Banking, Finance, and the Minsky’s Financial Instability Hypothesis

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The Global Financial Crisis in Historical Perspective: An Economic Analysis Combining Minsky, Hayek, Fisher, Keynes and the Regulation Approach

Abstract: Financial liberalization has triggered a series of financial innovations that seemed to define, at least transitorily and for the United States and United Kingdom, an unprecedented consumer credit-led accumulation regime. But financial innovations diffuse, quite quickly, since they are intangible and have major consequences for macroeconomic stability due to various externalities. Such a process took place for the securitization of mortgage credit. Therefore, the present crisis is not only that of over-accumulation in the real estate sector. Its severity and rapid international diffusion derive from the systemic collapse of financial valuation. It is the direct consequence of the anti-division of labour within the financial sector that has permanently externalized and underestimated the risk by hiding it into more and more complex and esoteric products. This lost informational content of financial pricing leads to the freeze of credit first within financial institutions and then households and ultimately firms. The article mobilizes successively the analytical framework of Minsky, Hayek, Fisher and Keynes. Within the taxonomy of “regulation” theory, this is a structural/major crisis, the overcoming of which is radically uncertain. The social control of financial innovation is one of the issues at stake.

Keywords: history of financial crisis, financial innovation, securitization, derivatives, subprime crisis, anti-division of labour in finance

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References

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1 Introduction: the historic reversal of financialization

In the mid-2000s, the American economy was the benchmark against which the performances of the other OECD countries were measured. At the end of the 1990s, it was clear how far Europe lagged behind in the production and use of information technologies and the adoption of the Silicon Valley model of organization. Up until 2006, many experts affirmed that the stronger growth of the United States compared to Europe was due to the sophistication of financial innovation and the decisive role of Wall Street. There were exceptions in Europe, since the United Kingdom, Ireland and Spain did display a certain degree of dynamism. But was this not precisely because these countries had adopted the model of finance-led growth, driven in particular by the mortgage boom?

However, intellectual landscape and economic policy have both changed dramatically since the US housing bubble burst in 2007. The purpose of the present article is to explain this reversal and to identify the consequences in terms of the influence of public policy on the direction and intensity of financial innovation.

We start by explaining the remarkable period of American growth that preceded the outbreak of the subprime crisis in March 2007 and exploring the reasons why the United States and the United Kingdom were then the most severely affected by the bursting of the housing bubble (§2). A historical review is useful in showing that periodic crazes are triggered by innovations that are so successful that they marked their era: they generate a speculative bubble that leads to a crisis, more or less serious, but as a result of which the public authorities take control of innovation and institute rules to improve efficiency in the allocation of capital, credit and risk, but without jeopardizing the public good of financial stability, which is crucial to the market (§3). On the basis of this observation of both history and heterodox financial theory, the scale of the subprime crisis is then explained by the delay in regulating either the ever more sophisticated products on the derivatives market or the use and abuse by hedge funds of leverage representing a potential threat to financial stability (§4). It is then essential to shore up the central hypothesis: the American financial system has entered a systemic crisis (what are the diverse financial assets and players worth now?) and the American economy is incapable of pursuing growth led by renewed financialization (§5). The conclusion stresses the major turning point heralded by the American crisis that broke in March 2007 (§6).
2 So finance-led growth was possible in the United States...

We should start by stressing the inherent attraction of financialization, for this process marked the whole of American society and prompted attempts to import such a regime into other OECD countries. And yet this growth regime marked a complete break with the logic of Fordism, characterized by the founding institutional compromise of the wage labour nexus, which matched mass production with mass consumption. In a financialized economy, it is the monetary and financial regime that occupies the hierarchical position held by wage relations in the post-war growth model. In previous works, we have shown that this pre-eminence results from a de facto alliance between the managers of large, listed companies and financial institutions, particularly investment banks (Boyer, 2005). This shift in the fundamental compromise has led to the modification of almost every other institutional form under the impact of the financial regime (Figure 1).

- There has been a break with previous determinants of investment decisions in non-financial companies, since shareholder value has become the essential criterion, while there has been a decline in the acceleration component of investment linked to anticipated demand. At the same time, typically financial strategies have proliferated, especially those involving mergers and acquisitions with a view to maximizing shareholder value and the share price (Aglietta, 2008).

