

“Private Sector Involvement”  
in Financial Crisis Resolution:  
Definition, Measurement, and Implementation

By William R. Cline

Abstract

Public policy on financial crises in emerging markets has implicitly been grounded in economic theory calling for lender-of-last-resort intervention when the country is solvent, and on theory recognizing that reputational damage is the quasi-collateral enabling lending to sovereigns with no physical collateral. The call for Private Sector Involvement – PSI – in the financing of crisis resolution has appropriately arisen from the desire for fairness as well as for successful outcomes. This paper identifies an array of PSI modalities and argues that in each crisis case the most voluntary type consistent with the circumstances should be chosen, to speed return to market access.

Proper measurement of PSI is examined (e.g. gross versus net flows, time horizon). Even narrowly-defined PSI is found to have been large: \$240 billion for 8 major episodes beginning with Thailand in 1997. Encouragingly, of the total fully half has been voluntary (market-based maturity-stretching swaps in Argentina and Turkey) or quasi-voluntary (bank credit line maintenance in Brazil, short-term debt conversion in Korea). A broader definition of PSI incorporating voluntary reflows after the crisis shows even larger magnitudes. The implication is that PSI has been working and does not need to be overhauled on a mandatory basis.

The paper cites the growing empirical literature rejecting the hypothesis of strong “moral hazard” from the large official support programs, which is consistent with the common sense observation that lending to emerging markets has been drying up rather than mushrooming. On the proposed Sovereign Debt Restructuring Mechanism, the discussion notes the inherent difficulty of avoiding a signal that default will be facilitated for international political purposes, with resulting adverse effects on capital flows. The paper reviews the major recent crises (Argentina, Brazil, Turkey). It rejects an influential critique that the Argentine mega-swap and final IMF program in 2001 were serious mistakes, and agrees with those who judge that Brazil can sustain its debt if President-elect Lula adheres to his pledge of fiscal prudence. The analysis also examines the notion that sovereigns “wait too long” to default, and finds that the conditions for this argument to hold are stringent: the escalation of default damage from delay must be severe to offset even a moderate probability that default damage can eventually be avoided altogether. Correspondingly, the IMF should lean toward “Type I” errors of lending even when solvency is uncertain, rather than the reverse “Type II” errors, especially in light of its preferred-creditor status. At the same time, the solvency diagnosis should be informed by the growing experience showing political coherence is the most important condition for solvency, as political fragility or collapse precipitated the most serious instances of default (Russia, Indonesia, Argentina).

Private Sector Involvement” in Financial Crisis Resolution:  
Definition, Measurement, and Implementation<sup>1</sup>

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## ***Introduction***

Emerging markets have experienced a long succession of crises in the past seven years, posing major challenges for international policy. Eight major financial crises (Mexico 1995; Thailand, Indonesia, Korea, 1997; Russia, 1998; Brazil, 1999; Argentina and Turkey, 2001) and four notable minor ones (Ecuador, Pakistan, and Ukraine, 1999-2000; Uruguay, 2002) have affected economies accounting for about 52 percent of total external debt of emerging market economies.<sup>3</sup> Credit markets have gone from boom to bust in terms of aggregate net lending, although direct investment has held up relatively well and for a number of sovereigns market access has remained intact while for other important borrowers it has been restored.

One of the most controversial issues in international policy on crisis resolution has been how to achieve “private sector involvement” (PSI). This essay seeks to synthesize what has been learned about PSI, and review the main issues that remain in dispute. It proposes relevant definitions for different types of PSI, compiles some broad-brush measurements of how much has occurred, and evaluates which types under what circumstances are beneficial, and which are deleterious. First, however, it is useful to review the conceptual framework for financial crisis resolution in emerging markets.

## ***Framework***

Whether consciously or not, in practice international policymakers have adhered to an analytical framework that runs along the following lines:

- Temporary official support, including in large volume, can be appropriate to promote stability and a return of private market confidence, when the country is experiencing a liquidity crisis but is undertaking proper policy adjustments;
- It is important to maintain a functioning international capital market for developing countries, because private capital by far exceeds the potential of official development assistance in the task of global development;
- The nature of support should be such as to avoid undue creation of “moral hazard” that could subsequently lead to excessive private sector lending.

I have argued (Cline, 2000; 2001) that the corresponding economic theories underlying this framework are those of Bagehot (1873), on intervention, and Eaton and Gersovitz (1981), on the functioning of private lending to sovereigns. The first principle calls for Bagehot-style forceful public sector intervention when the country in crisis is solvent but illiquid.<sup>4</sup> The

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<sup>3</sup> Calculated from World Bank (2002). This estimate is for end-1997, and refers to total external debt of all developing countries, less that of low-income countries other than China, India, Indonesia and Pakistan.

<sup>4</sup> Bagehot’s original formulation was for central bank intervention in support of banks under its jurisdiction. By analogy, the principle of socially beneficial public sector intervention on a temporary basis has been applied

rationale for official support is that a solvent debtor will be in a position to repay the official sector and temporary support can help avoid default and its resulting severe damage to the country's economy (and possibly, for larger cases, the international financial system).

The second and third principles comprise two objectives that must be adroitly balanced in designing responses, in light of the Eaton-Gersovitz insight that sovereign lending lacks physical collateral. Too lopsided a public sector imposition of default losses on the private sector would impair future private capital flows by sending the signal that countries can default painlessly thanks to official international political agendas, destroying the quasi-collateral of default pain. Too generous an approach would cause moral hazard.

### ***Definition***

“PSI” has been the 1990s equivalent of “bailing in the banks” in the 1980s. At the operational level the issue is one of concern that the public sector does not have enough funds to cover both a country's current account deficit and its capital account deficit resulting from an exodus of private lenders. At the political level the issue has been one of public perceptions of what is fair, and in particular public outrage that the official sector might be “bailing out” private lenders. In the 1980s the programs of debt rescheduling and concerted new lending provided a response to political critiques of official support for debt crisis resolution: namely, that in fact the banks were being bailed *in*. In the 1990s the PSI initiatives have sought to address the same goal in a new environment in which not only is bank lending just a part of the total, and but also in which in some key cases more rapid turnarounds in market confidence have been feasible.

The IMF summarizes PSI as follows (IMF, 2001b):

By involving private creditors and private enterprises in crisis-fighting, the international community aims to limit both moral hazard (the perception that international rescues encourage risky investments) and a “rush for the exits” by private investors during a crisis. ... [as well as to] ... have the burden of crisis resolution shared equitably with the official sector... .

Agreements for the maintenance of exposure on short-term bank credit have been achieved both voluntarily and through the application of moral suasion by central monetary authorities. In addition, international sovereign bonds have been restructured through voluntary debt exchanges.

[A] broad consensus has emerged among IMF member countries on the need to seek private sector involvement in the resolution of crises, while providing for flexibility in the form of involvement .... [PSI] can, in some cases, be achieved primarily on the basis of the Fund's traditional catalytic role in restoring spontaneous private capital inflows. ... [W]here greater assurance is needed ... [it may require] .. concerted private sector involvement. [The key issues

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internationally to sovereign financial crises, as indeed it was in the 1980s in response to the Latin American debt crisis (Cline, 1995, p. 92).

include] estimating the size of the financing requirements, the prospects for a spontaneous return to capital market access, the availability of tools for securing appropriate private sector involvement, the impact on the country's future cost of borrowing, and the possible impact of spillover effects on other countries.

This official synopsis of PSI is similar in spirit to the approach recommended in Cline (2000): private creditors should be involved in the crisis resolution process on as voluntary a basis as possible given the circumstances. In this way the country's chances for future market access will be maximized. Fortunately, the Greek alphabet has a character "psi". It may be used, with appropriate subscripts, to denote the various types of private sector involvement that may usefully be distinguished. The following enumeration of PSI categories is broadly in descending order of degree of voluntariness.

*Spontaneous lending*— The most voluntary form of PSI is the spontaneous reflow of lending upon restoration of confidence ( $\psi_{\text{spn}}$ ). The prototype is the case of Mexico in 1994-95. As discussed below, it is part of broadly defined PSI, but not of the narrower concept of PSI confined to forced and/or concerted action or broad swaps designed to address pending crisis.

*Foreign direct investment* — During the financial crises of recent years, net inflows of direct investment have held up remarkably well, rising from \$92 billion in 1996 to a peak of \$150 billion in 1999 before easing to an average of about \$137 billion in 2000-01 (IIF, 2002b). When an economy is in crisis, the continued inflow of direct investment can be a key source of stability, comprising an important source of voluntary flows under the broad (but not the narrow) definition of PSI ( $\psi_{\text{fai}}$ ).

*Maintenance of bank credit lines* — Next most voluntary is the (relatively) informal agreement of major international banks to maintain short-term interbank and trade credit lines at a given level ( $\psi_{\text{stcl}}$ ). The most conspicuous recent case was that of Brazil in the second quarter of 1999.

*Medium-term conversion of bank credit lines* — A more formal conversion of short-term international bank claims into 1- to 3-year notes, as was done in Korea in early 1998, represents a still relatively voluntary mode but one involving more exertion of moral suasion and concertation among lenders ( $\psi_{\text{mtcnv}}$ ).

*London-club rescheduling* — The classic PSI in the early phase of the 1980s debt crisis was the rescheduling of bank claims (including medium-term) to longer maturities at par and with interest rates above LIBOR ( $\psi_{\text{LCresc}}$ ). This has not been used in the 1990s. Its scope is lesser than in the 1980s, in part because of the smaller share of syndicated bank claims (and larger share of bond claims), and perhaps as well because of the lesser dominance of book-value valuation and greater incidence of mark-to-market valuation even among major banks. The shift toward asymmetrical stakes has also likely reduced the scope for this mechanism, away from the early 1980s situation in which loans to Latin America comprised a large share of bank capital toward much lesser bank vulnerability today.

*London club concerted lending* – One step beyond bank claim rescheduling is an accompanying round of “new money” lending that increases exposure by enough to pay some portion of the interest due ( $\psi_{LCcl}$ ). Used in the mid- to late-1980s, this instrument seems even less likely to be germane today than simple London Club rescheduling, given the present asymmetry in vulnerability of bank lenders and sovereign borrowers.

