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Introduction
Joseph E. Stiglitz and Daniel Heymann

Macroeconomic debt crises have been a part of the economic scene ever since the emergence of modern credit markets. Sovereign defaults go further back in history. From time to time, a certain consensus has arisen among influential economists, policymakers and economic agents that crises are “a thing of the past,” at least in some countries which appear to have gained immunity for some reason or other. This complacency has been repeatedly disappointed – and was probably a major factor in its own disappointment: it is in the nature of those economic storms that they gather strength more easily when they are less expected (Kindleberger, 1978). Various economies, particularly but not only those labeled “emerging,” have experienced a considerable number of crises, especially in the last 30 years (Reinhart and Rogoff, 2009). The recent Great Recession in the world economy and the still open Euro Zone crisis have shown that highly developed central economies can also be vulnerable to debt-related macroeconomic disturbances of the first order of magnitude.

Some decades ago, Hicks (1967) remarked that macroeconomics (or monetary theory) “... belongs to monetary history in a way that economic theory does not always belong to economic history... Monetary theories arise out of monetary disturbances...” The argument applies especially to the analysis of macro crises, given their high social costs and theoretical interest. In fact, the study of critical events has a long history, starting much before the coining of the term “macroeconomics,” as illustrated by the classic works of the nineteenth century, from Thornton (1802) to, say, Bagehot (1873), passing through Marx (1867–94). We still have much to learn, though.

The reflection on macroeconomic crises requires theoretical frameworks that do not rule out as a matter of principle the very phenomena being studied. Crises put into doubt the relevance of models that assume that self-equilibrating mechanisms work automatically in the economy and that economic decisions are based always and everywhere on a correct perception of the properties
of the environment, even if possibly subject to random “exogenous” shocks extracted from a known distribution.

Real-world macroeconomic crises typically trigger widespread and “fundamental” re-evaluations of the economy’s prospects, and an intense search for lessons to be drawn for theories and policies. This implicitly presumes that critical events supply material for redefining prior perceptions: the post-crisis macro model (which will be used to interpret pre-crisis behaviors in retrospect) is likely to differ substantially from the previously prevalent representations of the economy. The activity appears paradoxical if carried out under the precept that agents must be assumed unconditionally to form rational expectations and that, consequently, there remains nothing for them to learn about the functioning of the economy (Stiglitz, 2011; Leijonhufvud, 2009; Heymann, 2007, 2008). The analysis of macro crises can certainly make good use of rational expectations models to represent some aspects of the events in question. At its core, however, trying to understand crises means developing preliminary schemes to picture situations where agents (and very likely, also economists) are hit by a realization that the economy did not work as they had thought it would.

Beyond that, crises pose severe, and sometimes dramatic, policy problems, at the national and international levels. There is a challenging task ahead in searching to diagnose macroeconomic vulnerabilities, designing preventive measures, finding ways to manage critical disturbances if they do develop, and improving the chances of a good “life after debt,” as our title goes. The works collected in the volume aim at contributing to that activity.

A family of events

Economies in crisis: a heterogeneous collection

Crises are often bunched in time and place. We usually speak of the Latin American episodes of the 1980s, or the Asian crises in the following decade. These commonalities may reflect shared structural features, which make economies collectively sensitive to some classes of international impulses and various “contagion effects,” or direct interdependences through trade or financial channels; behavioral similarities may also play a relevant role (for example, in the response to their crises of the 1980s, countries of the Southern Cone of Latin America adopted macro and reform policies which, although clearly not identical, showed analogous features). However, specific cases have their own idiosyncrasies. The set of episodes that can be readily categorized as debt crises show diverse characteristics in a variety of dimensions.

An often-made critical distinction is between crises which begin in the public sector – with the inability of governments to repay what they owe and
to roll over their outstanding debts – and those that begin in the private sector. Argentina and Greece belong to the former category; the 2008 crisis belongs to the latter. But the distinction is not always clear: a private sector crisis can easily morph into a public sector problem, for example, when there is socialization of private debts, as happened both in the US and East Asian crises.2

There is, however, one important distinction between crises brought on by the inability of the private and the public sector to repay debts. In the former case, there is a clear legal framework of what should happen when a firm cannot (or is not willing to) pay what it owes. (There are, of course, complex problems that arise when there are systemic crises, with large numbers of firms going bankrupt.) But in the case of sovereign default, matters are more ambiguous. There is no clear legal framework, and it is not easy to ascertain whether a country could repay if it wanted to, for example, by raising taxes sufficiently.

Another important distinction often made is between crises which are a matter of liquidity and those which are a matter of solvency. In the former case, the presumption is that the borrower could eventually repay what is owed – the borrower is simply not able to repay the amounts owed now, and can’t find anyone to lend him the money. But the distinction is not so clear: if it were evident that the borrower is solvent, then presumably someone would be willing to make the loan. Typically, the debtor cannot get access to funds because no one has confidence that it can/will repay. Of course, the borrower may believe he is “solvent,” and is only facing a temporary problem. But the borrower faces a liquidity problem because no potential lender shares that optimism.

Of course, ex post, it turns out that in some of the cases where this pessimism prevailed, the borrower does recover. The provision of liquidity by a “lender of last resort” (or the provision of funds to a country by the IMF) can “work,” in the sense that the loans are repaid and the borrower goes on to experience economic growth. Brazil (1998) provides a case in point. But there are many cases to the contrary: Russia did default, and even when the lender of last resort (the IMF) gets repaid, it may be largely at the expense of other creditors, who de facto become junior to the IMF debt.