- If the financial community demands high returns that remain stable over the business cycle, the price that must be paid is none other than the increased flexibility of the wage labour nexus, through both faster workforce adjustment and the heightened sensitivity of wages to the company’s financial results and the general economic climate. A priori, this factor has a negative impact on consumption, but it is offset by the fact that since household financial wealth has grown considerably, notably under the effect of the development of pension funds, wealth effects have become important in the evolution of household consumption. Consequently, a concession in terms of wages can increase household wealth to the extent of stimulating consumption, for example by taking out loans based on the collateral of their financial and real estate wealth. This phenomenon was typical of the 1990s and 2000s.

- The transition from pay-as-you-go to funded pension systems has played a decisive role in the flood of capital seeking lucrative investments and the liquidity of the stock market. Thus, investments that were supposed to safeguard the financing of pensions were gradually transformed, under the effect of return-maximizing strategies from a typically financial perspective (Montagne, 2003, 2006). This pension reform, coupled with the rise of shareholder governance and
In the United States, finance has affected almost every institutional form.
the abolition in 1999 of the Glass-Steagall Act, which had instituted a separation between retail banks and investment banks, marked a turning point in American economic history. Add to this the refusal to regulate new derivatives, in 2003, and the scene was set for the speculative bubble and the crisis that followed.

This all occurred within a general trend of marketizing almost all the components of social security, diametrically opposed to the more universalist conceptions of the post-war period embodied in the Beveridge or Bismarck systems.

- Economic policy underwent a similar transformation in response to the demands of finance. On the one hand, the international mobility of capital severely limits the possibility of taxing financial capital, meaning that the fiscal load is transferred onto the workers and, possibly, the real estate capital that is irreversibly tied to the national territory. In fact, the richest households, whose income depends primarily on their financial wealth, can use this international mobility as a threat in demanding and obtaining a reduction in the progressiveness of the tax structure.

- On the other hand, the central bank has seen its role significantly if not totally redefined. Not only must it set the optimum interest rate in terms of the difficult trade-off between inflation and unemployment, but now it must also seek to maintain financial stability. This may involve raising the interest rate to prevent the formation of speculative bubbles, or acting as lender of last resort in the face of a financial collapse that might threaten the viability of the market economy itself. This hypothesis, put forward by experts in American monetary policy (Blinder, 1997), but for a long time ignored by macroeconomists of the academic world, finds its full expression in the current crisis triggered by derivatives linked to the American housing market.

The scale of the transformations observed, especially in the United States, made the existence of a finance-led growth regime very likely. It remains to determine whether the various different effects of financialization define a viable regime, i.e. one that is capable of responding both to the profile of accumulation over the course of the business cycle and to exogenous shocks. That is why a formalization is needed, to verify the conditions under which such a regime can become established (Boyer, 2000). Compared with the complexity of the relations depicted in Figure 1, formalization requires drastic simplification (Figure 2).

- The central variable is none other than stock prices, since it is the stock market that is observed simultaneously by the companies in their choice of governance and their investment decisions, by the employees in the management of their savings and debt decisions, and by the central bank in the pursuance of its objective of averting financial instability.
- In contrast with the Fordist model, household consumption is closely dependent on financial wealth, which allows access to credit even while real wages are stagnating for those whose qualifications no longer correspond to this new regime of growth. These people can even benefit from a real estate bubble to maintain a standard of living they can no longer pay for with labour income alone. In this model, wage austerity can thus imply an increase in profits such that the rise in stock prices boosts household consumption. We are therefore in a context diametrically opposed to the Kalecki or Kaldor models where the propensity to consume out of wages is higher than out of profits, whereby a reduction in the wage share reduces consumption.

- Lastly, the norm of profitability demanded by the financial community exerts a decisive influence on the volume and orientation of the investment of non-financial companies. Acceleration effects are present, of course, but they are no longer dominant as they were in the Fordist model. More generally, the principle of shareholder value, invoked by the financial operators, determines a good number of choices concerning the strategies and internal organization of the firm (Boyer, 2005; Ertuk, Froud, Johal, Leaver, & Williams, 2008).