*Bond exchange maintaining value* – The mechanisms discussed so far have referred to bank claims. Increasingly, however, external debt of emerging markets owed to private creditors has been in the form of bonds. There have been two types of PSI involving bonds in recent years. The first may be named an exchange maintaining value ( $\psi_{bemv}$ ). The cases of Pakistan in 1999, Ukraine in 2000, and especially Argentina’s mega-swap in June, 2001, are in this category. In these exchanges, the sovereign sets forth an offer that involves an exchange of existing bonds for new ones bearing longer maturities, and at interest rates that are not lower than the original interest rates. The offers involve lesser or greater degrees of voluntariness; the Pakistan and Ukraine offers had a take-it-or-leave-it nature, whereas the Argentine swap involved more consultation with bondholders and a much larger fraction of holders who held on to their original claims. In principle, these exchanges do not involve debt forgiveness.

*Bond restructuring through collective action clauses* – The modality that has been at the center of much of the discussion on international financial architecture has so far has been absent in actual PSI. This is the restructuring of existing bonds (as opposed to “exchange”) by a super-majority vote of holders ( $\psi_{brcac}$ ). This can be done in bonds issued in the United Kingdom, which typically contain such clauses, but not in bonds issued in New York, which typically have been interpreted to require 100 percent bondholder approval of restructuring. Ironically, in the two cases where this could have been done, those of Pakistan and Ukraine (with bonds issued under U.K. law), it was not. The reason appears to have been concern that the convening of enough bondholders to constitute a qualified majority would precipitate inter-bondholder consultation, leading instead to “acceleration” (Bucheit, 2000). (Note that the placement of this instrument above the next two does not necessarily make it more voluntary; the degree of voluntariness will depend on the severity of the “haircut” sought, if any, and the degree of debtor cooperation perceived by creditors in the restructuring negotiations.)

*Brady bond debt reduction* – Returning to bank claims but turning to more involuntary arrangements, a form not used since the early 1990s is the Brady bond exchange of reduced claims bearing some form of collateral enhancement to replace existing claims ( $\psi_{BBR}$ ). This instrument has not featured in the resolution of crises of recent years, and Ecuador’s default on its Brady bonds in 2000 has likely devalued this potential vehicle by eroding its credibility as a superior claim.

*Bond exchange with forgiveness* – Turning back to more contemporary experience and to bonds, relatively involuntary bond PSI has involved exchange conferring partial forgiveness ( $\psi_{bewf}$ ). The salient cases have been those involving the Russian GKO (treasury bills) and former Soviet debt to banks, defaulted on in 1998, and Ecuador’s Brady and other sovereign

bonds, defaulted on in September 1999. Effective losses on the GKO were extremely high (on the order of 90 percent). After protracted London Club negotiations, some \$32 billion in former Soviet debt was exchanged for \$20 billion in long-term bonds in an agreement in February 2000. In Ecuador, a unilateral exchange offer with very short allowed response time exchanged approximately \$6 billion in Brady- and Euro-bonds at an effective loss of about 40 percent in January, 2000 (World Bank, 2002, vol. 1, pp. 145, 148). In both of the latter two cases (as in the Pakistan and Ukraine cases) “exit consent” clauses largely vitiating the claims of any holders not accepting the exchange were employed to help achieve high participation.

*Officially approved Standstill* -- Often discussions of financial architecture feature the idea of an IMF-approved (or otherwise officially sanctioned) standstill in which temporarily the country would not be expected to service its debt pending some restructuring agreement ( $\psi_{oas}$ ). The IMF’s article VIII.2.b on authorized exchange controls is sometimes cited as a vehicle that could be used for this purpose, although this clause is inconsistent with a sovereign’s suspension of payments on its own external debt since it is designed to address private payments impeded by government-imposed exchange controls sanctioned by the IMF for macroeconomic reasons. An initial standstill is also part of the Krueger (2001; 2002) proposals for an international bankruptcy mechanism. To date, there have been no instances of formal officially-approved standstills, although the IMF’s broad support to Ecuador’s default and arrears was a close approximation.

*Outward capital controls* – In principle a government could force PSI through controls on outward capital flows ( $\psi_{occ}$ ). This could be done by imposing controls on amortization of existing external debt by the private sector, while not defaulting on its own debt. Capital controls on portfolio equity could also be applied, as was done by Malaysia during the East Asia crisis. Controls restricting the outflow of capital by residents have been much more common.

*Default and Arrears* – Finally, private sector creditors can be forced to participate in the form of not being allowed to collect payments coming due when a debtor country defaults ( $\psi_{daa}$ ). This was the case in much of Latin America in the late 1980s, Indonesia with respect to claims on the private sector in 1998 and after, Russia and Ecuador in 1999, and Argentina at present. This form of PSI is the most damaging to the country’s credibility for subsequent capital market access, and usually, to confidence and economic conditions at the time of the default (as been dramatically demonstrated once again after Argentina’s default in January 2002).

### ***Measurement Issues***

*Broad versus narrow PSI* – Having enumerated the modalities of PSI, we may turn to measurement. A revealing dimension of measurement definition is whether the concept is broad enough to encompass voluntary inflows prompted by adjustment measures or is narrowly confined to concerted and/or forced measures implemented on the verge, or at the height, of the crisis itself. Private support that occurs only as the consequence of public sector suasion or coercion, for example through an actual or threatened standstill, is clearly within the confines of what has been called PSI. However, there are strong grounds for including as well in a “broad”

version of PSI private reflows that occur voluntarily after policy adjustment and temporary official support have begun to rebuild confidence.

An intermediate form of PSI, most aptly included in the narrow concept, can occur when there are collective action dynamics that can be implemented to marshal support even without public sector pressure. In principle, where there is a limited number of large private creditors, they may find it in their joint interest to provide support because of the recognition that if each cuts and runs, none will be able to extricate its capital. Voluntary arrangements to maintain short-term credit lines are the closest to this market-strategic action and are appropriately included in the narrow concept of PSI even when they are not forced upon the banks by the IMF or other industrial country authorities. Similarly, extensive market-based swaps on a voluntary basis, undertaken by the sovereign because of concern about a pending crisis situation, belong in the category of “narrow” PSI as well (e.g. the mid-2001 Argentine megaswap).

*Time period* – Having enumerated the modalities of PSI, we may turn to measurement. The first key issue is whether to measure private flows solely during the crisis or over the crisis cycle. A central feature of voluntary PSI is that when successful it will tend to be minimal during the height of the crisis but substantial in the form of return flows once the crisis of confidence has been stemmed. In this framework public sector capital is a balance-wheel that enters during the crisis but is replaced by renewed private flows after the crisis. On this basis, for the period before, during, and after the crisis, private flows will show a U-shaped profile, while public flows will show that of an inverted U (as in the cases of Mexico, Korea, and Brazil; see Cline, 2001).

The proper time dimension for measuring broad PSI would seem to be the period of the crisis and a reasonable subsequent period, for example the crisis year and the following year or two. (Including private flows prior to the crisis would seem doubtful, as excessive pre-crisis inflows may be part of the problem rather than part of the solution.) The difficulty for policymakers is that in the early stages of the crisis, it will require a judgment as to whether and how much private capital will return one and two years down the road, and a corresponding judgment on the probability of restoring confidence through the temporary official support and prospective policy adjustments. As for the more narrow measure of PSI, the relevant time horizon is the period immediately preceding and extending through the duration of the crisis.

*Net versus gross* -- Attention has tended to focus on net capital flows in examining the role of the private sector in financial crises. For example, it is well known that net bank flows to the five East Asian crisis economies (Thailand, Indonesia, Korea, Malaysia, and Philippines) swung sharply from large inflows in 1996 to large outflows in 1997-98 (the IIF estimates are +\$62.7 billion in 1996, falling to -\$21.2 billion in 1997 and -\$36.1 billion in 1998; IIF, 1999b). For purposes of evaluating private sector involvement, however, it is the *gross* inflows that convey a more meaningful story. The reason is that the avoidance (or substantial reduction) of amortization otherwise due will comprise a key private sector participation in crisis resolution, even if there is no net new lending. Indeed, it has been almost 20 years (since the Baker Plan phase of the Latin debt crisis) since the private sector has been expected to contribute net new



lending in a crisis rather than merely minimize or avoid net outflows owed according to amortization terms.

Consider the case of Korea. Most would agree that the \$22 billion conversion of short-term bank claims to 1- to 3-year bonds in early 1998 comprised a prototypical form of PSI. But as these claims would have otherwise been payable in the short-term, a “net” measurement basis would conclude that there was zero (or large negative) PSI from this arrangement. It is the gross (\$22 billion) magnitude, then, rather than the net, that reveals the amount of private sector “effort” that was successfully mobilized to address the crisis.

*Individual- or Multi-country* -- One approach to policy on PSI would be to seek its presence in each case where public sector intervention becomes necessary to achieve crisis resolution. An alternative approach would be to consider the broad pattern across several crisis cases, and to “give credit” for PSI overall based on intensive private sector participation in some cases despite little PSI (at least during the crisis year) in others. One interpretation of the events is that because of implicit credit given on a multi-country basis, there has been an oscillation between insistence on PSI in some individual cases and acquiescence in its absence in others. Thus, after relatively formal PSI in Korea in early 1998, the severity of forced PSI through default in Russia in August of that year may have facilitated a public sector acceptance of no formal PSI for Brazil in late 1998 and only a moderate and informal version in Brazil in early 1999. Then there appears to have been a swing back to greater insistence on formal PSI in 1999-2000 in the cases of Pakistan, Ukraine, and Ecuador.

Cognizance of multi-country patterns over time appears to have been complemented by contemporaneous multi-country PSI balancing. By late 2000, there were large new support programs for Argentina and Turkey. Whereas there were large headline numbers on voluntary PSI for Argentina (\$20 billion out of a total rescue package of \$40 billion), for Turkey there was no PSI requirement. As discussed below, Argentina’s intended PSI was more than fulfilled by mid-2001 in the megaswap, and then turned comprehensive and involuntary by outright default by the end of 2001. The broader point, however, is that in practice policymakers appear to have increasingly recognized that a multi-country “pattern” approach is sufficient if the objective of PSI is to minimize moral hazard and share the burden of emergency support. If there were concern about a lack of capacity for official financing, there could still be a case for insistence on individual-country PSI even if the multi-country pattern has been adequate. So far, however, with the availability of the IMF’s Supplementary Reserve Facility, insufficient funding capability has not been the constraint (as most dramatically illustrated in the case of Turkey, as discussed below).

