (d) Short-term capital is highly myopic, and the often lauded discipline of the market accordingly forces countries to pursue more myopic policies than they otherwise would, again adversely affecting growth. Capital markets, for instance, often focus on budget deficits, without enquiring into how the money is spent; when the country is forced to cut back high-return investments to balance the budget, long-term growth suffers.
- (e) Countries increasingly feel that prudence requires that they keep in reserves an amount equal to foreign-denominated short-term debt. But there is a high cost to such reserves. Typically, they are held in the form of US (or other hard currency) Treasury bills, yielding rates of 1 per cent, when the opportunity cost of such funds invested elsewhere in the economy is of an order of magnitude greater. If a firm in a developing country borrows \$100m abroad short term from an American bank, paying, say, 20 per cent interest, then the country has to set aside a comparable amount of money, in reserves, paying only 1 per cent. There is, as a result, a net transfer *to* the United States: the country is almost surely worse off.<sup>18</sup>

Finally, the IMF paper seems, in many ways, unaware of one of the key issues: how do short-term capital flows translate into more *real* investment. Firms cannot (or should not) finance long-term investments with money that can quickly leave. (Consumption can, of course, be so financed, especially the purchase of durables.)

#### (v) FDI

The IMF paper focuses on financial-market integration—gross capital flows—which include FDI. While there was a broad consensus (outside of the IMF) that short-term flows did not lead to growth, but did enhance instability, there has been a broader sentiment in favour of FDI. Thus, the result that financial-market integration, including FDI, does not have a strong positive effect on growth, may come as a surprise.

Part of the reason may be that FDI statistics include a variety of forms of investment, and some of these may not lead to growth, or at least sustainable growth. I suspect that if better measures of welfare were used, the results would be even less positive.<sup>19</sup> For instance, FDIs include privatizations. If the privatization revenues are even partially spent on consumption, then the country's wealth (what the country as a whole owns) is decreased; the country is poorer. In some cases, privatizations do lead to increased efficiency—for instance, when there are public enterprises operating at a loss—but in other cases, it does not.<sup>20</sup> In many developing countries, much of the FDI is in the oil or other natural resource sector; typical measures of GDP do not take account of the fact that the country is poorer as a result of the depletion of resources. Moreover, there is a large and growing literature (the paradox of the resource curse—see, for example, Sachs and Warner, 2001) explaining why it is that natural-resource development is often not associated with faster economic growth. There are typically few linkages with the rest of the economy; meanwhile 'Dutch Disease' problems, causing exchange-rate appreciation, make exports more difficult and weaken import-competing sectors. Moreover, foreign firms may engage in bribery to obtain the natural resources at a 'discount' (or may even, in the case of manufactured goods, use bribery to obtain protection or monopoly positions).

<sup>17</sup> Even in developed countries, relatively little investment is financed by new equity issues, because of information asymmetries and imperfections.

<sup>18</sup> The only circumstance in which the country is better off would be if its ability to allocate its capital efficiently is so much worse than that of the American bank.

<sup>19</sup> This is also true of other forms of capital flows. For instance, if, as the analysis above suggested, short-term borrowing in foreign-denominated currencies is systematically associated with a higher probability of a crisis, a welfare-oriented national income accounting framework ought to take into account some actuarial estimate of the resulting losses at the time the borrowing occurs.

<sup>20</sup> For a survey of studies on the effect of privatization, see Megginson and Netter (2001). For a survey focused on economies in transition, see Djankov and Murrell (2002).



In the case of financial-market integration associated with international banking acquiring domestic banks, there are other reasons for possible adverse effects: the international banks *may* be less willing or able to lend money to domestic small and medium-sized enterprises.<sup>21</sup> Moreover, while, in principle, such integration holds out the possibility of greater stability in lending (since the risks are more diversified), in practice there have been important instances (such as in Bolivia in recent years) where shocks to the home-country banking system, or other events in the home country which result in a change in willingness to bear risk, in turn result in a market contraction in the credit supply, inducing a contraction in the economy of the developing country.<sup>22</sup>

#### (vi) Justifying Interventions

The fact that short-term capital flows have potentially such large adverse effects on others—beyond those directly involved in the flows—implies that there is an *externality* and, as always, when there is an externality, there is a *prima-facie* case for government intervention. The question is only whether there are interventions which can address the adverse consequences of the externality, without more than offsetting ancillary negative side-effects; and, if there are, what is the best form of intervention. The experiences of Chile and Malaysia suggest that there are such interventions.<sup>23</sup> Given the limited space of this paper, I cannot spell them out here.

