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Comment

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What Does the Model Tell Us?

This paper tackles the public policy question: *when* should a country liberalize its capital account? This is among the most important public policy questions in international macroeconomics today. So that is the first desirable feature of the paper. There is a voluminous literature that has attempted to answer this question, which is surveyed in Kose et al. (2006). The vast majority of this literature is empirical. So the fact that this is a careful, theoretical treatment is a second nice feature.

Of the theoretical papers addressing this question, the majority focus on the short-run dynamics of the economy following liberalization—the transition paths of, for example, output and asset prices. This paper allows an assessment of both those short-term dynamics and of the long-run equilibrium growth path of an economy, through endogenous adjustments in total factor productivity (TFP). These TFP dynamics depend in turn on the allocation of production between the productive and unproductive sectors.

Long-run TFP effects have been little studied in the literature to date on capital account liberalization. Indeed, some authors have suggested that a consideration of TFP effects is little short of essential when establishing a positive case for capital account liberalization; or, put differently, that existing (theoretical but in particular empirical) studies may have biased the case against capital liberalization because they have not properly considered those long-run dynamics (Kose, Prasad, and Terrones 2006). By addressing both the short- and long-run dynamics of the economy as a result of liberalization, this paper makes both a distinctive contribution to the (largely empirical, largely short-run) literature, as well as providing an analytical vehicle that is likely to be better able to address the intertemporal trade-offs public policymakers may face in practice.

In the paper, the short- and long-run dynamics of the economy following liberalization hinge critically on a single parameter, θ. This measures the fraction of future output that can be secured by domestic (and only domestic) creditors; it is an index of internal financial development. Though the precise microeconomics of this summary statistic are not discussed in detail, θ can be thought of as a measure of the monitoring effort domestic intermediaries undertake (the state of banking technology) and of the robustness of domestic property rights. Both factors have been shown to be empirically important determinants of whether capital account liberalization is good or bad cholesterol (Levine 1997; Stulz 2005).

What the empirical literature also finds is strong evidence of nonlinearity—or, more broadly, threshold effects—in the relationship between capital account liberalization and growth (Kose et al. 2006). Within this, financial development is typically found to be a particularly important factor in determining this (nonlinear) relationship. The theoretical model presented here matches those empirical moments quite closely. As figure 4.2 in the paper makes clear, it suggests a clearly nonlinear response of the economy to liberalization, conditional on θ. In particular, three distinct zones for θ can be identified, each of which has distinctive implications for (short-and long-run) dynamics. These three zones are summarized in table 4C1.1, together with their growth implications. Also shown are examples of countries which, on the face of it, appear to have undergone capital account transition dynamics that match those implied by the model.

When θ is low there is financial repression, which translates into a high shadow cost of internal funds. So when the constraint on the availability of (cheap) external funds is lifted, the result is that both the productive and unproductive sectors borrow significantly. In consequence, we see a rise in capital investment and output in the short run, which is in turn mirrored in a jump in asset prices. The last of these effects boosts domestic collateral and thereby loosens further the external borrowing constraint, generating an international financial accelerator. But while short-term effects are positive, long-run dynamics are less so. Having been relatively more constrained before liberalization, the nonproductive sector gears up most aggressively following liberalization. As a result, allocative inefficiencies are actually greater in the long-run—and TFP growth correspondingly lower—than prior to capital liberalization. So with the financial sector underdeveloped, capital account liberalization allows a short-run dash for growth, but is deleterious to long-run output growth.

Table 4C1.1
Internal financial development and growth dynamics

	Short run		Long run		
θ	Foreign capital?	Output/asset prices?	Who invests?	TFP?	Examples
Low	Inflow	Higher	Both productive and nonproductive	Lower	Thailand, Indonesia (1990s)
Medium	Outflow	Lower	Nonproductive fail	Higher	Russia (1990s), China (now)
High	Inflow	Higher	Productive sector	Same(ish)	United Kingdom, Australia (1970s/1980s)