*External versus Domestic* – The great bulk of the discourse and analysis on sovereign crises tends to focus on external debt, but increasingly it is domestic public debt that is at the heart of the issue. This in turn raises the question of whether the “P” in PSI is meant to include the domestic private sector or just the foreign private lenders. The proper answer would seem to be that it should include both. Indeed, a general principle of PSI in its more involuntary forms

would seem to be that there should be symmetrical treatment of foreign and domestic creditors. Otherwise a government will earn a bad reputation in international capital markets as being more concerned about short-term domestic political advantage than about the country's longer-term international borrowing capability.

### ***Measurement results***

With these definitions of the various types of PSI in hand, it is possible to compile estimates on the record of PSI in the principal crisis cases of recent years. Table 1 presents the narrow measure of PSI, which excludes business-as-usual as well as post-crisis private financing. The important spontaneous reflows to Mexico after its 1995 crisis are thus excluded from the table. The table categorizes the "type" of PSI as voluntary, quasi-voluntary, and involuntary. (i) Voluntary PSI refers to the market-based debt swaps in Turkey and Argentina through mid-2001 ( $\psi_{bemv}$ ). The mildest form of quasi-voluntary involvement (QV1) refers to the maintenance of bank short-term credit lines ( $\psi_{stcl}$ ). An intermediate form (QV2) comprises formal conversion of short-term bank credit lines to medium-term bonds ( $\psi_{mtcnv}$ ). The most severe form of quasi-voluntary participation (QV3) is the exchange of government bonds for obligations with no overt reduction in value but under circumstances involving considerable arm-twisting (still formally  $\psi_{bemv}$ ).

The array of more involuntary mechanisms includes first the relatively limited debt restructurings in Thailand (IV1), which involved significant loss of value (no prototype is listed above).<sup>5</sup> While the limited restructurings themselves were involuntary, it should be emphasized that from a broader perspective Thailand's management of the financial crisis was market-friendly. There was no attempt to impose widespread restructuring, and the government's own debt did not come into question. Next in severity (IV2) are the cases of suspension and restructuring involving moderate losses (e.g. in the range of 30 percent), of the prototype " $\psi_{bewf}$ ". More severe still are the cases of restructuring with deep forgiveness (still formally  $\psi_{bewf}$ ). The restructuring of Russia's treasury bills (GKOs, OZFs) on terms that for foreigners involved deep losses was in this category. Argentina's end-2001 default is provisionally placed at IV2 in the expectation that the ultimate forgiveness involved will be intermediate rather than deep, but could transit to IV3.

The total amount of narrowly-defined PSI as enumerated in table 1 comes to approximately \$240 billion, a large sum by any measure. If the nearly \$40 billion PSI associated with the Argentine suspension of payments on external debt in early 2002 is excluded (and this amount omits the \$8 billion foreign and \$22 billion domestic claims already swapped in mid-2001 to avoid double-counting), the remaining \$200 billion is still large.

Of the total, \$118 billion is classified as either voluntary or quasi-voluntary, while \$120 billion was involuntary (including the Argentine suspension). This is an important pattern, as it indicates that even when a narrow definition of PSI is used, about half of the total has

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<sup>5</sup> These were deposits in finance companies subjected to bankruptcy recovery or conversion, at a "haircut," to government-backed paper.

successfully been mobilized on a voluntary or quasi-voluntary basis. PSI does not always or even usually have to be mandated to the private sector by the public sector, as recognized in the IMF synopsis of the spectrum of approaches cited above.

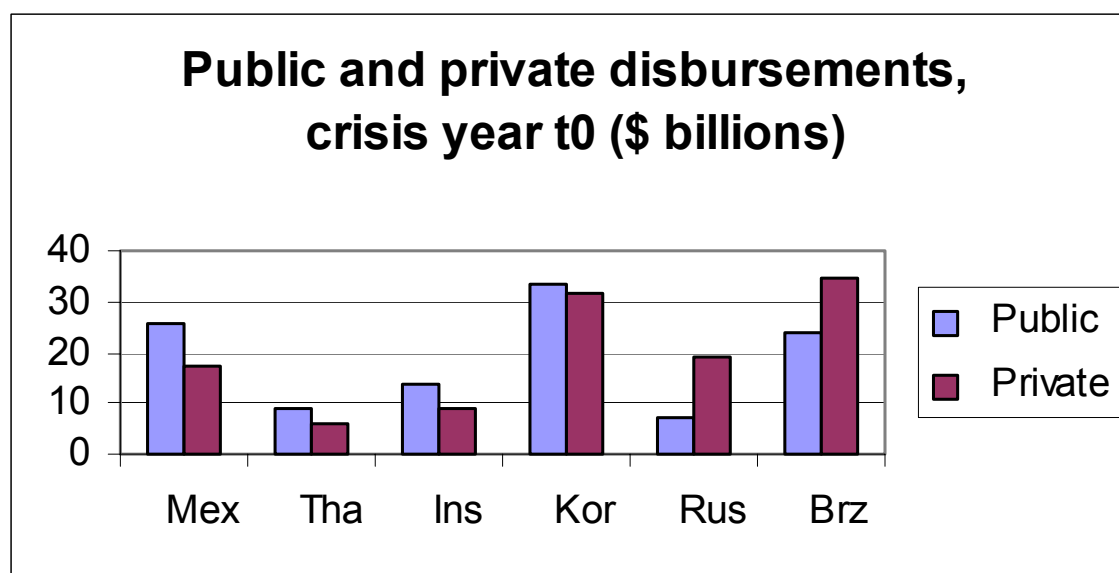
If a broader interpretation is taken of PSI, incorporating spontaneous capital flows even during but especially soon after each crisis, the totals are considerably larger and the predominant mode even more clearly voluntary. Annex table A-1 based on capital flow and debt data compiled by the World Bank indicates that for six major countries with crises in 1995-99

Table 1				
Narrowly Measured PSI in Principal Crisis Cases				
(\$ billions)				
Crisis episode:	Amount	Type	Comments:	
Thailand, 1997	4	IV1	Restructured debt of 56 intervened finance companies	
Indonesia, 1997-8	25	IV2	Arrears, restructurings on external debt of private corporations (est.)	
Korea, 1998	22	QV2	Short term inter-bank claims converted to 3-year paper	
Russia, 1998	14	IV3	Restructured GKO and OZFs with large present value loss (Nov. 98)	
	32	IV2	Restructured Soviet era debt to London Club banks, significant pres. val. loss (Feb. '00)	
Brazil, 1999	25	QV1	Voluntary maintenance of bank credit lines	
Ecuador, 1999	6	IV3	Restructured Brady and Eurobonds in Aug. 2000; pres. val. loss of about 50%	
Turkey, 2000-01	8	V	Swap of short-term Turkish Lira debt into longer-term dollar and Lira debt June '01	
Argentina, 2001-02	30	V	Mega-swap of government bonds, for longer maturities, June '01	
	33	QV3	Domestic-holder restructuring, Nov. '01 (a)	
	39	IV2	Suspension of payment on external debts to private creditors, Dec. '01 (b)	
TOTAL	238		Including Argentine suspension	
	199		Excluding Argentine suspension	
a. Excludes \$22 billion domestic holdings in June 2001 mega-swap				
b. Excludes \$8 billion swapped by foreign holders in June 2001 mega-swap				
V: voluntary		QV: quasi-voluntary		
IV: involuntary.		Severity: 1=mild to 3=severe		
Source: IIF (1999); Cline (2000); IMF (2001a); World Bank (2002); author's estimates.				

(Mexico, Thailand, Indonesia, Korea, Russia, Brazil), the total of public sector new disbursements in the year of the crisis (t0) amounted to \$113 billion while private bank, bond, and other credit disbursements were actually slightly larger at \$117 billion.<sup>6</sup> During the two years following the crisis outbreak (t1 and t2), the expected pattern of a sharp decline in public disbursements relative to private was attained, with public disbursements at \$29.7 billion and private at \$129.4 billion, of which \$36.5 billion was in reschedulings or amounts forgiven. (These totals are understated as they do not include Brazil 2001, for which World Bank data are not yet available.) For a three-year period, gross private lending disbursements or restructurings were thus substantially higher than public disbursements (\$247 billion versus \$143 billion).

Figures 1 and 2 show for the individual countries the same patterns of relatively comparable private and public disbursements in the crisis year, with far higher private than public disbursements in the two years following the crisis. Figure 1 additionally shows the somewhat surprising phenomenon of larger private than public disbursements even in the crisis year in Russia and Brazil.

Figure 1



<sup>6</sup> Even though the public figure is augmented to include late-1997 IMF support in Indonesia and Korea and full-1998 official disbursements in the case of Brazil, despite dating of the main crises in the subsequent year in each case.

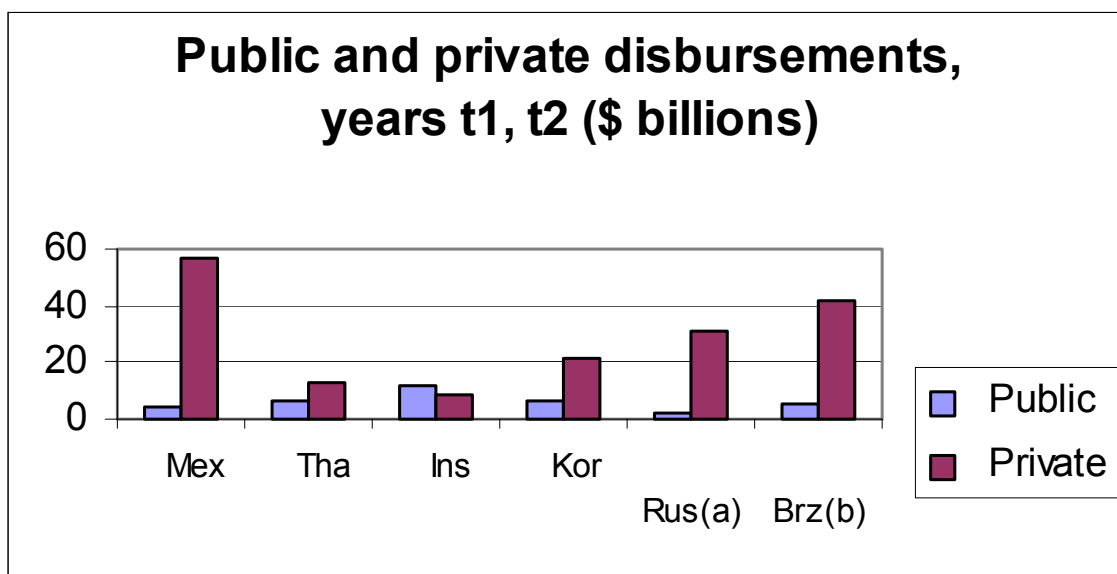


Figure 2

- a. Private includes \$29 billion in rescheduling and forgiveness
- b. t1 only

In sum, even if the narrow definition of PSI is employed, the magnitude of private sector involvement has been very substantial, especially counting the massive default of Argentina. If a broader definition is used including voluntary flows and a three-year cycle beginning with the crisis year, the amount of PSI has been even larger. The amount would be larger still if direct foreign investment flows were added. Moreover, on this broader definition (even without direct investment), private sector involvement has substantially exceeded public sector involvement.

