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Bedfellows, Hostages, or Perfect Strangers? Global Capital Markets and the Catalytic Effect of IMF Crisis Lending

Carlo Cottarelli and Curzio Giannini

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Bedfellows, Hostages, or Perfect Strangers? Global Capital Markets and the Catalytic Effect of IMF Crisis Lending

Prepared by Carlo Cottarelli and Curzio Giannini[1]

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Abstract

During the 1990s, the concept of "catalytic official finance" (COF) gained prominence in policy debates. The concept revolves around the idea that the propensity of investors to lend to a country increases when the IMF provides its "seal of approval"—backed up by only limited official financing—on the country's economic program. COF aims at avoiding, on the one hand, the massive use of public money to bail out private investors; on the other, the recourse to coercive bailing-in mechanisms. The paper concludes that COF, while possibly useful in other contexts, is less reliable when used to manage capital account crises.

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Authors' E-Mail Addresses: ccottarelli@imf.org; giannini.curzio@insedia.interbusiness.it

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"Chi non può quel che vuol, quel che può voglia".[2]
Leonardo da Vinci

I. INTRODUCTION

Ever since Walter Bagehot's times, it is recognized that emergency liquidity support, to be effective, must in principle be unlimited. Of course, the precept should not be taken too literally. What Bagehot meant, and central banks duly understood, was that the lender of last resort (LOLR) should provide money in sufficiently large amounts as to make good all the ailing bank's short-term (and therefore "liquid") liabilities, so as to reassure their holders that all claims will ultimately be met. In a panic, Bagehot reasoned, partial insurance is no insurance at all. To meet the precept, sometimes central banks have acted on their own, availing themselves of the capacity to create money *ex nihilo*. In other instances, exploiting their authority as bank supervisors, they have managed to arrange "lifeboats," or concerted rescues, involving the participation of a group of private institutions with sufficient liquidity to soothe the markets (Freixas, Giannini, Hoggart, and Soussa, 2000).

Generalizing Bagehot's precept to international liquidity support directed at countries undergoing a foreign exchange crisis has proved a daunting task. Some argue that this was only natural, given the lack of a truly supranational currency that could be supplied in unlimited amounts (Capie, 2002). But this explanation sounds unconvincing. Surely, the lack of a world currency notwithstanding, sufficient resources could be mustered to cope even with relatively large countries' foreign exchange crises, if the political will of a group of powerful nations could be assured (Fischer, 2002). Thus, to explain the lack of a Bagehotian LOLR at the international level one must look for something deeper.

More plausibly, attention could be directed at the fragmentation of the regulatory and political environment in a world of sovereign nations. As Charles Goodhart and Gerhard Illing have recently argued, at the international level:

"the whole process is far more complex than in the national case, with a multiplicity of participants (governments, central banks, creditors and debtors), of legal systems and infrastructures. So, besides the standard concerns about contagion on one side, and moral hazard on the other (which remain just as strong in the international as in the national contexts), questions about the design and conduct of an international LOLR are complicated by externalities due to coordination problems among many agents and the lack of enforcement mechanisms among sovereign states" (Goodhart and Illing, 2002, p. 21).

Operationally, this greater complexity is felt at various levels (Giannini, 1999): in the greater difficulty of reaching agreement within the official community as to when, how, and in what

[2] He who cannot get what he wants had better want what he can get.

amount LOLR operations should be conducted; in the lack of regulatory (i.e. externally enforced) means to hold sovereign debtors true to their promise to reimburse the emergency finance they have received—whence the need to "safeguard" the resources of the international LOLR through conditionality; in the relative ineffectiveness of moral suasion, especially when the bulk of a country's external debt takes the form of bond financing, since bondholders are hard to bind in the "mutual hostage" relationship that is the typical effect of moral suasion.

These impediments to the working of an international LOLR were less significant in the post-war world of pervasive capital controls and relatively underdeveloped international capital markets. It is because of this supportive institutional setup that at Bretton Woods the IMF could be assigned a limited LOLR role—that of providing short-term financing to overcome current account imbalances (Helleiner, 1994).

With the almost universal move toward financial liberalization in the 1980s, and the associated reprise in capital mobility, this "reductionist" strategy could no longer work. Hence, the task of adapting domestic LOLR practices to the international environment had to be faced squarely. Major overhauls of the Bretton Woods framework being ruled out by the political impracticality of reaching agreement on a new international treaty, adjustment had to take place at the margin. Under the pressure of events, there thus emerged a *novum genus* of LOLR, in the form of catalytic official finance (COF). The underlying idea of COF is that the provision of official resources—typically the IMF's—to a country in the context of a full-fledged program might increase the propensity of private investors to hold financial assets in the country concerned. In other words, COF postulates that under appropriate conditions private capital flows may be expected to behave like dependable "bedfellows" of official finance, thanks to the various services provided by the IMF through its lending and other activities.

The notion of COF has been invoked in practically all the capital account crises of the period 1997-2002 (Ghosh and others, 2002), and as a consequence references to "catalytic" forces have also multiplied until recently in policy documents. After the difficulties encountered by IMF programs in Argentina and Turkey—where private and official financial flows have behaved more like perfect strangers than dependable bedfellows—attitudes toward COF have begun to change. Thus, no reference to "catalysis" can be found in the press communiqué issued by the International Monetary and Financial Committee (IMFC) at the 2002 Annual Meetings. In the same vein, the official community is now actively working on alternative techniques for dealing with capital account crises, from informal standstills backed by the so-called practice of "lending into arrears" to formal debt workout procedures (the so-called Sovereign Debt Restructuring Mechanism, or SDRM, proposed by Krueger, 2001).[3]

[3] See Kenen (2001) for an account of the present state of the debate.

The time therefore seems ripe for a comprehensive assessment of COF, its potentialities, and its limitations. In this paper, we have set ourselves three tasks. First, to trace the process through which (and the reasons why) the notion of COF has taken shape. Second, to survey the empirical evidence on the existence and magnitude of catalytic effects. Third, to suggest possible ways to rationalize COF in theoretical terms, thereby also identifying the conditions that must be met in order for COF to work.

Three things ought to be stressed right at the outset to avoid misunderstandings. First, the notion of COF does not pertain only to the handling of confidence crises—the typical domain of domestic LOLRs. One may find catalytic effects at work also under more ordinary circumstances, such as in helping a country gain access to international capital markets under a prolonged period of financial isolation. Indeed, as we shall try to show in Section III, in the origin the notion of COF had nothing to do with capital account crises. Second, under crisis conditions the notion of COF attempts to cover the gray area between the two extremes of *full bail out* (the typical outcome of Bagehotian lending) and *full bail in* (the immediate impact of either default or a temporary suspension of debt service) of the country's creditors. This gray area is the domain on which we focus. Our analysis therefore does not directly deal with the pros and cons of the two polar opposites that delimits the chosen turf, although of course much of what we will be saying might be seen as relevant for that purpose as well. Third, the catalytic effect is by no means the only channel through which IMF programs work (see Mussa and Savastano, 1999, for a comprehensive assessment of the economics of IMF programs). Conclusions regarding the strength—or weakness—of catalytic effects are directly relevant only for programs that can be expected to work only if catalytic forces are at play. Regarding other programs, the following analysis has very little to say.

II. Defining Catalytic Official Finance (COF)

Despite the frequency with which the notion is invoked, no precise definition of COF has ever been provided. This is hardly surprising. COF is built around a metaphor, much like the invisible hand or the inconsistent trinity. Like all such mental constructs, this too is hard to pin down into an operational concept. Looking for guidance, we have decided to take the metaphor at face value, and looked in the Webster's, where a (chemical) catalyst is defined as "any substance that initiates a reaction and enables it to take place under milder conditions than in [its] absence."

Three features of this definition ought to be stressed. First, the reaction, though clearly intended by the chemist, is *spontaneous*. In our context, this means that COF should be distinguished from other potential ways of addressing unstable capital flows, ranging from direct intervention (suspension of payments or capital controls) to milder actions (moral suasion, concerted lending), which have also found application at the international level in recent times. Second, the purpose of catalysis is *to alleviate the burden* associated with the intended event. We take the "intended event" of IMF financial packages as being the restoration of the medium-term sustainability of the financial profile of a given country. The purpose of COF should therefore be construed as being that of bringing about such an event

at lower cost for the country (i.e., with less domestic adjustment) and for the international community (i.e., less direct exposure and less moral hazard) than it would otherwise be the case. Third, even if not explicit in the Webster's definition, the amount of the catalyst substance *is supposed to be limited* with respect to the substance that reacts to it. For our purposes, this can only mean that the amount of IMF resources should be limited compared with the potential capital outflow a country is subject to.

Accordingly, the IMF's involvement in a country has a catalytic effect to the extent that the announcement of an economic program backed up by a limited amount of IMF resources (as compared to the size of the potential capital outflow) increases the propensity of private investors to lend to the country concerned, thereby reducing the adjustment burden falling on the debtor country with respect to the no-catalysis scenario.

This definition is not yet operational, as it leaves unspecified the exact meaning of both the expressions "potential capital outflow" and "limited." As regards the former, a useful benchmark is the total amount of the country's external short-term liabilities. But it ought to be borne in mind that this is just a benchmark, more useful under ordinary conditions than during a generalized confidence crisis. In fact, with full capital account convertibility, residents might at any time decide to convert the entire stock of short-term assets into foreign exchange. This would increase the "potential" capital outflow dramatically.

As to the meaning of "limited," it is clearly tied to the potential outflow, but the relationship is not mechanical, the more so in view of the inevitable ambiguity we have just pointed out in the benchmark. Zettelmeyer (2000), for example, considers "limited" any package that is not large enough to finance outflows assuming a zero rollover rate of the existing short-run external liabilities. But a "limited" package of, say, US$40 billion might have a stronger impact on the private sector's investment decisions than a US$4 billion one, especially if the intervention is appropriately timed. That is, definitional ambiguities cannot simply be dispelled altogether, and we must live with them. All that can sensibly be said is that the smaller the amount of financing compared with the size of the potential capital outflow, the larger the reliance on catalytic forces. Conversely, a large package will more closely mimic an "unlimited" package.

IMF lending may have a catalytic effect regardless of whether the country is already facing a capital account crisis, but clearly under crisis conditions the concept assumes particular importance. It would then be useful if one could have a precise definition of what should count as a "crisis." Alas, after decades of reflection on lender-of-last-resort practices at the national level the subject is still a matter of great controversy, and we shy away from the task. Suffice it to say that we use a notion of crisis sufficiently broad as to encompass not only situations in which a country is experiencing a massive capital outflow but also pre-crisis situations, such as when the country's foreign exchange reserves no longer exceed

scheduled amortization of external debt during the next year or so.[4] When COF is used for countries that find themselves in such circumstances, we refer to it as being used for crisis management purposes. This is to differentiate it from two other possible uses of COF, namely for a crisis prevention purpose (as in "precautionary" IMF programs), or for crisis resolution (as in the context of debt restructuring following default).

III. The History of COF: A Tale of Two Crises

Until the 1970s, the notion of catalytic lending had never been entertained, either at the domestic or at the international level. As already remarked, Bagehot's principle dictated that domestic emergency lending should be provided to whatever extent needed to meet the demand for liquidity expressed by the market. As to international practices, the Bretton Woods architecture was so conceived as to rule out by construction *any* form of LOLR in excess of temporary current account financing. To make the restriction tighter, each member's access to IMF credit was bound by its quota. Moreover, the IMF's Articles of Agreement explicitly prohibited granting credit to finance a sustained capital outflow.

