

# **Making Sense of PSI**

## **On the role of the private sector in sovereign debt crises**

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## **Abstract**

Private Sector Involvement (PSI) in sovereign debt crises has been a hot topic in the international policy arena for years. Yet despite the large public interest in the issue, research on PSI and, generally, on the behaviour of private creditors during crises remains unsystematic and inconclusive. This article seeks to contribute to a common basis in research on PSI by focusing on one of the most trivial but also most crucial areas in this field: the missing consensus of what precisely is meant by PSI or “bail-in”. As shown in an extensive literature review in the first part of our paper, the literature still lacks a suitable definition and concept of PSI and private sector behaviour during crises. To improve this unsatisfactory situation, the second part of this paper proposes a new approach. We define PSI as any kind of efforts and contributions of the private sector in a context of sovereign financial distress. These “efforts and contributions” can range from softer forms, such as preventive talks, to harder forms like debt rescheduling, restructurings or even debt write-downs. Hence, in our view it is not only financial losses that should be considered when assessing PSI. To further conceptualize our new definition, we propose a time-line approach to PSI, with three discrete phases: phase 1 including “preventive efforts” in the pre-sentiment of a crisis, phase 2 involving “moderate costs” after negotiations started and phase 3 with “significant costs” after a default has occurred.

# 1 Introduction

The question of how best to respond to sovereign debt crises has been a key issue in the international policy arena in the last decades. A recurrent and highly controversial issue in these discussions was the role of the private sector in crisis prevention and resolution. In 1995, after the Mexican crisis was solved by a large official rescue package, the leaders of the G-7 initiated a new debate on the topic, pushing for greater “burden sharing” of private creditors during such crises. New policy terms, most prominently that of “private sector involvement” (PSI), came into use, heading the discussions for years to come. Arguably, the PSI debate was among the most prominent and controversial ones in recent decades, triggering a “veritable whirlwind of activity” (Rieffel 2003: 221) among international financial institutions, national governments, and the private sector.

Despite the considerable public interest on the issue, research on “private sector involvement” and, generally, on the behaviour of private creditors during crises has remained unsystematic and inconclusive. We believe that improved evidence on the role and behaviour of private creditors in crises could be a major benefit to a better understanding of policy wrongs and rights and improved crisis management. Why, for example, have some crises lead to much higher investor losses than others? What has determined the private sector to get involved voluntarily in some crises, while in others not? And what is the consequence of different types of such private sector involvement?

From our point of view, in order to tackle these and other related research questions, it is crucial to develop a solid understanding of what private sector behavior and/or private sector involvement during crisis really refers to. Does PSI include voluntary or preventive efforts of private creditors – or does it only refer to ex-post crisis resolution and coercive bailing-in? What is the appropriate way to measure private creditor behavior? And how can one best categorize the many debt instruments used in past crises? Until now, those questions have not been answered in a satisfactory way. Instead, as we will show, the literature still lacks a suitable definition and concept of private sector behaviour and PSI, even despite the many excellent publications on the topic.

This article has two moderate aims. First, in the search for a functional concept of PSI, it reviews and critically evaluates the existing literature on PSI and creditor behavior during crises (section 2). Second, it proposes a new, more functional concept and definition of PSI, which could be used for future research (section 3).

## 2 The Literature on PSI – A Critical Review

The literature on private sector involvement and, when taking into account the broader context, on the role of the private sector in sovereign debt crises more generally, is vast. This review consists of two main parts. In the first part, we start by reviewing the broader literature on private sector behaviour during financial distress episodes (section 2.1). The aim here is to give a concise overview on those features of creditor action in distress situations that have been researched. In the second part, we then turn to a number of more specific articles that explicitly focus on the concept and definition of PSI (section 2.2). Lastly, we provide an outlook on ways to improve the current status quo in the literature (section 2.3).

The first conclusion from our review is that the debt crisis literature does not provide a satisfactory general picture of the private sector's role during debt crises. The existing evidence, although insightful and of high quality, is quite scattered, covering only a series of sub-aspects of private creditor behaviour during crises. Our second conclusion, when looking to the more specific PSI literature, is that there are only very few contributions that do provide any functional definition of "PSI" or "bail in".<sup>1</sup> Most often, PSI is simply used as a self-explanatory buzzword. However, the concept is much less self-explanatory than it might seem at first. In fact – and this is our third main conclusion – the perspectives on, and the understanding of PSI, differ considerably between authors. (It is remarkable that a standard publication in this field simply postulates that no consensus on the concept of private sector involvement and commitment in debt crises appears to exist.<sup>2</sup>

### 2.1 The Broad Literature on Private Creditor Behaviour in Crises

The last decades have brought about an enormous body of literature on sovereign debt issues.<sup>3</sup> Among the many topics under consideration, the phenomenon of sovereign default has received particular attention.<sup>4</sup> To keep this

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<sup>1</sup> Note that, in essence, the concept of PSI means the same as other related terms that have been used over time such as "bail-in", "burden sharing" or "constructive engagement of the private sector" (Roubini and Setser 2004: 102)

<sup>2</sup> See Roubini and Setser (2004: 140).

<sup>3</sup> Eaton and Fernandez (1995) is a widely cited review article

<sup>4</sup> Empirical research on debt crises has mainly focused on the determinants of default and

review concise, we will mainly focus on those contributions in the debt crises literature that help to explain the concept and different elements of PSI. In other words, we will review mainly those contributions that have a specific focus on private creditor behaviour – be it before, during, or after crisis episodes.

The empirical and theoretical contributions on creditor behaviour during crises can be grouped into three broad categories: (i) literature directly related to the policy debate on a new international financial architecture, including studies on creditor moral hazard (ii) articles that analyse the determinants of capital flows during debt crises, including those on the catalytic effect of IMF lending, and (iii) articles on the terms of sovereign borrowing in crisis episodes. The following three subsections are devoted to each of these categories.

### **(i) Literature on the Reform Proposals for Crisis Resolution**

The discussions on PSI were closely intertwined with a broader debate on a new “International Financial Architecture” for the 21<sup>st</sup> century. Since the mid 1990s, many differing legal or institutional reform proposals have been floated.<sup>5</sup> A core issue in these discussions was how to mitigate adverse creditor behavior such as moral hazard or a “rush to the exit” by investors facing a crisis. As often, the policy debate was accompanied by a large analytical literature and a related discussions among researchers. Interestingly, this academic literature examines some crucial aspects of private creditor behavior in crises and should thus be mentioned in some detail.

Regarding the theoretical contributions, a series of authors have proposed models to evaluate the merits of differing policy proposals. Gai et al. (2004) analyse how different official sector interventions affect the efficient prevention

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the construction of early warning systems (see, for example, Manasse et al. (2003) or Detraigache and Spilimbergo (2001) as well as on the predictive power of credit ratings (Reinhart (2002) or Sy (2004)). Similarly, a large number of theoretical contributions have identified and discussed possible factors for the occurrence and characteristics of sovereign default. (See for example chapters 2 and 3 in Roubini and Setser (2004) for a good overview.)