### ***Desirability***

A fundamental policy question is whether PSI is even desirable. The answer depends on the type of PSI and the circumstances in which it is applied. Where on both political and economic grounds the country has a very strong prospect of underlying solvency but faces temporary liquidity problems, forceful public sector support even without any formal (“narrow”) PSI is probably preferable. In particular, the action adopted in the Mexican case was correct even with the benefit of hindsight. The alternative of forced rescheduling of Tesobonos would unnecessarily have spoiled Mexico’s credit reputation and hindered its economic recovery in the late 1990s. Where the political economy is solvent but liquidity problems remain even after a strong show of official sector support, in part because the magnitudes of short-term debt are simply too large, application of still relatively voluntary but non-spontaneous PSI will be appropriate: coordinated maintenance of short-term credit lines by banks (Brazil 1999),

conversion of short-term bank claims into medium-term (Korea 1998). It is less likely that in the latter types of circumstances it will be particularly helpful to take recourse to bond exchanges with maintenance of value, because usually bond amortization schedules are sufficiently spaced over a series of years that their magnitudes in the immediate horizon will not be the primary problem.

At the opposite extreme, where a country is highly likely to be insolvent, some of the types of PSI toward the involuntary end of the spectrum will be necessary, while others should still be avoided. The difference is basically between those forms that involve negotiation and mutual consent of creditors and debtor, and those that are unilateral. The consensual forms include rescheduling of bank claims (or exchange for bonds) and restructuring with a negotiated amount of forgiveness. The primary non-cooperative form is unilateral default.

Table 2 shows the combinations of PSI types with country circumstances that will usually be appropriate. Two forms are omitted, as no longer relevant: concerted “new lending” by banks ( $\psi_{LCCl}$ ) and Brady Bond forgiveness ( $\psi_{BBR}$ ).

The table also notes that certain types of PSI should be avoided if possible even under circumstances of insolvency. One is unilateral default and extended arrears. Another is outward capital controls. The distinction “unilateral” is important, however, as arrears could in principle be approved by a majority of creditors to ensure uniform treatment during the interim before formal restructuring. Unilateral defaults in contrast will do greater damage to the country’s credibility for future capital market access.

The instrument of the officially sanctioned standstill is also listed as generally undesirable, albeit with a question mark. If the case is one of solvency, a standstill will unnecessarily impair credit reputation and confidence.<sup>7</sup> If the case is one of insolvency, it is unclear how much practical improvement can be secured by official blessing of a standstill as opposed to temporary arrears. At the least, this instrument should be limited to circumstances where the creditors broadly agree that the country is making a best-faith negotiating effort, and themselves welcome a standstill as a source of corraling nonparticipants. Otherwise there will be a perceived official sector bias in favor of extracting a better deal for the debtor, which in turn undermines the Eaton-Gersovitz underpinnings of the sovereign lending market.

Table 2  
Desirable PSI Type Under Alternative Circumstances

Situation	PSI Type
Strong prospective solvency	$\psi_{spon}$ , $\psi_{fdi}$ , $\psi_{stcl}$ , $\psi_{mtcnv}$
Intermediate solvency	$\psi_{stcl}$ , $\psi_{mtcnv}$ ; possibly $\psi_{bemv}$
Insolvency highly likely	$\psi_{LCresc}$ , $\psi_{bewf}$ , $\psi_{brcac}$

<sup>7</sup> Thus, Roubini (2002) appropriately casts doubt on the relevance of the argument that under certain assumptions a “bank holiday” or forced standstill is fully equivalent to lender of last resort support. Essentially the required assumptions (no uncertainty, no risk aversion, full recognition that the problem is pure illiquidity rather than insolvency) are unrealistic.

Memorandum: generally undesirable	$\psi_{daa}, \psi_{occ}; (\psi_{oas}?)$
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In light of table 2, we may consider the scorecard for the types of PSI that have actually occurred in the crisis episodes listed in table 1. High scores would go to the cases of Thailand (because of the broadly cooperative approach and very narrow application of restructuring), Korea, Brazil, and arguably Turkey. Lower scores would go to the cases of Russia and Ecuador, because even though their instances might be argued to have been insolvencies (warranting  $\psi_{bewf}$ ), the unilateral manner in which the defaults and extended arrears were adopted ( $\psi_{daa}$ ) was undesirable. Indonesia too merits at best a passing grade. Its insolvency was not of the sovereign but of the corporate sector, but its arrangements for workout proved seriously deficient, in considerable part because of the absence of forceful domestic bankruptcy arrangements. As for Argentina, the discussion below argues that a high score is warranted for the effort to restructure debt on a voluntary basis, and a low score is appropriate for the unilateral default adopted when a new government succeeded the one forced out of office.

### ***Moral hazard?***

Some would argue that even where there is a strong case for solvency, the public sector should insist that there be a relatively formal private sector commitment of lending to complement emergency official sector support, because otherwise there will be moral hazard. In view of the moribund status of emerging markets lending (net credit flows by banks and through bonds and other private credit instruments have fallen from an average of \$153.2 billion annually in 1995-97 to -\$0.9 billion in 1998-01, and -\$16.5 billion in 2001; IIF, 2002b), by now it should be clear that whatever degree of moral hazard has been present in official support programs has been negligible in terms of inducing subsequent excessive private sector lending.

Formal analyses of this issue are tending to come to this same conclusion. Zhang, (1999) conducts statistical tests explaining country spreads in emerging markets. He finds that after taking account of indicators of creditworthiness as well as global capital market conditions as proxied by spreads for US high-yield corporates, the dummy variable for post-Mexico moral hazard has the wrong sign and is statistically insignificant. Lane and Phillips (2000) use graphical analysis of lending spreads to examine whether various instances of IMF intervention induced lower borrowing costs, and find no evidence of generally greater moral hazard after the Mexico crisis (albeit with ambiguous patterns consistent with moral hazard prior to the Russian default). Kamin (2002) applies statistical tests to emerging market spreads, and also finds no evidence that access to credit has eased relative to the pre-1995 period. He also notes that there is some evidence credit was exceptionally easy in mid-1996 through mid-1998, but emphasizes that this was short-lived and may have been associated with “market exuberance.” His tests for countries receiving large-scale IMF support similarly show no evidence that geo-politically and economically important countries pay lower spreads than explained by their economic variables.

### ***Diagnosing solvency***

Matching the PSI type to the circumstance does of course require an official sector judgment on whether the country is fundamentally solvent or insolvent. This is no easy decision, but most would agree that the distinction is fairly clear between for example a Korea and an Ecuador. Several points are important to take into account in judging solvency.

First, experience has increasingly underscored the importance of political coherence in sustaining solvency. Political upheavals were critical in the defaults of Russia, Indonesia, and Argentina. Riots and deaths forced a change in government in the latter two cases.

Second, it is important to avoid the trap of a self-fulfilling prophecy in diagnosing insolvency based on contemporaneous market pricing. In particular, in times of market nervousness about a country, the country-risk spread on its secondary market can soar to 1000-2000 basis points or more. If solvency is then evaluated using these interest rates, almost any moderate amount of public sector debt will tend to look unsustainable. This is exactly the obverse of Japan's extraordinarily high public debt to GDP ratio combined with its extraordinarily low interest rate. Some more "normal" interest rate (e.g. a risk spread of say no more than 700 basis points) is the appropriate basis for judging solvency, on the reasonable grounds that once the temporary liquidity crisis is overcome the market rates will ease. Moreover, typically the country will have an actual average interest rate on its existing stock of debt that is far below the current crisis-environment spread.

Third, if one believes that default carries extremely severe economic disruption and long-lasting adverse reputational consequences, it will generally be more socially beneficial to make a Type I error (diagnosing and treating the case as one of solvency when in fact it is insolvency) than a Type II error (imposing default and forgiveness treatment on a case where in fact solvency could have been sustained).

Fourth, and for the same reason, under acute uncertainty it may well be desirable to provisionally treat the case as one of solvency simply to preserve the option of the chance of escaping default, even if this chance seems somewhat below 50 percent. As developed below, the conditions on which default should instead be entered into preventatively require a relatively high probability of eventual default combined with a relatively high incremental damage to the country from delaying default. The decision of the international policymakers to throw Argentina one last lifeline in August, 2001 can be understood within this framework.

The third and fourth considerations do raise the question of IMF solvency. If the IMF leans toward Type I errors, over time it might accumulate losses. In practice, however, the IMF enjoys a preferred creditor status. If it does provide support to a country that nonetheless subsequently finds it necessary to default, the strong likelihood based on past experience is that the country will soon be back into orderly servicing of its IMF obligations even if it finds it necessary to seek restructuring from its private creditors. Nor is preferred status merely a matter of custom. Its underpinning is the fact that it is only the IMF and the other International Financial Institutions that have historically been willing to provide enough new financing (or more) to cover debt service coming due to them, in crisis circumstances.



The late-2002 impasse between Argentina and the IMF does not fundamentally alter this diagnosis. The Fund appears likely to prefer to wait for the new government to be elected in March 2003 rather than sign what it considers a weak agreement with the outgoing government, and is apparently not unduly concerned about arrears in the interim. Of course, if over the next two years or so it were to transpire that a critical mass of large debtors (such as Argentina, Brazil, and/or Turkey) were in prolonged arrears to the Fund, there would be a far greater case for shifting the weighting toward Type II rather than Type I errors in the lender of last resort decision.