There is a tendency to look at the factors that seemed central to the last crisis as central to determining any country’s vulnerability to future crises. In the aftermath of the Latin American crises of the 1980s, the focus was on public sector indebtedness; but excessive government spending played little role in the next crisis, the Mexican “Tequila” crisis of 1994–95, and no role at all in the East Asian crises of 1997–98: the governments had run surpluses. Mexico’s low savings rate was sometimes blamed for that country’s crisis, but the East Asian countries had high savings rates.

After East Asia, the focus shifted to the relative size of a country’s short-term indebtedness that is denominated in foreign exchange; but the North Atlantic financial crisis of 2008 showed that that variable was not so critical.
Many critics of East Asia placed the blame on those countries’ lack of transparency. While transparency is clearly important – if one had all the relevant information, clearly one wouldn’t lend to someone who would not be able to repay – there have been crises in the most transparent countries, those in Scandinavia. The quest for finding the variables that would determine, or at least predict, vulnerability to a crisis has been largely futile (Furman and Stiglitz, 1998). Part of the reason is the rich heterogeneity of circumstances of different countries.

Economies large and small, central and peripheral, rich and less rich

Episodes of debt-related crisis in the last few decades have involved some of the largest world economies (the US and Japan, among them) and others of a substantially smaller size. Debt crises would seem more frequent in middle-income economies, but over the decades a number of episodes have originated in wealthy countries. (Because very poor countries often have very limited access to credit and have very underdeveloped financial sectors, such crises are less likely to occur there.)

Financial systems with different sizes, configurations, sophistication of assets

A macroeconomic debt crisis obviously cannot develop without the fuel of a substantial mass of financial obligations. That being given, crises have been observed in economies with quite different degrees of financial depth (or financialization). The stock of financial assets/liabilities in the US before the recent crisis was several times larger than the annual value of GDP, and famously included a sizable volume of highly complicated derivatives, which were meant in principle to improve the allocation of risks and reduce systemic fragility, but may have ended up doing the opposite.

However, in other instances, “innovative” financial products did not feature prominently. Crises have occurred in financial systems operated mostly on the basis of traditional bank lending and simple bonds. (Indeed, traditional Minsky credit cycles are associated with plain vanilla banking.)

The denomination of the debt

In countries like the US and Japan, the national currency served as the usual unit of denomination of a credit. In contrast, the Argentine crisis of the early 2000s occurred in an economy with relatively low ratios of liabilities to GDP before the collapse, but where most of the debts that went into default consisted of simple, dollar-denominated instruments.

Typically, governments that issue debt in their own currency cannot face a conventional sovereign debt crisis: formal repayment can be accomplished simply by turning on the printing presses.
So too, governments that have borrowed in their own currency can reduce the real value of what they owe through inflation (if they have long-term debt.) But, while seigniorage financing in moderate volumes may be an effective instrument of debt reduction, so long as inflation remains mild, strong doses are likely to prove disruptive. A government that is perceived to be engaged in inflationary policies may not be able to get access to new funds, and the sudden stop of an inflow of credit can itself precipitate a crisis.

Varieties of monetary, exchange regimes and policies
Debt crises occur in countries with a range of exchange rate systems. It used to be thought that the best exchange rate regimes were the polar cases – either rigidly fixed or freely floating, and that managed exchange rate regimes were particularly vulnerable. On this basis, the IMF recommended that countries adopt one of the polar forms. But we have seen crises in countries with “pure” floating regimes (US, Japan), as well as those with currency boards with rigid convertibility (as rigid as can be – since in practice even “strictly fixed” exchange rates do change) at a constant rate (for example, Argentina 1991–2001). They occur too in circumstances where there has been integration into a regional monetary area (for example, Greece). Crises can occur under an autonomous national monetary management, and also in the complete absence of a country-specific monetary policy. Debt troubles may emerge in very different inflationary environments. To mention examples of a single country, the Argentine collapse of 2001/2002 was preceded by a period of nominal deflation, while the crisis of the early 1980s developed in a context of high inflation (over 80 percent a year).

Capital inflows, not always
The accumulation of ultimately unsustainable foreign debts (by governments and/or private sectors) as the counterpart of current account deficits was a feature of a variety of crises, especially in emerging economies. But asset market bubbles and domestic financial boom–bust cycles also arose in economies (Japan, the US in the 1920s) which ran international surpluses and had positive net lending flows to the rest of the world.

Government or twin deficits, sometimes
In some instances, difficulties in servicing the public debt, or outright government default, are at the epicenter of the macroeconomic quake. Lax fiscal policies in the boom can also indirectly stimulate an unsustainable spending and borrowing expansion of the private sector in open economies with access to foreign credit. “Twin deficits” have been a salient element of crises, for example, in Greece recently, and in several Latin American episodes. However, there are other cases where the origin of a crisis can be identified directly
in private sector over-indebtedness, with the government running measured surpluses (as, for example, with the cases of Ireland in the 2000s, or Chile in the buildup of its crisis in the 1980s). The connection between public and private budget constraints works in both phases of the cycle. A “bubbly” growth in private spending can transitorily boost fiscal revenues. But this may mask what would appear to have been in retrospect the buildup of large contingent liabilities for the public sector, if after a crash the government engages in bailout operations to rescue troubled groups of private debtors.

**Family characteristics: broken promises and frustrated wealth expectations**

Macroeconomic debt crises, with all their heterogeneity, have a common defining feature in the (actual or feared) non-fulfillment of large masses of financial obligations. Bankruptcy and default are incompatible with perfect foresight. A default perfectly and unanimously anticipated from its origin will not happen (because no one will advance resources against an empty promise).