Here, I simply wish to note that even the IMF recognizes the importance of externalities in this arena—witness the authors' concern about contagion, and their use of contagion as a justification for bail-outs. But if crises justify government actions, then it makes sense to address the underlying causes. (One should not just build a bigger hospital to address public health problems.) Among the causes of crises are destabilizing short-term capital flows. Accordingly, it makes sense to try to stabilize such flows. Even if interventions are *imperfect* (i.e. they are 'leaky'), there may be a large social benefit

from the reduction in the overall magnitude of the volatility of short-term capital flows.

## IV. CONCLUDING COMMENTS

Economists, particularly in developing countries, had long expressed doubts about the virtues of capital-market liberalization—see, for example, the often cited paper by Diaz-Alejandro (1985). Though I have not seen a survey of beliefs within the economics profession, long before the IMF paper, I suspect these doubts represented almost a consensus. Even Lawrence Summers, before he went to the US Treasury, expressed misgivings (Summers, 1997). As I have noted, the seeming pro-cyclical movements of capital flows and the structure of capital markets—which left developing countries bearing interest-rate and exchange-rate risks—had left little doubt of the risks imposed by capital-market liberalization. Had the Rogoff *et al.* paper concluded that *on average* capital-market liberalization reduced consumption volatility relative to output volatility, it would not have fully answered the critics of capital-market liberalization, whose attention is focused not so much on *averages* but on the *extreme* events. But the fact that a paper which begins with a clear bias towards capital-market liberalization—and an analysis resting on theoretical presumptions so out of tune with many, if not most, developing countries—comes to such a sceptical conclusion about its virtues should make a fundamental contribution to the debate on capital-market liberalization. The IMF should change from pressuring countries into liberalizing their capital markets into working with countries on how to design interventions in the capital markets which stabilize capital flows, or even better, ensure that they move counter-cyclically. It should be working harder to address the underlying failures in capital markets, devising ways by which more of the risk of interest-rate and exchange-rate fluctuations can be shifted to developed countries and international financial institutions. And, in the future, it should rely more on evidence and less on ideology in developing its policy

<sup>21</sup> Similar concerns, of course, were at the centre of restrictions on interstate banking in the United States, which were only finally repealed in 1995.

<sup>22</sup> The fact that the foreign lender is less informed about risks in the developing country may imply that there is a higher likelihood that certain categories of lending in the developing country will be 'red lined', i.e. rationed out of the market.

<sup>23</sup> China and India are two other examples. For the Indian case, see Joshi (2003). See also Wyplosz (2002).

agenda. The IMF's stance on capital-market liberalization has, in many circles, undermined its credibility; in spite of its authors' claims that the paper represents 'an evolution, not a revolution' in IMF

thinking, this paper confirms what many in the developing world have long known: IMF advice in this area confronted countries with risk without reward.

## APPENDIX A

### A simple model of 'regime change' in which financial-market integration leads to increased income and consumption volatility

Consider an economy in which there are two states of nature  $\theta_1$  and  $\theta_2$ , and the economy stochastically shifts (in a Markovian way) from one to the other, with probability  $\pi$ . In both states there are two projects, one risky, one safe, and the lender cannot monitor which one the borrower will undertake. Projects take two periods to mature and, for simplicity, we assume that all loans are variable rate, with the interest rate in the second period set at the prevailing lending rate at the time. We focus on behaviour along the equilibrium path. Both borrowers and lenders thus have (rational) expectations about what the lending interest rate *next* period will be, which will depend on the state. Let  $\beta_i^j(r_i, r_i)$ ,  $j = S, R$ , represent the expected return to an investor who must borrow to finance the project for an investment in the safe (S) or risky (R) project, when the economy is in state  $i$ , when it charges interest rate  $r$ , and it anticipates that if there is a regime change, the interest rate will be  $r_i$ . (If the state is the same next period, then it is assumed, rationally, that the interest rate the next period will be the same as this period.) The borrower makes the decision about what type of project to undertake in period 1, but the outcome of the project is determined by the state of nature in the second period. Both the lender and the borrower know, of course, the likelihood that the state will change between today and tomorrow.