### *The recent crises*

As this paper is written there are three major and one minor crisis cases raising the issues of public policy on crisis resolution: Argentina, Turkey, Brazil, and on a smaller scale Uruguay. It is beyond the scope of this review to provide a full analysis of these cases, but some summary views would seem indispensable to consideration of the evolution of the PSI debate.

*Argentina* – The crisis in Argentina began in the fourth quarter of 2000, triggered by the resignation of the vice president in the coalition government and in the context of severe recession in 1999-2000. By December 2000, the International Monetary Fund had agreed to increase the existing Standby program by about \$6.7 billion to a total of \$13.7 billion (500 percent of IMF quota). The government planned some \$10 billion in borrowing from local banks, which included affiliates of major international banks; \$3 billion from pension funds; and \$7 billion in maturity-stretching debt swaps. In announcing the program, IMF Managing Director Horst Koehler highlighted this substantial PSI by welcoming “private sector ... support on the order of US\$20 billion” (IMF, 2000a). Together with anticipated support of \$2.5 billion each from the World Bank and Inter-American Development Bank and \$1 billion in bilateral support from Spain, the IMF and private sector support amounted to a headline total of \$40 billion in support. With half coming from the private sector, this seemed like a prototypical case of major lender-of-last-resort action coupled with commensurate PSI.

The financial rescue seemed briefly to function, as the Argentine sovereign spread (Argentine component of the JP Morgan EMBI+) fell from a high of 880 basis points in November 2000 to 665 basis points by February 2001. There then ensued a new round of political destabilization, however, that featured a brief attempt by a new finance minister (Lopez Murphy) to implement sharp fiscal adjustment, followed almost immediately by his replacement by Domingo Cavallo, renowned for his success in ending hyperinflation in the early 1990s. At this point policy was on the horns of a dilemma. Financial markets abroad were insisting on both growth and fiscal adjustment to restore confidence in public debt sustainability. Cavallo swung the pendulum briefly toward growth with certain sectoral stimulus measures. He successfully implemented a megaswap stretching out public debt by June, but made a serious mistake in April by announcing that the peso would be shifted to a basket of 1:1 each with the dollar and euro once these two currencies crossed paths again (and until then a trade tax-rebate scheme would make up the difference). Whatever its economic merits, this plan undermined

confidence by calling into question the lynchpin of the Argentine economic model, the “convertibility” currency board parity with the dollar. Confidence was further undermined by the forced exit of central bank governor Pedro Pou.

The megaswap completed at the beginning of June 2001 exchanged about \$30 billion, or about half of the government bonds eligible, for new bonds with maturities in 2006 and after and with various grace period and step-up interest rate features. The exchange was voluntary, although the greater scope for moral suasion on domestic holders such as pension funds meant that its subscription was primarily by residents (some \$22 billion). Importantly, the fiscal costs were limited, as the effective average interest rate on the new instruments was only modestly higher (about 11.7 percent compared to the original 10 percent on the bonds exchanged), despite by then a 16 percent secondary-market interest rate. Only the secondary-market value of a bond was counted in the value accepted for exchange, and the price of the new bond for purposes of the exchange was also at the discounted secondary market value.<sup>8</sup>

Consummating a large exchange without paying a sharply higher interest rate was possible first because of the moral suasion on domestic holders, and second because many foreign holders confronted with the disappearance of much of the outstanding stock of a given bond were inclined to exchange rather than be left holding an “orphan” bond with much less liquidity. In effect the megaswap comprised a positive-sum cooperative game of large holders who were able to overcome the “prisoners’ dilemma” problem of non-communication by virtue of the government’s cooperation with and organization of the leading domestic holding institutions.

The best way to examine whether the swap was favorable is to compare the cost of the swap against the potential macroeconomic gain from improved liquidity. The swap reduced payments due by \$8 billion through end-2002 and by \$16 billion through end-2005 (*Financial Times*, 5 June 2001).<sup>9</sup> There was a perception at the time that the increased liquidity gave Argentina much-needed breathing space.<sup>10</sup> Discounting at 10 percent, the swap increased the discounted present value of the debt by one-sixth, or by \$5 billion for the \$30 billion

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<sup>8</sup> The most direct comparison between interest costs of the old and the new bonds may be made on about \$10 billion in straight-interest global bonds originally maturing in 2009-17 and 2019-30, exchanged for \$10.7 billion in global bonds due to mature in 2018 or 2031 (Ministry of Economy, 2001). The average interest on the original bonds was 11.2 percent, and on the exchange bonds, 12.1 percent. So there was an increase in the annual interest burden by about one-sixth, taking account of the increment in principal and interest. This increase was far less than implied by the secondary market rate of 16 percent, which would have imposed a 43 percent increase in interest costs ( $16/11.2 = 1.43$ ). The text figure of 11.7 percent applies the one-sixth increment to the full swap.

<sup>9</sup> Mussa (2002, p. 40) places the initial savings somewhat lower at \$12 billion. He also states that after 2005 the swap increased total payments by \$66 billion, but this calculation exaggerates by failing to take account of the additional payments that would have occurred from switching to longer maturities even at unchanged interest rates from the original bond terms.

<sup>10</sup> The *Financial Times* (5 June 2001) reported that “Argentina’s mammoth bond swap was given a good reception yesterday as international investors and analysts shared the view that the success of the Dollars 29.5 billion operation was a first step towards further reform of the economy to enable a resumption of economic growth.”

exchanged.<sup>11</sup> In 2002 alone, Argentina's GDP will fall by about 15 percent, or \$45 billion, as a consequence of the default and devaluation. So it requires no more than a judgment that the megaswap reduced the probability of default-cum-devaluation by 11 percent to arrive at the conclusion that the operation was beneficial. This is a reasonable assumption, and this probabilistic cost-benefit approach leads me to conclude that the megaswap was favorable for Argentina.<sup>12</sup>

Unfortunately, and perhaps in part because the megaswap was misunderstood by many to have sharply increased the fiscal burden of the debt, within a month market reaction had deteriorated. The actual launch of the "convergence" quasi-dual exchange rate mechanism at mid-June may have contributed to exchange rate uncertainty. The critical development was that by July the outflow of bank deposits and reserves accelerated, as bank deposits fell 7 percent in a single month. The government responded at mid-July with a dramatic "zero deficit" program that had as its centerpiece a 13 percent reduction in government salaries, which was to continue and be adjusted on a monthly basis to whatever rate was required to achieve a zero deficit.

It was at this point and on the strength of both the megaswap and the severe fiscal adjustment commitment that the government appealed to the IMF for additional support. In late August the IMF announced an additional \$8 billion in support, of which \$5 billion was available immediately but early use of the remaining \$3 billion was contingent on some form of debt restructuring reducing the interest burden. My colleague Michael Mussa has argued that the August IMF program was a tragic mistake, and that at this point Argentina instead should have been told to default (Mussa, 2002). This judgment hinges on an assessment of the inevitability of default, which was by no means clear. The new fiscal tightening had in fact been applied in July and early August, and there was a significant chance that the IMF support coupled with the megaswap and the zero deficit plan could begin to reduce the secondary market spreads once again from their prohibitive levels, and in fact spreads did temporarily ease from 1600 basis points to 1400 basis points by end-August.

By late November 2001 the government successfully exchanged some \$55 billion in domestic holdings of government bonds for loans at 7 percent and collateralized by tax revenue. Losses in the October legislative elections and the continuation of political difficulties with the

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<sup>11</sup> This present value calculation is based on the \$10 billion fixed coupon swaps referred to in note 6.

<sup>12</sup> In contrast, Mussa (2002) criticizes the swap as unduly costly. He states that "... interest rates for the Argentine swap of 16 percent ... were not consistent with positive growth of the Argentine economy or with debt sustainability" and refers to the terms as "onerous" (p. 41). Unfortunately, this could give the false impression that the average interest rate on the replacement debt was 16 percent, whereas it was only 11.7 percent as noted in the text. Mussa has clarified in private communication that he did not mean to imply the average interest rate on the replacement debt was 16 percent. Instead, his analytical approach is to determine what discount rate was necessary to make the present value of the change in the stream of payments equal to zero. This discount rate, which is a very different thing from the new average interest rate, turns out to be 16 percent. Mussa does not clarify what discount rate he would have considered acceptable. As indicated in the text, I consider a more appropriate evaluation to be a cost-benefit comparison taking account of the reduced probability of default and depression at the macroeconomic level. The narrower focus on the internal rate of return on the swap itself is penny-wise and pound-foolish, as it completely omits the most important benefits: restoration of confidence and avoidance of economic collapse.

provincial governors' acceptance of fiscal adjustment, however, contributed to uncertainty and a continued drain on deposits and reserves. This eventually precipitated the government's early-December limits on withdrawals from bank deposits. In effect, the government was honoring the exchange rate commitment by reneging on the commitment to the public's access to bank deposits. This in turn contributed to an environment in which rioters (some encouraged by elements of the political opposition) took to the streets. When the riots caused 22 deaths, President de la Rúa and Economy Minister Cavallo resigned. To the end they had sought to honor their pledge to neither default nor devalue. But the interim President Adolfo Rodríguez Saá immediately defaulted on external debt, and his successor Eduardo Duhalde in early January devalued and floated the peso. Duhalde then adopted such populist measures as converting dollar deposits to pesos at 1.4 pesos per dollar while requiring that banks accept conversion of their dollar loans to pesos at 1 peso per dollar.

During the course of 2002 the Argentine catastrophe has continued. As of early November 2002 the peso has been trading at about 3.5 to the dollar, and output for 2002 is expected to fall by 15 percent or more. Cumulative price increases in 2002 have been only about 40 percent, sharply below what might have been anticipated from the 250 percent rise in the peso price of dollars and reflecting the severe recession and the decline in liquidity associated with the bank freeze. The key question is whether a severe intensification of inflation can be avoided as deposits are partially released and partially converted to long-term bonds. The IMF found it necessary to postpone a repayment due, but the World Bank and IDB have stated they do not have comparable flexibility. By early November 2002, remaining differences between the IMF and the Argentine government, and perhaps IMF concern about the political enforceability of an agreement prior to election of a new government in March or April 2003, meant there was a considerable possibility Argentina would go into arrears with the IMF and World Bank. An IMF agreement is necessary for new IMF and World Bank loans even if the new loans only suffice to cover repayments coming due.