Thus, debt crises can only be studied in models in which there is uncertainty – in which at least at the time loans are made, the lenders think there is at least some chance of being repaid. Of course, for all but a few borrowers, lenders recognize that there is a chance of non-repayment, and thus demand an interest rate that is in excess of the safe rate of interest (and greater than the rate paid by the US government for a loan of comparable maturity). In principle, the non-execution of a payment commitment written as if it should be realized unconditionally, could possibly be viewed as implementing an implicit contingency clause in the contract. Non-payment would then represent what everyone should, and does, expect according to the contract under the observed circumstances. Luck determined a bad outcome from a distribution of external conditions which, by assumption, was optimally contemplated by the parties when they agreed on the contract. What went wrong was due to blind chance: it may be deplored, but should cause no regrets to anyone.

The argument just mentioned points to the ambiguity of the notion of default. The existence of interest premiums implies that, somehow, the prospect of non-payment of the debts in certain states of the world has been contemplated as part of the “normal course of events.” Also, in assessing the profits and losses of the parties in a contract, it should be considered that a lender is hurt when a stream of promised payments is interrupted, but the damage could be (and, on average, in a world with a modicum of rationality, would be) more than offset by the profits from holding high-yield claims before default occurred. In this view, debt restructurings are both anticipated (in the sense that creditors know that these restructurings will happen under certain contingencies) and are welfare increasing, since implicitly, what appears as a pure debt contract contains within it an element of equity, of risk sharing.
Such restructurings need not lead to crises. Indeed, the large declines in incomes often observed in debt crises (in this perspective) are not because of the debt crisis so much as because of the adverse shocks that led to the crisis; the debt restructuring can be an important element in helping countries absorb such adverse shocks.

But when there is a large amount of debt, adverse shocks can lead to a crisis for a slightly different reason: in a world with credit rationing, the adverse shock, if large enough, can lead to a sudden cessation of the flow of credit from abroad, with severe macroeconomic consequences (Gersovitz et al., 1986).

We should note that for developing countries (and increasingly for developed countries) the adverse shocks are often not something that happens internally, but a change in the flow of funds abroad, as a result, for instance, of a change in monetary policy in the United States or a change in risk perceptions.

However, for the most part crises do not correspond to the image of events which, though unpleasant, can be taken serenely as part of a well-defined “natural randomness of things.” Crises negate rational expectations. It is not just that a bad outcome that they realized might happen has happened. Typically, crises lead to changes in views of the world. They are memorable incidents that remain in the minds of people who live through them, and often serve as historical landmarks long after their time. For large groups of people, a crisis does not call for moving ahead along a particular branch of a predetermined decision tree. Rather, agents living in a crisis perceive potentially life-changing transformations in their environments, calling them to reconsider attitudes, beliefs and behavior patterns. Policymakers are likely to be in the same predicament: the crisis proved them wrong (those in power, at least) and now they, and society as a whole, must come to a new understanding of the world, and in doing so find their way out of a mess.\footnote{The Queen of England famously asked about the financial crisis in the UK “It’s awful... Why did nobody see it coming?” The answer was not that the economy had been hit by a well-identified shock whose likelihood of occurrence was known to be given by certain probability distribution. Rather, some years later (December 2012, in a visit to the Bank of England), the Queen answered her own question: “People got a little lax... perhaps it’s difficult to foresee [a crisis].”\footnote{By the very nature of debt crises, the difficulty that many people find in anticipating their appearance is an intrinsic part of the process that generates them.} Crises substantially modify the scenarios where people carry out their economic activities. They represent a point of discontinuity: Most importantly, from a macroeconomic perspective, large groups perceive themselves, and the economy as a whole, poorer than once thought. These are “awful” events, where the estimates of a country’s wealth get revised downwards. And this leads to marked changes in behavior.\footnote{Cries substantially modify the scenarios where people carry out their economic activities. They represent a point of discontinuity: Most importantly, from a macroeconomic perspective, large groups perceive themselves, and the economy as a whole, poorer than once thought. These are “awful” events, where the estimates of a country’s wealth get revised downwards. And this leads to marked changes in behavior.}
Solvency, or debt sustainability, are intrinsically prospective and subjective notions: the relevant “fundamentals” can only be determined by forming some fallible conjectures (cf. Keynes, 1936, esp. chapter 12; 1937). In a crisis, big classes of borrowers are seen to lack the earning capacity required to service their obligations. Their currently anticipated flows of future incomes (in terms of the relevant units of denomination) fall short of the expected levels that supported the creation of the debts. The consequences reverberate across the economy. In the aggregate, the process amounts to a collective recalculation of the economy’s prospective growth trend (see Aguiar and Gopinath, 2007; Boz et al., 2008; Guzmán, 2013; Heymann et al., 2001). In the boom phase, big segments of agents (and, probably, analysts) acted as if they perceived that the economy was operating on a solid trend; now the same performance is viewed as an unviable temporary bubble.

These changes of mood are a marking feature of debt cycles. In the title of the great book *Manias, Panics and Crashes*, Kindleberger (1978) vividly sketches a picture of crises as dramas where actors are moved successively by emotions of high euphoria and deep fear. Indeed, in the course of big macro fluctuations, relevant agents sometimes seem to behave as if they thought that nothing may go wrong, only to fall shortly afterwards into panicky flight or gloomy depression.

However, crises do not appear to be simple consequences of “irrational exuberance” (cf. Greenspan, 1996; Schiller, 2000), as a sort of macroeconomic bipolar disorder. Pre-crisis booms tend to show conformist attitudes by sophisticated agents, who do not appear to be thinking or acting under the influence of psychological “high spirits.” At their time, booms that ended in crises could be rationalized in ways that left sober agents satisfied to play along for quite a while. While, as Kindleberger points out, at the time these exuberant actors believe that they are not part of a collective mania – and even go to great efforts to distinguish the current situation from earlier bubbles where such irrationality was in evidence – in fact it is hard to deny that the social contagion of beliefs have played an important role in the credit bubbles that typically precede debt crises.