While domestic practices have not substantially changed to this date, international practices have evolved over time, especially since the late 1970s. The seeds of catalytic emergency lending were sown in the late 1970s in the context of the recycling of oil-surplus funds, but the notion came to full blossom only in the following decade, with the protracted attempt to find a way out of the less developed country (LDC) debt crisis. By the end of the decade, however, the effectiveness of catalytic lending was increasingly being questioned. A new change in attitudes occurred during the late 1990s, essentially on the initiative of the G7, which had grown concerned about the drawbacks of the large financial package assembled to overcome the Mexican crisis of 1994–95. It was then made a central pillar of the official strategy for crisis management at the IMF 2000 Annual Meeting in Prague. Ever since then, a swing of the pendulum backward seems to have begun, with the merits (and effectiveness) of catalytic lending once again being increasingly called into question.

A. A New Notion Begins to Take Shape (Late 1970s–Early1980s)

In the context of the limited capital mobility of the postwar period, the recipe the IMF applied for dealing with balance of payment difficulties was fairly straightforward. When a country faced current account pressures, the IMF would typically arrange a program featuring a combination of official financing and domestic policy adjustment, the latter including a currency depreciation in cases of "fundamental disequilibrium." Within this mechanism, quotas—that is each country's contribution to IMF resources—played the dual

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[4] This is, for example, the benchmark proposed by the former Argentinean Deputy Treasury Minister, Pablo Guidotti, as a measure of prudent risk management on the part of domestic authorities. See Financial Stability Forum (2000).

role of a constraint on the capacity of each member to borrow and of a ceiling on the resources each member would have to contribute to the common pool.

The ability of the IMF to play its intended role came under stress during the 1970s, as a consequence of worldwide inflation, which reduced the real value of existing quotas, and larger current account imbalances in the aftermath of the oil crises. Faced with the prospect of being unable to meet the members' needs arising from the first oil shock, the IMF was forced to contemplate at least a partial transformation from a credit union into a financial intermediary. This essentially meant bringing borrowing into the panoply of funding means. The possibility of direct borrowing on financial markets was ruled out at the outset, because it would have fundamentally altered the intergovernmental nature of the institution. As a consequence, the IMF's financing needs would have to be satisfied by borrowing from member countries. To be sure, this transformation had already begun in 1963, with the creation of the General Arrangements to Borrow (GAB). But the departure from previous practice remained modest until the 1970s. Moreover, in February 1977 IMF Managing Director Witteveen proposed a Supplementary Financing Facility that would link traditional lending based on quotas with funds obtained through borrowing from countries.

The transformation of the IMF into a financial intermediary, however, did not go unchallenged. First, it looked much more controversial in the late 1970s, after international financial markets had taken up the key role in "recycling" the current account surpluses of members of the Organization of Petroleum Exporting Countries. Second, and more important from our perspective, the notion that IMF lending could cause moral hazard and therefore that "taxpayers' money" should not be used to bail out private investors was increasingly attracting political attention.

It is in connection to this latter problem that the idea that IMF resources, rather than substituting private capital, could be used to sustain financial markets' confidence and catalyze private capital flows began to take shape. This is most evident in the testimony made in 1977 by Anthony Solomon, Undersecretary of the Treasury for Monetary Affairs, before the Committee on Banking, Finance and Urban Affairs of the U.S. House of Representatives. To defend the proposed Witteveen facility, Solomon made the case that the new IMF window would not be used to bail out the private banks, as the latter typically *follow* the IMF in their lending decisions:

"The very fact that [countries] are meeting the IMF's performance criteria and thus continue to be eligible to draw from the IMF tends to represent a kind of Good Housekeeping seal of approval. Good performance under an IMF program tends to result in private capital inflows, private banks being willing to lend more to the country concerned" (U.S. House of Representatives, 1977, p.72).[5]

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[5] Solomon produced as supporting evidence a short empirical study, showing that between 1970 and 1975 a number of IMF programs had been followed by an increase in private lending (see Section III below). Interestingly, virtually the same wording is included in an

The notion that private capital may tend to "follow" IMF lending had also begun to gain currency within the IMF itself. Margaret Garritsen de Vries, for many years the IMF historian, described the mechanism in the following way:

"A close tie between the willingness of commercial banks to lend to a country and the country's having a stand-by arrangement with the IMF became almost standard after commercial banks encountered repayment problems with Zaïre in 1976 and 1977. ... Commercial bank officials were beginning to be more familiar with IMF parlance and policy, and the test which they devised to judge the creditworthiness of a country was whether it could meet the conditions needed for a stand-by arrangement with the IMF in the upper credit tranches. This test induced private commercial banks to have prospective borrowing countries obtain the stamp of approval of the IMF by obtaining a stand-by arrangement in the upper credit tranches." (De Vries, 1985, pp. 493-94).[6]

De Vries, however, might have overstated the importance attached to the mechanism in the "Fund parlance and policy." Indeed, references to what we now call catalytic effects in the writings of IMF staff remained for a while episodical.[7] Moreover, it seems clear from reading such texts that at that time that the seal-of-approval mechanism was not seen as having major implications for the way the IMF operated. Thus, Manuel Guitián (1982), who would later become head of the Monetary and Exchange Affairs Department of the IMF, in a paragraph remarkably entitled "The Fund as Catalyst," argues:

"a critical side effect of the mix of adjustment and financing that is typically built into the programs supported by Fund resources has been to help members attract flows of capital from sources other than the Fund" (p. 91).

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oft-quoted remark made twenty years later during the debate on the role of the IMF that took place in the Treasury Committee of the U.K. House of Commons: "But is there not an all pervasive conventional wisdom that if you do sign up to an IMF programme you get the Good Housekeeping Seal of Approval and away you go!" (quoted by Bird and Rowlands, 1997).

[6] A reference to banks following the IMF seal of approval in this period, made by a private banker, is Guth (1979), member of the Board of the Deutsche Bank and former Executive Director for Germany at the IMF.

[7] Bird and Orme (1981) argue that "the Fund itself clearly believes ... that borrowing from it, particularly on the basis of a stand-by agreement, acts as a catalyst for the generation of private capital inflows" and quote Sturc (1978), Gold (1979), and de Larosière (1980) as relevant references. However, only the latter includes an explicit reference to the fact that *the adoption and pursuit of suitable adjustment programs in cooperation with the Fund generally tends through enhancement of the creditworthiness of borrowing countries to facilitate the attraction of private capital.* Note also that the reference in de Vries (1985) quoted above takes less than one page in her 600-page history of the IMF in the 1970s.

This passage solicits two remarks. First, contrary to Dooley's (1994) suggestion that the notion of catalytic lending is to be attributed to the Baker Plan of 1985, one can see that not only the notion, but also the label, were known to the IMF staff several years earlier. Second, Guitián does not argue that the effect lies at the core of the IMF role. Rather, he is quite explicit that this is but a "side effect" (although a "critical" one) of IMF programs. The reason probably is that Guitián was still contemplating a world in which balance of payment crises were predominantly being determined by the behavior of the current account.

B. The Debt Crisis (1982–93)

Increased financial liberalization and capital mobility during the 1980s were making the latter assumption increasingly questionable. The capital account was rapidly becoming as important a source of balance of payment pressure as the current account. But capital account pressures are far more complicated to deal with. The problem arose for the first time in August 1982, when Mexico started having trouble in servicing its external debt, in the aftermath of a generalized increase in international interest rates. The problem soon spread to at least eight other countries in Europe, Africa, and Latin America. The IMF was called in to help solve the problem, but it soon became apparent that:

"the old approaches would not work, because new financing from the Fund would quickly be siphoned off as the indebted countries would have to repay other creditors" (Boughton, 2000a, p. 171).

In the old approach the IMF could work out the needed amount of "policy adjustment" and "financing" on the assumption that the overall financing gap the country faced was given and easy to measure. Now, the possibility of a drawdown in the foreign sector's holdings of domestic debt—as well as of an increase in residents' assets abroad—implied that the size of the overall financing gap depended on the credibility of the promised policy adjustment. Unless one found a way to convince investors not to liquidate their holdings, financing a country's balance of payment crisis might become like trying to fill up a bottomless pit. Of course, the problem could have been obviated by providing a full bailout of, at least, foreign creditors, but this option was never seriously contemplated in policy circles, on the ground that it would conflict with both the credit union structure and the monetary nature of the IMF (Boughton, 2001), not to mention obvious political difficulties in raising sufficient funds.

With the "Bagehotian" solution ruled out, the official sector's strategy took at first the form of *concerted lending*.[8] The strategy was inaugurated in November 1982, when the then Managing Director of the IMF, Jacques de Larosière, informed a gathering of bankers in

[8] Here and henceforth we refer to a Bagehotian solution in a rather loose sense, since, as already remarked, international rescue packages have always involved a measure of conditionality, something that Bagehot never contemplated.

New York that the IMF would not approve a request by Mexico for a US$4 billion loan until private banks provided written assurances that they would as a group increase their Mexican exposure by US$5 billion.

With respect to domestic experiments with orchestrated rescues, all of which are ultimately based on the power of the central bank to hold private banks "hostage" through moral suasion, this international version's main novelty lay in its formalized character. Under the "financing assurances policy," as it came to be known, the IMF would suspend access to its own money if creditor banks refused to reschedule the country's debt (Boughton, 2001, p. 477). Such a high degree of formalization was required to make up for the IMF's lack of direct powers over commercial banks. It had a serious drawback, though, in that it gave the banks a virtual veto over the approval and financing of adjustment programs. More bluntly, under the new practice it was unclear who was being made hostage to whom.[9]

Yet, the concerted lending strategy was applied with some success to a dozen cases between 1982 and 1986 (Boughton, 2000a, p. 172). By 1985, however, it was no longer working, essentially because of commercial banks' growing unwillingness to be "concerted." Both financial and macroeconomic developments concurred to make bankers stiffer. On the financial side, the time gained through the concerted packages had allowed banks to build up considerable provisions against sovereign credit risk. Feeling less exposed to the threat of outright default, banks gradually assumed a tougher negotiating position. On the macroeconomic side, the policy adjustment of the countries benefiting from concerted lending had been insufficient, particularly in the structural area, resulting in protracted stagnation. This made concerted lending increasingly unpopular, as banks feared they would end up throwing good money after bad. Indeed, net bank lending to developing countries declined dramatically in 1985, and turned negative the next year.

All this provided the setting for U.S. Treasury Secretary's famous October 1985 speech laying out a "Program for Sustained Growth"—later to be known as the Baker Plan. The plan's underlying idea was that in order to avert massive cuts in lending to developing countries growth had to be revived. To this end, what was needed was a combination of structural reform in recipient countries and the mobilization of financial resources on a large scale. How to achieve the first was fairly straightforward: one only needed to extend the scope of IMF conditionality to structural aspects, something the IMF had already begun doing. The latter task was more complicated. It is here that the notion of "catalysis" came in handy.[10] The Baker plan posited that the provision of sufficient amounts of official financing

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[9] And, in fact, to encourage banks to take a cooperative stance, authorities in creditor countries made some concessions as to how the new loans would have to be treated for supervisory purposes. See Sgard (2002).

