Proposals Regarding Restrictions on Capital Flows

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A variety of measures to slow down international capital flows are in place somewhere in the world, and some additional measures have been proposed by academic observers. The debate over the desirability of such measures has been sterile however. It generally consists of arguments for and against the virtues of free and unfettered capital markets. On the one hand, proponents of introducing "sand in the wheels" of international financial markets point to evidence of inefficiencies, anomalies, bubbles, speculative attacks and crashes. On the other hand, opponents (which, at least until recently, has included the heavy majority of academic economists) argue that any measures to weed out alleged destabilizing short-term capital flows would inevitably also inhibit desirable long-term capital flows. Neither group bothers much to distinguish among the details of the various possible measures. (Appendix 1, shows how a number of important details differ across three such proposals: Chile's deposit requirement on inflows, the Eichengreen-Wyplosz deposit requirement proposal, and the Tobin tax proposal.) In the wake of the East Asia crisis, a more careful consideration may be warranted.

Review of arguments on efficiency of financial markets

Financial integration between an emerging-market country and the rest of the world has many advantages. First, for a successfully developing country, the rate of return to domestic capital is sufficiently high that investment can be financed more cheaply by borrowing from abroad than out of domestic saving alone. Second, investors in richer countries can earn a higher rate of return on their saving by investing in the emerging market than they could domestically. Third, everyone benefits from the opportunity to diversify away risks and smooth disturbances.

Fourth, letting foreign financial institutions into the country improves the efficiency of domestic financial markets. Over-regulated and potentially inefficient domestic institutions are subject to the harsh discipline of competition and the demonstration effect of having examples to emulate. At the same time, the governments face the discipline of the international capital markets in the event they make policy mistakes (e.g., in their domestic regulatory duties).

There are some indications, however, that financial markets do not always work quite as perfectly as the happy view of the economic theorist suggests. Most salient are such recurrent disruptions as the 1982 international debt crisis, 1992-93 crisis in the European Exchange Rate Mechanism, 1994-95 Mexican peso crisis, and 1997-98 Asian financial crisis. It is difficult to argue that investors have punished countries when and only when the governments are following bad policies. First, large inflows often give way suddenly to large outflows, with little news appearing in between that might explain the change in sentiment. Second, contagion sometimes spreads to countries where fundamentals appear strong. Third, the recessions that have hit emerging market countries in such crises have

been of such magnitude that it is difficult to argue that the system is working well.

This note will proceed on four premises: (i) modern financial markets do not work perfectly, as the recurrence of crises attests, but (ii) we are better off with them than without them, so that (iii) as countries industrialize, open markets should be the goal (eventually, if not right away), and (iv) the interesting question in the meantime is *whether or not there exists some possible tinkering with the freedom of capital movement that might potentially reduce the frequency or severity of the crises that occur.*

Five possible aims of controls

What would be the precise aim of capital controls, or other lesser "sand-in-the-wheels" measures? There are five possibilities:

- to discourage **capital outflows** in the event of a balance of payments crisis.
- to discourage **capital inflows in the aggregate**, before a crisis.
- to modify the ***composition* of capital inflows**, in particular to discourage short-term banking inflows, especially those denominated in foreign currency, relative to other inflows.
- to create some friction for **all foreign exchange transactions**, with the aim of reducing volatility.
- to decouple **domestic interest rates** from foreign, with the aim of restoring some monetary independence.

We consider each of these categories in turn.

(1) Discouraging **capital outflows**.

Controls on capital outflows have been very common, especially among smaller and less developed countries. Even the United States, in the 1960s, imposed an interest equalization tax, and a "voluntary" foreign credit restraint program that put ceilings on banks' foreign lending. France and Italy maintained such controls up until the late 1980s. Conditional on a speculative attack occurring, controls on capital outflow can help slow down or minimize the loss of reserves or the required increase in interest rates. Controls are generally leaky, however. (There is the problem of "leads and lags" in payments for imports and exports, for example.) Needless to say, controls on outflows can also weaken the discipline that international financial markets place on the quality of macroeconomic policy.