Behaviors that lead to crises need not embody eccentric expectations or opinions contradicting the established beliefs of the times. Rather, they often appear as variants of prevalent views and attitudes. The anticipation that price stabilization and structural reforms along accepted lines would drastically raise productivity levels supported a positive interpretation of current account deficits in Argentina in the 1990s (see Galiani et al., 2003). In the path to the recent crisis technical improvements and benefits derived from the changing patterns of the international division of labor were expected to expand productive opportunities in the US and validate the increase in leveraged expenditures: the “new economy” would be able to manage its debts, helped by the
availability of innovative financial instruments that would allow it to diversify risks. Would not a country like Greece, having adopted European institutions and the common currency, enter a process of convergence towards European income levels, where the Balassa–Samuelson effect would result in an equilibrium real appreciation, and where the use of foreign credit could be seen as a natural consequence of anticipations of future prosperity?

Of course, contrary opinions were also expressed. However, the burden of the proof seemed to be on the dissenting arguments and, as a matter of fact, they did not carry a decisive power of conviction, sufficient to modify behaviors. Indeed, proponents of the conventional wisdom under which the economy was not at risk could not really fathom the arguments to the contrary.15 The rationalizing arguments looked qualitatively plausible. In those conditions, performance indicators such as rising debt ratios (later to be called perhaps a credit mania) may have been interpreted in a positive light, as signs that savers and financiers shared optimistic attitudes and were willing to participate in the expansion by financing higher spending levels.

In Hemingway’s novel *The Sun Also Rises* (1926), a character is asked how he went bankrupt. The short answer was: “Two ways. Gradually, then suddenly.” The history of crises shows substantial variations in the timeframe of expectations and decisions as the process evolves. In the phase of debt buildups, the disposition to lend and to borrow suggests that people trust their ability to make forecasts over not-too-short periods. Prosperity itself helps to strengthen those views, as it tends to be interpreted as an indication of an underlying strength in the economy’s growth potential. The possibility that Minsky fragilities may be developing is not taken at first as a relevant cause to worry. The boom that precedes the bust lulls market participants into the belief that macroeconomic risk is low, and therefore that investors can take on more debt and leverage. The change in mood tends to happen slowly at the beginning. In terms of “categorical thinking” (Mullainathan, 2002), where agents do not modify their beliefs continuously, but use a classification in discrete scenarios to guide their behavior, the evidence that may start coming in that borrowers are not generating the cash flows to service debts is likely to be interpreted as circumstantial, and not requiring a change in the operative perception of an economy on track.

If news about rising problems keeps accumulating (in the case of an episode driven by private sector debt, signs like growing arrears in repayments, indications that the increase in asset prices may have gone too far, maybe a leveling of aggregate demand) the speed of reactions can quicken substantially. What once used to be named financial deepening gets increasingly called a debt bubble.

Crises are “big events.” Bankruptcies or defaults mark discontinuities. Besides the loss in perceived (or pseudo-) wealth, there is a change in real wealth as a
result of bankruptcy costs, a change in distribution, and a change in control. They open a new history, without implying an immediate resolution of past issues. When the eventuality of a crisis emerges, people can perceive that the economy is approaching a bifurcation: either avoid the worst and somehow regain balance, or go into a tailspin. This is likely to be a phase of increased policy activity, and rising public demand for “reassuring signs.” Naturally, at that point people will watch more and more anxiously the moment-by-moment pieces of information that may indicate whether the economy is close to tipping one way or another. This leads to a shortening of planning and decision horizons, and induces volatility of expectations. Self-reinforcing avalanches in financial markets become more likely. Solvency and liquidity problems get more mixed up than in tranquil times: the (provisional) proof of solvency is paying punctually, now. The supply of credit now contracts, and real activity is likely to fall. In most cases, the ability of monetary authorities to loosen monetary policy, sufficient to offset the credit contraction very limited.

It may happen that economies come close to a full-fledged crisis, but manage to avoid it, and recover (for example, Brazil in 2002). The more remembered episodes are those where the outcome goes the other way. In some instances, the manifestation of the crisis may have as milestones particular dates or events, like major devaluations, declarations of government default, or failures of large banks or corporations. The European experience of the last years shows cases where, although there is not a climactic breakdown, the economy gets stuck in a prolonged state of malaise as the effects of excessive debts linger on, without a clear-cut resolution; this also would apply to Japan’s “balance sheet recession” (Koo, 2003; Greenwald and Stiglitz, 1993, explain why recovery from a balance sheet recession may be very slow.).

The eruption of a crisis removes some uncertainties (the collapse has happened), and creates others. Losses have to be processed throughout the economy: their magnitude and distributive incidence remain to be determined, and their multiple rounds of effects to be worked out.

In those conditions, further disturbances of credit are to be expected. Diverse channels of financial propagation have been extensively discussed in the recent literature. The various mechanisms may work with different intensity according to the case, and particularly the configuration of the financial system. However, the different effects point in a similar direction, of a tightening of credit constraints even of high-productivity borrowers due to a variety of effects: a weakening of bank balance sheets, worsening expectations, perceptions of increased risk, a fall in the price of assets used as collateral, and an increased fragility of banks. Each of these can turn into a self-feeding spiral; for instance, the increased fragility of banks may lead to an even stronger contraction in lending, weakening the economy further. Thus, instead of helping
to smooth the impact of the shock, credit markets operate as amplifiers, with positive feedbacks aggravating solvency and liquidity problems.