These dynamics match the experience of several countries that liberalized their capital accounts in the second half of the 1990s, in particular across East Asia. Then, liberalization resulted in a flood of (sometimes indiscriminate) capital into a range of countries' banking systems and capital markets. This resulted in a number of fat years of rising output and asset prices. But in some countries—for example, in Thailand and Indonesia—the low level of sophistication of domestic intermediaries meant that much of that foreign capital was employed in unproductive projects of various kinds: payouts to associates of President Suharto, bridges to nowhere, Imelda Marcos' shoe collection, and so forth. It was far from clear that the deployment of foreign capital in this way would benefit the recipient countries in the long run. And so it proved: after many of these countries hit crisis in 1997, capital flows reversed and decades of fat years were replaced by several years of thin ones.

When θ lies in the intermediate range, the cost of internal funds is lower than in the first case and, as a result, some domestic investment is already underway. This means that the return on domestic investment is somewhat lower than under financial repression. Relaxation of the international borrowing constraint allows domestic savers to put their money into foreign investments that are now relatively more attractive. So capital flows uphill—out of the poor countries toward richer ones. In the short run, this causes output and asset prices to contract. But the long-run picture is altogether more encouraging. The capital outflow results in Schumpeterian creative destruction, starving the unproductive sector of capital entirely and forcing them to collapse. Only the productive sector remains to inherit the earth. That, in turn, means that long-run TFP and growth in the economy is higher than before the liberalization. The collapse of capital, output, and asset prices has a long-run cleansing effect on growth.

It is again possible to think of examples that match these patterns. Consider, for example, the dilemma facing policymakers in Russia toward the end of the last century and that facing Chinese policymakers now. In both cases the authorities began with an unfortunate endowment—a large unproductive sector, financial as well as nonfinancial. In both cases, the authorities resisted attempts to undertake significant, speedy capital account liberalization. Why? Because they were fearful that this would result in an exodus of domestic savings abroad, with damaging implications for the financing of unproductive domestic firms (financial and nonfinancial), the collapse of whom would have had seriously adverse short-term costs for output and employment. So both Russia (then) and China (now) traded-off a higher short-term path of output against the higher long-run growth rate that would have resulted from the sharp shock of Schumpterian destruction of their unproductive sectors.

In both of the first two cases, where financial development is low, policymakers face a well-defined intertemporal trade-off—even though the precise nature of this trade-off differs. The case for liberalization is neither black nor white, but instead hinges on how the authorities trade-off jam today (short-run output and asset prices) against jam tomorrow (long-run TFP and growth). That perhaps helps explain why there remains such controversy about capital account liberalization today, to a much greater extent than about, say, trade liberalization.

No such trade-off exists in the third zone, however, when θ is high. The internal intermediation process is already then allocating capital efficiently, with the unproductive sector ceasing production and instead channeling their capital to the productive sector. Liberalization allows further capital deepening by the productive sector, which is beneficial in both the short and the longer-run. Capital account liberalization poses few difficult trade-offs for policymakers if the financial sector is already allocating capital fairly efficiently—as was found, for example, by a range of developed countries that liberalized during the 1970s and 1980s, including the United Kingdom and Australia.

So we have a nice theoretical model that engages with a big public policy question, is able to capture both short- and long-run dynamics, and that matches the moments of the empirical literature and a number of countries' actual liberalization experience. So far, so good.

What Doesn't the Model Tell Us?

There are two areas in particular where the model's assumptions do not closely match the empirical literature. The specification of foreign capi-

tal is, as the authors acknowledge, somewhat restrictive. In particular, there are three features worth highlighting. First, foreign capital is deep-pocketed, in the sense of being supplied perfectly elastically at rate r*. In turn, r* is assumed to lie below the reciprocal of the domestic rate of time preference, in order to ensure that capital flows downhill in the normal course of events. Second, foreign capital essentially takes the form of secured *debt*. In other words, foreign capital does share in the fruits of the future output that results from its investment, as would, for example, be the case with either equity or foreign direct investment. Third, foreign investors are essentially dumb, or at least indiscriminate, in that they do not distinguish between the productive and unproductive sectors when making their investment decisions. In short, foreign capital is assumed to take the form of deep-pocketed, dumb debt.