<sup>5</sup> In essence, proponents of a more “statutory approach” to crisis resolution, i.e. through the establishment of an international bankruptcy procedure for sovereigns, stood in opposition to advocates for a more market-based, case-by-case approach, i.e. through the introduction of collective action clauses in bond contracts. For a detailed discussion of the debate see Eichengreen (2003), Kenen (2002) or Roubini and Setser (2004)

and resolution of crises. Their results and those of Morris and Shin (2004) underline the crucial role of proper information on fundamentals for private creditor behaviour, i.e. through public sector monitoring and surveillance efforts. Haldane et al. (2005) examine the welfare implications of competing policy proposals distinguishing between liquidity and solvency crises. Amongst other, they conclude that coordinated lending by private creditors is only a second best solution for liquidity crises, while in solvency crises debt-write downs should be preferred to IMF bail-outs. Haldane et al. (2005) find that a statutory mechanism and third party intervention is only necessary in case of serious coordination problems between the debtor and private creditors. For this reason, i.e. failed creditor coordination, Miller and Ghosal's (2004) analytical article argues in favour of a formal sovereign bankruptcy procedure.

Two recent empirical papers by Eichengreen and Mody (2004) and Becker et al (2003) contributed to the debate by analyzing the reaction of private creditors to the use of collective action clauses (CACs) in sovereign bond contracts - a legal feature which might facilitate PSI through easier restructurings. Concretely, both articles analyse whether CACs increase the borrowing costs for emerging market sovereigns but come to quite contradicting results. Another type of empirical contributions tests for creditor moral hazard during crisis episodes, mainly by examining the reaction of market participants to official bail-out announcements. Most of these articles focus on the private sector's behavior after official bail-out announcements. Lane and Phillips (2000) analyse the bond spread effect of news about the potential size of IMF emergency lending, but find little indication for moral hazard, except in the Russian crisis case. Based on a comparably large news sample, Haldane and Scheibe (2003) test the same by employing stock market data of major emerging market creditor banks, which, they conclude, provide some evidence of moral hazard.<sup>6</sup> Zhang (1999) and Kamin (2004) focus on the Mexican crisis bail-out in 1995 to test moral hazard, finding only weak evidence. However, an article by Dell'Ariccia et al. (2002) strongly criticizes to rely on the Mexican case. In their much perceived event study, they focus on the Russian crisis instead, providing robust evidence for a reduction in investor moral hazard behavior.<sup>7</sup> All in all, when accounting for serious measurement

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<sup>6</sup> Specifically, Haldane and Scheibe (2003) find that shares of banks largely exposed to emerging markets, regularly outperform the market after news on sizable IMF loans in emerging markets became public.

<sup>7</sup> Specifically, after computing pre- and post-crisis models for a sample of countries, Dell'Ariccia et al. (2002) test whether the Russian non-bailout had significant effects on (i)

problems in many studies (see Dell'Arriccia et al. 2002), most of the reported evidence on moral hazard is quite inconclusive, maybe apart from evidence on the Russian case.<sup>8</sup> It does not allow to derive any general conclusions on the creditor incentive behavior during crises.

## **(ii) Literature on Private Capital Flows in Crisis Episodes**

Another important body of research connected to PSI has analysed private capital flows during crisis episodes.<sup>9</sup> It should be kept in mind, that capital movements, i.e. the composition, size and direction of private investment flows, are crucial for the success of failure of crisis resolution and PSI. If creditors "rush to the exits" in situations of financial distress, they are likely to make things worse. On the other hand, fresh money inflows, such as the spontaneous lending during the Mexican crisis, can help to avoid serious adverse consequences of a crisis.

One crucial determinant of creditor action during crises that has been identified is the behaviour of the IMF. The literature on catalytic finance has focussed on this, examining if and how private capital flows towards distressed countries are influenced by official lending announcements.<sup>10</sup> In an excellent review, Díaz-Cassou et al. (2006) summarize the main determinants of such catalytic flows: (i) the macroeconomic and political conditions in the crisis countries (ii) the kind of the IMF program (long vs. short term, conditional vs. unconditional) and (iii) the program's total volume. Overall, the evidence suggests that the catalytic effect is large only in countries which have "intermediate" fundamentals and those that have not been hit excessively by the crisis (Eichengreen and Mody 2001 ; Mody and Saravia 2003). Bad performers appear to receive less catalytic flows (Bordo, Mody et al. 2004). Additionally, Eichengreen et al. (2006) and Díaz-Cassou et al. (2006) provide some evidence that programs for crisis prevention have a

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the absolute level of spreads, (ii) their sensitivity towards changes in fundamentals and (iii) their dispersion across countries. The robust results confirm the incidence of all three effects, indicating to strong moral hazard.

<sup>8</sup> Roubini and Setser (2004: 214) state that, "apart from a few well-known moral hazard plays (Russia in 1997 and early 1998 and Turkey from 2001 on) there is little evidence that expectations of future bailouts systematically distort risk spreads or flows."

<sup>9</sup> Note that there is also a large literature on the general determinants of capital flows to emerging markets, which is not directly related to crisis episodes. For a recent overview see Daude and Fratzscher (2006) or Alfaro et al. (2005).

<sup>10</sup> Note, that this short overview portrays only the main empirical evidence. See Morris and Shin (2004) and Corsetti et al. (2006) for analytic models of IMF's catalytic financing.

particularly positive effect on private flows.<sup>11</sup> This literature clearly indicates that IMF behaviour is a major factor related to PSI.

The second strand of literature that should be taken into account when considering capital flows during crises, are those articles on contagion, focusing amongst other, on the herd behaviour of private creditors in withdrawing capital from crisis countries. A number of theoretical studies has illustrated how rumours or unexpected changes in fundamentals can lead to such contagious behaviour and the occurrence and spread of financial crises.<sup>12</sup> Others, such as Goldstein et al. (Goldstein, Kaminsky et al. 2000) and Kaminsky et al. (2004), were able to provide empirical evidence for contagion, showing that private creditors, such as international banks and mutual funds, play a crucial role in transmitting of crises.<sup>13</sup> Regarding banks, both Heid et al. (2005) and Van Rijckeghem and Weder (2003) show clear evidence for contagion during the Russian crisis. Similarly, Gande and Parsley (2005) show for the bond market, that a change in the sovereign credit rating of one crisis country can have contagious effect on the credit spreads of other emerging markets (see also Eichengreen et al. 2001). As a general tendency, an interesting article by Mauro et al. (2002) finds that, in recent times, investors appear to pay less attention to an individual country's characteristics than in earlier decades. Instead, today's investors appear to invest and divest in groups of countries simultaneously. Given the rich and convincing evidence on the topic, it seems quite obvious, that contagion and herd behaviour is a major influencing factor of PSI.