[10] It is indeed in the mid-1980s that use of the word "catalytic" becomes more frequent in the literature on international financial arrangements. See, for example, Kenen (1986), Buira (1987), and the empirical literature cited in Section IV below.

in the context of structural reform aiming at economic liberalization would catalyze private sector lending to the extent needed to fill whatever financing gap was created in the process of spurring economic growth. It was estimated that the money needed to finance the plan during 1986-88 was US$17-18 billion for official money and US$20 billion for private lending (Boughton, 2001, p. 428).

This first experiment with using COF for crisis management purposes yielded mixed results. Actual official lending was very close to the planned figure, but the sought catalytic effect on private lending was hardly visible.[11]

Leaving figures aside, the experiment led to widespread frustration. As Paul Volcker puts it, barely a year after the launching of the plan "any sense of enthusiasm was very much gone" (Volcker and Gyohten, 1992, p. 215). Even the most ardent advocates of the plan had to recognize that "by 1988 there was no question that the banks' willingness to provide new financing was essentially finished" (Boughton, 2001, p. 428). The symbolic *coup de grâce* to the Baker Plan came when, in 1988, Citicorp provisioned US$3 billion against Citibank's exposure toward developing countries. While the price of Citicorp stock skyrocketed, the prices of developing countries' loans on secondary markets plummeted. Not surprisingly, new lending to developing countries nearly dried up over the next two years.

In this environment, proposals to deal with the developing countries' problems by resorting to some form of debt relief began to gain currency, first in Europe and Japan, then in the United States. The IMF itself began to show dissatisfaction with both concerted lending and catalytic financing by adopting a new operational framework called the "menu approach," which entailed dealing with individual crises by presenting creditors with a range of options all of which implied replacing old loans with new instruments that more accurately reflected secondary market values.

There was a critical problem, though, before the new strategy could be translated into concrete actions. Under the "financing assurances" policy, the IMF was for all practical purposes incapacitated to force debt relief onto recalcitrant creditors. This policy had to be modified. Thus, the plan concocted by U.S. Treasury Secretary Brady in the late 1980s, envisaging a comprehensive scheme for debt reduction, also encouraged the IMF to reconsider its financing assurances policy to reduce the risk that some creditors might hold out for a protracted period, thereby undermining the success of the debt reduction strategy in individual cases. The IMF Board endorsed the Brady Plan in May 1989. Under the new

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[11] On the basis of stock data, the IMF staff estimated zero net private lending over 1986–88. Other analysts, like Cline (1989), whose views appear to have been shared by the U.S. Treasury, estimated actual flows at some US$13 billion, still well below the planned US$20 billion. As Boughton (2001, p. 428) explains, the difference was to be attributed to some offsetting transactions (in the form of swaps, write-downs, and buy-backs) that the major banks put in place to contain their overall exposure while increasing direct lending.

operational framework, an accumulation of arrears to banks could be tolerated even pending agreement between the country and its creditors, provided "negotiations continue and the country's financing situation does not allow (arrears) to be avoided." The new policy meant adapting COF to the needs of crisis resolution, as the IMF, through its lending-into-arrears, would now pressure creditors to reach agreement with the country's authorities on the appropriate amount of debt reduction.

The Brady Plan can be counted among the successes of international cooperation. By 1993, eight Latin American countries, through a variety of operations, achieved a reduction of their external obligations by US$42 billion, out of an initial stock of obligations of about US$104 billion (Boughton, 2001, p. 552). Over the same period, rescheduling agreements with bilateral official creditors achieved through the Paris Club totaled about US$35 billion. The LDC debt crisis was finally over.

C. The Emerging Market Crisis (1994–2002)

After the launch of the Brady Plan, discussions on international crisis lending stopped for several years—inter alia, because of the lack of major *new* balance of payment crises. However, the idea that IMF lending could catalyze private financial inflows had not lost its appeal, particularly within the staff and management of the IMF (see, for example, IMF, 1992, and Guitián,1992, p. 20).

As a matter of fact, the catalytic effect lay at the heart of "precautionary" programs aimed specifically at promoting financial markets' confidence through the IMF's seal of approval, rather than providing member countries with official finance. "Precautionary" programs—programs in which the country authorities state their intention not to draw—became quite popular in the early 1990s, especially in those countries with a recent history of government intervention in the economy, and therefore with a structural credibility deficit (Dhonte, 1997). By the outbreak of the Asian crises, such programs accounted for one-third of all Stand-By and Extended Fund Facility (EFF) arrangements. Moreover, the ratio between actual and potential borrowing in all outstanding IMF arrangements—excluding those off-track—declined significantly between the early 1980s and the middle of the 1990s (Cottarelli and Giannini, 1997).

Interestingly, however, when Mexico was hit by a devastating capital account crisis, in late 1994, the catalytic effect was not invoked. Indeed, as Kenen (2001, p. 22) remarks, the package that was mounted to cope with the crisis (totaling about US$50 billion, mostly from the IMF) had all the features of a Bagehot-style LOLR operation:

"The official financing for Mexico was unique in more than its unprecedented amount. Although other crisis-stricken countries obtained large-scale official financing in subsequent years, the amounts involved were not intended—nor were they sufficient—to pay off those countries' short-term foreign debts. The size of the Mexican package, by contrast, was meant to extinguish the whole stock of tesobonos, to help Mexico cope with large dollars withdrawals from its banking system, and to help it rebuild its reserves."

Of course, no one either at the IMF or the U.S. Treasury really thought that the package should be used to pay back the Tesobonos. Only, the package was big enough to ensure holders of Tesobonos that the Mexican authorities would have sufficient money to honor their short-term debt, *even if that implied redeeming it in full.*

But why was COF not tried out for Mexico?[12] Probably, an important chunk of the answer is political in nature (one could maliciously ask why a Bagehot-style operation of such a size proved so easy to arrange, after all?). But this is hardly the whole story. One should add to it that until then no one had yet contemplated the idea of using COF as a crisis management tool *while financial markets stayed open.* As we have seen, the Baker Plan had been concocted in quite different circumstances, since all the crisis countries had already suspended external debt service long time before.

But the Mexican full-rescue package raised a number of problems that would later generate the attempt to use catalytic lending as a tool for crisis management also for major emerging markets. First, the sheer size of the package was hard to replicate, should more than one country be hit by a crisis. Second, it generated moral hazard concerns. Third, and perhaps more importantly, the idea that taxpayers' money should be used to bail out private banks was hard to sell. Thus, it is not surprising that immediately after the announcement of the Mexican program references to COF as a market-friendly crisis management tool became more frequent.

For example, the Interim Committee of the IMF already in April 1995 refers explicitly to the "catalytic role" that the IMF could play in assisting members in coping with sudden market disturbances. Later that year Michel Camdessus, makes it plain that the Mexican package is to be regarded as an exception:

"We have agreed on procedures through which the Fund can respond rapidly—as it did in Mexico—to help put appropriate adjustment measures in place and avoid spill-over effects. We have made clear, however, that the use of such procedures will be limited to truly exceptional circumstances. The extent of our support will depend, as always, on the strength of the country's own adjustment effort, and we will take appropriate steps to ensure that its support remains catalytic in nature" (Camdessus, 1995).

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[12] The amount the IMF was willing to lend to Mexico was increased by US$10 billion in February 1995, after the initial forecasts on the behavior of private investors had proved overly optimistic. Was this yet another example of a failed catalytic effect? Our reading of the episode is that the problems initially encountered by the program had more to do with the uncertainty surrounding the amount of the U.S. contribution to the package (which turned out to be less than originally envisaged), than with the program itself. See Boughton (1997) and De Long and Eichengreen (2001) for detailed accounts of the Mexican packages.

More extreme measures, reminiscent of the way the LDC debt crisis had been handled, were also contemplated. Thus, at the Halifax summit, in June 1995, the G7 recommended an in-depth reflection on crisis management tools. The task was taken up by the G10, which set up a working group whose report (the so-called "Rey Report," from the name of his chairman) was published in May 1996. The report did accept the importance of catalytic lending.[13] But it also warned that, given the difficulty of arranging a concerted package when a large share of "lending" takes place through bonds held by a myriad of investors, a temporary suspension of debt payments (a standstill) might sometimes prove desirable, as a way to gain time and better assess the sources of market turbulence. The Rey Report, however, met with fierce opposition from the private sector. A counter-report published by the Institute of International Finance in September 1996 called its approach "misguided," on the twofold ground that it would face enormous implementation problems and, if implemented, it would fuel moral hazard on the debtor side. As a result, its recommendations never won enough consensus to be adopted.[14]

With the concerted approach increasingly regarded as difficult to implement, and the standstill approach facing strong opposition, by default the catalytic approach saw its appeal as a crisis management tool unquestionably rise.[15] The Asian crises provided a first testing ground for the new technique.

Several excellent descriptions of the Asian crises are already available (see, for example, IMF, 2001, and Kenen, 2001). Here, it will suffice to note that COF—with IMF resources provided in large amounts yet falling short of Bagehot-style LOLR financing—featured in all the main Asian crises, notably in Thailand, Indonesia, and Korea. Indeed, as noted by IMF staff "most of the capital account crisis programs [of the late 1990s] were predicated on just such a catalytic effect of official financing." (Ghosh and others, 2002, p. 8). As it happens, the catalytic effect failed to materialize, leading to sharper domestic adjustment, further

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[13] For example, it noted that "the official community has several objectives, including ... catalyzing finance in support of adjustment efforts, when the latter are credible" and that "the main instruments of the official sector are signaling confidence in the good faith of the debtor and the economic soundness of its adjustment programme and providing the prospects of limited finance, subject to conditionality, to foster the resumption of spontaneous inflows."

[14] One should add "until recently," since current initiatives in the area of crisis management and resolution bear much resemblance to the original recommendations of the Rey Report. More on this later.

[15] At this juncture, references to catalytic lending can, once more, be found in the communiqués of the IMF Interim Committee of that periods. The one issued on September 21, 1997 states that "the Fund will continue to play a critical role in helping to mobilize financial support for members' adjustment programs. In such endeavors, the Fund will continue its central catalytic role while minimizing moral hazard."

injection of IMF resources and, in some cases (such as Korea) the recourse to stronger forms of concerted lending.

Russia's crisis, in the summer of 1998, although different in both causes and ending, confirmed that the effectiveness of COF in the new environment could not be taken for granted. There, too, the existence of an IMF-supported program failed to provide sufficient confidence to markets. Yet, for want of better alternatives the official community continued to bet on the idea. Thus, the report on international financial crises published by the so-called Group of Twenty-Two (G22, 1998), reiterates that:

"In most cases when a country experiences payment difficulties, the combination of adjustment and financing of a typical IMF programme can be expected to restore market confidence and catalyze private capital flows."