A second area where the model is potentially restrictive is in its specification of the sources of growth following capital account liberalization. In the model, these are essentially threefold: foreign capital, via a standard neoclassical capital-deepening channel; the financial accelerator; and (distributional) allocative efficiencies, as production shares switch between the productive and unproductive sectors. These two sets of assumption—about the nature of foreign capital and about the sources of growth following liberalization—jar somewhat with what we know from the extensive empirical literature on capital liberalization.

Empirical evidence indicates that the growth effects of capital account liberalization tend to be largest for equity and foreign direct investment flows (see, for example, Durham 2004). In other words, the returns from foreign investment tend to be greatest when investors have some skin in the game, through a claim on future returns. That fits with a second key stylized empirical fact: that the growth effects of liberalization tend to arise not from the direct neoclassical capital-deepening channel, but rather from the indirect efficiency-enhancing effects of FDI and equity flows, in particular technological diffusion and improved managerial practices and disciplines (Gourinchas and Jeanne 2005). Foreign direct investment (FDI) is the clearest manifestation of these channels, as in this case financial technologies are, in effect, imported lock, stock, and barrel. Kose et al. (2006) call these the collateral benefits of liberalization. Microeconometric studies appear to show clear evidence of these being the key channels through which TFP improvements arise (Goldberg 2004). The specification of foreign capital and growth in the model means, of course, that FDI and equity flows in general, and these channels in particular, are missing.

Is this fatal? The paper considers the comparative static consequences

of a boost to θ, which is a possible shorthand means of gauging the broader collateral benefits of liberalization. A more sophisticated treatment would be to free up the restriction $\theta_{foreign} = 0$. A previous paper by the same authors showed that such an extension is analytically feasible (Aoki, Benigno, and Kiyotaki 2006). Of course, the particular restriction one would want to impose, to match the previous microeconomic evidence, would be more precise still: $\theta_{foreign} > \theta_{domestic}$. In other words, FDI and equity are a means of importing efficiencies, as well as capital, into the foreign intermediation process. An extension along these lines would be well worthwhile.

There are a host of other factors that a policymaker would probably want to weigh before taking too seriously the conclusions from the model. One such factor is the state of preparedness of public institutions, including property rights and the rule of law (institution/constitution-building); a second would be the state of preparedness of the macroeconomic policy framework, both monetary and fiscal policy, but as important regulatory and supervisory policies. Both such factors have been found to be crucial determinants of the success of capital liberalization—though both may be beyond the reach of what is an already rich paper. One consideration that is well within the reach of this paper is, however, an assessment of the political economy of capital account liberalization—how the authorities' choice of discount rate may affect their liberalizing tendencies. The model has all the ingredients to analyze that normative issue in greater depth than has been done in the literature to date, and I think this too would be a worthwhile extension.

References

Aoki, K., G. Benigno, and N. Kiyotaki. 2006. Adjusting to capital account liberalization. London School of Economics and Princeton University. Unpublished Manuscript.

Durham, J. 2004. Absorptive capacity and the effects of foreign direct investment and equity foreign portfolio investment on economic growth. *European Economic Review* 48 (2): 285–306.

Goldberg, L. 2004. Financial-sector foreign direct investment and host countries: New and old lessons. NBER Working Paper no. 10441. Cambridge, MA: National Bureau of Economic Research, April.

Gourinchas, P., and O. Jeanne. 2005. Capital mobility and reform. Paper presented at the 6th Jacques Polak Annual Research Conference, International Monetary Fund. 3–4 November, Washington, D.C.

Kose, A., E. Prasad, and M. E. Terrones. 2006. Globalisation and productivity growth. International Monetary Fund Working Paper.

Kose, M. A., E. Prasad, K. Rogoff, and S. Wei. 2006. Financial globalization: A reappraisal. NBER Working Paper no. 12484. Cambridge, MA: National Bureau of Economic Research, August.

Levine, R. 1997. Financial development and economic growth: Views and agenda. *Journal of Economic Literature* 35 (2): 688–725.

Stulz, R. 2005. The limits of financial globalization. *The Journal of Finance* 60 (4): 1595–1637.