We can describe the set of interest rates over which the safe project will be undertaken in both states of nature: it is the state-dependent set  $\{r_1, r_2\}_i$  such that

$$\{r_1, r_2\}_1 : \beta_1^s(r_1, r_2) \geq \beta_1^r(r_1, r_2)$$

$$\{r_1, r_2\}_2 : \beta_2^s(r_2, r_1) \geq \beta_2^r(r_2, r_1).$$

We let  $\rho_i(r_1, r_2)$  represent the expected return to a lender if the interest rate is  $\{r_1, r_2\}$  for a loan made in state  $i$ . (Lenders can infer what kind of project the borrower will undertake.) Let  $\rho^*$  = the safe international rate of return. We assume that state 1 is the bad state, and that

$$\text{Max } \rho_1(r_1, r_2) < \rho^* < \text{Max } \rho_2(r_1, r_2)$$

so that in state 1, no matter what interest rates are charged, the expected return to the lender is so small that no loans are made within the country *with financial-market integration*; while in state 2 loans will be made. The 'trick' in the analysis is that in a closed economy, the 'safe' rate of interest adjusts to the state of the economy, so that some loans will still be made even in state 1. Thus, the variability of output will be less.

We assume that there are  $M^*$  safe projects (each costing a dollar),<sup>24</sup> and that the lenders' expected returns are always maximized by the borrower undertaking the safe project and, indeed, that the lenders' expected return should the borrower undertake the risky project is so low that they would not make the loan. There is a weak enough credit culture that international lenders cannot lend to consumers directly. (Alternatively, they cannot tell the capitalists from the charlatans, and their expected return to lending, given that they cannot distinguish, and that there is a maximum interest rate above which the capitalists will not borrow, is negative. Accordingly, there are no consumption loans.)

We use a standard Keynesian aggregate demand macroeconomic framework, which we simplify by assuming the fraction of income saved,  $s$ , is a function of the expected return,  $\rho$ :  $s(\rho)$ , with  $s' > 0$ , fixed exports,  $X$ , imports equal to a fraction  $m$  of income, fixed government expenditures, so that

$$Y_i = X + G + Im + s(\rho).$$

<sup>24</sup> Moreover, all the investment entails non-traded (domestically produced) goods.

**(i) Closed Financial Markets**

With closed financial markets,  $\rho$  adjusts to equate savings with investment. In the ‘good state’ all projects are undertaken, so  $I = M^*$ .

This means that in the good state, the interest rate is such as to generate savings to finance all the investment projects;<sup>25</sup> while in the bad state, the interest rate is the maximum interest rate such that the borrower does not undertake the risky project.<sup>26</sup> We can then easily solve for  $(r_i, Y_i)$  through the simultaneous equations:

$$Y_2 = [X + G + M^*] / [m + s(\rho_2(r_1^o, r_2^o))],$$

the standard income-expenditure equation for state 2;

$$M^* = s(\rho_2(r_1^o, r_2^o))Y_2 = s(\rho_2(r_1^o, r_2^o)) [X + G + M^*] / [m + s(\rho_2(r_1^o, r_2^o))].$$

ensuring that in state 2 savings equals investments;

$$Y_1 = [X + G + I_1] / [m + s(\rho_1(r_1^o, r_2^o))],$$

the standard income-expenditure equation for state 1;

$$\{ r_1^o, r_2^o \} : \beta_1^s(r_1^o, r_2^o) = \beta_1^r(r_1^o, r_2^o)$$

ensuring that the safe project is undertaken in state 1; and where

$$I_1 = s(\rho_1(r_1^o, r_2^o)) Y_1 = s(\rho_1(r_1^o, r_2^o)) [X + G + I_1] / [m + s(\rho_1(r_1^o, r_2^o))] = s_1^* [X + G]/m,$$

where  $r_i^o$  denote the equilibrium interest rate in state  $i$ .<sup>27</sup>