What we must stress is the extent to which, a priori, this economic regime is paradoxical: whereas in the Fordist model, the dominant rationale is the creation of value-added, in the financialized model it is the expectations of future wealth, as measured by the stock market, combined with the use of strong leverage based on those expectations, that drive the production process. Expectations and confidence in the predictions or “story telling” of finance are

**Figure 2:** The finance-led regime of accumulation.
therefore decisive as to the possibility of such a regime. Calibration of the corresponding model shows that \textit{a priori}, the conditions of stability were satisfied for the American economy in the 1990s: high levels of household financial wealth, a large fraction of disposable income linked to capital gains, and a significant proportion of wealth held in the form of shares and bonds, either directly or indirectly through pension funds (see Table 1). This may explain why, at the beginning of the 2000s, many European macroeconomists advised their respective governments to adopt the American way, making credit and finance the key instruments of action on economic activity.

\textbf{2.1 \ldots but it could not be exported to other countries, apart from the United Kingdom...}

But this hope was naive, because ultimately, the economic structures of the United States were quite singular (Artus, 2009). Only the United Kingdom had a similar configuration. In all the other countries, notably Japan, Germany and France, the prevailing rationale that determined economic activity was one of productivism and creation of added-value in non-financial companies, much more than one of shareholder value and all-out financialization (Table 1). The weak spread of stock wealth in relation to disposable income, the modest levels of capital gains and a norm of profitability much lower than that entailed by Anglo-American shareholder value all formed obstacles to the establishment of a finance-led growth regime. Moreover, formalization reveals that if productivism is the prevailing rationale, then the introduction of shareholder value damages the macroeconomic equilibrium, both for companies and employees. It was therefore not in these countries’ interest to adopt the American model, since

\textbf{Table 1:} This model has little chance of spreading throughout the world.

<table>
<thead>
<tr>
<th>Country Parameters</th>
<th>United States</th>
<th>United Kingdom</th>
<th>Canada</th>
<th>Japan</th>
<th>Germany</th>
<th>France</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average propensity to consume (1996)</td>
<td>0.95</td>
<td>0.926</td>
<td>0.956</td>
<td>0.869</td>
<td>0.884</td>
<td>0.908</td>
</tr>
<tr>
<td>Stock wealth/disposable income (1997) (%)</td>
<td>145</td>
<td>75</td>
<td>95</td>
<td>30</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Capital gains/disposable income (%)</td>
<td>35.5</td>
<td>15</td>
<td>11</td>
<td>-7</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Proportion of shares and bonds in households’ total financial assets</td>
<td>28.4</td>
<td>52.4</td>
<td>n.d.</td>
<td>25.3</td>
<td>21.3</td>
<td>14.5</td>
</tr>
</tbody>
</table>

Source: Boyer (2000).
they had different sources of growth and international competitiveness. In a way, the harshness and persistence of the Japanese crisis following the bursting of the 1980s bubble bears witness to this major divergence between different OECD countries (Aglietta, 1992; Boyer, 2004; Yoshikawa, 2002).

The present research therefore moderates the prediction initially made by certain regulationists that financialization was the heart of the regime of accumulation that would succeed Fordism (Aglietta, 1998). Since then, the bursting of the Internet bubble and the subprime crisis have clearly brought to light the limits of finance-led accumulation, which does not appear to be endowed with the same long-term dynamic stability as the Fordist growth model (Aglietta & Réberioux, 2005; Boyer, Dehove, & Plihon, 2004; Plihon, 2001, 2002; Jorion, 2008; Conseil d’Analyse Economique, 2008).

2.2 ... The very success of financialization can lead the economy into a zone of financial fragility...

The other interest in formalizing this regime of accumulation is that it allows us to identify the parameters that play a key role in the possibility of driving the economy into a zone of financial instability.

- First, it may be that the rate of return demanded by the financial community reaches such a high level that it is impossible for any macroeconomic equilibrium to sustain it. During the Internet bubble, for instance, the norm was gradually raised from 5% up to as much as 15%. In passing, we can also understand, at a microeconomic level, why non-financial companies have been driven to use ever higher leverage (Plihon, 2002) or resort to creative accounting to invent profit levels high enough to satisfy the capital markets (Boyer, 2005). Fair value accounting further accentuates these effects by adding an accounting accelerator to the typical financial accelerator (Boyer, 2007).