How are controls on outflows relevant for ex ante efforts to make crises less likely, as opposed to ex post crisis management? For a country experiencing potentially excessive

capital inflows, liberalization of controls on outflow may offer a way of reducing net national indebtedness. On the other hand, international investors sometimes respond to such liberalization by accelerating the capital inflows. The explanation is that liberalization boosts investors' confidence -- particularly their confidence that they will be able to take their money back out of the country in the future if they wish.[1] This logic could be inverted to suggest that if a country wants to discourage volatile capital inflows, it could do so by retaining controls on outflows, thereby deliberately depressing investor confidence. This suggestion may sound facetious, until one considers that China weathered the 1997-98 Asian crisis well, in part, because it had sufficiently low capital account convertibility that it had avoided running up large debts.

(2) Discouraging **capital inflows**

The usual motivation for controls on inflows is to prevent overvaluation and over-indebtedness. Traditionally, high levels of capital inflow and cumulative indebtedness (expressed as a shares of GDP or exports), often in conjunction with a currency overvalued in real terms, have been considered key indicators of the risk of financial crises. Mexico and Thailand had large net capital inflows in 1994 and 1996, respectively, in advance of their crises. It is probably easier to keep capital out than to keep it in. Some countries appear to have had some success discouraging inflow (particularly temporary inflows), so as to limit real appreciation and aggregate debt, and subsequently to have withstood contagion from others' crises.[2]

The historical record, however, suggests that aggregate borrowing is a poor predictor of crises. More important is the mode of financing -- see below -- and the uses to which the funds are put.

Furthermore, limiting aggregate debt is the same as limiting the extent to which both foreign investors and the domestic economy can benefit from the above-mentioned benefits of capital inflows. An economy that is growing rapidly and has sound economic policies, good financial regulation, and high marginal product of capital should in principle be able to sustain quite a large debt ratio, to the benefit of both debtor and creditors.

Controls may have a role to play as a temporary measure when a country faces a large upsurge of inflows. They might help a government "play for time" until it can determine whether the funds are going to useful investments, which will generate the foreign exchange earnings needed in the future to service the debt, or whether they are instead going, for example, to consumption. After several years, policy-makers may have a better

[1] Bartolini and Drazen (1997) and Laban and Laraine (1994).

[2] Reinhart and Smith (1998) explain the controls on inflows adopted in the 1990s [up to 1996] by Indonesia, Malaysia, Philippines, Thailand, Brazil, Chile, and Colombia, and discuss the issues. They conclude that controls on inflows are more likely to be effective than controls on outflows.

idea whether their country is the next tiger, justifying the inflows, or merely the subject of a speculative bubble. (Figures on growth in output and productivity in developing countries are typically available only with a lag as long as two years.) While Chile's removal of some of its inflow controls in 1998 has been described by some as evidence against their utility, it could instead be interpreted as an appropriate recognition by Chile that the controls should be maintained only in the phase of the cycle when inflows are potentially excessive. The phrase is "one only deploys the umbrella when it is raining."

The efficacy of controls on inflows is likely to be greater than controls on outflows, in part because it is easier to "scare capital off" than to "keep it in against its will." Enforceability remains a serious limitation however, the more so as time goes by. Also, controls that were intended to be temporary may turn out to be kept too long. In that case, the argument that controlled countries cut themselves off from an advantageous means of financing their development remains a serious limitation.[3]

(3) Modifying **the *composition* of capital inflows**

Statistical evidence suggests that the composition of inflow is a significant leading indicator of the probability of currency crashes occurring. The higher the reliance on foreign direct investment, the lower the probability of crisis. The higher the reliance on foreign-currency borrowing that is short-term or intermediated through banks, the *higher* the probability of crisis.[4] The theory is that bank flows in particular are more vulnerable to moral hazard problems than are other sorts of modes of finance, and that a mismatch of short-term bank liabilities with longer-term bank assets (e.g., real estate) leaves a country vulnerable. FDI is thought to be relatively more stable than banking inflows.[5] Flows of longer-term securities have the advantage that the price of a stock or bond adjusts automatically in the event of adverse developments ("risk-sharing"), with fewer sticky negotiations with bankers over terms of rollovers or restructuring.