### **(iii) Literature on the Terms of (Re-)Borrowing During Sovereign Distress Episodes**

A third and last subfield of related research, are those articles examining the terms, i.e. the cost and maturity structure, of sovereign lending in distress episodes.

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<sup>11</sup> Interestingly, bond issuance seems to respond more to IMF interventions than bank lending, which is attributed to the fact that the IMF's role as a "delegated monitor" is much more important in bond markets than for banks, which frequently have their own surveillance divisions (Eichengreen and Mody (2001) and Eichengreen et al. (2006)).

<sup>12</sup> See Pericoli and Sbracia (2003) for a good overview on the theoretical literature on contagion.

<sup>13</sup> Dungey et al. (2004) provides a comprehensive literature review on the empirical modelling of contagion.



Regarding the relationship between debt crises and market access conditions, a very prominent contribution comes from Reinhart et al. (2003). In their paper on “debt intolerance”, the authors emphasize the crucial role of a country’s debt history, i.e. the number and characteristics of past defaults, for today’s access to reasonably priced foreign capital. Similarly, but with a special view on the bond market, Eichengreen et al. (2001) find evidence that past crises strongly influence the market access of emerging market economies, namely the price and volume of bonds issued. Regarding banks, Banczúr and Ilut (2006) come to a similar result, finding that both past and predicted future defaults clearly determine the loan spreads demanded from sovereign borrowers.<sup>14</sup>

Other articles have analysed the impact of defaults on the maturity structure of borrowing. In their early models with lenders as rational agents, Eaton and Gersovitz (1981) and Sachs and Cohen (1982) illustrate that lenders typically respond to increased default risk by shortening the maturity of their loans (besides, of course, quantity rationing). Rodrik and Velasco (1999) and Buch and Lusinyan (2003) provide some empirical evidence for this, finding that richer economies with deep financial markets and little debt have much easier access to long term borrowing. Lastly, in a contribution analogous to the catalytic finance literature, Marchesi (2001) finds that the announcement of IMF programs tends to increase the probability that commercial creditors agree to debt reschedulings and a lengthening of maturities. Obviously, both the evidence on the maturity structure and the pricing terms of lending cover only a quite limited subfield of creditor behaviour during crises.

## **2.2 The Specific PSI Literature**

When referring to the “specific” PSI literature, we mean three quite distinct categories of articles, which have one thing in common: They explicitly refer to the debate on and the concept of PSI or bail-in. The first category comprises the many policy reports on PSI published by the official sector. The second contains a number of more analytical studies on the PSI debate published in academic journals. Finally, in group number three, we bundle those contributions that have made a clear effort to define and categorize the concept of PSI. The aim of this whole exercise is to scrutinize each of these three categories for their use and understanding of the concept and definition of PSI.

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<sup>14</sup> This finding is in accordance with earlier contributions such as Ozler (1993).

### **(i) Policy reports on PSI – The official sector view**

PSI was a true “hot topic” in the international public debate since 1995 (Haldane 1999). Accordingly, over the years, many reports and statements on PSI were published by different official players. Among the more important documents in this debate are the reports by the Group of 10 (1996), the Group of 22 (1998), the Group of 7 (2000), the contributions by the Bank of England and the Bank of Canada (Haldane and Kruger 2001), the many IMF reports on the issue IMF (1999 ; IMF 2000 ; 2000 ; 2001 ; 2003) as well as the voices from the US treasury (Rubin 1998 ; Taylor 2002).

It is interesting to realise that in all of these reports the “official sector”, developed an inherent consensus of what PSI refers to. Roubini and Setser (2004: 7) nicely summarize this view: “PSI became the accepted jargon to define the official sector’s efforts to obtain crisis financing from the private creditors of a crisis country”. It is quite obvious, that under this consensus, PSI is used as a mere euphemism for a policy goal, namely, to reduce official funding in crisis resolution by “binding-in” private investors as much as possible.

With such a definition in mind, the political message behind the propagation of PSI is clear: “Carpenters and plumbers” taxes should not be used “to pay for the bailout of poor performing emerging market economies” (Roubini 2004: 104). Instead, “creditors and investors [should] bear the consequences of their decisions as fully as possible” (U.S. Treasury secretary Rubin in a speech on January 21, 1998). At this point, it seems important to emphasize, that the official understanding of PSI as a policy goal remains rather blurry and unspecific. Hence, it differs quite a lot from an understanding of PSI as a coherent concept.

### **(ii) Analytical Literature on the PSI debate**

A small number of researchers have analysed the PSI debate from a more academic point of view than the above policy reports. Most notably, one should mention the contributions by Eichengreen and Rühl (2001), Tillmann (2005), McBrady and Seasholes (2000) and Lipworth and Nystedt (2001) that study the private sector reactions to PSI policies. Given that these articles explicitly refer to the terms of bail-in and PSI, we expected to find clearly developed and common conceptual foundations underlying for the understanding of PSI. Unfortunately, however, this turned out not to be the case.

In essence, Eichengreen and Rühl (2001) argue that official announcements to forcefully bail-in the private sector are not credible, and will thus not affect investor behaviour. Tillmann and McBrady and Seasholes (2000) oppose this

view. In their empirical contributions, they show that the market actually reacts to PSI policy announcements through changed prices and/or risk perceptions. Quite different is the argument put forth by Lipworth and Nystedt (2001), who use a theoretical model to show that past experiences are generally not well suited to evaluate the future efficacy of PSI initiatives. The authors emphasize the role of forward looking adaptation of market participants.

Surprisingly, none of these more analytical articles clearly and explicitly defines PSI or bail-in – even though these terms are deliberately used and at the core of the research question. Apparently, given the lack of a clear-cut general consensus, the authors have implicitly adopted the official sector’s “accepted jargon”. Although insightful with a view on the PSI policy conclusion<sup>15</sup>, these studies do not show any own effort to define the concept. They clearly lack a careful statement on what PSI really stands for, on how it could be measured or grasped and which elements and instruments it could include.

### **(iii) More functional Attempts for a Definition of PSI**

Opposed to the above, a number of authors have proposed some helpful first attempts to define and discuss the concept of PSI. Most notably, there is a contribution by William Cline, former deputy managing director and chief economist of the IIF and senior fellow at the Institute for International Economics. As of today, his contribution includes probably the most extended effort to define and measure PSI. Cline (2004) classifies modes of PSI as a function of the degree of private creditors’ voluntariness to engage in crisis resolution. He views PSI clearly from the perspective of private creditors, opposed to the above official sector view. In more detail, Cline proposes three main categories of PSI: spontaneous, quasi-voluntary and involuntary PSI. He then goes on and attributes a series of past crises and their resolution instruments to each of these categories.<sup>16</sup>

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<sup>15</sup> For example, Tillmann (2005) provides a very nice overview on news events in the debate between 1998 and 2000.