It is easy to verify that for  $i = 1, 2$

$$Y_i = [X + G]/m.$$

There is no output variability. There is some consumption variability, since savings must be higher in

the good state (so consumption must actually be lower in the good state). The difference in consumption in the two states is equal to the difference in investment. Note that in more general versions of the model, there will be output as well as consumption variability, for instance, if  $m$ ,  $X$ , or  $G$  are sensitive to the state of nature or the real interest rate.

**(ii) Open Financial Markets**

With fully open financial markets, the separation between investment and savings is almost complete—except through the effect of investment on income. There is an international interest rate that determines savings; we will denote that savings rate by  $s^{**}$ . In the good state, all the investment projects are undertaken; in the bad state, there is no interest rate at which it is profitable to invest. Hence

$$Y_2 = X + G + M^*/m + s^{**}$$

and

$$Y_1 = X + G/m + s^{**}.$$

*Opening the capital market lowers income in the bad state and (assuming that in the good state, the country has a ‘scarcity of capital’, i.e. it borrows abroad) increases income in the good state (as the scarcity leads to higher savings and lower consumption). Capital-market liberalization thus increases output volatility. It is ambiguous whether overall consumption variability is increased or reduced; the difference in consumption in the two states is now  $(1 - s^{**})(Y_2 - Y_1) = [(1 - s^{**})/(m + s^{**})] M^*$ , whereas in the closed economy model the difference in consumption in the two states is  $I_1 - M^*$ .*

The model also is consistent with observed patterns of capital mobility—capital flows into the country in good periods, and in bad periods, flows out (all of savings is invested abroad).

<sup>25</sup> Moreover, we assume the parameters are such that the interest rates lead borrowers to undertake the safe project in the good state.

<sup>26</sup> That is, if the interest rate increased to make the supply of funds equal to the potential demand for good projects, borrowers would, in fact, undertake the risky projects.

<sup>27</sup> In the credit-rationing equilibrium,  $r_1^o$  is such that  $\beta_1^s(r_1^o, r_2^o) = \beta_1^r(r_1^o, r_2^o)$ .

**APPENDIX B**

**A simple model with incomplete risk markets where financial-market integration leads to increased income and consumption volatility and lower welfare and growth**

Newbery and Stiglitz (1984) showed how, in the absence of risk markets, the opening of trade led to a Pareto inferior equilibrium. The idea was a simple one: with unitary demand elasticities, price and output vary inversely, so that the price system provides perfect revenue insurance. (With near unity demand elasticities, it provides good revenue insurance.) The opening of trade, however, weakens the inverse link between price and quantity, thus exposing producers to greater risk. This may discourage investment in the high-return activity; tracing through the effects in a general equilibrium model, it is possible not only that the producers are worse off—because of their greater exposure to risk—but consumers are worse off as well.

A similar model can be used to show how capital-market liberalization in the absence of good insurance markets can lead to lower welfare (and higher consumption and income volatility.) Assume that the international lending rate to a country,  $r$ , is variable. Foreigners, however, only lend to enterprises (since they are unable to distinguish good from bad household borrowers). Individuals live for two periods, working in the first. The budget constraints are given by

$$\begin{aligned} C_1^t &= w_t - s_t \\ C_2^t &= [1 + r_{t+1}]s_t \end{aligned}$$

where the superscript  $t$  identifies the generation.

For simplicity, we assume that they have a logarithmic utility function

$$U^t = \ln C_1^t + \ln C_2^t$$

which means that  $s = 0.5$ , and

$$EU^t = -2 \ln 0.5 + 2 \ln w_t + E \ln(1 + r_{t+1}).$$

In the discussion below, we focus on two cases, that where the only source of randomness is the interest

rate, and that where it is domestic productivity; and in each we focus on closed versus open capital markets. We begin with the case where the only source of uncertainty is the external interest rate.