This conclusion lends support to proposals for controls that would seek to change the composition of capital inflows, rather than the total magnitude. Taxes or restrictions on short-term inflows might shift the composition toward longer maturities.

[3] A theoretical calculation of Reinhart and Smith (1998) gives the result that, although a country can benefit from a temporary control on inflows in response to a temporary shock, if the government mistakenly retains the control after the shock disappears (for a roughly equal period of time), then the net effect becomes detrimental.

[4] For econometric evidence, see Frankel and Rose (1996). Among many commentators expressing concerns about the stability of short-term, foreign-denominated, bank borrowing is Greenspan (1998, p. 8).

[5] As pointed out by Claessens, Dooley and Warner (1995), FDI can be a source of volatility in the balance of payments. (For example, firms in time of crises can transfer funds from subsidiary to parent, even while controls prevent other investors from getting their money out of the country.) Nevertheless, statistical results suggest that countries that host FDI are less likely to have currency crises.

Chile imposed its famous implicit tax on inflows in 1991. Initially it was a non-interest bearing deposit requirement equal to 20% of the investment, to be maintained at the central bank for a period that varied from 90 days to one year depending on the maturity of the loan. In 1992, the reserve requirement was raised to 30% of the foreign loan, and the period that the deposit was required to be held at the central bank was fixed to one year no matter the maturity of the loan. In addition, there is a longstanding requirement that all FDI stay in the country for at least one year.[6] A common interpretation of Chile's experience is that the controls succeeded in changing the composition of the capital inflow, in the direction of longer-term maturities, while having little effect on the total magnitude.[7] Colombia's controls are evaluated similarly.[8]

One possibility is the idea of placing some penalty on banks' short-term borrowing from abroad in foreign currency, perhaps in the form of requiring a non-interest-earning deposit with the central bank. This formulation combines aspects of other proposals, including the Chilean feature of taxing inflows of maturity less than one year, with the Eichengreen-Wyplosz proposal of aiming the restriction specifically at banks.[9] The penalty could take the form of higher reserve requirements on banks' foreign borrowing than are placed on other bank borrowing. As such, it need not be inconsistent with the pursuit of properly timed liberalization of the overall capital account. Rather it would fall well within the kind of enhanced prudential banking regulation that the United States and the IMF have for some time urged on developing countries, and for which the need has become increasingly obvious in the wake of the East Asian crisis.[10]

Moreover, reserve requirements that penalize bank borrowing can be viewed from a third angle, in addition to their interpretation as capital controls or prudential banking regulations: sterilization of reserve inflows so as to prevent increases in the money supply

[6] The source is Velasco and Cabezas (1997, 19-20). For more on Chile's controls, see Edwards (1998) and Agosin and Ffrench-Davis (1996).

[7] References, in addition to ibid, include Eichengreen (1998), Valdes-Prieto and Soto (1996), and Chucamaro, Laban, and Larrain (1996), who use regression analysis to confirm a relationship between the observed decline in the share of short-term capital inflows into Chile and the deposit scheme.

[8] Colombia adopted non-remunerated reserve requirements on firms' liabilities in foreign currency in 1993. Cardenas and Barrera (1997).

[9] Eichengreen, Tobin and Wyplosz (1995). On the other hand, it has been argued that if such restrictions are applied to banks alone, financial markets will find ways around them (Garber, 1995, 1997).