While the new report was being published, a new crisis broke out, this time in Brazil. The financial package the official community mounted this time totaled about US$42 billion, almost half of which from the IMF. The package was heavily front-loaded, as about 90 percent of the sum was to be made available within 13 months. Both the size of the package and its time profile were clearly unprecedented. Yet, the package remained, according to our definition, catalytic in nature, since Brazil's short-term debt exceeded at the time US$100 billion. After the announcement of the program, markets stabilized for a while, but then, in late December 1998, new pressures emerged in the foreign exchange market. This time, financial conditions improved only after the floating of the real, and the announcement of a roll-over agreement between the Brazilian government and international banks. Such deals, contrary to Korea's, had not been actively promoted through moral suasion at the international level, but it proved successful. Brazil's external problems subsided. Eventually, only a fraction of the US$42 billion package was actually drawn. The whole episode was widely read as a success story for COF, although some commentators invited caution in drawing lessons from it.[16]

After Brazil, official thinking on crisis management proceeded along two parallel paths. A first path led to giving center-stage to the notion of catalytic lending, which was in fact enshrined in repeated public statements. The other led to the notion of "private sector involvement" (or PSI, a general term encompassing a range of options, from concerted lending to mandatory solutions), which clearly underscored the belief that catalytic lending may not be sufficient in a number of cases. Indeed, some debt restructuring operations were actively promoted, if somewhat implicitly, in a number of small countries with limited financial ramifications.

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[16] Eichengreen and De Long (2001, p. 55), for example, remark that "the very different aftermath of Brazil's crisis remains one of those late-20th centuries mysteries to be unraveled by future historians."

This two-pronged approach culminated in the "Prague Framework" issued at the 2000 IMF Annual Meeting, which hinged around three propositions. The first simply reiterated the belief that, in some cases, catalytic lending would be sufficient to overcome a crisis. The second pointed to the usefulness of voluntary PSI in many circumstances. The third announced that "in exceptional cases, countries might impose capital or exchange controls as part of payments suspensions or standstills, in conjunction with IMF support for their policies and programmes, to provide time for an orderly debt restructuring." In such a context "IMF lending into arrears might be appropriate."

In practice, however, experimentation continued only along the first two propositions of the Prague Framework. Thus, COF was again invoked, this time coupled with PSI, in two prominent cases, Turkey and Argentina. Both countries had requested an IMF program in December of 1999, for precautionary purposes in the case of Argentina, to strengthen the credibility of disinflationary policies, in the case of Turkey. Both programs initially worked, but then for a number of reasons, including policy slippages, financial conditions deteriorated. In line with the Prague Framework, in the course of 2000 the programs were increased in size (in IMF technical jargon, they were "augmented") and expanded to include a PSI component. But this provided only little respite. Financial conditions stabilized in Turkey only after a further "augmentation," at the end of 2001, brought financial support up to Bagehotian levels, namely about 1.500 of Turkey's quota in the IMF. In Argentina, a third augmentation, in August 2001, proved unable to restore calmer financial conditions. The following December, the authorities then declared a moratorium on foreign debt to private creditors.

In light of these experiences, it is not surprising that in recent months the emphasis on COF as a crisis management tool has been declining. As Eichengreen (2001) puts it:

"the main lesson of the Turkish and Argentine experiences is that the markets are likely to disappoint official hopes. In the climate of uncertainty that invariably surrounds a crisis, waiting has option value. Investors have an incentive to wait and see whether the commitment to reform is sustained instead of being first to provide new money."

In fact, increasing attention is now being given to the third leg of the Prague Framework. The speech given in November 2001 by the First Deputy Managing Director of the IMF, Anne Krueger, in which she proposed a formalized framework for restructuring a country's external debt in case this was deemed unsustainable, set the ball rolling in the new direction. In subsequent discussions, the original proposal was somewhat refined and qualified. But its gist found its way into the official position at the IMF Spring Meetings, in April 2002. There, the word "catalytic" disappeared from both the IMFC and the G7 communiqués. The latter contained in its stead an Action Plan "to increase predictability and reduce uncertainty about official policy actions in the emerging markets." The plan outlined "a market-oriented approach to the sovereign debt restructuring process in which new contingency clauses would be incorporated into debt contracts." It also supported "the IMF on proposed approaches to sovereign debt restructuring that may require new international treaties, changes in national legislation, or amendments of the Articles of Agreement of the IMF." At

the subsequent Annual Meetings, in September 2002, the IMFC invited the IMF to make *"a concrete proposal"* along these lines by the Spring of 2003. Once the technical work is completed, pressure for change will have reached a critical stage.

IV. A Survey of the Empirical Evidence

The narrative in the previous section casts doubts about the magnitude of catalytic effects, at least for capital account crises, but clearly more systematic evidence is needed to rule on this issue. We have surveyed 26 papers, to our knowledge the whole empirical literature on catalytic effects. They are here classified in three branches—case studies; statistical studies of capital inflows; and statistical studies of interest rate spreads in international capital markets—which will be reviewed in turn. One should be aware before proceeding that several methodological difficulties make the measurement of catalytic effects particularly troublesome. Here is a tentative list of empirical hurdles.

- First of all, one must allow for the so-called counterfactual problem. The IMF seal of approval may not raise capital inflows, but one could argue that, in its absence, capital inflows might have been even weaker. This argument is sometimes used to explain the absence of obvious catalytic effects. Case studies are liable to this criticism; much less so those studies that model the behavior of capital movements, which are able to control for a variety of factors before and after the crisis.
- Second, one should properly specify the relevant time horizon over which the catalytic effect is expected to take place. Some studies focus on the short term, which is more relevant for assessing the role of the IMF in stemming a sudden confidence crisis. In such a context, however, it is critical to use high frequency data, so as to be able to distinguish preprogram from postprogram observations. Failure to do so would bias the results toward the rejection of the existence of catalytic effects.
- Third, it may be difficult to distinguish between demand-driven and supply-driven capital movements: in particular, under a floating exchange rate with no intervention (although not necessarily under fixed exchange rates, on in the presence of intervention) a decline in the current account deficit—a frequent goal of IMF-supported programs—must be associated with a *decline* in net capital inflows (as the balance of payments is by definition in equilibrium). This again may create a bias against finding catalytic effects. The studies focusing on interest rates spreads, rather than on capital movements, are, however, not affected by this problem.
- Fourth, in assessing whether it is the IMF seal of approval that makes the difference one should control for the adjustment in economic policies. A strengthening of investors' confidence may be due to a policy change, rather than to the IMF seal of approval on those policies. Thus, not controlling for policy changes creates a bias in favor of the existence of catalytic effects.
- Fifth, one should control for steps taken in support of catalytic programs. Some programs were supported by various forms of private sector involvement, in which the private

sector was nudged into action through more or less formalized regulatory means. Failure to control for these supporting steps also creates a bias in favor of catalytic effects.

- Sixth, one should control for the purpose COF is used for (whether for crisis prevention, management, or resolution), if truly operational implications are to be drawn from the analysis. But classifying programs according to purpose is clearly no straightforward matter.

These difficulties, as mentioned, affect to various degrees the three different empirical methodologies that have been followed in the literature. Thus, by contrasting the results obtained on the basis of each of them one should be able to arrive at a better picture of the actual extent of catalytic effects. This is what we will try to do in the rest of this section. Our reading of the evidence is that, while catalysis may be found at work in quite specific circumstances, such as in precautionary IMF programs or in the context of crisis resolution, overall its magnitude is small, and tends to become yet smaller as a country approaches the crisis stage.

A. Case Studies

Few papers have focused on case studies. An early example of the case-study approach is Killick (1995), who discusses the experience with IMF-supported programs in 17 countries, concluding that there is no evidence of catalytic effects on private capital inflows.[17]

A comprehensive discussion of country experiences is also presented in Bird, Mori, and Rowlands (2000).[18] This paper looks at the experience of 17 countries during the 1980s and 1990s and draws four conclusions: (i) involvement by the multilaterals will not guarantee an inflow of capital from other sources; (ii) what really matters is the perceived commitment by a government to a policy agenda that is seen as sound and internally consistent: (iii) catalysis with the multilaterals is likely to be stronger and more positive in the case of bilateral aid flows; and (iv) the nature and extent of catalysis may differ between the IMF and the World Bank, with the IMF having a stronger but *negative* effect.

A significant contribution to the case-study approach has recently been given by the IMF staff in their study of IMF-supported programs in capital account crises (Ghosh and others, 2002). This paper looks at the experience of eight programs for large emerging markets during the 1990s, and points mostly at the absence of strong catalytic effects:

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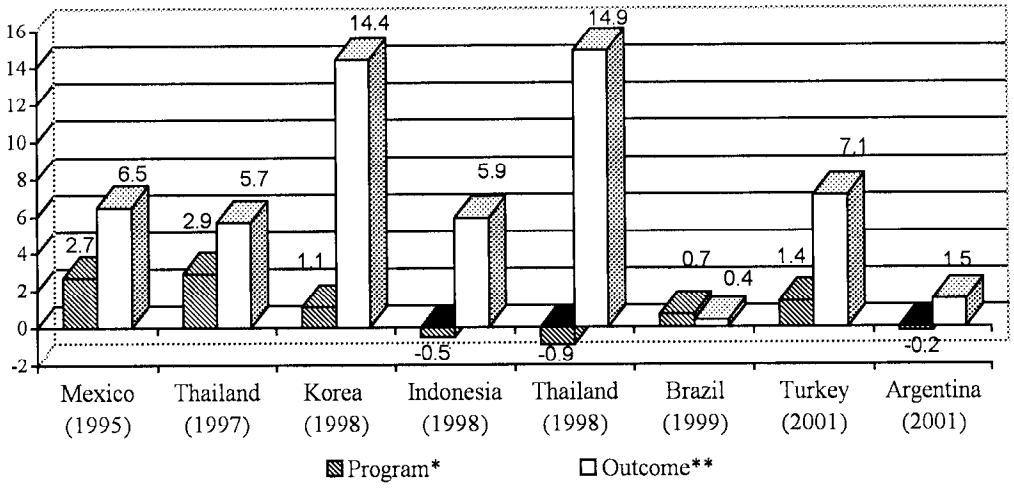
[17] Another early paper sometimes credited with reporting evidence of catalytic effects is de Vries (1986). It should be noted that in this paper the term catalytic is used with reference to "concerted lending," rather than in the meaning used in this paper.

[18] The same results are also reported in Bird and Rowlands (2000).

"It is striking that, in every [emphasis in the original] instance in our sample, the outcome [for private capital inflows] was worse than projected. Even in cases where the magnitude of the error was small, such as Argentina (1995), the program does not appear to have had a strong catalytic effect, at least in the very short run." (p. 11).

The resulting financing gap had to be filled with larger current account adjustment than originally envisaged. The amounts were not negligible, as Figure 1 testifies. The discrepancy reached a peak in the cases of Korea and Thailand, where actual current account adjustment was 13-15 points larger than planned, but remained sizable also afterwards, in Turkey and Argentina. The only exception to this pattern is Brazil in 1999, where the outturn was about 1 percentage point below the planned figure.[19]

Figure 1. Current Account Adjustment in Selected Crisis Countries
(As a percentage of GDP)



Sources: IMF, *World Economic Outlook* database; Ghosh and others (2002).

* Implied adjustment equal to planned current account minus actual current account in the year before the program.
** Implied adjustment equal to actual current account in the year of the program minus actual current account in the year before.

[19] On the Brazilian crisis and its peculiarities, see Section III.C above.

B. Effects on Capital Inflows

Several papers have focused on testing statistically how the existence of an IMF-supported program, or the size of IMF financing, have affected private capital inflows. Various methodologies have been used, with the predominant result being that catalytic effects, if any, are small. Three approaches have been followed (Table 1).