Some would argue that the Argentine case proves that countries should default earlier, and that an international bankruptcy mechanism is needed to help them do so. My interpretation is instead that the Argentine case underscores the difficulty of making the solvency/ insolvency diagnosis, and in particular shows its sensitivity to political unravelings. The catastrophic outcome associated with the default and devaluation, moreover, may be read at least as appropriately (more so, I would argue), as painful evidence that the default was indeed damaging and therefore that the successive attempts to avoid it during the course of 2001 were worth trying.

A final word on Argentine solvency as it looked in 2001, especially by July. It is beyond the scope of this paper to provide an in-depth analysis of this issue. The key points, however, are the following. First, Argentina had been hit by a convergence of severe external shocks. Brazil's crisis in 1999 depressed a key export market. The surge of the dollar against the Euro pulled up the peso against the currency of Argentina's most important regional market. Falling commodity prices hit Argentine export earnings, even though by 2000 rising oil export prices reversed the decline in terms of trade in the previous two years. Second, in the run-up to the

1999 presidential elections, then-President Menem engaged in fiscal loosening as he sought constitutional change to permit a third term, and then-governor of Buenos Aires Eduardo Duhalde unleashed a spending spree in his bid for the presidency. Third, the debt to GDP ratio had risen far more than cumulative deficits, because of “skeletons” (such as court awards to victims of the “dirty war”) and incorporation of provincial debts. Fourth, the economy was in a prolonged recession. All of these factors meant there had been temporary deterioration that tarnished but did not fundamentally reverse Argentina’s mid-1990s record of star economic reformer. There was every reason to believe that the temporary external shocks would reverse in time, and that with renewed fiscal discipline – already begun in 2000 by the de la Rúa regime – and a cyclical recovery in the economy, the debt/ GDP ratio could be stabilized. By July, 2001, although the secondary-market spreads on Eurobonds had soared to unsustainably high levels (1600 basis points), there was also good reason to believe that by then the proximate cause was the rapid pace of bank deposit and external reserve losses, and that by a show of force by sizable additional external support, this self-fulfilling downward spiral could be reversed as confidence in adequacy of external reserves was restored.

In short, there was still a case for solvency even by July 2001. On the other side, there was a seemingly inexorable mounting of opinion in international financial markets that the combination of the currency board, the recession, and the fiscal deficits (even if cyclical) was a recipe for no recovery in growth and hence eventual unsustainability of debt. For public policy, there was ample room for both type I error (falsely identifying solvency) and type II error (falsely identifying insolvency). Even with the benefit of hindsight, the international community took the appropriate step in August 2001 by leaning in the direction of a type I error, because the consequences of default were potentially so drastic, as we now know.

*Turkey* – In December 1999 Turkey embarked on a stabilization program to end its status as the last major emerging market economy with persistent high inflation (averaging 75 percent annually during 1988-99; IMF, 2001a). The program centered on a pre-announced exchange rate path (with intent eventually to float) as anchor, privatization, and fiscal adjustment. As interest rates fell sharply while inertia remained in inflation, domestic demand surged in 2000 and the current account swung into deficit. Pressure on the banking system (characteristic of sharp disinflation) contributed to failure of an important bank in November, 2000, and turmoil in the interbank market then led to rapid reserves loss. By late December the IMF substantially expanded its support by \$7.5 billion, from the original \$3.8 billion standby arrangement to a total of \$11.3 billion. In February 2001, a renewed round of pressure on reserves, in part attributable to sharp division between the Prime Minister and the President and more generally doubts about commitment to structural reform, forced the government to float the lira.

In the face of renewed crisis, by May 2001 the IMF expanded the standby program by \$8 billion, to a total of \$19 billion. Increased World Bank commitments by \$2 billion complemented the package. The new program was premised on major new commitments on privatization (especially of the telecom firm) and banking-sector recapitalization and reform. Through the next several months market concerns persisted, however, as high interest rates increasingly posed questions about the sustainability of government debt. The events of

September 11, 2001 then aggravated the situation, affecting tourism earnings, export markets, and international capital market conditions. By early February, 2002, the IMF increased its commitment yet again under a new program amounting to \$16 billion, of which \$3 billion was the remaining amount from the previous program. After deducting approximately \$7 billion in repayments to the IMF in 2001 and early 2002, this brought total IMF support to \$25 billion, or about 17 percent of 2001 GDP.

PSI in the Turkish case has been limited to a sizable (\$8 billion) market-based swap of short-term for longer-term government debt (table 1). The May 2001 program announcement referred to “voluntary private sector involvement, in line with the authorities’ strong preference for market solutions” (IMF, 2001c). The combination of market uncertainty, the voluntary approach, and especially the structure of foreign lending meant, however, that there was a large rundown in foreign bank claims during 2001 (by about \$8 billion; IIF, 2002a, p. 8) that contributed to pressure on external reserves despite the large IMF support.<sup>13</sup> There are both structural economic reasons and geopolitical reasons for the lack of greater PSI.

The economic reason is related to the source of the problem, which has primarily been one of public debt sustainability rather than an external transfer problem, coupled with the fact that the public debt was primarily owed to domestic banks and residents rather than foreign private creditors. Turkey has tended to run a balanced current account (except in the stabilization growth spurt of 2000). Its external debt is relatively low (net external debt deducting reserves was about 180 percent of GDP in 2000-2001).

The problem of domestic government debt, in contrast, has been severe. Public debt amounted to 80 percent of GDP at end-2001 (valuing GDP at year-end prices), up from about 50 percent in 1999 and 2000.<sup>14</sup> The central challenge has been the race between high real interest rates, which cause the public debt to snowball, and sufficient fiscal adjustment and privatization sales to halt the upward spiral in the public debt burden. About three-fourths of public debt (excluding debt owed to the IMF, technically by the central bank) is held by the domestic banks and other residents, rather than by non-residents.

Large domestic bank holdings of government debt, rather than direct foreign holdings, have placed inherent limits on the amount of PSI. As the IMF became the purchaser of government debt, the result was to displace domestic bank holdings of government debt. This reduction in assets led to a corresponding reduction in liabilities, which was carried out by the domestic banks by repaying foreign banks and investors who were primarily investing indirectly in government paper through the Turkish bank intermediaries. Moreover, because the government provides a full guarantee on Turkish banks, there is a Catch-22 for PSI. Any losses imposed by the government on holders of its debt through forced restructurings would have an adverse impact on the banking system the government in turn is obliged to support.

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<sup>13</sup> External reserves excluding gold fell from \$22.5 billion at end-2000 to \$18.9 billion at end-2001 (IMF, 2002).

<sup>14</sup> With high inflation, it is necessary to inflate during-year GDP to end-year prices. Otherwise the end-year public debt will be exaggerated relative to during-year GDP.

The geopolitical reason for limited PSI is that Turkey has been considered strategic, especially after September 11 (and in view of participation of Turkish troops in Afghanistan peacekeeping). This has meant that the official sector was inclined to act decisively rather than to delay support and make it conditional on more formal PSI. The unique political profile of Turkey helps explain how its IMF support reached 17 percent of GDP, far above the 8 percent maximum commitment (not fully disbursed) in the case of Argentina.

In early November 2002 Turkey elected the Islamist Justice and Development Party (AKP) with a strong parliamentary majority. The central political-economic issue has been whether a new round of political unraveling would derail chances of success in the race between real interest rates and debt stabilization through fiscal adjustment and privatization. The decisive AKP victory, and the party's broad support of the commitments to and strategy of the IMF program, thus offer hope for a favorable outcome. The IMF and international community have a large stake in Turkey's success, as Turkey is the IMF's largest debtor.

*Brazil'02* – In mid-2002 Brazil faced mounting financial pressures that led to a new round of large official support. As the polls in the second quarter began showing a strong front-runner position of leftist Luiz Ignacio Lula da Silva (“Lula”) in the campaign for the October elections, financial markets abruptly shifted their view on Brazil from strong support to great skepticism. By mid-July the Brazil Eurobond spread had surged from about 850 basis points to about 1500, and the spread subsequently rose above 2000 basis points. Attention focused once again on the trend in Brazil's government debt to GDP ratio (a great source of concern at the height of the early 1999 crisis). Net of external reserves and central bank holdings of government debt, the net debt/ GDP ratio rose from 33 percent in 1996 to 49.5 percent in 1999-2000, spurred by the devaluation in early 1999 as part of the debt is in dollars and another part is indexed to the dollar. The ratio rose still further to 53 percent at end-2001, reflecting the 2001 recession. These increases have also reflected incorporation of “skeleton” debts previously not recognized. High domestic interest rates mean a large primary surplus is necessary to avoid a ballooning of the debt. The mid-2002 weakness in the currency, related to election uncertainties, meant that the ratio was in the range of 58 percent by end-June and reached 64 percent at the end of September.

As for external debt, Brazil actually shows a lower burden now than in many past years when gauged against the export base, though not if measured against the depreciation-shrunk dollar value of GDP. As of end-June 2002, external debt net of reserves stood at \$171.7 billion. Exports were weak in the first half of 2002 at 13.1 percent below a year earlier, but they then began to respond to the strong exchange rate incentive and by July-October stood 16.6 percent above the level a year earlier. For 2002 as a whole, exports should be about the same as in 2001, placing the ratio of net external debt to exports of goods and services at 254 percent. This is far below the 398 percent reached in 1983 with that decade's debt crisis (when international interest rates were also far higher, making the interest burden even higher). It is also below the 325 percent in 1991, the recent peak of 345 percent in 1999, and also lower than the 295 percent in 2000 – a year when the market was comfortable enough with the external debt burden to accept

spreads of only 500 basis points.<sup>15</sup>

As Williamson (2002) points out, 68 percent of net external debt is owed by the private sector, not the government. Although net external debt relative to GDP has surged with the sharp depreciation of the real (to about 50 percent at an exchange rate of 3.5 reals per dollar), this ratio is likely to decline at least part way back toward the end-2001 ratio of 32 percent if the post-election recovery in the currency persists.<sup>16</sup>

There have been two central questions about Brazil. The first was whether the existing levels of internal and external debt are unsustainably high even for an optimum government and economic team.<sup>17</sup> The second was who would win the election, and whether he would follow a populist path that would destabilize financial conditions. After Lula won the runoff election in late October, 2002, Brazilian markets began to show a rise in confidence in view of his market-friendly comments and repeated statements of commitment to fiscal equilibrium.<sup>18</sup> His choice of an economic team will be important to continued improvement in confidence. With renewed confidence, there could eventually be a major moderation in the still high spreads and a significant further recovery in the currency, permitting at least an arrest in the upward climb of the debt ratio and more likely some reduction from its recent level.