For simplicity, we assume that the short-term capital actually is translated into investment goods.  $F(K_t, L_t)$  is constant returns production function,  $f(k_t)$  is output per worker, with  $k_t = K_t/L_t$ . We assume that all of capital depreciates each period. In a closed economy,

$$k_t = 0.5w_{t-1} = 0.5[f(k_{t-1}) - k_{t-1}f'(k_{t-1})] = 0.5 g(k_{t-1}),$$

where  $g \equiv f - kf'$ .

The steady state is defined by

$$k^* = 0.5g(k^*).$$

We assume that the economy is in steady state. There is no volatility in wages, or interest rate, or utility.

We now consider what happens when we open the economy. Now,

$$k_t = f'^{-1}(1 + r_t) \equiv h(r_t)$$

where  $r_t$  is a random variable. Hence  $w_t = g(h(r_t))$  is a random variable, and expected utility of an individual in period  $t$ <sup>28</sup>

$$E_t U^t = -2 \ln 0.5 + 2 \ln w_t + E_t \ln(1 + r_{t+1})$$

and *ex-ante* expected utility (of the *average generation*) is

$$E\{E_t U^t\} = -2 \ln 0.5 + 2 E \ln w_t + E[E_t \ln(1 + r_{t+1})].$$

*It follows that opening the capital market unambiguously leads to an increase in consumption variability.*

The impact on social welfare is more difficult, for it depends in part on the relationship between the average interest rate in the international market and the interest rate in the closed economy, as well as the nature of the social-welfare function. If, for instance, we denote by  $r_c$  the interest rate in the

<sup>28</sup> In the following,  $E_t(X)$  denotes the conditional expectation of the random variable  $X$  given the information available at time  $t$ .

closed economy, and assume that the average logarithm of  $(1 + r_t)$  in the international market is the logarithm of one plus the interest rate in the domestic closed economy— $E[\ln(1 + r_t)] = \ln(1 + r_c)$ —and that there is a utilitarian social welfare function, then social welfare is lowered or increased as the elasticity of substitution between labour and capital in the production function is less or greater than unity.<sup>29</sup> If the social-welfare function is concave (i.e. is inequality or risk averse), then social welfare is reduced even when the elasticity of substitution is greater than unity, provided it is not too large. If the average interest rate in the open economy is equal to  $r_c$ , then it is even more likely that social welfare will be reduced.<sup>30</sup>

**(i) Variability in Productivity**

A similar result holds even if there is variability in domestic production, e.g. domestic production function is of the form  $Q_t = \theta_t f(k_t)$ .

In a closed economy now there is consumption and output variability. With our logarithmic utility function,

$$s_t = k_{t+1} = w_t / 2 = \theta_t g(k_t) / 2$$

and

$$\begin{aligned} E_t U' &= -2 \ln 0.5 + 2 \ln w_t + E \ln(1 + r_{t+1}) \\ &= -2 \ln 0.5 + 2 \ln w_t + E_t \ln \theta_{t+1} + \ln f'(w_t / 2) \end{aligned}$$

and<sup>31</sup>

$$E\{E_t U'\} = -2 \ln 0.5 + 3 E[\ln \theta_t] + 2 E[\ln g(k_t)] + E \ln f'[\theta_t g(k_t) / 2].$$

In the case of an open capital market,

$$k_t^* = f^{-1}((1+r_t)/\theta_t) = h(r_t/\theta_t)$$

and

$$\begin{aligned} w_t &= \theta_t [f(k_t^*) - k_t^* f'(k_t^*)] = \theta_t g(k_t^*) \\ &= \theta_t g(h(r_t/\theta_t)) \end{aligned}$$

<sup>29</sup> Social welfare is lowered or increased as  $\ln w$  is a concave or convex function of  $\ln(1 + r)$ . It is straightforward to show that  $d \ln w / d \ln(1 + r) = -\alpha / (1 - \alpha)$ , where  $\alpha$  is the share of capital in national income. The result is immediate.