<sup>16</sup>The PSI instruments, in descending order of voluntariness and linked to past crises, are the following: Spontaneous lending (Mexico 1994-95), Foreign direct investment, Maintenance of bank credit lines (Brazil 1999), Medium-term conversion of bank credit lines (Korea 1998), London-club rescheduling (1980s debt crisis), London club concerted lending/new money (1980s debt crisis), Bond exchange maintaining value (Pakistan, 1999, Ukraine, 2000, Argentina, 2001), Brady bond debt reduction (1980s debt crises), Bond exchange and forgiveness (Russian GKO, 1998, Ecuador 1999), Bonds rescheduled through collective action clauses, Officially approved Standstill (Ecuador 1999), Outward capital

As emphasized by Leiderman (2004), Cline's most valuable contribution is probably, that he discusses a series of measurement issues and provides first (very) rough estimates on the size of PSI in past crises. Regarding the time period for measuring PSI, Cline opts to consider "the period of the crisis and a reasonable subsequent period, for example the crisis year and the following year or two" (Cline 2004: 67). He also argues that gross inflows rather than net inflows should be taken into account and that, both external and domestic creditor contributions, should be considered when measuring PSI (Cline 2004: 67).<sup>17</sup>

In another insightful contribution, Roubini (2004: 101-102) clearly shares Cline's view to categorize PSI on a spectrum of voluntary and more involuntary types. He states that defaults such as in Argentina, Russia or Ecuador should be regarded as very coercive PSI, while cases with large bail-outs (Mexico in 1995) or semi-voluntary rollover agreements (Brazil in 1999, Turkey in 2001) were "softer" types of PSI. Similarly, Roubini and Setser (2004: 373) categorize PSI and ways to enforce private crisis financing, into "voluntary and catalytic means", "semi coercive" steps and "fully coercive" steps. In their view, the amount or degree of PSI is equal to the mere volume of debt that was rolled over and/or exchanged (Roubini and Setser 2004: 148). No further differentiation or any discussion on measurement issues is provided.

More general and impartial definitions of PSI have been rare in the literature. One pleasant exception can be found in a recent ECB Occasional Paper by Thimann et al. (2005: 6). The group of authors from a standing committee within the European System of Central Banks defines PSI as follows: "The term private sector involvement [...] refers, broadly speaking, to the contributions or efforts of private sector creditors to the crisis resolution process". Note that, as it stands, this definition is much more general than the above. In their analysis, however, Thimann et al. mainly limit private sector involvement to financial burden sharing.<sup>18</sup>

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controls (Malaysia 1997-98), Default and Arrears (Latin America in the late 1980s, Indonesia, 1998, Russia and Ecuador 1999, and Argentina 2002).

<sup>17</sup> Based on these definitions he estimates a sum of 239 billion USD of PSI between 1995 and 2002, of which 119 billion USD are classified as voluntary or quasi-voluntary and \$120 billion as involuntary (Cline 2004: 70)

<sup>18</sup> In the same paragraph on the PSI definition they state: "specifically, it means that the private sector shares some of the costs of a financial crisis by incurring itself financial losses, such loss-bearing can result of a loss in principal (write-off of debt), a lengthening of the repayment schedule or the reduction in interest payments" (Thimann et al. 2005: 6).

## 2.3 Summary and Critique

The broader debt crisis literature provides interesting and insightful evidence of various aspects of PSI and creditor behaviour during crises. It is clear that factors such as proper information on fundamentals, creditor coordination problems, moral hazard, the catalytic role of the IMF, herding behaviour and contagion or a country's past debt history all appear to shape the behaviour of private creditors during crises and hence the characteristics of private sector involvement. However, the literature does not provide a coherent and well-delimited overview of the private sector's role. Indeed, the literature looks scattered, with each strand covering merely a subfield of the bigger topic, i.e. the private sector's role and behaviour in crises. Other researchers, such as Morris and Shin (forthcoming) or Detragiache and Spilimbergo (2004) share our view that more research is needed in examining the overall private sector behavior during crises.<sup>19</sup> After all, our impression of the broader debt crises literature is that it does not allow us to derive any general understanding of PSI.

As the second part of the review on the more specific PSI literature indicates, there have been some attempts of PSI definitions. We do believe however, that those definitions have serious shortcomings. The official sector view on PSI as a "policy goal" is ill-suited for systematic analysis. Their conceptualizations lack clarity, mainly because the bulk of contributions and reports refer to PSI as catch-all category, avoiding the politically delicate concrete specification of types of instruments or contributions that would count as private sector involvement or bail-in.

Although Cline and Roubini's definitions are more specific, they are neither comprehensive nor rigorous. Their proposed categorizations are mainly anecdotal and lack a clear systematic foundation. For example, Cline's (2004) dividing line between "voluntary" and "quasi-voluntary" remains blurry. His categories are built inductively, based on his own knowledge and judgement of past debt crises. Yet, he refrains from offering any objective criteria to distinguish and delimit the categories and subcategories he presents. Likewise, Cline does

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<sup>19</sup> Morris and Shin (forthcoming) state that "more empirical work is called for in examining the behavior of short term claim holders" [in crises]. Similarly, Detragiache and Spilimbergo (2004: 385) emphasize that "more theoretical and empirical research is needed to understand the choice between different types of borrowing instruments" [in the debt market/ during crises].

not specify the criteria used to divide different types of instruments into the presented categories of PSI.

Summarizing, we think that, as of today, there is no convincing definition of PSI, nor an appropriate categorization of its “degrees” and types. Likewise, there is no comprehensive qualitative or quantitative assessment of PSI in past decades.<sup>20</sup> We believe that this poses a main obstacle to crisis diagnosis and to the understanding of what the determinants and consequences of private creditor behaviour in crises are. Our goal is thus to develop a more concise definition of PSI and its sub-categories, which, amongst other, should allow for econometric analysis. Some first endeavours in this direction are presented in the next section.

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<sup>20</sup> Cline (2004) covers only the years between 1995 and 2002. Moreover, the specific calculation methods and data sources remain somewhat opaque.