- A second source of destabilization can result from the growing importance of wealth in consumption decisions. Beyond a certain threshold for the wealth effect, the economy is on an explosive path, and any possibility of a stable regime disappears. And yet, through a constant stream of financial innovations, the access to credit has been made ever easier and may have provoked the equivalent to this phenomenon at the end of the American housing bubble. In a way, the source of the crisis lay in the popularization of the attractions of financialized growth.

- The central bank may be too slow in adjusting the interest rate to suit the economic situation. In this case, if it maintains interest rates too low for too long, it may endogenously trigger the collapse of the previous macroeconomic
equilibrium. In a sense, this is the criticism that has been levelled at Alan Greenspan since 2007, that he did not have the courage to raise interest rates, preferring to see a housing bubble succeed the stock market bubble.

- Lastly, since the stabilization of ROE is based on greater flexibility of jobs and wages, the responsiveness of wages may reach such a level that it contributes to the destabilization of the economic equilibrium, in this case in a depressionary direction. This factor is likely to play a decisive role during the phase of correction of the excesses of financialization.

To varying degrees, these four developments have marked the American trajectory over the last two decades.

2.3 ... And result in a series of ever more severe crises

Even before the systemic nature of the crisis that began in September 2008 became apparent, the American financial system had been touched by a series of crises, initially perceived as being sector-specific and limited, whereas they were in fact the first symptoms of the fact that this financialization built on a succession of financial innovations had reached its limits. With hindsight, it is possible to reinterpret the so-called crisis of the new economy as an expression of the conflict between the impatience of finance as regards expected profits and the reality of the long process of converting innovations into profitable products (Boyer, 2002a). The subprime crisis stemmed from the fact that financial intermediaries had become less and less accountable for their actions, because of the generalized separation between financing and risk, resulting in an explosion in the volume of derivatives and, within the shadow banking system, the deterioration in the quality of the corresponding assets (Bourguinat & Briys, 2008). The US public authorities, believing in the superiority of the market over any kind of public evaluation, contributed to the birth of the crisis through their inaction.

3 Financial innovations have a typical profile of development

The problems related to the uncertainty of any financial instrument are exacerbated by the launch of a new financial product. People have to form an opinion about it, and in the absence of past observation, they have to fall back on beliefs in one way or another. To take just one example, the financial community believed wholeheartedly in the new economy, although there was very little to justify an almost
doubling in the rate of return on capital. Moreover, the very novelty of the financial instrument led people to think that an unprecedented era was beginning, in which past regularities would disappear. And yet the history of finance may well provide us with valuable hypotheses concerning the trajectory of technical and financial innovations that are supposed to usher in a new epoch.

But the horizon of the people involved does not exceed a few years, and the collection and analysis of information is concentrated on the most recent developments. The players on these markets had little incentive to seek out similar episodes from the distant past: through the formation of market prices, the collective opinion that emerged was that we were entering a new era marked by returns of unprecedented magnitude and stability. Financial history has the great merit of detecting the repetition of the same sequence of speculative boom-and-bust. Today there are numerous works on the subject: isolated to begin with (Kindleberger, 1978), they have multiplied with the rising frequency of crises since the mid-1980s (Eichengreen, 2003; Garber, 2000). What is new is that theorists of macroeconomics and finance have themselves drawn on the successive phases of speculative boom-and-bust in building models to explain the inefficiency of markets through more or less substantial modifications to either the hypothesis of rationality (Shiller, 2000) or the organization of markets (Shleifer, 2002). It is remarkable that the same chain of events is repeated in every one of these episodes.

- They all start with an impetus related to an innovation, which may be technical (a new method for producing tulips, for example, or the invention of mass production methods), a new financial instrument (shares in a shipping company), the end of a conflict (the railroad boom after the American Civil War), the emergence of a customer base for new services (holidays in Florida through the purchase or renting of an apartment) or the possibilities offered by a new financial context (the flood of liquidities fuelling the rise in stock prices and the surge in take-overs, mergers and acquisitions).