In early August the IMF announced agreement with the Brazilian authorities on a \$30 billion support program, of which \$3 billion was to be available by September, \$3 billion in November, and another \$24 billion in 2003. The agreement also reduced the IMF's target for net international reserves from \$15 billion to \$5 billion, freeing \$10 billion for exchange market intervention. The delay of the bulk of the new support until 2003 was designed both to provide a strong incentive for the new government to adhere to the program and, by implication, to limit the IMF's potential exposure in the event of a severe political derailing. The candidates announced qualified support for the program, which centered on the maintenance in the next government of the 3.75 percent of GDP primary fiscal surplus. After an initial buoying effect on Brazilian markets, however, results of new polls showing government candidate Serra even further behind renewed pressure on the currency. The Cardoso government responded by seeking more formal pledges of support for the IMF program from all candidates. These were secured, and Lula's continued commitment to this fiscal target has been crucial to the initial favorable market trends after his election.

So far there has been no formal PSI in the most recent Brazilian difficulties, even with

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<sup>15</sup> Cline (1995, p. 320); Central Bank of Brazil (2002); IMF (2002).

<sup>16</sup> Brazil's GDP averaged \$770 billion annually in 1995-98 when the real was overvalued, and \$540 billion in 1999-2001 after the early 1999 devaluation; but it stands at only about \$340 billion at the early-November exchange rate of about 3.5 reals per dollar.

<sup>17</sup> My colleague Morris Goldstein has taken the position publicly that there is a 70 percent chance Brazil will be forced to default by the end of 2003. Speech presented at the Institute for International Economics, Washington DC, 27 June 2002. I agree instead with my colleague John Williamson (2002), who has stressed that the debt is sustainable if the recent adverse dynamics of self-fulfilling prophecy can be reversed.

<sup>18</sup> The *real* appreciated about 8 percent from its low point prior to the election to the beginning of November 2002, and spreads on the "C-bond" fell from about 2,300 basis points to about 1,800 basis points.



the launching of a new large rescue package. No doubt the government considered possible efforts to mobilize formal PSI counterproductive as they could send a signal to the markets that claims could suddenly face restructuring. There were indications that short-term credit lines had fallen off (by some 30 percent according to some press reports), placing severe liquidity constraints on the private sector. In late August, however, leading international banks offered their support for Brazil in a meeting in New York with central bank head Arminio Fraga, and pledged informally to maintain (but not necessarily restore) outstanding trade credit lines (*Financial Times*, 27 August 2002). Nonetheless, this commitment appears to have been considerably less concrete (for example, with respect to horizon and monitoring) than that undertaken by the foreign banks in early 1999, however.

*Uruguay* – Finally, the case of Uruguay provides additional information on the trend in crisis resolution strategy. In the face of severe contagion from Argentina's default and devaluation, which particularly affected the banking sector, in March 2002 Uruguay entered into a Standby agreement with the IMF for \$0.8 billion. As pressures continued, the government reached agreement with the IMF to increase the program to \$2.28 billion on June 25, after floating the exchange rate and committing to further fiscal contraction. Even though the program was large relative to the size of the economy (12 percent of GDP), there was no reported element of PSI. This would suggest that the official community saw the case as one appropriate for lender of last resort intervention to deal with temporary contagion effects. In early August this interpretation received a strong confirmation by the addition of another \$0.5 billion to the support program. The further expansion was accompanied by closure of four private banks and maturity stretch-out for dollar time deposits in public banks. The U.S. Treasury provided a \$1.5 billion bridge loan from its Exchange Stabilization Fund pending release of IMF funds. Considering that Uruguay is non-systemic, these steps seemed to mark a turnaround in philosophy at the U.S. Treasury from early rhetoric opposing large international financial rescues (even though in practice it had already approved such support for Turkey and Argentina) toward a position giving greater recognition to the lender of last resort function.

### ***Relation to the Bankruptcy Debate***

The issue of PSI is at the core of the recent move in official thinking toward reconsideration of international bankruptcy mechanisms and arrangements for collective action clauses in bond contracts. In November, 2001, the IMF's First Deputy Managing Director Anne Krueger outlined a mechanism for sovereign bankruptcy in which the IMF would play a central role, including in determining when a standstill and call for bankruptcy measures should be approved (Krueger, 2001). In April, 2002, Krueger released a revised proposal centered more on creditor-debtor control of any bankruptcy negotiating mechanism, with a more auxiliary role for the IMF. Both proposals, however, reflected her view that nations often wait "too long" before seeking debt restructuring. A parallel public sector concern has been that in the absence of a sovereign bankruptcy mechanism, the official sector is faced with the Hobson's choice of providing large bailout financing or letting a country founder in disorderly default.

A key consideration in thinking about bankruptcy mechanisms is whether they are

consistent with the Eaton-Gersovitz underpinnings of a functioning international capital market for sovereign lending. The problem is that if capital markets obtain the impression that debt difficulties will be taken to some form of international bankruptcy court in which it is likely that the international official sector will take an active role in settlement, the result will be that investors think the cards are stacked against private creditors, whose interests are commercial whereas the interests of sovereigns inherently reach the political sphere. If so, then the risk is that private creditors will reduce their lending to emerging markets, demanding higher credit risk premia, not only for countries that become enmeshed in bankruptcy but also (albeit to a lesser degree) for other countries.<sup>19</sup> The shift from Krueger's first to second formulation appears in part to have reflected an effort to address this underlying concern, but it is unclear that it can in fact be effectively removed. There is of course the additional problem of how the national legislative approvals (including for amending the IMF articles) could be achieved, which was one reason the Group of Ten rejected the bankruptcy approach in its 1996 report (G-10, 1996). Moreover, as Truman (2002) has emphasized, the SDRM does not deal with cases where the problem is primarily debt owed by the private sector, or even with sovereign debt when it has been issued under domestic rather than international law, and as such would have been of direct relevance in only one case (Argentina) out of the eight major crisis episodes beginning with Mexico in 1995.

The alternative approach that has also attracted attention is the "contractual" strategy of achieving widespread clauses for qualified majority approval of rescheduling in sovereign bonds (collective action clauses, CACs). This is as opposed to the "statutory" approach of bankruptcy-type legislation. U.S. Undersecretary of the Treasury John Taylor has proposed that incentives for private sector adoption of CACs be considered by the official community (Taylor, 2002). These could include the requirement for such clauses as part of IMF conditionality in country programs, and/or lower borrowing rates for IMF funds for countries doing so. Although Taylor suggests that the latter might induce countries to swap existing bonds for ones with CACs, the incentive to the country to do so could be insufficient to elicit much response.<sup>20</sup>

The operational question is whether PSI on an ad hoc basis varying with the circumstances of the crisis can be an effective substitute for or actually superior alternative to either a move toward more widespread CACs or a bankruptcy mechanism with either a lesser or greater degree of IMF centrality. The empirical record summarized in table 1 and appendix table

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<sup>19</sup> The alternative notion that the private sector would actually welcome more formal bankruptcy mechanisms to reduce uncertainty, sometimes heard from especially official sector experts, is I believe misconceived. For evidence to the contrary, see Chamberlin (2002).

<sup>20</sup> Taylor's "slightly lower charges on IMF borrowing" would have to be multiplied by the volume of potential IMF lending and the probability it would be needed, on the one hand, and compared to the likely boost in spreads on the new exchange instruments of a likely much larger volume of outstanding bonds, along with associated underwriting fees. In most cases it seems unlikely the cost-benefit calculus would come out favorable to the country. But the more fundamental problem is that most governments are loath to signal to the market that they are thinking about ways to ease restructurings, lest they provoke unjustified doubts in their willingness to pay. Moreover, the popular reading of Eichengreen and Mody (2000) -- apparently the "recent empirical work" referred to by Taylor -- to the effect that bonds with rescheduling clauses are little if any more costly than those without, is I believe a misinterpretation of their findings (see Cline, 2001).

A-1 suggests that in practice quite a bit of PSI has been mobilized. Of course, if it is an official sector objective to put an end to large-volume lender-of-last-resort (LLR) intervention, then something more forceful than ad hoc arrangements, each as voluntary as possible under the circumstances, could become necessary. It is unlikely that the CAC route would suffice if official LLR were to be eliminated, in part because proximate bond maturities are not usually the primary problem. Instead, with the LLR function largely removed it would become more likely either that one of the bankruptcy versions would be required or that there would be a greater incidence of defaults that could have been avoided with temporary support. In either case there would likely be an adverse effect for emerging market economies directly (damage from defaults that could have been avoided) and indirectly (from erosion of future creditor confidence and capital flows to emerging markets).

### ***When Should a Sovereign Default?***

Because the PSI debate within policy circles has recently evolved in the direction of sovereign bankruptcy arrangements, it seems especially relevant to conclude this review with an examination of the circumstances under which it might behoove a government to default. The current policy context of this question is summarized in the following argument: “countries with unsustainable problems wait too long before confronting the inevitable” (Krueger, 2001). The proposition is that default can be less damaging for the country if it is adopted early, essentially a “preemptive default” argument.

This argument can be (minimally) formalized as follows. Suppose there are two periods when the government can default. The time gap between them is sufficiently modest (say one year at maximum), and the other stakes sufficiently large that the question of usual time discounting (e.g. at a social time preference rate), can be ignored as second-order. Denote the losses from default (associated with general disruption of the economy, including from social disorder associated with irate holders of government debt as in the current Argentine case) as  $L_1$  if the government defaults in period 1, and  $L_2$  if it defaults in period 2. There is no loss if the government manages to escape default.

Now suppose that the probability that the government will be forced to default in period 2 is:  $p_{d2}$ . Define the benefit of preventive default as:  $B_{prd}$ . Then this benefit will equal the expected loss that would occur waiting until period 2, minus the known (probability = 1) loss of preemptively defaulting in period 1, or:

$$1) B_{prd} = p_{d2}L_2 - L_1.$$

If we define  $\beta$  as the ratio of the economic damage defaulting in period 2 to that defaulting in period 1, or  $\beta = L_2/L_1$ , then

$$2) B_{prd} > 0 \text{ only if } p_{d2}\beta L_1 > L_1, \text{ or } p_{d2}\beta > 1, \text{ which requires that}$$

3)  $p_{d2} > 1/\beta$ .