## 3 A Time Line Approach to PSI

### 3.1 Making sense of PSI – a new and broader definition

Adopting a working-basis for consistent research on PSI involves three steps. First, definitions are needed. Second those definitions have to be complemented with clear practical categorizations to apply the abstract definitions to cases across space and time. Third, on the basis of such categorizations, a data collection on PSI cases and categories becomes possible. The remainder of this paper will focus on the first two of the three steps.<sup>21</sup> As was portrayed above, the few existing attempts to define PSI have in common that they conceptualize PSI as a variable that can be separated into several categories, degrees or phases.<sup>22</sup> Although we share this view, our main point of critique of the respective approaches was that they remain implicit about what characterizes each phase. Moreover, they lacked accurate criteria to distinguish between different PSI categories.<sup>23</sup>

**We define PSI as any kind of intentional, informal or formal, efforts and contributions of the private sector** starting at that point in time when a debt crisis becomes likely (i.e. when a technical default already took place or when there is a strong pre-sentiment of a default amongst creditors). This definition builds on the previous approach of Thimann et al. (2005), in that all “efforts and contributions” are taken into account. However, whereas the ECB authors constrain the concept to financial costs, we go beyond this definition, including also the not directly measurable symbolic costs of preventing crises (crises prevention most often involves moderate costs, e.g. from providing new credit

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<sup>21</sup> Additionally, we are currently trying to put together an accurate set of crisis cases. We seek to combine statistical analysis - based as good and inclusive a sample as possible - with more in-depth case studies on debt crises in the 1980s and 1990s. (For a comparison of quantitative and qualitative measures of debt crises and the data sets used see Detragiache and Spilimbergo (2004), Beim and Calomiris (2001), Pescatori and Sy (2004), Stuzenegger and Zettelmeyer (forthcoming)).

<sup>22</sup> Cline (2004), Roubini (2004), Roubini and Setser (2004), Haldane et al. (2004), Ghosal and Miller (2004).

<sup>23</sup> As most researchers in the field of sovereign debt, the term private sector used here refers to the financial ambit, i.e. mainly to banks and bondholders, including mutual funds etc.. We do not aim at an analysis like Boresztein and Panizza (2006) or Arteta and Hale (2005).

lines), as well as the more significant costs arising from debt rollovers, restructurings and write downs.

Previous approaches, especially those from the official sector, focus mainly on the very restricted burden sharing aspect of private sector engagement. Only Cline (2004) includes some aspects of voluntary or ex-ante efforts in his concept. In our view, preventive contributions providing crisis support should definitely be taken into account when assessing the private sector's role during debt crises. In fact, in many crises preventive contributions have been even more important than ex-post efforts to resolve the distress situation (e.g. Korea 1997, Thailand 1997, Mexico 1995).

Hence, a comprehensive definition of PSI should include elements both of crisis resolution and of crisis prevention.<sup>24</sup> Private sector attempts to prevent or handle a crisis taking place before the point of a standstill is reached can include non-pecuniary efforts such as phone calls, the provision of in-house expertise to a debtor or even the prolongation of a credit-line. One obvious example of such preventive coordination efforts would be the 'Country Clubs' proposed by the IIF, envisioned as a forum for debtor/creditor dialogue at an early stage to avoid a deterioration of the situation happening in the first place (see Haldane (1999)). Another example would be coordinated arrangements among creditors to maintain short term credit lines.

Compared to other definitions in the literature our notion of PSI is more inclusive confronting us with a number of measurement issues, particularly concerning the "softer" components of PSI. In the following we would like to further explain the perspective we are taking in our analysis and to develop the term PSI.

### **3.2 Three Phases - a time line approach to PSI in debt crisis**

So far, we have tried to provide a new and more inclusive definition of PSI. In this sub-section, we make the attempt to develop an operationalization of our definition to allow for consistently framed research of PSI on the basis of our

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<sup>24</sup> Rieffel (2003: 220) hinted at this problem. In his own description of the PSI debate he explicitly "focuses on only one aspect of PSI, namely, the machinery used for sovereign debt workouts when all attempts to avoid a default have failed" decidedly not including "the inherently more important aspect of crisis prevention."



definition. In contrast to most of the existing literature, we suggest a time-line approach to PSI.

As was described above, the economic literature on private creditor behaviour and PSI offers rather “simplistic” approaches, narrowing crisis definitions down to a single quantifiable event – in other words, a debt crisis is set equal to a default, defined as a halt in debt servicing or an increase in bond spread beyond a certain predefined threshold (a notable exception is Arteta and Hale (2005)).<sup>25</sup> In contrast to this literature we try to conceptualize crises as processes and seek to answer two questions: First, what are the different phases of an “ideal type” crisis that we can construct on the basis of many different cases? Second, which are the financial instruments used in each of those phases?

Looking at patterns of processes of sovereign debt crisis management over space and time we find that three clearly distinguishable phases can be identified: phase 1 entailing “preventive efforts”, phase 2 “moderate losses” and phase 3 “significant costs”. Each phase is characterized by certain features, mainly referring to the instruments that are applied to prevent or to resolve crises.

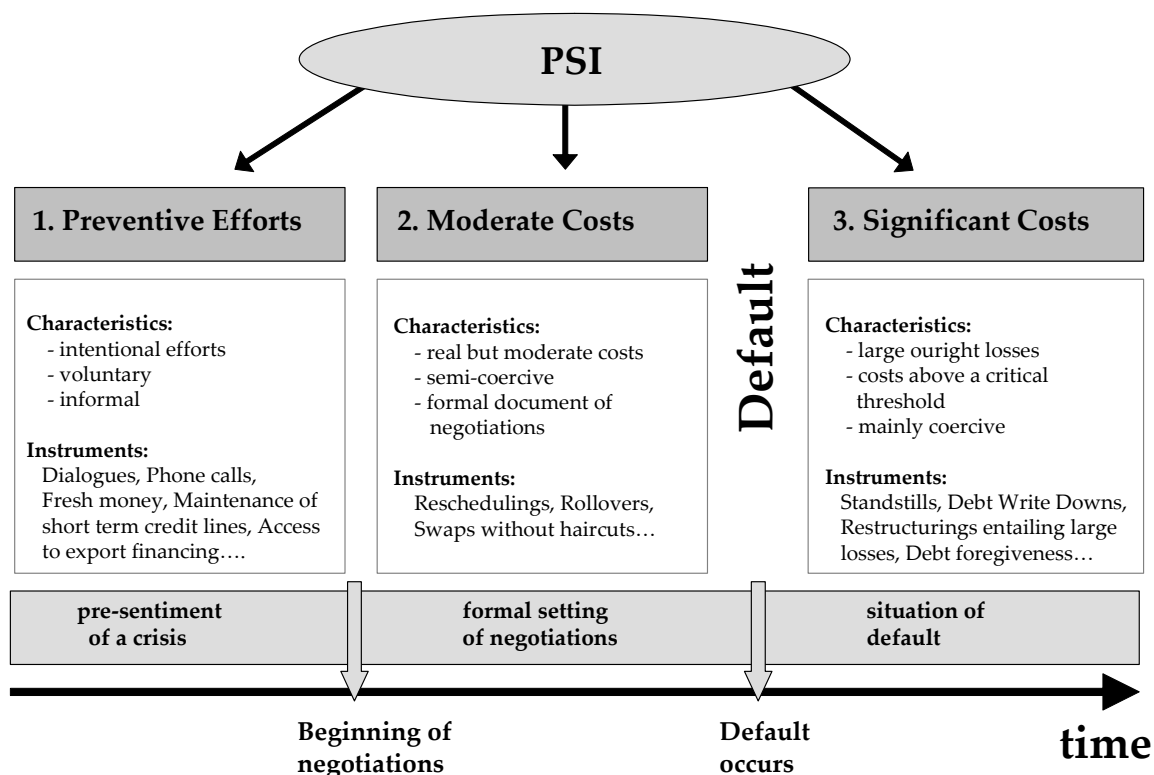
Phase 1 is based on the crucial distinction between the “normal” state of affairs in a debtor-creditor relationship and a context of distress. If certain criteria are met, then the case qualifies as “crisis”, even if the following phases that can be components of more severe crises are not met. For instance, if a country was inhibited from servicing its debtors at a certain point in time due to illiquidity problems but obtains an informal guarantee by its debtors to preserve the level of capital inflows and prevent a rush-to-the-exit, the case will be classified in phase 1. However, assuming that the abovementioned instruments are sufficient to solve the problem, the country will be able to continually pay back its loaned debt and to service bond holders. The case will not necessarily be classified in phase 2, which is characterized by more formal negotiations between sovereign and creditors involving more severe measures like formal roll-overs, debt reschedulings including changes in maturities and grace periods; nor that it will reach phase 3, characterised by debt restructurings with outright losses.