[10] E.g., Frankel (1995, p.188). Fischer (1997) argues that the IMF's plans for generalized capital account convertibility are not inconsistent with restrictions on financial institutions of this sort. Cooper (1998, p.8), however, argues that an inconsistency does arise because convertibility without harmonization would lead to " 'unfair competition,' i.e., to competitive pressures on those countries that choose prudential regulations more rigorous than those prevailing in serious competitors."

and real appreciation of the currency. This form of sterilization does not have the disadvantage of inducing a problematic "quasi-fiscal deficit." (The quasi-fiscal deficit is the income shortfall that results when the central bank has sterilized reserve inflows by issuing high-interest-rate domestic obligations and has in exchange place acquired low-interest-rate US Treasury bills.) Penalty reserve requirements on foreign borrowing have the advantage that they substitute low- or zero-interest-rate central bank liabilities for foreign assets, rather than substituting high-interest-rate liabilities for foreign assets.

(4) Friction **for all foreign exchange transactions**

The fourth idea is the much-discussed (though little-analyzed) Tobin tax, the proposal for a small uniform tax on all buying and selling of foreign exchange, with no attempt to ascertain the purpose of the transactions.[11] It is an overstatement to claim, as many do, that there is no possible reason to believe that a Tobin tax would discourage short-term destabilizing speculation without harming desirable longer-term movements or trade in goods and services. A small Tobin tax would automatically dampen short-term capital movements (such as the majority of transactions that take place in well-developed foreign exchange markets, which are typically unwound within hours), more than it would discourage long-term movements or trade in goods and services. There exists at least some reason to suspect that the former are more likely to represent destabilizing speculation than the latter.

But in any case, the entire debate applies properly to the currencies of major industrialized countries with floating exchange rates. The proposal is not very relevant to the desire to minimize balance of payments crises among countries that peg or stabilize their exchange rates. It is hard to see how a Tobin tax of a fraction of a percent would discourage speculators who were hoping to earn overnight returns of 30 or 40 percent by speculating against the French franc in 1993 or the new Taiwan dollar in 1997. Another manifestation of the difference is the geographical scope of the proposed restriction. The Tobin tax, as proponents and detractors alike agree, would have to be extended to all financial centers worldwide. In the context of proposals to minimize the danger of payments crisis in a given country, the capital controls that are wanted pertain only to transactions between that country and the rest of the world.

(5) Decoupling **interest rates**

The fifth and final possible motivation for controls, on all capital account transactions, does apply to countries with fixed exchange rates. That would be the motivation to decouple domestic interest rates from foreign interest rates in order to retain some independence for monetary policy. Reisen (1993a,b) argued pre-crisis that Southeast Asian countries had succeeded in doing something that Latin American and European

[11] The original proposal came from Tobin (1979). Frankel (1996) reviews the issues. Serious problems with enforceability of a Tobin tax are explained by Garber (1996) and Kenen (1996).

countries could not: achievement of the "Impossible Trinity" of fixed exchange rates, open capital markets, and monetary independence at the same time.

The goal of policy independence is not directly relevant to the goal of minimizing financial crises. But the hypothesis, more specifically, was that in the face of large capital inflows the Southeast Asians were able to sterilize the increase in reserves, so as to avoid real appreciations of their currencies. A reasonable interpretation is that they in fact were able to attain (only) a modest amount of policy independence through modestly incomplete liberalization of capital markets.[12] And one could argue that the ill-fated real appreciations of 1996-97 in the end showed that, in Asia as elsewhere, the sterilization strategy is not sustainable indefinitely.

Sequence of liberalization

Even if one stipulates the superiority of a system with no government-imposed distortions, there is an important question of the optimal order of liberalization, since most countries begin with many distortions. Should capital controls be removed before or after domestic financial regulations? Before or after trade barriers are liberalized? Before or after a budget deficit is eliminated, or monetary stabilization is complete? There is a general principle that removing one distortionary barrier can sometimes make things worse, rather than better, if other barriers remain in place -- an application of the "Theory of the Second Best."