- Informed economic agents adopt a selective strategy to ensure they can obtain the returns promised by the innovation. They carry out shrewd purchases, exploiting their technical expertise (how to grow these new tulips, what sort of real estate to build in Florida, etc.) or privileged information they possess, which is generally the case for financial innovations. Their behaviour is fully rational, and does not, in itself, create runaway speculation.

- But the strategy of these informed agents pushes up the prices of the products concerned and consequently of the financial assets of the companies involved in their production. And in response to these price signals, the market is entered by other agents who know little or nothing about the innovation, relying simply on an extrapolation of the price rises.
Individuals who have never bought shares in their lives and have little idea of how they function transfer a significant proportion of their wealth into this financial instrument. During this third stage, *followers and credit* play a decisive role in inflating the speculative bubble. Their expectations are based solely on the surge in stock prices, independently of any evaluation concerning the reality of the profits or of the demand that might justify these stock prices. These followers adopt beliefs and prophecies more or less directly nurtured by the stock traders themselves. In modern language, “story-telling” has replaced the difficult if not impossible evaluation of fundamentals (Biondi, Giannoccolo, & Galam, 2012).

- The boom is all the more powerful when an *authority confirms the reality of the promises* made to small savers and followers in general. In the Mississippi bubble, the French government officially supported Law. In the United States in the 1920s, an economist as renowned as Irving Fisher declared that the stock market boom and economic prosperity were made to last, a view that he maintained up until the very eve of the crash. In modern times, the turning-point in the Internet bubble came when Alan Greenspan, who had previously warned against “irrational exuberance,” rallied to the opinion of the markets, declaring that private agents know better than the central bank what level stock prices should be at.

- When this movement reaches its maximum, we are close to the moment of sudden reversal expressing the fact that the returns obtained are in fact well below those expected, whence the recurrent and almost structural temptation to manipulate the accounts and the *ex post* discovery of some spectacular frauds. Either because of the endogenous erosion of returns due to over-accumulation, or in reaction to some bad news, apparently fairly trivial events are sufficient to trigger the readjustment of expectations. Another possibility is that the better-informed agents decide that, given the level reached by asset prices, it would be prudent to withdraw, by selling their assets.

- In the last stage in the sequence, the public authorities, faced with the harshness of the social and political consequences of the crash, are obliged to intervene, both to designate the culprits and to introduce rules and reforms to prevent the repetition of such episodes and restore the confidence without which the markets cannot function. In most cases, these measures are successful in getting people to forget the crisis, to such an extent that a new cycle can start: any innovation that catches the fancy is capable of setting off a new phase of expansion and then speculative boom (Figure 3).

It is in the light of this diagram that we shall now analyse the last decade in terms of financial innovations, chiefly in the United States.
4 The contemporary period: regulations systematically lagging behind financial innovation

The movement of external and internal financial liberalization greatly facilitated financial innovations. As their numbers increased, there was a sufficiently large sample of innovations and crises available in 2008 to make an overall judgement: in the absence of adequate public regulation and control, there is a high risk that financial innovations will lead to a local, sectoral, financial and in some cases macroeconomic crisis. The last decade can be likened to the race between the tortoise and the hare: innovation by financial agents – in the role of the hare – starts the process, and it is up to the public authorities – in the role of the tortoise – to curb the costs of the resulting financial crises and to seek to avoid their repetition through a new strategy and, possibly, new regulations. The financial markets that were supposed to be self-regulating have in fact been the site of crises that have often had dramatic effects on economy and society.

4.1 The stock market crash of 19 October 1987: the ghost of 24 October 1929 soon forgotten

This episode started with the collapse of the Dow Jones on the New York Stock Exchange, equivalent in value to the crash that marked the beginning of the crisis in 1929. The analysts started asking themselves the question that Minsky
had taken as the title of his famous work: “Can it happen again?” In a conception of the economy governed by the notions of equilibrium and the temporal invariance of the basic economic mechanisms, a depression equivalent to that of the 1930s was expected. In the end, this prediction proved to be completely erroneous, for two main reasons (Table 2).