Figure 1 illustrates both our definition of PSI and the time line approach, listing a number of exemplary debt instruments in phase 1, 2 and 3.

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<sup>25</sup> Similar approaches integrating “time” as a crucial variable in “debt games” during liquidity crises have been presented by Haldane (2004) and Ghosal and Miller (2004).

Figure 1: A time line approach to PSI



We define **Phase 1** on the basis of (i) a presentiment of a debt crisis; (ii) an intentional effort by the private sector to solve the pre-crisis; and (iii) some kind of informal agreement between debtor and creditors involving – at most – emblematic costs to prevent the crisis. **Phase 1** may thus include any promise of creditors to maintain credit-lines or maintain the overall level of capital inflows. It is important to note, however, that the private sector regards any measures taken as **intentional, informal and voluntary** efforts to prevent a crisis. There may be a **pre-sentiment** that an illiquidity-problem is on the fore and the hope that a mild intervention will prevent it. The kind of PSI consisting of ex-ante engagement is thus referred to as “**private sector preventive efforts**”. The term should be regarded as a proxy for a range of creditor efforts including attentive calls by chief executives of foreign banks or financial intermediaries to finance

ministries in EMEs or promises to keep inter-bank credit lines to keep the level of inflows and prevent bank-runs. Another example would be the promise to increase or maintain export credits in times when money increasingly leaves the country. Private sector preventive efforts can thus be seen distinct from private sector involvement associated with higher losses at later points of a crisis. The key distinction between phase 1 and phase 2, however, lies in the answer to the question whether one can speak of a rather informal or formal nature of dialogue between creditors and debtor.

We define Phase 2 on the basis of (i) a formal commitment to some kind of burden sharing by creditors; (ii) an agreement on that commitment reached in a clear negotiation setting between the sovereign and major creditors; and (iii) real losses – beyond mere symbolic costs – for the private creditors. A distinctive criterion to identify phase 2 is the existence of a written (preliminary) formal document. Phase 2 instruments clearly demonstrate that at either one or both sides of the negotiation table awareness arises that the country is in deep trouble due to illiquidity if not insolvency. Both sides anticipate greater losses from a laissez-faire strategy than from prompt negotiation. Thus, although the step to the negotiation table may be considered a voluntary decision the financial consequences evolving for the private sector during negotiations can no longer be regarded as completely voluntary. In this light Cline's terminology of "quasi-voluntary" perhaps describes best how the private sector feels about first round debt negotiation results. Phase two instruments can be rollovers, rescheduling and restructuring agreements entailing real costs to the private sector. We coined this phase of the negotiation process Private Sector Moderate Costs because although creditors are likely to incur losses and inconveniences, these remain rather small, especially compared to the costs expected to result from deeper crisis and default.

We define Phase 3 on the basis of (i) the presence of a context of "default" – i.e. a clear understanding by creditors that a substantial part of the debt payments is not going to be serviced any longer; (ii) significant and related outright losses for the private sector; and (iii) crisis negotiations characterized by a context of conflict. The dividing line between phase 2 and phase 3 of crisis workouts has to be seen in the presence of outright losses following default. After a country passed a certain threshold of non-servicing its creditors the private sector seems prepared to negotiate over a series of debt restructurings affecting the face value of interest or principal payments or debt write-downs directed at debt stock reduction. Phase 3 comes down to what we call "Private Sector Significant

Costs”, meaning that private investors have to accept wealth reductions going clearly beyond what could be considered moderate losses.

We choose the three phases – Preventive Efforts, Moderate Costs, Significant Costs – to describe that there are theoretically distinct categories of involvement of the private sector. Everyone familiar with crisis cases will immediately see that those categories or phases still contain some arbitrary or not fully objective criteria. However, we are deeply convinced that this timeline approach provides a sufficiently detailed set of characteristics that allows attributing crisis events and processes to different categories making research on PSI both more detailed and generalizable.

Our approach is meant as a first attempt to account for what is going on during crisis workouts over time. Whereas phase 1-instruments, certainly remain most difficult to measure there is already a number of approaches to built on in our attempt to capture the characteristics and criteria of phase 2 and phase 3 (for measurement issues see Cline (2004), Roubini and Setser (2004) and for data on the beginning of negotiation see Arteta and Hale (2005)). Clearly, in this field of research the devil is in the details, namely the details of logically categorizing a plethora of different financial instruments developed to resolve and ideally to prevent debt crises. Our next steps will be to further develop logically coherent categories and eventually applying them to a large number of crisis cases. Meanwhile, we aim to measure financial losses by the private sector coming along with employing particular instruments brought into play to prevent and resolve crises.

## **4 Conclusion**

A key aim of this article was to critically evaluate the literature on the concept of PSI and private creditor behaviour during crises. Both a broader review on private creditor behaviour in crises and a closer look on existing approaches to defining PSI did not provide us with a functional and comprehensive concept. In our view, although deliberately used, nobody really knows what is meant by the policy buzzword PSI.

We think that, as of today, there is no convincing definition of private sector involvement, nor an appropriate categorization of its “degrees” or types. Likewise, there is no comprehensive qualitative or quantitative assessment of PSI in past decades. We believe that this shortcoming in the literature poses a main obstacle to crisis diagnosis.

In an attempt to overcome the current unsatisfactory status quo, this paper provides a first tentative proposal of a more concise concept of PSI and the private sector's role in crisis resolution. We define PSI as any kind of informal or formal efforts and contributions of the private sector in distress episodes. These "efforts and contributions" can range from softer forms, such as preventive talks, to harder forms like reschedulings, restructurings or even debt write-downs. In our view it is not only financial losses that should be looked at when assessing PSI, but all kinds of intentional efforts from the private sector to ameliorate the situation.