In the context of financial liberalization, the argument is usually that if capital controls are not still in place at a time when other problems are being addressed (unfinished business), misleading market signals may attract an excessive capital inflow and current account deficit, leaving the country overindebted and vulnerable. When the "unfinished business" is monetary disinflation or an outstanding budget deficit, the market signals include high real interest rates and a currency overvalued in real terms, both of which result in capital inflows and current account deficits. If the unfinished business is domestic financial liberalization -- an end to "financial repression" that keeps rates of return to savers artificially low and allocates funds to investment inefficiently -- the shortfall in domestic saving can likewise lead to a large capital inflow. If the unfinished business is removal of import barriers, the period of adjustment of the economy once again can lead to a large current account deficit (especially if consumers increase import purchases out of fear that the reforms may be reversed in the future) and capital inflow.

The conventional wisdom is thus that opening of the financial markets should come last, after these other issues are resolved. The question of the optimal order of liberalization was first extensively considered in the context of liberalization programs in the "Southern

[12] Frankel (1994). A mainstream viewpoint would be that countries should liberalize as they develop; and that if an industrializing country is large enough to satisfy the criteria for an independent optimum currency area, then it should achieve its policy independence by means of exchange rate flexibility, not capital controls.

Cone" of South America in the late 1970s, and more recently in the context of the transition economies.[13]

Indonesia is an example of a country that is said to have reversed the conventional wisdom, pursuing international financial liberalization more rapidly than domestic financial (and other) liberalization.[14] There is a possible justification for this reverse sequencing that some have proposed for Japan and other Asian countries. In an environment where banks, brokers, and the rest of the financial sector are highly protected, regulated, and dependent on longstanding customer relationships, they may lack experience at competing in terms of the fees they charge for their services or at adapting to new ways of doing business. Like any vested interest group, they may be able to oppose liberalization politically. In such an environment, if international liberalization comes first, the "demonstration effect" of seeing foreign financial companies operating in their markets may teach them new ways of doing business. In any case, the political opposition may become irrelevant, as banks are forced to offer competitively high interest rates to their depositors, and brokers are forced to charge competitively low fees to their clients, to avoid losing business to the foreign newcomers. This argument notwithstanding, however, the financial crises recently experienced by Japan (1990-98) and Indonesia (1997-98) might be interpreted as supporting the conventional wisdom that international liberalization should be saved for last.

One should add a note: domestic liberalization and macroeconomic stabilization do not complete the list of pre-requisites to full opening of the capital account. Recent events have reminded us that another pre-requisite is a well-developed domestic financial market, including adequate mechanisms for prudential banking regulation. This pre-requisite is no less important because it cannot be described as removal of a government-imposed distortion. Prudential banking regulation might be described as an appropriate government remedy to market failure -- the danger of bank runs and the consequent need for a safety net, the fact that the payments mechanism is implicated when banks are at risk, and the political necessity of bailing out individual depositors.

The highway analogy

A popular analogy is used to illustrate the proper role of the moral hazard problem in the context of efficient capital markets, and can be extended to illustrate the proper sequencing of financial liberalization as well. The analogy, reportedly due to Robert Merton originally, is that today's financial markets are like superhighways. They get you where you want to go fast. By this is meant that they are useful: they help countries finance investment and therefore growth. But accidents occur, and they tend to be bigger than they used to be when people were not able to drive so fast. If serious accidents seem to happen repeatedly to different drivers in the same stretch of road, one cannot blame the

[13] Edwards (1984, 1985) and McKinnon (1991).

[14] Cole and Slade (1992) and Sabirin (1993) for Indonesia; Frankel (1984) for Japan.

problem entirely on mistakes made by the drivers. The lesson is not that superhighways are bad. But drivers need to drive carefully, society needs speed limits, and cars need air bags.

The moral hazard problem is, of course, that IMF/G7 "bailout" programs to reduce the impact of a crisis reduce the incentive of borrowers and lenders to be more careful in the future. The bailout programs are represented in the analogy by the seat belts and air bags, which cushion the driver in the event of an accident. It is a standard principle of economics that actions in one area can generate partly offsetting reactions in another. That is not in itself a reason not to take action. In our highway example, there is research demonstrating that drivers react to seat belts and airbags by driving faster and less safely than they used to. But that is not a reason to dispense with air bags. If it were, that logic would say that to discourage dangerous driving, we should put a spike in the steering wheel (as Michael Mussa of the IMF says).