For example, if in June 2002 one believed that there was a 70 percent probability that Brazil would be forced to default by the end of 2003, then it still would have been attractive for Brazil to default immediately -- rather than waiting -- only if the likely economic damage from a default 18 months later were  $1/0.7$  or 1.43 times as great as the damage from defaulting immediately. If the probability of default in period 2 is only 50 percent, then it will be advisable for the government to hold out as long as possible rather than adopting preventive default so long as the damage done by defaulting in period 2 is less than twice the damage done by defaulting immediately.

Although the proposition that  $\beta \gg 1$ , or “waiting too long” sharply increases the ultimate pain from default (so that  $L_2 \gg L_1$ ) seems increasingly fashionable, there would seem to be little historical evidence to support it. Brazil adopted preemptive default in early 1987 under Finance Minister Dilson Funaro, and subsequently reversed the decision after finding it costly to trade credit and economic activity. The notion that Argentina’s 2002 trauma could have been far smaller if the government had defaulted at mid-2001 is speculative at best. Even done 6 months earlier, the default would have meant the collapse of the exchange rate, the inevitability of a bank freeze, and the consequential social tensions. The adroitness of managing these shocks could clearly have been better in the absence of some of the populist mistakes of the Duhalde government, but the conceptual issue is whether a government of identical expertise would have been able to greatly reduce the damage by defaulting earlier.

The key point here, however, is that even if the damage of waiting for a forced default is greater than defaulting preemptively, the difference between the two outcomes must be sufficient to outweigh the chances that default can be avoided by holding out for better times rather than defaulting immediately. It is by no means clear that the required condition ( $p_{d2} > 1/\beta$ ) will generally be met even for governments increasingly at risk of default.

### ***Conclusion***

This paper has identified the principal modalities of private sector involvement (PSI) in crisis resolution, prepared calculations of the amounts that have actually occurred in the principal crises of recent years, and examined the issues involved in judging the desirability of PSI. It has also sought briefly to link this issue to the recent debate on sovereign bankruptcy mechanisms, and to explore the conceptual issues associated with the related question of when a sovereign should default.

The principal findings include the following:

- The conceptual underpinning of crisis resolution remains Bagehot’s rule for LLR intervention (solvency versus illiquidity) and Eaton-Gersovitz theory on the need for default pain as quasi-collateral in the absence of physical collateral.

- Consistent with this framework, the best approach to PSI remains an ad hoc basis in which the form of PSI sought in each case is the most voluntary possible under the circumstances, in order to maximize future access to capital markets.
- Using narrow definitions, approximately \$240 billion of PSI has been secured in the 8 principal crises beginning with Thailand 1997 and running through Argentina 2002.
- When more broadly defined as new disbursements over a three-year cycle beginning with the crisis year, PSI in the six major crisis through 1999 amounted to \$247 billion, which overshadowed cumulative public sector disbursements of \$143 billion.
- There have been pendular swings in official sector assiduousness in securing PSI. After its absence in Mexico and mild presence in Korea and Brazil, PSI was heightened to a more aggressive objective in such cases as Ecuador in 2000. There have also been contemporaneous differences in PSI required, best illustrated by the large headline PSI for Argentina and the absence of significant PSI for Turkey in the end-2000 financial rescues. There was also no PSI requirement in the most recent cases of Uruguay and Brazil. These swings in PSI policy likely reflect three factors: differing judgments from case to case on the degree of spontaneous capital flow revival possible; learning-by-doing on when to insist on PSI; and recognition of multi-country patterns that give “credit” for large PSI in one case and thereby reduce the need for PSI in another without reducing the public sector signal seeking to dispel moral hazard.
- Argentina has revealed both the scope for very large quasi-voluntary PSI with the megaswap of mid-2001 and for large but deleterious involuntary PSI with payments suspension in December 2001. The analysis here, moreover, rejects the critique that the megaswap and the additional round of IMF support that followed it were serious mistakes.
- Both the collapse of net lending to emerging markets in 1998-2001 and recent formal analyses suggest that the concern about moral hazard – a prime motivation for official sector emphasis on PSI – has been exaggerated.
- The massive total PSI in Argentina (at the end of the day turned involuntary) may serve as a basis for official sector judgment that at least for the time being the private sector has by no means escaped without bearing its share of the burden in financial crises. This may in turn help explain the absence of a PSI requirement in the latest round of substantial expansion in the already large official support to Turkey and the large support for Uruguay (in proportionate terms) and Brazil (in absolute terms).
- For the public sector, the critical decision continues to be a judgment on whether the country is solvent or insolvent, and thus whether LLR support should be provided or instead the country should pursue involuntary PSI. It is increasingly clear that political coherence is a vital determinant of solvency, as in most of the adverse outcomes (Russia, Indonesia, Argentina) it

was a political collapse that precipitated default.

- At the same time, “crisis level spreads” in the secondary bond market can be a misleading gauge in calculating debt sustainability, as they can easily reach levels that could not be sustained indefinitely but can quickly drop once confidence is restored.

- Recognizing this dynamic, the discussion joins the current debate on Brazil by maintaining that although the spreads recently facing Brazil have been unsustainably high, they are likely to continue their post-election drop and the exchange rate is likely to rebound somewhat further, obviating a need for recourse to debt restructuring (under the assumption that President-elect Lula adheres to his pledge of fiscal prudence).

- For policy purposes, moreover, the official sector will usually do better to lean toward a type I error (providing support when it turns out there is insolvency) rather than a type II error (failing to provide support when the country could have been solvent). The basic reason is that the damage from default can be severe, as now being witnessed in the Argentine case.

- Similarly, an analysis of “when to default” shows that the currently fashionable view that countries should not “wait too long” to default implies a rather stringent set of conditions which may not often be met even if the chances of eventual default are better than even. The reason is that as long as there is a substantial probability of non-default in the second period, it can require a relatively large increment in the damage from waiting as opposed to defaulting in the first period for the probability-weighted benefit of early default to exceed the cost. Yet there is little empirical evidence that the time-slope of default cost is severe. Thus, it would be difficult to demonstrate that an Argentine default in mid-2001 could have avoided many of the shocks that accompanied the 2002 default.

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## Annex A. Table A-1

Private and Public Sector Disbursements to Crisis Economies  
(medium- and long-term, \$ millions)

Country and crisis year:	t0	t1	t2	t1+t2
<b>Mexico (1995)</b>				
Public	25566	2465	1751	4216
IMF	12142	0	0	0
Multilateral	2669	2090	1514	3604
Bilateral	10755	375	237	612
Private	17354	28971	27482	56453
Banks	8234	7137	12031	19168
Bonds	7902	20891	14885	35776
Other priv. cred.	1218	943	566	1509
Rescheduled	0	0	0	0
Reduced/ forgiven	0	0	0	0
Total	42920	31436	29233	60669
<b>Thailand (1997)</b>				
Public	9053	2501	3400	5902
IMF	2477	678.25	273.46	952
Multilateral	1062	1142	1118	2260
Bilateral	5514	681	2009	2690
Private	5705	9632	2903	12535
Banks	3343	5312	2895	8207
Bonds	2319	300	0	300
Other priv. cred.	43	20	8	28
Resch. or reduct.	0	4000	0	4000
Reduced / forgiven	0	0	0	0
Total	14758	12133	6303	18437
<b>Indonesia (1998)</b>				
Public	13997	7151	4428	11580
IMF	8758 a	1382	1122	2505
Multilateral	2369	2557	1650	4207
Bilateral	2870	3212	1656	4868
Private	8683	5609	2641	8250
Banks	4566	2285	2285	4570
Bonds	500	0	350	350
Other priv. cred.	315	24	6	30
Rescheduled	3302	3300	0	3300
Reduced/ forgiven	0	0	0	0
Total	22680	12760	7069	19830

Table A-1, continued

	t0	t1	t2	t1+t2
<b>Korea (1998)</b>				
Public	33272	4522	1509	6031
IMF	27400 b	0	0	0
Multilateral	4844	1067	37	1104
Bilateral	1028	3455	1472	4927
Private	31445	8673	12702	21375
Banks	1050	4,407	7781	12188
Bonds	6395	3878	4866	8744
Other priv. cred.	0	131	55	186
Rescheduled	24000	257	0	257
Reduced/ forgiven	0	0	0	0
Total	64717	13195	14211	27406
<b>Russia (1998)</b>				
Public	7247	1215	738	1953
IMF	5326	0	0	0
Multilateral	1293	561	574	1135
Bilateral	628	654	164	818
Private	19384	1612	29469	31081
Banks	6615	1021	204	1225
Bonds	11607	0	75	75
Other priv. cred.	1162	591	221	812
Rescheduled	0	0	17369	17369
Reduced / forgiven	0	0	11600	11600
Total	26631	2827	30207	33034
<b>Brazil (1999)</b>				
Public	23977	5256	n.a.	n.a.
IMF	8760 c	0	n.a.	n.a.
Multilateral	11520 c	4468	n.a.	n.a.
Bilateral	3697 c	788	n.a.	n.a.
Private	34844	41858	n.a.	n.a.
Banks	24958	30510	n.a.	n.a.
Bonds	9866	11336	n.a.	n.a.
Other priv. cred.	20	12	n.a.	n.a.
Rescheduled	0	0	n.a.	n.a.
Reduced / forgiven	0	0	n.a.	n.a.

Table A-1, concluded

	t0	t1	t2	t1+t2
Six countries				
Public	113111	23111	11827	29681
IMF	64862	2061	1396	3456
Multilateral	23757	11885	4893	12310
Bilateral	24492	9165	5538	13915
Private	117415	96355	75197	129694
Banks	48766	50672	25196	45358
Bonds	38589	36405	20176	45245
Other priv. cred.	2758	1721	856	2565
Rescheduled	27302	7557	17369	24926
Reduced / forgiven	0	0	11600	11600
Total	230526	119466	87024	159375

Source: World Bank (2002); IMF (2001); IIF (1999)

- a. Includes \$3 billion in late 1997.
- b. Includes \$11 billion in late 1997.
- c. Includes 1998
- d. Excludes Brazil 2001

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