<sup>30</sup>  $\ln(1 + r)$  is a concave function of  $r$ .

<sup>31</sup> Assuming  $\ln(\theta_t)$  is a martingale.

so that

$$E_t U' = -2 \ln 0.5 + 2 \ln w_t + E_t \ln(1 + r_{t+1}).$$

If we assume that there is no variability in the international interest rate, then

$$E\{E_t U'\} = -2 \ln 0.5 + 2E[\ln \theta_t] + 2E[\ln g(h(r/\theta_t))] + \ln(1 + r).$$

It should be clear that opening up capital markets allows for greater variability of wages (when  $\theta$  is high, the country can borrow more, driving up the wage, and, conversely, when  $\theta$  is low, capital flows out of the country). And unlike the closed economy, a high level of wages today has no adverse effect on the interest rate next period. Hence, on average, consumption and expected utility will be more volatile than in a closed economy, and with a sufficient inequality/risk-averse social-welfare function, social welfare will be decreased. The only subtlety is presented by the fact that when the economy is more productive, it has access to more resources. We have to set this gain against the losses from greater variability. A full analysis is beyond the scope of this appendix. Here, we look only at the special case of a unitary elasticity production function, a utilitarian social welfare function, and a normalization where the expected logarithm of the interest rate in the closed economy is equal to the logarithm of the interest rate in the open economy, i.e.

$$\ln \alpha - (1 - \alpha) E \ln k_c + E \ln \theta_t = \ln(1 + r_o).$$

So, in the obvious notation,

$$E \ln w_c = \ln(1 - \alpha) + \alpha \ln k_c + E \ln \theta_t.$$

Meanwhile, for the open economy, for each  $\theta$

$$\ln \alpha - (1 - \alpha) \ln k_o + \ln \theta_t = \ln(1 + r_o)$$

so that

$$\ln \alpha - (1 - \alpha) E \ln k_o + E \ln \theta = \ln(1 + r_o).$$

It immediately follows that

$$E \ln w_c = E \ln w_0$$

and therefore the expected utility is the same. But with *individual* utility being

$$\ln(w_t/2) + \ln(w_t(1+r_{t+1})/2),$$

and with  $w$  and  $r$  in a closed economy being negatively correlated, there is less variability in utility across generations in the closed economy; accordingly, with a concave social welfare function, social welfare is lower after capital-market liberalization.

More generally, with capital-market liberalization, variations in  $\theta$  generate large variations in wages and, therefore, in lifetime utility, particularly if the share of labour is small.<sup>32,33</sup>

It is also clear that capital-market liberalization leads to an increase in the variance of output.

The intuition behind these results is simple. Before the opening of the capital market, utility will vary less than wages, since when there is a positive productivity shock, the wage is high; when the wage is high savings will be high, and so the interest rate will be low; lifetime consumption of the younger generation will not increase in tandem with productivity, i.e. with output and their wage. Moreover, the benefits of a productivity shock are shared with future generations, as the increased savings lead to increased wages in the next generation, which in turn benefits succeeding generations.

On the other hand, once the capital market has been liberalized, the first effect will no longer be present (since the interest rate does not depend on the country's own savings). Moreover, the impacts of a higher  $\theta$  are felt only by the generation working at the time. (It thus affects consumption in only two periods, the two periods of life of the individual.)

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<sup>32</sup> In the open economy,  $d \ln k / d \ln \theta = 1/\beta$  where  $\beta = -(1/d \ln f' / d \ln k)$ , so  $d \ln w / d \ln \theta = 1 + \beta (\alpha/1 - \alpha) (d \ln k / d \ln \theta) = 1 / 1 - \alpha$ .

<sup>33</sup> The variations in wages and utility in a closed economy depend on the stochastic process for  $\theta$ . Assume, for instance, that  $\theta$  takes on two values,  $\theta_1$  and  $\theta_2$ . Then the steady state is defined by the pair of equations  $k_1^* = \theta_1 g(k_1^*)$  and  $k_2^* = \theta_2 g(k_2^*)$ .

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