Moreover, financial restrictions contribute to induce a segmentation of agents between those who maintain their earning capacity and hold assets which remain liquid, and those who face strict constraints. Large numbers of agents are limited in their possibilities to spend on goods and services. For the currently less restricted sets of people, the situation is likely to motivate apprehension about the future: this would induce “voluntary” cuts in expenditures, and stronger flexibility/liquidity preference. While these changes lead to an increase in the savings rate, the simultaneous decrease in consumption and credit availability leads to a simultaneous decrease in investment. This is a typical scenario for a traditional savings–investment inconsistency, and raises the possibility of large-scale effective demand failures (Leijonhufvud, 1973).

An economy does not undergo a substantial drop in its level of activity proportionally, or gracefully. A strong shock on wealth, incomes and spending must imply considerable sectorial reallocations and distributive shifts. Market adjustments in wages, prices, and interest rates may in fact be disequilibrating (Stiglitz, 2013). Longer-run trends that tend to induce changes in the structure of production can contribute to keep low the aggregate level of output, if mobility between occupations is limited (cf. Delli Gatti et al., 2012). In a large-scale crisis, some productive activities (especially those that were particularly involved in the bubble) reduce their production levels sharply; some types of human skills experience a strong diminution in value; and because of credit constraints, individuals may not be able to finance the investments required to enable them to acquire the skills to move to alternative occupations. Finding a new place in the labor market when the old abilities have little or no market value can be difficult and time-consuming, apart from personally painful: a willingness to accept a salary cut may not suffice to regain work. This effect can contribute to a jump in the unemployment rate.

Remarks on policies

A macroeconomic crisis is a (possibly understandable) policy failure, by action or omission. Economic policies cannot avoid being concerned about crises, in the different stages of their evolution. According to the old saying, French generals in the 1930s prepared themselves thoroughly to fight and win the previous war. The design of economic policies should avoid getting into the same predicament of seeking to avoid the behaviors that led to the last crisis. Crises do not repeat themselves, as we have seen: innovation (real and financial) implies that the same (or closely similar) economic configurations and behaviors will not be encountered in the future.

While, in some sense, each crisis is sui generis, the previous discussion has made clear that there are some common elements. Crises, and especially debt
crises, are often marked by credit and asset bubbles. In the run-up to the 2008 crisis, policymakers in the US were wont to brush off concerns about bubbles (partially in the belief that markets are “rational” and therefore that bubble simply don’t exist) by saying that you can’t tell a bubble until after it breaks. But while one can’t be sure that there is a bubble until after it breaks, all policy-making is done under uncertainty. One could have been fairly sure, for instance, as the price of housing relative to median income soared to unprecedented levels that there was a bubble. Equally to the point, there are asymmetric costs and benefits of taking actions: the costs of taking actions to have dampened, and perhaps prevent, the bubble were an order of magnitude smaller than the benefits that would have been derived from such actions.

In short, policies should prepare themselves to adopt preventive measures if signs of danger emerge and, when these do not prove effective, to face the management of disruptions of different intensity. These are huge issues, with large-scale economic and political (distributive) implications. We limit ourselves to some brief remarks.

**Prevention**

Crisis prevention means inducing behaviors that avoid large-scale economic mistakes. There are three sources of market failures: (a) Large macroeconomic externalities. Market participants do not take into account the effects of their actions on others, leading to phenomena such as excessive borrowing and excessive reliance on foreign-denominated debt. (see Korinek, 2010, 2011). The “too-big-to-fail” banks in the US did not take into account how their actions could lead to systemic risk and a crisis. (b) Agency problems, so that decision makers may not even take into account the consequences of their actions for their own firm. Part of the reason for Greenspan’s failure to anticipate the excessive risk undertaken by banks is that he ignored these agency problems; if he had only looked at the incentive structures facing bank managers, he would have anticipated that they would undertake highly risky action. (c) Poor judgment – beliefs that are inconsistent with “reality.” Many of those in the financial market denied the possibility that there was a bubble.

Policymakers can (and should) have different objectives than private actors. They are paid to think about externalities and agency problems. Their job is to focus on the systemic consequences that might arise if there is a kind of collective bias in market beliefs. Thus, if regulators and policymakers do what they are supposed to do, it is not necessarily because they are smarter than markets. It is because what they strive to do is different from what private firms strive to do (which is to maximize profits in ways that do not get them into jail).

Policymakers must assess the sustainability of the economic path that is being generated by private expectations and behaviors. This intrinsically forward-looking exercise can hardly be reduced to the application of mechanical rules,
and may itself be a source of errors. (Certainly America’s policymakers failed, but it was partly because they bought into the idea that they couldn’t and shouldn’t second guess the market.)

The game is one with high stakes and considerable uncertainty. However, policymakers are engaged in playing it whether they act or abstain. Benign neglect when a bubble develops will not prevent the consequences. There are real questions about the adequate mix of *ex ante* policies and post-crisis interventions: the first must be based on conjectures, but “mopping up after the crash” catches the economy already in difficulties, can be very expensive, and, if anticipated, may distort private incentives (Jeanne and Korinek, 2012). In any case, the notion that policies can passively wait until a bubble bursts and rely on variants of the “Greenspan put” overestimates the capacity to stop a macro disruption in mid-course, while it minimizes the social costs of a crisis, and the distributional impact of bailouts (Stiglitz, 2010b).

Preventive policies put themselves in the way of expansions that may, or may not, ultimately prove unsustainable. The choice of the timing or intensity of policy actions risks errors of both types: too much too soon, or too little too late. The mix of instruments, particularly between monetary and fiscal policies, can also be a matter of discussion. Policies of crisis prevention can affect real growth immediately; their benefits are delayed, and may remain hypothetical (the non-event that a potential crisis does not occur). The opposite happens with non-action. Immediate political incentives may be biased in the direction of the latter: nobody wants to be a party pooper, especially when the bubble is generating huge profits for key actors in the private sector, who are often willing to share a fraction of those rents with political actors, to induce them not to interfere. The analysis above about the sources of market failures provides some guidance for preventive policies.