Analysis of the demand for IMF credit. Several papers have explored the issue of why countries need IMF credit. These papers do not typically focus on the existence of catalytic effects, but are often quoted in this context because the right-hand side of the econometric equations describing the demand for IMF-credit usually include the amount of private capital inflows. The sign of the coefficient on this variable is seen as having a bearing on the catalytic issue: a positive sign would indicate complementarity between IMF credit and private credit (as one would expect when catalytic effects are in place); a negative sign would indicate substitution. The first of these papers (Bird and Orme, 1981) does find a positive and significant correlation for a cross section of 1976 programs, but no correlation for the 1977 cross section. A positive correlation, albeit a weak one, is found also in Bird (1994) (published also in Bird, 1995). Other papers (Cornelius, 1987; Joyce, 1992) find negative (and typically nonsignificant) coefficients.[20]

Before-after tests. This approach focuses on whether the inception of an IMF-supported program involves a statistically significant increase of capital inflows (or of variables related to them, such as foreign exchange reserves) with respect to the pre-program period. The first of these studies is the short paper (see Section III) prepared by the U.S. Treasury in 1977 as background for the discussion on the Witteveen Facility (U.S. Treasury, 1977). This analysis of 36 Stand-By Arragements (SBAs) during 1970-75 finds that in most cases SBAs were followed by an increase in bank lending. Richmann and Stillson (1978), although not directly aiming at measuring the existence of catalytic effects, also find that net foreign assets typically increase as a result of IMF-supported programs, but note that in only one-fourth of their sample this increase is statistically significant. Some evidence of catalytic effects in also found by McCauley (1986): in only one-third of the programs considered in his sample did bank lending decline in the year following the inception of a program. The relative frequency of outflows, however, increases to 50 percent by the end of his sample (1981). A more negative assessment of the existence of the catalytic effects can be found in Killick, Malik, and Manuel (1991).[21] They find that, on a two-year time horizon, the effect on private capital inflow is negative or small: the improvement in the overall balance of payment position, which they also observe, is thus generally due to the improvement of the current account.

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[20] Faini and others (1995) compute, outside a regression approach, the correlation between capital inflows and the amount of IMF credit. They find a negative and significant correlation.

[21] The same results are also reported in Killick (1995).

Table 1. Private Capital Inflows and IMF Lending

	Methodology	Question	Sample	Main Findings
I. Papers estimating the demand for IMF credit				
Bird and Orme (1981)	Regression analysis.	What determines the drawings by program countries?	31 developing countries that made drawings in 1976 and (an unspecified number of countries with drawings in) 1977 (annual data).	In 1976 significant positive correlation between drawings from the IMF and borrowing from euromarkets.
Cornelius (1987)	Regression analysis.	What determines the IMF drawings?	Eleven sub-Saharan countries, during 1975–77 and 1981–83.	Negative and nonsignificant correlation between drawings and borrowing from foreign and international capital markets.
Joyce (1992)	Regression analysis.	What determines the decision of a country to enter an IMF-supported program?	45 countries, annual data for 1980–94.	The commitment of new funds from private creditors relative to imports has a negative impact on requests for IMF assistance, but it is not significant.
Bird (1994); results also published in Bird (1995)	Regression analysis.	What determines the drawings in program countries?	1980–85 for 27 countries.	Positive, but weak, correlation between drawings and net disbursement of debt creating private finance.
II. Papers based on before-after tests				
U.S. Treasury	Inspection of changes in capital inflows.	Does bank lending to program countries increase or decrease with the inception of a program?	36 program countries during 1970–75.	In most cases bank lending increased.
Reichmann and Stillson (1978)	Mann-Whitney test for difference in frequency distribution.	Is the increase in net foreign assets observed statistically significant?	85 program during 1963–72 (quarterly data).	Improvement observed in two-thirds of cases, but statistically significant only in less than one-fourth of cases.

Table 1. Private Capital Inflows and IMF Lending

	Methodology	Question	Sample	Main Findings
McCauley (1986)	Before-after analysis.	Does a program affect bank lending to a country in the year following the inception of a program?	99 programs covering 56 countries during 1976–81.	Generally supportive of the catalytic approach, with only one-third of countries showing a decline in private lending. However, the frequency of these cases increases over time (to half by 1981).
Killick, Malik, and Manuel (1991), same results reported also in Killick (1995)	Before-after analysis of differences from base (pre-program value); time horizon: four-year period.	Is the size of private long-term capital inflows different from the pre-program period over a four year horizon?	16 developing countries with IMF programs commenced in 1979–85.	Small effects and negative on net capital accounts, with net repayment of foreign loans and no increase in disbursements.
Schadler and others (1995)	Inspection of capital inflows.	What is the effect of a program on capital inflows?	45 IMF loans from mid-1988 to mid-1991.	Only in one-third of cases there were large increases in capital inflows.
Conway (1998)	Regression analysis.	Is the probability of exiting a crisis (defined as a deviation of the reserve to import ratio from a certain threshold) affected by the existence of an IMF program?	84 countries, quarterly data for 1973–92.	Countries participating in IMF programs are less likely to enter crisis, but this benefit is lost for countries for extended periods of IMF programs.
III. Papers estimating capital inflows models				
Hajivassiliou (1987)	Regression analysis.	What determines the supply of new loans?	79 countries during 1970–82, annual data.	There is a negative (although barely significant) correlation between the supply of new loans and the lagged presence of IMF support or request for a rescheduling.

Table 1. Private Capital Inflows and IMF Lending

	Methodology	Question	Sample	Main Findings
Rodrik (1996)	Regression analysis.	What determines net private capital inflows?	87 developing countries, averages of six-years periods (1970–93).	Effect of IMF lending not significantly different from zero, negative in some cases.
Adji et al. (1997)	Regression analysis.	What determines foreign direct investment?	Annual data for 23 developing countries during 1970–81.	No significant effect of the amount of IMF-lending on foreign direct investment.
Bird and Rowlands (1997)	Regression analysis.	What determines new lending commitments (net of repayments)?	90 developing countries, annual data for 1974–89.	The catalytic effect on private flows is either negative (and significant) or nonsignificant; some positive and significant effect on official inflows, not private.
Bird and Rowlands (2000)	Regression analysis; and questionnaires.	What affect private (portfolio, FDI, and other debt) and bilateral capital inflows?	96 developing countries during 1980–95, annual data; and 15 interviews, with financial market managers.	No evidence of a positive catalytic effect and some evidence of a negative one for the private inflows; some (weak) effect on bilateral inflows. No evidence that the catalytic effect has strengthened over time.
Edwards (2000)	Regression analysis.	Do private inflows (commitments) and FDI reach positively to IMF programs?	106 countries, annual data for 1979–95.	No catalytic effect from the existence of an IMF program, even in countries with a good record of compliance with past programs; negative effects for countries with IMF programs that experienced past compliance problems.
Marchesi (2001)	Regression analysis.	Does an IMF program facilitate debt rescheduling by commercial creditors?	93 developing countries, annual data during 1983–95.	The presence of an IMF program increases the probability that a country benefits from debt restructuring.

They also note that not only net inflows are not much affected by programs, but that gross flows are not affected either (there is no increase in gross disbursements). Another paper finding weak catalytic effects was prepared by IMF staff (Schadler and others, 1995). This paper, covering 45 IMF loans from mid-1988 to mid-1991, finds that only in one-third of the cases there were large increases in capital inflows. A more sophisticated variant of this approach is found in Conway (1998), who explores whether the probability of a foreign exchange crisis is reduced by the existence of an IMF-supported program. However, as the "crisis" is defined as foreign exchange reserves falling below a certain threshold, and as the behavior of foreign exchange reserves is modeled through a simple time series model, this approach essentially focuses again on whether on average the reserve position increases after the inception of a program. The results show that reserves do increase when a program is in place, but that this is no longer true for countries under a program for an extended period.

Capital inflows models. The before-after approach does not address the "counterfactual" problem. A solution to this problem is to model directly the behavior in capital inflows, and evaluate whether this behavior was changed by the existence of an IMF-supported program (or by the size of their financing). Early results in this area were obtained by Hajivassiliou (1987), who, while not focusing directly on the existence of catalytic effects, does find a non-significant (and indeed negative) effect on the supply on new private loans of the lagged presence of an IMF program. In this paper, however, the dummy measuring the existence of a program also measures the existence of a previous rescheduling (being built to signal the existence of previous payment difficulties). A more direct attempt to assess the existence of catalytic effects on capital inflows is Rodrik (1996),[22] who finds that the effect of IMF lending on net private capital inflows was not significantly different from zero, and negative in many cases. No effect of IMF-lending on foreign direct investment is found by Adji and others (1997). Similar conclusions were reached by Bird and Rowlands (1997), and Bird and Rowlands (2000), with more sophisticated capital inflows model, although they do find some evidence of catalytic effects on bilateral official inflows. One should note that the dynamic specification of these papers is absent or very basic, and one wonders whether the use of longer lags, and perhaps higher frequency data, would have helped. However, the fact that annual data do not reveal catalytic effects suggests that, if those effects are present, they do not show up very rapidly, and are thus not very valuable for crisis management.[23] Edwards

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[22] Rowlands (1994) is an earlier contribution, but we could not acquire a copy of this paper in time for the current draft. According to Bird and Rowlands (1997), this paper concludes for the absence of catalytic effects on private capital inflows.

[23] It would also be necessary to control for simultaneity issues: the IMF may step in to stem capital outflows, but the use of annual data (mixing pre- as well as post- IMF intervention periods) may not allow to identify the catalytic effect. However, Bird and Rowlands (2000) also present results based on a questionnaire sent to financial managers. The sample would show that financial managers do find that signing an agreement with the IMF or the World Bank makes a country more attractive, but none of them regarded IMF or World Bank involvement as one of the five principal reasons for investing in a country. The sample of

(2000) also fails to identify positive catalytic effects, after controlling for the record of past implementation of IMF programs: indeed, he finds that, while a program does not have catalytic effects even following a record of good program implementation, it does have negative catalytic effects if coupled with a recent history of nonperformance. The only paper that does find catalytic effects on private capital flows is Marchesi (2001), who, however, focuses on a very specific form of such flows, namely the decision to reschedule existing external obligations: a program would raise the probability of a rescheduling. In principle, the decision to reschedule a loan can be seen as equivalent to granting a new loan and, so, as a new capital inflow. However, the paper does not make allowance for rescheduling decisions that were part of concerted strategies from those that were due to genuine catalytic effects. And there is no doubt that the IMF did play a major role in several cases of concerted rescheduling (Milivojević, 1986). Moreover, the paper does not control for the effect of a change in policies on the decision to reschedule; the latter, rather than the IMF's seal of approval, may be responsible for the increased probability of a rescheduling.[24]

C. Effects on Spreads

One obstacle in estimating capital inflows equations is that capital movements are typically very noisy. In addition, as noted, a decline in net capital inflows may merely reflect an improvement in the external current account. Thus, some paper have focused on how the interest rates charge on a country's debt is affected by a program (Table 2).

The first paper to include a dummy for the existence of an IMF-supported program is Özler (1993). He finds that programs are associated with an increase in spreads, a results that is interpreted as indicating that IMF-supported programs signal (or are associated with) payment difficulties. The effect is statistically significant, albeit less so in specifications including more variables. More recently a similar conclusion was reached by Haldane (1999) who focuses on the behavior of secondary market spreads on the bonds issued by large emerging economies. He finds that a large spreads persists after the initiation of a program and that, indeed, the spread "typically widens further in the immediate aftermath of a program."