Table 2: A comparison of four American crises and the recent Japanese crisis: the decisive role of banks.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>“REAL” ORIGIN OF THE BUBBLE</strong></td>
<td>Mass production methods</td>
<td>Return to growth No financial bubble</td>
<td>An original model of production</td>
<td>ICT boom and new economy</td>
<td>Speculative boom on the housing market and easy access to credit</td>
</tr>
<tr>
<td><strong>PRE-CRISIS ECONOMIC CLIMATE</strong></td>
<td>Strong growth</td>
<td>Period of structural adjustments</td>
<td>Regime of growth tending towards deceleration</td>
<td>Strong, non-inflationary growth</td>
<td>Sustained growth with some inflationary pressures</td>
</tr>
<tr>
<td><strong>TYPE OF CRISIS</strong></td>
<td>Stock market crisis</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>NO initially, then contamination by subprimes</td>
</tr>
<tr>
<td></td>
<td>Banking crisis</td>
<td>*</td>
<td>NO</td>
<td>*</td>
<td>NO, remarkable resilience due to securitization YES for investment banks</td>
</tr>
<tr>
<td></td>
<td>Housing crisis</td>
<td>NO</td>
<td>NO</td>
<td>*</td>
<td>Weak and localized YES, significant</td>
</tr>
<tr>
<td><strong>MANIFESTATION OF THE CRISIS</strong></td>
<td>Depression and deflation followed by late recovery</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
Table 2: (Continued)

<table>
<thead>
<tr>
<th>Policy</th>
<th>Orthodoxy</th>
<th>Ad hoc</th>
<th>Avoid deflation</th>
<th>Get out of a systemic crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not to repeat 1929</td>
<td></td>
<td>Slow reaction from the Bank of Japan and the Ministry of Finance</td>
<td>Fast reduction of interest rates and acting as lender of last resort, even for investment banks</td>
</tr>
</tbody>
</table>

Then an attempt at institutional restructuring (New Deal)  
Capital market supplied with liquidity  
No restructuring of banks  
Fiscal stimulus, including the consequences of 9/11  
Fiscal stimulus  
Takeover or nationalization of many financial institutions  
Creation of a defeasance structure and project for new regulations

<table>
<thead>
<tr>
<th>Severity of the crisis/fragility of the banks</th>
<th>*</th>
<th>NO</th>
<th>*</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absence of crisis/resilience of the banks</td>
<td>NO</td>
<td>*</td>
<td>NO</td>
<td>*</td>
</tr>
</tbody>
</table>

Notes: Convention: the sign * denotes the presence of the corresponding phenomenon.
The origin of the two crises was completely different. In the former case, stock market speculation simply amplified a disequilibrium in the regime of accumulation, which explains the scale of the economic and social costs in the United States in the 1930s. In the crisis of 1987, there was sustained growth, although the underlying international context was troubled by exchange rate uncertainty. The disequilibrium was essentially confined within the financial sphere.

- The US central bank had learnt from the errors of its predecessors in the 1930s: instead of allowing a chain of bankruptcies to develop on the capital market, Alan Greenspan provided the threatened operators with abundant liquidities. Ex post, we therefore observe the continuation of growth and slight inflation, rather than depression and deflation.

So stock market crises keep developing, but they are never the same. In this case, it was the financial innovations of the early 1980s that were at the origin of the crisis. At that time, a new method of stock portfolio management was developed, associating every transaction with an option hedging against potential losses from unexpected changes in the market. But for other financial players, this simply served as a support for speculation on such a scale that the innovation supposed to stabilize the financial system ended up leading it into crisis (Biondi, 2011; Pradier, 2011; Stout, 2011). At the same time, all the players on the market invested in software allowing them directly to place the orders entailed by this optimization programme. A marked fall in stock prices then triggers a depressionary spiral: everybody wants to sell and almost nobody wants to buy. We can draw three lessons from this already distant episode.

- In this case, it was the general adoption of the strategy of market risk coverage that triggered the occurrence of the risk against which the agents were trying to protect themselves, at a microeconomic level: in a way it was the convergence of perfectly rational microeconomic strategies that blocked the market. This feature can also be found in most of the other crises, including the subprime crisis (see Figure 10, below).