To further conceptualize our new definition, we propose a time-line approach to PSI, with 3 three discrete phases: phase 1 including "preventive efforts" in the pre-sentiment of a crisis, phase 2 involving "moderate losses" after negotiations with creditors started and phase 3 with "significant costs" after a default has occurred. Starting from here much remains to be done. The main challenges will be to ascribe the various types of private creditor behaviour and related instruments to each of these phases. Moreover, a series of measurement problems will have to be tackled before it will be possible to quantify PSI and its degrees in a historical perspective.

Our aim is to construct an index of "Degrees of PSI" which can be used in econometric analysis. With such an index at hand, it will be possible to explore a series of open research questions. Most prominently, it may allow us to examine which political and economic factors determine the degree and characteristics of PSI in debt crises.

## References

- Alfaro, L., S. Kalemli-Ozcan and V. Volosovych (2005). "Capital Flows in a Globalized World: The Role of Policies and Institutions." NBER Working Paper 11696.
- Arteta, C. and G. Hale (2005). "Are Private Borrowers Hurt by Sovereign Debt Rescheduling?" Working Paper, Department of Economics, Yale University.
- Banczúr, P. and C. Ilut (2006). "Determinants of Spreads on Sovereign Bank Loans: The Role of Credit History." Central Bank of Hungary Working Paper 2006/1.
- Becker, T., A. Richards and Y. Thaicharoen (2003). "Bond Restructuring and Moral Hazard: Are Collective Action Clauses Costly?" *Journal of International Economics* 61 (1): 127-161.
- Beim, D. O. and C. W. Calomiris (2001). *Emerging Financial Markets*. New York, McGraw-Hill, Irwin.
- Bordo, M. D., A. Mody and N. Oomes (2004). "Keeping Capital Flowing: The Role of the IMF." *International Finance* 7 (3): 421-450.
- Borensztein, E. and U. Panizza (2006). "Do Sovereign Defaults hurt Exporters?" IADB Working Paper 1018.
- Buch, C. M. and L. Lusinyan (2003). "Determinants of short-term Debt: A Note." *Journal of International Financial Markets, Institutions and Money* 13 (2): 157-170.
- Calvo, G. A. (2002). "Globalization Hazard and Delayed Reform in Emerging Markets." *Economía* 2 (2): 1-29.
- Cline, W. (2004). Private Sector Involvement in Financial Crisis Resolution: Definition, Measurement, and Implementation. In: Haldane, A. G., *Fixing Financial Crises in the Twenty-first Century*. London, Routledge: 61-94.
- Cline, W. R. (1995). *International Debt Reexamined*. Washington, D.C., Institute for International Economics.
- Corsetti, G., B. Guimaraes and N. Roubini (2006). "International Lending of Last Resort and Moral Hazard: A Model of IMF's Catalytic Finance." *Journal of Monetary Economics* 53 (3): 441-471.
- Daude, C. and M. Fratzscher (2006). "The Pecking Order of International Financial Integration." ECB Working Paper 590.

- Dell'Ariccia, G., I. Schnabel and J. Zettelmeyer (2002). "Moral Hazard and International Crisis Lending: A Test." IMF Working Paper WP/02/181.
- Detragiache, E. and A. Spilimbergo (2001). Crises and liquidity: evidence and interpretation. IMF Working paper WP/01/2.
- (2004). "Empirical Models of Short-Term Debt and Crises: Do they test the Creditor Run Hypthesis?" *European Economic Review* 48 (2): 379-389.
- Diaz-Cassou, J., A. Garcia-Herrero and L. Molina (2006). "What Kind of Capital Flows does the IMF catalyze and when?" Banco de Espana Working Paper 617.
- Dungey, M., R. Fry, V. Martin and B. Gonazález-Hermosillo (2004). "Empirical Modeling of Contagion: a Review of Methodologies." IMF Working Paper WP/04/78.
- Eaton, J. (2004). Standstills and an International Bankruptcy Court. In: Haldane, A. G., *Fixing Financial Crises in the Twenty-first Century*. London, Routledge: 261-276.
- Eaton, J. and R. Fernandez (1995). "Sovereign debt." NBER Working Paper 5131
- Eaton, J. and M. Gersovitz (1981). "Debt with Potential Repudiation: Theoretical and Empirical Analysis." *Review of Economic Studies* 48 (152): 289-309.
- Eichengreen, B. (2003). "Restructuring Sovereign Debt." *Journal of Economic Perspectives* 17 (4): 75-98.
- Eichengreen, B., G. Hale and A. Mody (2001). Flight to Quality: Investor Risk Tolerance and the Spread of Emerging Market Crises. In: Claessens, S. and K. Forbes: *International Financial Contagion*. Norwell, Kluwer.
- Eichengreen, B., K. Kletzer and A. Mody (2006). "The IMF in a World of Private Capital Markets." *Journal of Banking and Finance* 30 (5): 1335-1357.
- Eichengreen, B. and A. Mody (2001). "Bail-Ins, Bailouts, and Borrowing Costs." *IMF Staff Papers* (47): 155-187.
- Eichengreen, B. and C. Rühl (2001). "The Bail-In Problem: Systematic Goals, Ad Hoc Means." *Economic-Systems* 25 (1): 3-32.
- Eichengreen, B. J. and A. Mody (2004). "Do Collective Action Clauses raise Borrowing Costs?" *Economic Journal: The Journal of the Royal Economic Society* 114 (495): 247-64.

- Gai, P., S. Hayes and H. S. Shin (2004). "Crisis Costs and Debtor Discipline: the Efficacy of Public Policy in Sovereign Debt Crises." *Journal of International Economics* 62 (2): 245-62.
- Gande, A. and D. C. Parsley (2005). "News Spillovers in the Sovereign Debt Market." *Journal of Financial Economics* 75 (3): 691-734.
- Ghosal, S. and M. Miller (2004). Co-ordination Failure, Moral Hazard and Sovereign Bankruptcy Procedures. In: Haldane, A. G., *Fixing Financial Crises in the Twenty-first Century*. London, Routledge: 313-320.
- Goldstein, M., G. Kaminsky and C. Reinhart (2000). *Assessing Financial Vulnerability: An Early Warning System for Emerging Markets*. Washington D.C., Institute for International Economics.
- Group of 7 (2000). Statement of G-7 Finance Ministers and Central Bank Governors and Action Plan. Washington, D.C.
- Group of 10 (1996). The Resolution Liquidity Crises: A Report to the Ministers and Governors. Washington, D.C., International Monetary Fund.
- Group of 22 (1998). Report of the Working Group on International Financial Crises. Washington, D.C., Group of 22 (Willard Group).
- Haldane, A. (1999). "Private Sector Involvement in Financial Crisis: Analytics and Public Policy Approaches." *Financial Stability Review* (7).
- Haldane, A. G. and M. Kruger (2001). "The Resolution of International Financial Crises: Private Finance and Public Funds." Bank of Canada Working Paper 01 (20).
- Haldane, A. and J. Scheibe (2003). "IMF Lending and Creditor Moral Hazard." Bank of England Working Paper 216.
- Haldane, A. G. (2004). Binding-in the Private Sector. In: Haldane, A. G., *Fixing Financial Crises in the Twenty-first Century*. London, Routledge: 146-177.
- Haldane, A., A. Penalver, V. Saporta and H. Song Shin (2005). "The Analytics of Sovereign Debt Restructuring." *Journal of International Economics* 65 (2): 315-333.
- Heid, F., T. Nestmann, N. von Westernhagen and B. Weder (2004). "German Bank Lending during Financial Crises: A Bank Level Analysis." Deutsche Bundesbank Discussion Paper 4/2004.
- IMF (1999). Involving the Private Sector in Forestalling and Resolving Financial Crises. Washington, DC, International Monetary Fund.