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respondents was, however, quite small (15 managers). Bird (1995), footnote 51, p.175 also reports mixed evidence on catalytic effect from interviews with bankers held during the 1980s.

[24] One paper that does try to distinguish between the effect of changes in policies and the seal-of-approval effect (or "credentialing," in the author's terminology) is Conway (1994). This paper focuses directly on the effect of programs on economic performance, concluding that there is no evidence of the IMF's seal of approval improved performance, after controlling for policy changes.

Table 2. Spreads and IMF Lending

	Methodology	Question	Sample	Main Findings
Ozler (1993)	Regression analysis.	Does the existence of an IMF-supported program affect the spread over Libor on commercial bank loans?	1,525 commercial bank loan contracts for 26 countries over 1968–81.	The effect is positive (i.e., the existence of a program raises the spread). The effect is statistically significant, although less so in specifications with more variables.
Haldane (1999)	Inspection of spreads.	Does a program affect spreads on secondary bond markets?	Seven large emerging markets during 1996–99.	A large spread persists after the program initiation. Indeed the spread "typically widens further in the immediate aftermath of a program."
Eichengreen and Mody (2000)	Regression analysis.	Does a program affect the spread at launch on international bonds?	All bond issues by emerging markets from 1991–I to 1999–IV.	Negative effect of the existence of a program on the spread. The effect is statistically significant in some regressions, in particular for EFF programs and, to a lesser extent, SBAs, but only in equations including the duration of programs with a positive sign (i.e., the effect is negative, but declines over time). The size of the effect is, however, small.
Mody and Saravia (2002)	Regression analysis.	Does a program affect the spread at launch on international bonds?	All bond issues by emerging markets from 1991–I to 199–IV.	Broadly in line with the previous paper, but, in addition: the size of a program matters, with stronger effects for larger programs; precautionary programs are those where the effect is stronger (and indeed, the catalytic effect does not matter for nonprecautionary programs).

Haldane's paper, however, looks only at seven countries in a relatively short time frame, and does not test statistically his conclusions, reaching them from visual inspection of the spreads. A more systematic approach is followed in Eichengreen and Mody (2000). This paper has two advantages with respect to others: it is based on a large sample and on high frequency data (thus reducing the risk of averaging between before- and after-the-program data). The paper looks at the spread at launch on bond issues during the 1990s. The strongest catalytic effect are found for EFF loans (the IMF's longer-term loans) and, to a lesser extent SBA loans (the traditional shorter term loans) in equations when the number of quarters under a program is also included with a positive coefficient. This means that a program lowers the spread but the effect declines over time. The authors conclude that their results "will hearten official observers concerned to document the "catalytic effect" of IMF programs, although they also suggest cautions about the type of programs that exercise this effect." [25] Two qualifications should be made in interpreting these results. First, the regressions do not control for the change in economic policies that typically characterizes an IMF-supported program. This means that it is impossible to distinguish between the decline in the spread that is due to sounder policies, from that arising from the IMF's seal of approval: as noted, catalytic effects should refer only to the latter.[26] Second, the effect of the programs remains, albeit significant, small: the spread is lowered by some 9 percent, or 24 basis points in the sample average. This is not much compared with the average volatility of spreads in international markets. Similar conclusions are reached in Mody and Saravia (2002), with the presence of a program lowering spreads on average by 8 percent. In addition, this paper shows that the size of a program does matter: an additional program size of 10 percent of a country's long-term debt lowers spreads by about 20 percent. While this effect remains fairly low, it underscores that, more than the seal of approval, what matters is the amount of financial support that the IMF makes available. A second interesting finding relates to precautionary programs (those for which either the authorities declared that there was no intention of actually borrowing, or those for which no borrowing took place): the paper shows that the whole negative effect on spreads comes from these programs. This of course may be tautological: if a program succeeds, this should be reflected in both a decline in spreads and the fact that the country does not need to borrow from the IMF. In any case, this results suggests that, if catalytic effects are present, they do not arise under crises situations (when programs are not precautionary).

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[25] Indeed, the authors find that Enhanced Structural Adjustment Facility (ESAF) loans (those addressed to poorer countries) do not have a significant effect on spreads (and the coefficient is positive). Moreover, they find that the effect is significant only for countries with intermediate credit rating.

[26] Of course, it could be argued that, without the IMF, those policies would have not been implemented, as policymakers needed, for internal political reason, an outside "policy enforcer." But, this points at an entirely different channel through which the IMF might have a role, *even in the absence of catalytic effects*.

V. In Search of Theoretical Underpinnings

Where does all this leave us? None of the papers surveyed finds evidence of strong catalytic effects, although some of them do find the existence of moderate effects. Besides, this overall unfavorable outcome has been reached in spite of the failure to control for policy changes, which should have biased results in favor of COF. Moreover, there are indications that, to the extent that catalytic effects do exist, they are diminishing over time, are weaker for countries that went through a series of IMF-supported programs, and are weaker under crisis situations.

Why are catalytic effects empirically weak? Is there anything that the IMF could do to enhance them? Has the trend toward increased capital mobility affected their magnitude? Are there any developments in the international financial markets likely to make them stronger? Conversely, why should there be any catalytic effect at all? Answering these questions requires discussing the analytical bases of the very notion of COF.

If IMF support to a country boosts the confidence of private investors, it must be because the IMF is supplying something to the private sector, and something that, presumably, cannot be provided by market forces. An IMF program does indeed provide "services," and, based on these services, one can identify five channels through which the catalytic effect, in principle, operates. While these channels are not mutually exclusive, it is useful to discuss them separately, not only because their effectiveness depends on different conditions, but also because there are cases in which they may conflict with each other, thus weakening potential catalytic forces.

For each channel/service, we first identify some key "requirements" (seven altogether) needed for its effectiveness. Then, we assess whether these requirements are likely to be met under ordinary and extraordinary circumstances, and point out a number of adverse interactions among the various conditions. Channels and requirements are summarized in Table 3.[27]

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[27] It has been argued (see, for example, Bird, 1994; Killick,1995; Bird and Rowlands, 2001) that the catalytic effect fails to materialize because the record on IMF-supported programs in achieving their objectives is poor. But, leaving aside the difficult issue of assessing the effectiveness of programs, programs may not achieve their results precisely because the intended catalytic effects fail to materialize. Explaining this failure with the programs' alleged poor record thus involves a logical circularity.

Table 3. Conditions for the Existence of Catalytic Effects

	1. No Information Asymmetry between IMF and program country	2. No Constraint in Policy Design	3. Transparency	4. No Cost in Playing this Role Well	5. Lending	6. Conditionality Mechanism and Negotiation Process	7. Reasonable and Predictable Costs for Slippages
Channel I (provision of assistance in policy design)	✓	✓					
Channel II (provision of information)	✓		✓	✓	✓		
Channel III (provision of commitment technology)	✓			✓	✓	✓	✓
Channel IV (provision of a screening device)	✓			✓		✓	
Channel V (provision of liquidity insurance)	✓				✓		

A. Five Channels for the Catalytic Effect

Channel I: "Policy Design"

Bird and Rowlands (1997) note that:

"For the [international financial institutions] to have a possible catalytic effect there must be a presumption that economic policy will be better designed and more appropriate to a country's existing economic situation and needs."

The IMF—an agency specialized in macroeconomic adjustment policies —provides key advice in the design of programs, thus supplementing the human resources of the program country. Indeed, IMF-supported programs are often perceived as having been *designed by the IMF*. The catalytic effect would arise because the private sector would be reassured that, thanks to the "technical assistance" of the IMF, the best policy design has been adopted.

In principle, this service could be provided by private sector consultants. There are three reasons why the IMF may have a comparative advantage in this area. First, as a public agency that member countries commonly "own," the IMF is in a better position to guarantee the confidentiality of (at least some) of the information on which the process of policy design is based. Thus, it may be easier for the IMF to obtain the full collaboration of the government in disclosing all the relevant data. Second, it may also be politically more acceptable to receive advice from an international agency than from private agents. Third, as a lending institution that puts its own resources at risk and as administrator of conditionality, the IMF may have stronger incentives in delivering high-quality advice. That is, the unique combination of services it provides tends to give the IMF a competitive edge in the advisory business.

For this channel to operate effectively two requirements must be met:[28]

- The IMF should have all necessary information available to optimize the policy design: there should be no information asymmetries between the program country and the IMF.

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[28] One additional condition, for this as well for other channels to operate, is that the IMF is endowed with sufficient resources and skills to perform its tasks. Rodrik (1996) makes this assumption explicitly. Other authors have challenged it, blaming the failure of some Fund-supported program in restoring confidence on errors in policy design, possibly due to poor judgment (see, for example, Stiglitz, 2000). There has been no systematic analysis of whether the human resources available to the IMF are adequate to the task. Nevertheless, this line of criticism is not particularly relevant from an analytical standpoint, as it points to a problem that, at least in principle, could be easily handled by enhancing the IMF's human resources.

- The IMF should provide the best advice for the country, regardless of other considerations. This means that the program should be the "best" that can be designed under the circumstances for the specific country. It is important to stress that the focus here is on the absence of constraints that might arise from the fact that the IMF is a multicountry institution and may, as such, have to take into consideration costs for other countries arising from certain policies. As we will see, problems of this type may arise.

Channel II: "Information"

Rodrik (1996) notes that:

"Information about the broader investment environment and the quality of government policy-making is a public good: such information benefits all potential investors, regardless of specific projects ... [I]n view of the public nature of the benefit, individual investors have inadequate incentives to devote resources to information gathering of this particular kind and certainly little incentive to share with others the information they do gather."

Thus, it should be possible for the IMF to invest more resources on information gathering than the private sector, and, consequently, to have an information edge vis-à-vis the private sector. Consequently, private investors should be willing to follow the IMF when the latter provides a positive assessment of macroeconomic conditions (a catalytic effect).

Playing this monitoring role, however, requires a set of stringent requirements (Table 3):

- The IMF should, not only in theory but also in practice, have better information than the markets.
- The monitoring should be transparent. The IMF could, of course, simply signal that the program is on track. However, a mere seal of approval not backed up by additional information is not equally effective. On this basis, Rodrik (1996) and other IMF-watchers have argued that the IMF should play this role more transparently. And the IMF has responded to this call, increasing its transparency.[29]
- The IMF should not suffer major costs in providing the information transparently, whether it is "good news" or "bad news."

[29] Until the mid-1990s, the provision of information by the IMF was limited to statements that the program was on track, on occasional public statements by IMF staff and management, and on occasional contacts with the business community. The IMF is currently publishing virtually all Letters of Intent, as well as most staff reports for program countries.