“Good bye financial repression, hello financial crash,” said Diaz Alejandro (1985) in his analysis of the Latin American financial reforms of the late 1970s. The regulatory cycles of the last decades have not reached a stationary point. Governments have tried to act as if the financial sector could take care of itself, only to step up and assume large losses when banks were at peril (through the socialization of private debts or the purchases of dubious assets in the midst of an emergency). The history of the last forty years, since the beginning of the liberalization movement in the late 1970s, is the history of one bailout after another; and while the bailouts typically have the name of a country associated with them, they are really bailouts of the lenders, and, in particular, the international banks.

The international financial crisis showed that arrangements (such as universal banking, credit default swaps, or even diversification) believed to promote risk-spreading may end up in effect amplifying systemic risks. Standard capital requirements can act pro-cyclically, rather than moderating financial swings.
Size and connectivity of financial agents are double-edged features (see, for example, Nier et al., 2008; Gai and Kapadia, 2010; Battiston et al., 2012a, 2012b; Gallegati et al., 2008; Haldane, 2009; Haldane and May, 2011). The reconsideration of regulatory frameworks has to deal with the intricate links between the architecture of the financial system, the exposure of the system to risks (and the correlation of the shocks) and its vulnerability. In a sector where the race between the measures of the regulators and the maneuvers of avoidance by the regulated is especially intense, policy provisions (like liability rules or restrictions on bonuses) which may modify incentives of financial managers also seem relevant parts of the package (cf. Leijonhufvud, 2010).

The hazards and sources of financial fragility are related to the types of assets issued and traded. Ultra-sophisticated instruments, as has been seen from the performance of derivative markets in the 2000s, are apt to turn into factors of confusion rather than tools to improve the allocation of risks. This is especially the case when there is a lack of transparency (for example, in over the counter derivatives). Symmetrically, vulnerabilities may also derive from a poor or unbalanced menu of assets. As a salient instance, the prevalence of contracts in foreign currencies was a major element in crises in “emerging” economies over the years. Those units of denomination are ill adapted to such economies, since domestic incomes are likely to have a highly variable purchasing power in terms of the currencies in which money is borrowed. Crisis prevention would then include policies to induce “de-dollarization,” and encourage the use of the domestic currency in writing debts, particularly macroeconomic frameworks tending to reduce income and price volatilities. The search for improvements in contractual arrangements has also emerged prominently at international levels, especially in relation to sovereign debts. The matter is treated in several contributions to this volume (see Miller and Zhang, 2014; Barr et al., 2014; Schneider, 2014; also Basu and Stiglitz, 2014).

While there is still no unanimity about the set of appropriate preventive measures – measures for which the expected benefits exceed the costs – there is a broad consensus around several measures: (a) more transparency; (b) reducing incentives for excessive risk taking, for example, associated with too big to fail, too interconnected to fail, or too correlated to fail banking structures; (c) reducing opportunities for excessive risk taking in “core” banks, for example, by restricting proprietary trading (the Volcker rule), by ring-fencing (partially restoring divisions between investment and commercial banking), and by not allowing government insured institutions to write derivatives; (d) circumscribing the shadow banking system, much of which exists simply to circumvent regulations imposed on the regular banking system to promote economic stability; (e) macroprudential regulations, designed to ensure that the financial system acts in a counter-cyclical rather than pro-cyclical manner, including provisioning requirements, and speed bumps.
Debt represents fixed obligations, and other things being equal (which they typically are not), with a fixed set of debt obligations, the greater economic volatility, the more likely it is that there will be a debt crisis. Hence, an important aspect of crisis prevention is limiting exposure to risks and ensuring that whatever shocks that buffet an economy are dampened rather than amplified. The nature of the economic regime obviously affects both exposure to shocks and the extent of amplification (and persistence) of shocks. The East Asian crisis as well as many other crises have widely been blamed on capital and financial market liberalization, which exposed the countries to more external shocks. Financial deepening (high levels of margin), it has been suggested, may give rise to amplification. While economies should respond to a greater exposure to, say, external shocks by undertaking lower levels of debt, the adjustments in debt levels often have not been sufficiently deep, partly perhaps because of the market failures to which we referred earlier, and partly because the “reforms” that led to greater exposure to risk simultaneously led to greater financial deepening.23

Macro management of debt crises

Can prevention fully succeed in eliminating debt crises, or close threats? Possibly not, at least in economies with substantial volumes of financial obligations. Macro policies in situations of strong disturbances to credit markets will be conditioned by the characteristics of the perturbation and the means available to the government.

We can distinguish two sets of government policies: Those that deal directly with the debt problem, and those that deal with the macroeconomic consequences that we have discussed earlier. Of course, the two are related: allowing the economy to sink into recession or depression will exacerbate debt problems. Even if a country did not have a debt problem before the recession, it will eventually have one if the downturn is prolonged.

Debt, as Stiglitz emphasizes in his paper in this volume, is simply money that some people owe to others. In much of the standard macro-theory, distribution doesn’t matter; and even if the standard micro-theory, the distribution of wealth (or changes in the distribution of wealth) shouldn’t affect the ability of the economy to achieve full employment. But, of course, each individual does care about the size of the slice of the economic pie that he gets. The easiest resolution of debt crises, entailing, for instance, the simple cancellation or restructuring of debt, are typically not on the table, at least at the beginning of the crisis, though, eventually, creditors often do accept significant debt restructurings. (Debt restructurings involving a rolling over of debt and a lengthening of the maturity structure are often attempted, in the hope that the country or firm is simply facing a liquidity crisis rather than a solvency crisis. As we commented earlier, the distinction between the two is
often not clear; and often a simple extension of the maturity structure doesn’t work: sometime later there is a debt write-down.)