- (2000). *Involving the Private Sector in the Resolution of Financial Crises - Standstills - Preliminary Considerations*. Washington, D.C., International Monetary Fund.
- (2001). *Involving the Private Sector in the Resolution of Financial Crises - Restructuring International Sovereign Bonds*.
- (2003). *Crisis Resolution in the Context of Sovereign Debt Restructuring: A Summary of Considerations*.
- Kamin, S. B. (2004). "Identifying the Role of Moral Hazard in International Financial Markets." *International Finance* 7 (1): 25-59.
- Kaminsky, G. L., R. K. Lyons and S. L. Schmukler (2004). "Managers, Investors, and Crises: Mutual Fund Strategies in Emerging Markets." *Journal of International Economics* 64 (1): 113-134.
- Kenen, P.-B. (2002). "The International Financial Architecture: Old Issues and New Initiatives." *International Finance* 5 (1): 23-45.
- Klingen, C., B. Weder and J. Zettelmeyer (2004). "How private creditors fared in emerging debt markets, 1970-2000. IMF Working Paper WP/04/13
- Lane, T. and S. Phillips (2000). "Does IMF Financing Result in Moral Hazard?" *IMF Working Paper* WP/00/168.
- Leiderman, L. (2004). Comments on "Private Sector Involvement in Financial Crisis: Definition, Measurement and Implementation". In: Haldane, A. G., *Fixing Financial Crises in the Twenty-first Century*. London, Routledge: 95-98.
- Lipworth, G. and J. Nystedt (2001). "Crisis Resolution and Private Sector Adaptation." *IMF Staff Papers* 47, Special Issue: 188-214.
- Manasse, P., N. Roubini and A. Schimmelpfennig (2003). "Predicting Sovereign Debt Crises." IMF Working Paper WP/03/221.
- Marchesi, S. (2001). "Adoption of an IMF Program and Debt Rescheduling. An Empirical Analysis." *Journal of Development Economics* 70 (2): 403-423.
- Mauro, P., N. Sussman and Y. Yafeh (2002). "Emerging Market Spreads: Then versus now." *Quarterly Journal of Economics* 117 (2): 695-733.
- McBrady, M. R. and M. S. Seasholes (2000). "Bailing In." *Journal of Restructuring Finance* 1 (1): 1-29.

- Mody, A. and D. Saravia (2003). "Catalyzing Private Capital Flows: Do IMF-Supported Programs work as Commitment Device?" IMF Working Paper WP/03/100.
- Morris, S. and H. S. Shin (2004). "Coordination Risk and the Price of Debt." *European Economic Review* 48 (1): 133-153.
- (forthcoming). "Catalytic Finance: When does it work?" *Journal of International Economics* (forthcoming).
- Ozler, S. (1993). "Have Commercial Banks Ignored History?" *American Economic Review* 83 (3): 608-20.
- Pericoli, M. and M. Sbracia (2003). "A Primer on Financial Contagion." *Journal of Economic Surveys* 17 (4): 571-608.
- Pescatori, A. and A. N. R. Sy (2004). "Debt crises and the development of international capital markets". IMF Working Paper WP/04/44.
- Reinhart, C. M. (2002). "Default, currency crises and sovereign credit ratings." *World Bank Economic Review* 16 (2): 151-170.
- Reinhart, C. M., K. Rogoff and M. A. Savastano (2003). "Debt Intolerance." *Brookings Papers on Economic Activity* (1): 1-70.
- Rieffel, L. (2003). *Restructuring Sovereign Debt: The Case for Ad Hoc Machinery*. Washington, D.C., Brookings Institution Press.
- Rodrik, D. and A. Velasco (1999). "Short-Term Capital Flows." NBER Working Paper 7364.
- Roubini, N. (2004). Private Sector Involvement in Crisis Resolution and Mechanisms for Dealing with Sovereign Debt Problems. In: Haldane, A. G., *Fixing Financial Crises in the Twenty-first Century*. London, Routledge: 101-142.
- Roubini, N. and B. Setser (2004). *Bailouts or bail-ins? Responding to Financial Crises in Emerging Markets*. Washington, D.C., Institute for International Economics.
- Rubin, R. E. (1998). Statement at the Special Meeting of Finance Ministers and Central Bank Governors. Washington, US Treasury.
- Sachs, J. D. and D. Cohen (1982). "LDS Borrowing with Default Risk." *NBER Working Paper* 975.
- Sturzenegger, F. and J. Zettelmeyer Debt Defaults and Lessons form a Decade of Crises (forthcoming), MIT Press.

- Sy, A. N. R. (2004). "Rating the Rating Agencies: Anticipating Currency Crises or Debt Crises?" *Journal of Banking and Finance* (28): 2845-2867.
- Taylor, J. B. (2002). "Sovereign Debt Restructuring: A US Perspective." Conference on Sovereign Debt Workouts: Hopes and Hazards, Institute for International Economics, Washington, DC.
- Thimann, C., R. Wölfinger, T. Bracke, R. Bessone Basto, O. Hollensen and S. Hollensen (2005). "Managing Financial Crises in Emerging Market Economies - Experience with the Involvement of Private Sector Creditors." ECB Occasional Paper 32.
- Tillmann, P. (2005). "Private Sector Involvement in the Resolution of Financial Crises: How do Markets React?" *Journal of Development Economics* (78): 114-132.
- Van Rijckeghem, C. and B. Weder (2003). "Spillovers through Banking Centres: A Panel Data Analysis of Bank Flows." *Journal of International Money and Finance* 22 (4): 483-509.
- Vreeland, J. R. (2003). *The IMF and Economic Development*. Cambridge, Cambridge University Press.
- Zhang, X. A. (1999). "Testing for Moral Hazard in Emerging Markets Lending." Institute of International Finance Research Paper 99 (1).