- The IMF should lend: monitoring can, of course, be decoupled from lending. But, as Rodrik (1996) notes, the word of the IMF acquires more weight if it "puts its money where its mouth is" (see also Masson and Mussa, 1995).[30]

Channel III: "Commitment"

This channel—perhaps the one that has attracted more attention until recently—focuses on the mechanism of conditionality and its implications for the government's credibility in promising "good" policies. Conditionality in IMF-supported programs means that if these policies are not implemented the program country suffers an immediate cost.[31] In entering a program that involves a clear and immediate penalty for noncompliance, a government ties its own hands, thus addressing the typical intertemporal consistency problem of economic policymaking (Sachs, 1989; Diwan and Rodrik, 1992; Masson and Mussa, 1995; Rodrik, 1996; Dhonte, 1997; Fischer, 1997; Cottarelli and Giannini, 1999; Dornbusch, 2001). A catalytic effect would in this case arise because the private sector would be reassured that policies will be implemented. The private sector could not play this conditionality-centered role, the main reason being that a direct negotiation with the private sector is politically unacceptable: a public, multilateral institution like the IMF is needed (Rodrik, 1996; Masson and Mussa, 1995).

Several requirements need to be met for this channel to operate smoothly. These can be more easily identified by interpreting the relation between the IMF and the program country as a principal-agent relationship (Killick, 1997). The IMF is the principal who wants to see certain policies implemented because this is good not only for the program country, but also for the international community. The program country is the agent, who receives a reward (IMF support) if the program is implemented. For a principal-agent relationship to work effectively some key requirements must be met:

- The IMF and the program country should share the same information, so as to make e monitoring of the agent's policies effective.

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[30] Another requirement that is frequently mentioned is that the inception of an IMF program should not send a negative signal. The provision of information should not be distorted by the very fact that the country has entered an IMF-supported program. Many authors have noted that this may not be the case: the announcement of a program may be interpreted as signaling that the country is in trouble, which may weaken any catalytic effects (Killick, 1995; Eichengreen and Mody, 2000; Bird and Rowlands, 2001). We do not find this argument convincing, as typically markets know already that a country is in trouble when it reaches the point of starting program discussions with the IMF.

[31] Note that the interruption of a program involves different types of costs for a country, ranging from the direct loss of IMF financial support, to political costs, to the loss of private sector support (assuming the existence of catalytic effects).

- Lending (the reward for the agent) is needed as this channel is based on the program conditionality arising from lending.
- There should be a process for negotiations that allows the definition of the "contract" between the principal and the agent, as well as a process for renegotiation to take new information into account. This renegotiation is not a trivial aspect of an IMF-supported program, which involves essentially iterative processes, sometimes based on trial and error (Mussa and Sevastano, 1999).
- The penalty for the program country in not delivering should be clear. It should also be "reasonable": it would not make sense to (break the principal/agent relation (i.e., stop the program) for minor deviations in implementation.
- There should be no large cost for the principal (the IMF) when the agent (the country) does not deliver: this is typically the situation in most principal-agent relationships in which the principal (say, the employer) has a large number of agents (employees).[32]

Channel IV: "Screening"

Marchesi and Thomas (2001) argue that only countries where the authorities' policies are fundamentally good can afford sustaining the costs arising from IMF policies. The authors do not say what the costs of entering an IMF-supported program are, but one can make the case that countries suffer a short-run economic hardship under a program. Moreover, some measures are unpleasant to undertake, at least because they harm powerful political constituencies. Only countries with viable long-term plans are willing to face these costs. Thus, entering a program helps the private sector to single out (or to screen) the countries that (upon entering a program) will follow good policies, a point also made by Fischer (1997).

What is peculiar, and paradoxical, about this channel is that it does not require that the conditions "imposed" by the IMF be strictly necessary for the program success (or even that they be economically useful): as long as they are not plainly inappropriate (which would signal only stupidity and thus reduce credibility), all that is required is that they involve costs and thus are "difficult" to implement. While this is, by no means, the channel that is more frequently mentioned, it is not, at an analytical level, unreasonable, as it focuses on a form of signaling that is not uncommon in social behavior (acting "tough" is a signaling device; see,

[32] It is worth noting that a principal-agent relationship will work less effectively the stronger are the differences in the utility functions of principal and agent. With respect to IMF-supported programs, this means that program works better if the program country owns the program. This has been long acknowledged. Some authors have raised the issue of whether the imposition of program conditionality does not per se signal lack of ownership. We do not see this as a major issue: a policymaker that ties its own hands does not necessarily do it because it does not own the program, but to reassure outsiders that the program will in any case be implemented.

for example, Diamond, 1992). Critics of the IMF have also sometimes argued that certain measures (in particular those of a structural nature) are not clearly linked to program's goals. One oft-heard rebuttal of this criticism is that, while not directly linked, these measures show the authorities' resolve to undertake difficult steps. This is the essence of the screening channel.

Although Marchesi and Thomas (2001) stress the difference between this channel and the more traditional "commitment" channel, the effectiveness of the "screening" mechanism is enhanced by many of the same factors required for Channel III to operate, namely those pertaining to the effectiveness of the "bargaining process" between the IMF and the country authorities and the program monitoring (no information asymmetry, no costs for the IMF in enforcing the program conditions, and the existence of a negotiation/renegotiation process; Table 3).

Channel V: "Insurance"

This is perhaps the trickiest channel of all, or at least the channel that has been most affected by the transition to capital account convertibility (and has thus attracted more attention recently). Knowledge that the IMF might step in should a country fall short of external finance might act as an implicit insurance for investors that their claim will be honored. Indeed, such a mechanism lies at the root of the oft-heard criticism that the possibility that a country could rely on an IMF program to stem a capital account problem generates moral hazard–a typical by-product of any form of insurance. Leaving aside the issue of moral hazard, which need not concern us here, the gist of the argument is that the very existence of the IMF might reduce the probability of a self-fulfilling run caused purely by illiquidity problems (Haldane, 1999; Zettelmeyer, 2000; Miller and Zhang, 2000). The catalytic effect would arise from the provision to the private sector of the insurance service that is implicit in the LOLR function.

This service could in principle also be provided by the private sector: contingent credit lines could be made available by banks, against the payment of a fee. However, the cases in which this has happened so far are rare, and the results are hardly encouraging.[33] Why? Probably because it is hard to identify, or even define, cases of pure liquidity crises, in which the line of credit would become available. The traditional lending facilities of the IMF are not directly affected by this problem, because IMF programs always involve elements of conditionality.[34] It is thus somewhat academic to discuss the "insurance" channel as a

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[33] See Kenen (2001) for an account of the experience with private contingent credit lines.

[34] This is not entirely true of the CCL, the facility established in 1999 to deal with "pure" liquidity problems, which, to some extent, works on the basis of pre-selection. Until today, however, the CCL has attracted no applicant. See Giannini (2002) for a criticism of the CCL.

separate one. Nevertheless, for the sake of completeness, it is worth pointing at the two requirements that are needed for this channel to operate:

- Once again, the absence of asymmetric information that would prevent the IMF from assessing whether the crisis is one of liquidity, or to request measures that would eliminate any solvency issues.
- Lending should be forthcoming in amounts sufficiently large to convince the private sector that the risk of being locked-in is small.

B. Channel-Specific Problems

We now turn to the discussion of why some of the requirements summarized in Table 3 are unlikely to be realized in a number of practical cases, and especially under conditions prevailing in capital account crises. Four requirements may be particularly hard to meet in some circumstances.

Requirement 1 ("sufficient information"). This requirement takes two forms. The information channel requires that the IMF has better information than the market. All other channels require that there are no major information asymmetries between the IMF and the program country. As to the first aspect, the process of financial consolidation and technical improvements in information technology have reduced the private sector's disadvantage in gathering and processing macroeconomic information. Consequently, the resources invested in these tasks by the private sector have increased and the information edge of the IMF may have declined, with respect to, say, the late 1970s. Note also that some information that becomes more critical in capital account crises (that related to financial transactions and intermediaries) may be more easily accessible to financial analysts than to the IMF. As, to the assumption of no major information asymmetries between the IMF and the program country, there are also some problems.

Requirement 2 ("no constraint on policy design"). The policy design channel (Channel 1) assumes that the IMF can identify and promote the best program for each country. Leaving aside the issue of possible errors in policy design, a more intrinsic problem arises from the very nature of the IMF as a multi-country agency. For lack of a better term, we will refer to this problem as "policy contagion." Suppose the best program that could be designed for a country requires a measure that markets fear may be introduced also in other countries. If the IMF had to deal only with one country, its unconstrained advice would be to introduce that measure. However, the IMF may not go ahead because of the implications that this may have for other countries. To make the case more concrete, the measure in question may be the introduction of some form of capital control or of debt restructuring. The fact that the IMF is supporting this measure in one country (where it could be implemented rapidly, thus minimizing disruptions) might be perceived by markets as indicating that the same approach would be followed for other program countries. The latter perception could trigger speculative attacks. Fearing this, the IMF would stop short of including in a program a measure that would be optimal for that country. This is an extreme case, involving a strong (and very contagion-prone) measure. But the point is more general (it affects, for example

advice regarding the choice of the exchange rate regime). IMF advice to a country does not take place in a vacuum, and this may constrain its policy advice, particularly in crisis management packages where more radical (and contagion-prone) measures may be needed.

Requirement 5 ("lending"). Lending, of course, takes place (at least potentially) in all IMF programs. The real question, however, is whether the "limited" lending that characterized catalytic programs is enough to raise the propensity of the private sector to invest in the program country, particularly, in a capital account crisis. This issue is particularly problematic for the insurance channel (Channel V), as highlighted by Zettelmeyer (2000), Eichengreen and Mody (2000), and Ghosh and others (2002). In particular, the analytical model in Zettelmeyer (2000) demonstrates that limited financing does not eliminate the risk for creditors to be locked-in in pre-default situations; indeed, limited financing may *prompt* a speculative attack as investors take the opportunity of closing their positions.

Requirement 7 ("reasonable and predictable penalty for policy slippages"). The penalty for noncompliance in the execution of IMF-supported programs could be clearly defined in the "old days." Lack of implementation of critical measures would cause the interruption of a program and of IMF financial support. The latter could be resumed after the implementation of corrective measures. This is still the way things work in a number of countries, those less involved in international financial markets, mostly pure cases of "external current account crises." But in capital account crises, the penalty for noncompliance cannot be set a priori: it depends on the markets' reaction. The latter may be disproportionately large due to band-wagon effects. Consequently, the magnitude of the penalty is also difficult to predict.[35] The unpredictability of the penalty can have severe effects on the IMF's willingness to promptly react to lack of compliance, and hence on its credibility and the strength of catalytic effects. Fearing an excessive market response, the IMF may not respond in a timely way to inappropriate policies, thus undermining its role both as provider of information (Channel II), provider of credibility (Channel III), and provider of a screening device (Channel IV).

C. Channel Inconsistencies

It would be somewhat reassuring if the seven requirements for effectiveness we have identified could be shown to have no adverse interaction. However, this is not the case: some requirements, while making some channel stronger, at the same time tend to weaken the others. Thus, attempts to enhance one channel, for example through changes in the way the IMF operates, may overall yield ambiguous results. There appear to be three main "channel

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[35] On this issue Ghosh and others (2002) note that: "There is no country that has not at some point of time experienced hesitations and lapses in policy implementation, mixed political signals, untimely release of bad news, and uncertainties in particular elements of financing. The difference is, in a capital account crisis, the country's entire macroeconomic prospects may be hostage to such events—and the markets unforgiving of any lapses."

inconsistencies," respectively associated with "conflicts of interest in blowing the whistle," "transparency and the conditionality process," and "conditionality and insurance services."[36]

(A) ***"Conflicts of interest in blowing the whistle."*** *The information channel (Channel II), the commitment channel (Channel (III) and the screening channel (Channel IV) all require that the IMF is an unbiased observer and that "blowing the whistle" is not costly for the IMF. However, when the IMF is involved in policy design (Channel I) and in insurance (Channel V) blowing the whistle is costly.*

Channels II, III and IV require that the IMF plays its role fairly: it should provide the relevant information to the market (Channel II) and enforce the implementation of the program policies, interrupting the program in case of noncompliance (Channels III and IV). However, the larger is the cost that the IMF faces when it blows the whistle, the larger will be the disincentive in playing its role effectively.