When a single firm has trouble paying what it owes, there is a simple procedure for debt restructuring; but when there are many firms that owe money to each other, there is no such easy working out of the situation: the value of each firm depends on what it receives from others, who may also not be paying their debts. There is a complex simultaneity problem; Miller and Stiglitz (1999, 2010) argue that this should be dealt with through a special bankruptcy procedure that they call a “super Chapter 11.”

Bankruptcy entails shareholders losing some or all of their claims on the assets of the firm and some or all of their control to creditors. Bankruptcy law provides for an orderly way by which claims are resolved and, at least in Chapter 11 of the US bankruptcy code, creditors are given a fresh start. But there is no corresponding legal framework for the resolution of sovereign debts. As several papers in this volume argue, using GDP bonds as part of sovereign debt restructuring can be thought of as providing an analogous mechanism for sovereigns, although their usefulness may be limited by low market valuations when they are issued.24

As we noted earlier, debt crises are often associated with sudden changes in the expectations of market participants, in ways that lead to the destruction of perceived wealth and thus to abrupt reductions in aggregate effective demand. These changes in aggregate effective demand can be so large that adjustments in wages, prices, and interest rates cannot easily offset them. The problems are exacerbated if financial institutions and other creditors decide by reasons of caution, or are forced by their own illiquidity, to contract their lending. The economy plunges into recession or depression, exacerbating the debt crisis; whether it originally was a private or public debt crisis, it soon becomes a national debt crisis.

If governments have the required fiscal space, they can (at least partially) step into the breach, for example, by direct stimulation of the economy, by bailing out the banks and restoring their lending capacity, and/or by facilitating debt restructuring, to make the apparent losses of the creditor smaller and, therefore, more acceptable. But, in order to perform those functions, the government must be able to raise funds in appropriate amounts and terms,25 a particularly difficult requirement if public finances are already under stress.26 That is why ex ante precautionary measures such as the accumulation of actual or contingent resources (in forms like foreign reserves, access to credit or taxing capacity, as the case may be) that can be accessed quickly in emergencies is so important.

At the early stages in a crisis, traditional arguments for lender of last resort operations become relevant when many private debtors are perceived to be in jeopardy, and there are risks of a destructive avalanche of self-reinforcing
Joseph E. Stiglitz and Daniel Heymann

credit contraction in the absence of intervention. Avoiding a debt deflation process is then a priority. Direct actions on credit markets, where the urgent problems appear to be, seem a natural first line of defense.

The ability of policies to sustain the supply of credit depends on the assets that the public wants to hold. In some economies, the domestic money and government bonds are perceived as safe refuges by potential lenders, and their demand actually rises in a private sector crisis. This is not a general case. When the public sectors are less trusted, and the demand is for some “outside” asset (central currencies, or gold in its times), an “external drain” can combine with “internal drain” (as was feared by Bagehot in the England of the 1870s) and lead to a financial and currency twin crisis (cf. Kaminsky and Reinhart, 1999). The resulting movements in exchange rates can further exacerbate the debt crisis, especially when there is a currency mismatch between assets and liabilities.

Government lending operations in a crisis imply taking perhaps considerable credit risks. What may appear as conventional monetary policies morph into “quasi-fiscal” operations with long-lasting effects on the liabilities of the public sector. In some instances (for example, Latin America in the 1980s) these consequences can contribute to turn a debt crisis into a high inflation trend.

But even when the government does not engage in lending operations, there can be severe budgetary consequences, as has been evident in the 2008 crisis. The economic contractions reduce revenues, and the attempts by government to stimulate the economy, even when partially successful, represent a drain on the fisc.

Distributive repercussions are present in any event, since the interventions shift the allocation of losses from insolvencies, besides hopefully moderating their aggregate volume. In the midst of an economic turmoil, it is good if policymakers are able to discriminate between assisting bank stockholders, managers, workers and organizations, or depositors. The Swedish experience of the 1990s is interesting in this regard (see Jonung, 2009). A key criticism of the US rescue of the banks in the 2008 crisis was that too much of the money went to bailout shareholders and bondholders and to support the incomes of the managers.

Those measures often prove insufficient, however. Debt purchases by the public sector satisfy the thirst for safety and liquidity on the part of the owners of those assets, but do not involve those groups without financial holdings. When the weight of bad debts is too big, and/or their contractionary effects have been allowed to go too far, those illiquid groups are likely to increase their numbers (in particular, through the addition of the unemployed who have exhausted their savings), and to remain shut away from credit markets. In a segmented economy, liquid agents do not find creditworthy individual borrowers, while many people would be willing to borrow at high rates in order to sustain consumption, or to keep open an enterprise, but do not have
financing options, even when, on average, they may be expected to regain a capacity to generate incomes when the economy recovers. Lenders may be risk-averse (see, for example, Greenwald and Stiglitz, 2003), so that the risk compensation they demand may exceed the willingness of borrowers to pay a risk premium; and this may be especially the case if there are large disparities in beliefs about the likelihood of a quick recovery on the part of borrowers and lenders (Stiglitz, 1972, 2013). In the 2008 crisis, the restoration of the balance sheet of the banks did not lead a resumption of lending, especially to small and medium-sized enterprises.