The capital controls are represented by speed bumps or posted speed limits, which are necessary when coming into a town, even if not on an open highway. Drivers sometimes have the illusion that in the event of a sudden obstacle, they can respond quickly enough to avoid a crash. (They cannot have such illusions when it comes to air travel, which may account for the fact that people typically have an irrationally greater fear of air travel than car travel. The analogy is that perhaps bankers have greater illusions of control than do equity investors.) In part because crashes involve others, the public has an interest in keeping speeds safe.

A country with a primitive domestic financial system should not necessarily be opened up to the full force of international capital flows before the appropriate domestic market reforms and prudential financial regulations have been put into place. If the planned route for a superhighway draws near to a primitive village, it is not a good idea to design an off-ramp that dumps high-speed traffic into the center of town before its streets are paved, intersections are regulated, and pedestrians learn the dangers of walking in the street. But neither is it practical or desirable to try to insulate the village from the modern world indefinitely. Emerging-market countries should proceed *both* with domestic reforms and opening to the outside world, in the proper balance and sequence.

Conclusion

The East Asia crisis has further weakened support for the proposition that financial markets work flawlessly. Accordingly, more attention is falling on proposals that some developing countries should introduce some sort of international capital controls, or at least should slow down the speed with which they remove existing controls. Measures that apply a tax penalty to capital flows (or an implicit tax, such as the deposit requirements) are to be preferred on efficiency grounds to controls that amount to outright ceilings or prohibitions. Of these proposals, perhaps the strongest case can be made in favor of Chile-style penalties on short-term capital inflows, prudential restrictions on banks' borrowing in foreign currency, or the intersection of these two measures. These

policies might do no more than change the composition of capital inflows for a while -- away from banks' short-term borrowing in foreign currency. But such an effect might nonetheless be useful, particularly when a country is experiencing a large inflow and is unsure whether the funds are being put to good use. Statistical evidence suggests that the probability of a future currency crisis goes up when capital inflows take the form of short-term bank borrowing, and goes down when they take the form of foreign direct investment.

Worryingly, however, one observes a frequent failure to target intervention this narrowly. It is important that experts distinguish among different types of capital controls (with regard to whether they are short-term vs. long-term, inflow vs. outflow, bank loans vs. securities transactions, and temporary vs. permanent) and among the different circumstances that countries find themselves in. It is important that experts think more carefully about the pros and cons of each specific case. Countries have all too often used controls to shield their economic policies from the discipline of international markets. There is a risk that blessing one particular targeted kind of capital control would have the effect of encouraging the indiscriminate use of controls. Since financial market integration, on the whole, does more good than harm; this is a danger that should be taken into account as part of the analysis of any proposal.

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APPENDIX 1

Three proposals for "sand in the wheels" capital controls, and how they differ

	Chile's deposit requirement on inflows	Eichengreen-Wyplosz deposit requirement proposal	Tobin tax proposal
1. Motive	Prevent over-indebtedness	Protect balance of payments	Reduce volatility in exchange rate (and raise revenue)
2. Tax applied to:	Capital inflows	Capital outflows (and inflows)	All foreign exchange transactions, including trade
3. Paid immediately by:	Foreign investors	Banks	All traders (mostly banks)
4. Paid immediately to:	Central bank (foreign currency earnings)	Central bank (seignorage only)	Tax authority (domestic revenue)
5. Relationship of tax amount to interest rate	Rises with foreign interest rate	Rises with domestic interest rate	Invariant to interest rate
6. Relationship to maturity	Fixed amount (falling with maturity in % p.a. terms) when maturity < 1 year	Falls with maturity? But does not apply to intra-day trading	Fixed amount. In % p.a. terms, falls continuously with maturity.
7. Where imposed	One country (facing inflows)	One country (facing outflows)	Must be world-wide
8. Probable level of tax rate	Moderate (30 % times interest rate)	High (to discourage speculative attacks)	Low (to avoid distortions and substitution)