Unfortunately the IMF does face large costs in blowing the whistle. According to some IMF-watchers, because of the IMF's political nature—the IMF is administered by a Board of Directors who are political appointees—these costs are primarily political. If this were the whole story, the solution would be to give the IMF more independence, as indeed proposed in De Gregorio and others (1999). But there are costs that arise from the very function the IMF is required to play:

- No matter how much stress is put on program ownership, IMF-supported programs are perceived as IMF-programs. In a way, this is desirable, as the fact that the IMF-expertise is used to build the program should support the catalytic effect (Channel I). But this implies that the IMF suffers a cost in terms of reputation if the program does not work. Note that the cost is there even if the program fails because of lack of implementation: the IMF could in this case be accused of having supported a government that did not deserve credit, possibly because of a "bias towards lending."[37]
- As already remarked, stopping a program can trigger a crisis with major costs for the program country. A crisis involves also costs for the IMF. Not only because the program country is an IMF member, but also because of possible contagion effects to other IMF members. Thus, from the perspective of an international agency, it may be preferable to

[36] Some of the problems highlighted in this sections are also "channel specific," i.e., would arise even in the absence of inconsistencies. For example, this is true for some of the costs that the IMF suffers when it blows the whistle (see inconsistency A, second bullet).

[37] The existence of a conflict between monitoring activities (the so-called *surveillance*), on one side, and program design and negotiation, on the other, is probably at the root of the proposal by Chancellor Brown (Brown, 2001)"to make the IMF's surveillance and monitoring functions independent of the intergovernmental decisions about financial support for crisis resolution."

wait to "blow the whistle" as this allows to "buy time," giving financial markets time to differentiate and reducing, in this way, contagion effects. The cost of this for the IMF is a weakening of its credibility, and thus a weakening of catalytic effects. Needless to say, this cost is larger the more a countries is exposed to the risk of a capital account crisis.[38]

Note also that these costs exist not only when a program is already in place, but also when the IMF has to decide whether to start a new program.

(B) ***"Transparency and the conditionality process."*** *Channel II requires transparency, but transparency enhances problems in the conditionality/negotiation process required by channels III and IV.*

As stressed by Mussa and Savastano (1999), the conditionality mechanism is not based on a "contract," but is rather a "process:"

"A typical IMF-supported program is not set in stone at its inception, either proceeding subsequently in exact accord with the initial plan, or terminated because of some minor deviation.[D]isbursements proceed automatically if all the performance criteria are met as initially specified. This rarely happens all the way through an arrangement. Instead, if various conditions are not met, deviations may be accommodated with 'waivers,' projections may be revised, and numerical targets changed. Those who participate in the process of IMF-supported programs, from both sides, do so with full awareness of their fundamental iterative, open-loop character."

The "constructive imperfection" of this process is plain in these words. Economic policy-making is not an exact science. The process of steering an economy back on track is a continuous one and may require, for example, waiving some conditions that had been initially regarded as critical, or, vice versa, halting the program if a sufficiently number of conditions initially regarded as not critical was not met, or, again, changing conditions. In virtually all of these cases, judgment and negotiation will play a critical role.

Transparency, in particular the publication of Letters of Intent—which is yet critical to enhance the information channel—makes this process more difficult to manage. For example, failure to implement a certain measure may trigger a crisis, even when the IMF would have been willing to grant a waiver. Conversely, the granting of a waiver may be seen as a watering down of the program, which could be construed as based on political reasons.

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[38] Rodrik (1996) points to the fact that the IMF can no longer be regarded as an unbiased observer merely because it lends (another form of channel inconsistency as, at the same time, lending is needed for the working of all the above channels; Table 3). It is not clear whether this is a severe problem, however, taking into account that IMF lending has seniority over private sector lending, so that the IMF should not be concerned about the effect that stopping a program should have on the likelihood of recovering its investment.

It may be argued that these problems could be solved through *increased* transparency. For example, the IMF could be more explicit or more prompt in clarifying what is critical and what is not, and under which circumstances it would be willing to support a change in policies. This is a naïve view. Not only is the range of events that a program can face too large to be subject to pre-specification. More fundamentally, pre-specification would be inconsistent with the negotiation aspects of an IMF-supported program. Suppose financial markets reacted negatively to the lack of implementation of a measure included in a published Letter of Intent. If the IMF immediately stated publicly its willingness to waive the condition, so as to stem a speculative attack at its inception, it would lose any leverage in negotiating remedial actions. Thus, in these circumstances, what the IMF might end up doing would be to provide some half-hearted support which would not be fully convincing for the markets (it might indeed be even counterproductive).

The critical point here is that the negotiation/conditionality process requires time, and transparency, coupled with high capital mobility, dramatically cuts the time available for the process to proceed effectively and to lead to an optimal redesign of programs as they proceed. In this environment, conditionality may become perverse: not only does it not provide credibility, but it may end up being used as a coordinating device for speculative attacks, with program benchmarks/performance criteria assuming inappropriately the role of triggering devices.[39]

(C) ***"Conditionality and insurance services."*** *The commitment and screening channels presuppose conditionality, and this creates uncertainty about the availability of IMF resources; but certainty that sufficient resources will be made available is key to the working of the insurance channel.*

Channel IV requires that liquidity is available "with no strings attached." Ever since Bagehot (1873) it has been recognized that the attempt to tighten the type of "security" required for granting liquidity support during a panic would have disastrous results. But this is inconsistent with conditionality.[40] It could be argued that this inconsistency could be addressed by eliminating the conditionality in pure "liquidity" crises. This is the logic underlying the recommendations of the Meltzer Commission: liquidity support should be restricted to countries that have pre-qualified by meeting a (limited) number of performance

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[39] This is consistent with the empirical results in Edwards (2000) discussed above. The possibility of a negative catalytic effect (triggering a crisis) related to Fund discussions in also mentioned in IMF (1999), p. 35.

[40] As remarked in the IMF staff's account of the recent crises, "the IMF's own financing was phased and conditional on program implementation, implying that markets could not count on the availability of this financing" (Ghosh and others, 2002). The study mentions this as one of the main reasons why, in those cases, the IMF program failed.

criteria ahead of a crisis. There is a difficulty, though, in this logic, since countries, unlike the representative individual of most economic models, may be subject to sudden regime changes. No matter how good the historical record has been (and typically for most IMF borrowers "historical" means a decade or so), the domestic political process may engender a coalition that is simply "unwilling" to accept the burden of past policies. It is not accidental, in our view, that in most cases capital account crises burst out in the vicinity of a major election, in the run-up to which one or more of the candidates has won large popular support precisely by promising a "regime change." A measure of conditionality, and of discretion by the crisis manager in assessing the credibility of the ruling coalition, is therefore inevitable. But the insurance service provided by an insurer that feels the need to insure itself against the adverse event is unlikely to meet with success in the eyes of private investors.

VI. Conclusions

In this paper, we have reviewed the historical evolution, empirical record, and theoretical underpinnings of the notion of "catalytic official finance."

Our reading of the history of COF has yielded three insights. *First*, the idea that official lending might play a catalytic role was recognized and accepted by the IMF staff before the generalized move toward capital account liberalization that took place in the course of the 1980s. But in the era of capital account inconvertibility this was considered just a side effect of IMF programs, not the main hinge around which IMF activity revolved.

Second, with the opening up of the capital account, the emphasis on catalytic effects drastically changed. Attitudes toward COF appear to have followed a similar pattern in the course of the two major crisis episodes that have marked the last twenty years. In both the LDC debt crisis of the 1980s and the capital account crisis of the 1990s-early 2000s COF emerged as the official community's preferred option out of dissatisfaction with the alternatives. In the 1980s, it was the erosion of the concerted approach that prompted the Baker Plan. In the 1990s, the proximate cause was the moral hazard concern generated by the "Bagehotian" Mexican package. In both cases, private flows and official finance were postulated to be dependable "bedfellows" only for want of a better alternative. However, when it finally became evident that private capital flows were reacting as "perfect strangers" to policy impulses, the official community had to acknowledge, if somewhat grudgingly, the need in some cases to proceed to debt restructuring. It then directed its attention at finding ways to make the latter expeditious and reasonably uncontentious. In the 1980s, this attempt led to the Brady Plan. In the present context, it has so far led to the Krueger initiative, the reprise of discussions on collective action clauses, and the complex negotiations triggered by the Argentinean default of December 2001.

Third, the major difference between the LDC debt crisis and the emerging markets crisis, apart from the composition of external debt, is that in the former crisis management took place in the context of a suspension of debt service, while in the latter the official packages' primary objective was precisely to avoid such a suspension. This difference is responsible both for the greater variety of recent packages (as they had to be fine-tuned to the

circumstances of time and place) and for the greater size of IMF lending and ultimate exposure (since the crisis package had to be big enough "to impress" the market).

On the basis of this historical review, we have then turned to a more systematic evaluation of the empirical record of COF. Here, the evidence appears mixed, but overall consistent with the reading we have proposed above. All in all, catalytic effects do not appear to be strong, which is all the more remarkable since most empirical studies fail to control for actual policy change, thereby biasing results *in favor* of COF. Slightly stronger results tend to be obtained when COF is used either in the context of precautionary programs, that is for crisis prevention, or in association with debt rescheduling and/or restructuring, that is for crisis resolution.

The theoretical review contained in the last part of the paper tried to make sense of this rather dismal record. It so happens that the conditions for having strong catalytic effects, always rather demanding, become yet more severe when COF is used as a crisis management tool. Reviewing theoretical rationales for COF, we have identified five channels through which the announcement of an IMF program might prop up the propensity of private investors to lend to a financially distressed country, which we have labeled "policy design," "information," "commitment," "screening," and "insurance." The dependability of each of these channels appears weaker under the conditions that typically accompany a capital account crisis, impending or actual. The main problems stem from: (i) the costs that the IMF suffers when programs go off track (in terms of reputation, and of the risk of being accused of precipitating a crisis through the announcement that the program has derailed); (ii) the uncertainty regarding the penalty for lack of compliance, which depends on the markets' reaction (an important precondition for the conditionality mechanism to work properly); (iii) the inadequacy as an insurance mechanism of a form of lending that is limited (as compared to the potential capital flight) and conditional; and (iv) the asymmetric information between IMF and country authorities.

On the basis of these considerations, we conclude that COF should be handled with great care. Its potential as a crisis management tool, in particular, appears at best limited. This by no means implies that, if and when catalysis fails, IMF programs will likely be ineffectual, as catalytic effects are not the only channel through which programs work. Our argument solely implies that one should not have crisis management programs that can be expected to work only if strong catalytic forces are at play. This is our main message. Consequently, the current effort of the official community to go beyond COF, through the development of alternative crisis management tools, seems well warranted.

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