In crises originated in the private sector, macro policies have a role mobilizing resources to contain the disruption, on the basis of their perceived ability to obtain future revenues. In public debt crises, the primary necessity is to restore that ability, and/or reduce government’s obligations, real or financial. Here, it is the private sector that is going to be asked, or made, to contribute in order to equilibrate public finances. If prosperous taxpayers or recipients of government transfers and services are in a position to be called to provide the funding, the fiscal adjustment need not cause strong macroeconomic perturbations, considering that it may dissipate uncertainties regarding fiscal policies and their distributive incidence. However, in scenarios where the government attempts a large-scale adjustment in a weak economy (as in Argentina in 2001), the consequence may well be a cumulative process of reduced real activity, lower government revenues and further demands for belt tightening. This may result in a period of stalemate, where creditors of the state renew their lending only at still higher interest rates, the government struggles under constant pressure to pacify lenders for some time, and the economy stagnates at a low activity level, while few can believe that the debt will be honored, especially given the large interest burden (cf. Calvo, 1988). But, without a deus ex machina, the final outcome is likely to be a bang – a debt crisis with some form of debt restructuring. Fiscal adjustments designed to avoid the day of reckoning can be self-destructive.

Crisis may be so strong that they require large-scale debt reductions in order to allow a recovery to take place. There is life after debt, although not necessarily an easy one.

Errors reduction and life after debt

Errors, miscalculations and failures of business projects occur all the time in normally functioning economies. Debt servicing difficulties are handled routinely by private renegotiations or by formal bankruptcy procedures through the legal system, without causing more than low-intensity “background noises” for the system as a whole. In a private debt crisis of macroeconomic importance, the current problems and the future prospects of individual debt repayment are intricately coupled together. This implies that a case-by-case,
decentralized approach to dealing with a mass of problematic debts would result in a cumbersome process, during which the ownership and the access to resources remains doubtful, and where there is apt to be much heterogeneity in the criteria used in different rulings (until, possibly, they are somehow unified by a high-level judicial decision), with an uncertain aggregate outcome. Reciprocally, a “decision from above” (like the annulment of the gold clause in US bonds in the 1930s, or the “pesification” of dollarized assets and liabilities of the Argentine banks in 2002) could contribute to a recovery by reducing debts at once (at least provisionally, since these decisions are still subject to legal review), and freeing resources for spending and production.

At the same time, measures of that type represent a dramatic intervention in existing agreements, and they bring about wealth redistributions. Those who lose out will argue for the sanctity of contracts, the risks associated with such “abrogation of contracts,” and that the actions are unnecessary for macro-economic purposes. Advocates of such restructurings contend that all legal frameworks contain an explicit or implicit provision that contracts are not enforceable in certain unanticipated extreme events – and crises are examples of such extreme events; and that countries that seem mired in distress often do recover dramatically after such debt restructurings, even when they are outside the pre-existing legal frameworks. More generally, many of the other actions governments and private parties take are outside pre-existing legal frameworks: had those been adhered to, arguably the US bailout and foreclosure crisis would have taken on a very shape.

Something similar would apply to sovereign debt restructurings, though here, legal frameworks are deficient and attempts to develop an international “Sovereign Debt Restructuring Mechanism” have, so far, failed. In some instances (for example, the US following World War II), debt reduction may take place gradually, possibly with the help of mild inflations and measures to constrain interest rates (Reinhart and Sbrancia, 2011). Hyperinflation has operated in some episodes as a brutal mechanism for reducing the real value of debts, but this requires the pre-existence of bonds with domestic currency denomination, as in the defeated Central Powers after World War I. But often an unmanageable debt overhang leads into an explicit interruption of payments. Government defaults are traumatic events, which tend to occur when an economy has reached a state of distress, and non-payment appear more or less unavoidable. Perhaps for that reason, the measured economic costs of government defaults appear, on average, not too large, or long-lived.27

Debt restructurings involve numerous players: national governments and their constituencies and bondholders, domestic and international; but also foreign governments and international organizations, with different degrees of interest and influence in the proceedings according to the case. The observed outcomes of these complicated games cover a wide range of operations with
different characteristics, going from rapid “friendly” bond swaps with small haircuts to protracted negotiations with large debt reductions. From the point of view of the debtor country, there is some evidence that the costs of default increase with the magnitude of the “haircut” involved in a restructuring (Cruces and Trebesch, 2011). But sustainability is a crucial consideration: restarting from a precarious position because of an insufficiently deep debt restructuring would raise the eventuality of a new crisis; a prospect that should be frightening also to creditors. Debt reductions are part of the emergency kit of economic policies.

Economies do recover after crises, and sometimes quite rapidly, if the debt overhang is dealt with. However, regaining peak levels of income typically takes a considerable number of years, and it is common for aggregate output not to return back to the trend line that would result from extrapolating peak values with pre-crisis rates of increase (Cerra and Saxena, 2008; also Reinhart and Rogoff, 2014). But, of course, this is true for any deep recession – there is, at best, very limited “mean reversion.” The accumulated gaps indicate the substantial wealth losses with respect to what may be have expected during the boom. Once the economy has rebounded, the dramatic urgencies of the crisis give way to the more mundane, but non-trivial problems of turning a recovery into sustained growth.

Contents of this volume

The analysis of debt crises poses questions at different levels, from the characteristics of individual behavior in large social ups and downs to the functioning of the international system when a country or groups of countries goes through economic turbulence. In this book we concentrate on some aspects of the processes involved, emphasizing the relevance of international comparisons and the interest in exploring policies and instruments to deal with crises and to resolve debt defaults.

The first paper of the volume, by Joseph Stiglitz, presents an overview of analytical issues concerning the behaviors and mechanisms that generate macroeconomic crises and the associated policies. It sets the scene by placing the theory of crises within the context of standard economic theory. It focuses on three central questions: Given that the state variables that describe the economy (for example, the capital stock, the level of human capital, the amount of natural capital) change slowly, why is it that the state of the economy – levels of output and employment – can change very rapidly? Why is it that the natural equilibrating mechanisms don’t seem to work, that is, why is it that adjustments in wages, prices, and interest rates often don’t restore the economy quickly to full employment, and often move the economy further away, and why is it that debt so often precipitates crises? As we noted, debt
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