- The central role of the Fed was confirmed by this episode: faced with a liquidity crisis, whatever the responsibilities of the other players and whatever the risks of moral hazard, the central bank acts as the lender of last resort, restoring the continuity of the system of payments. This characteristic is present in most of the crises examined in the present article.

- Upon demand by the political authorities – but not by the professionals, who argued that the mechanisms of the market should be allowed to operate freely! – circuit breakers were introduced to halt trading in the event of
exceptional price movements. Thus, the financial markets record the sedimentation of rules instituted to prevent the repetition of past crises. When the political authorities go back on some of these rules, such as the separation between commercial banks and investment banks, a return to old forms of crisis becomes possible, as some of the developments in the subprime crisis have shown.

The first of these lessons, but not the other two, was demonstrated in the following US crisis.

4.2 A first crisis, quickly overcome, that warned of the dangers of derivatives: the collapse of LTCM

Market finance theories have developed greatly since the beginning of liberalization. Statistical and mathematical techniques have become more sophisticated and the theorists have proposed new methods of evaluating risk and consequently of pricing derivatives. The contributions of Black and Scholes (1973) and Merton (1973) opened up a wide domain of possibility for the invention of new derivatives. Far from observing the regularities resulting from the functioning of the market, these theorists invented a new method of evaluation and presented it to the financial community, which adopted it so wholeheartedly that it was now the regularities postulated by the theoretical model that appeared in the market prices. This performativity of financial theory was a novelty, compared with standard micro- and macroeconomic theories (MacKenzie & Millo, 2003).

It was tempting to believe that this remarkable mastery of risk evaluation had eliminated any danger of major financial crisis. The collapse of long-term capital management (LTCM) is interesting precisely because it shows that financial crises are not necessarily the result of ill-informed agents acting irrationally or the herding behaviour of the crowd (Kindleberger, 1978, 1994; Shefrin, 2000), but may derive from the implementation of a new approach to the optimization of returns on capital, so vigorous that it destabilizes the macroeconomic regularities, all the more so when something occurs that is considered to be a once-in-a-century event (Taleb Nassim, 2007; Cont, 2009) at least in the light of retrospective analyses (Figure 4).

The huge losses incurred by one sole financial institution, originally of modest size, raised two problems for the public authorities responsible for financial stability.
Figure 4: The collapse of Long-Term Capital Management: an ad hoc solution brokered by the Fed with no review of public control.
The sophisticated derivatives that are supposed to cover the risk of certain agents actually expose other agents to risks that are all the greater as they become the accredited or even exclusive suppliers of this type of product. This conclusion, drawn from observation of the LTCM crisis, is also confirmed by diverse models that take into account the specificities of the current organization of the financial market. These models show that creation of a futures market and a derivative can push the economy into a zone of financial fragility, under conditions very similar to the characteristics of existing markets (Artus, 1990; Brock, Hommes, & Wagener, 2006; Li & Rosser, 2001). This contradicts the (false) conclusion one might draw from the last chapter of Gérard Debreu’s Theory of Value (1959): if all the futures markets are open, then an equilibrium can exist under the usual conditions. As we move closer to this ideal, we should therefore observe greater financial stabilization. This conjecture is essential, since it underpins the strategies of creation and multiplication of derivatives, but it is refuted by recent financial literature.

- The sudden appearance of losses running into billions of dollars is the direct consequence of the use of extremely high leverage, with factors of 30–50. Under these conditions, it only takes a price fall of 3.3% or even 2% for the losses to exceed the value of the equity capital. This was the whole problem with hedge funds or even the management of an experienced firm like Lehman Brothers: it only possessed 1 billion dollars in equity to cover more than 30 billion in assets.

One might have thought that the various regulatory authorities might be worried by these risks and seek to impose some kind of limit on the more dynamic managers of Wall Street. But self-organization by the market players was the solution favoured by Alan Greenspan, who encouraged other, healthier investment banks to take over LTCM. This elegant and economical solution – from the viewpoint of public finances – therefore helped to conceal the dangers of derivatives and of hedge fund strategies.

4.3 The Enron episode: a second opportunity wasted

Setting aside the precise characteristics of the derivative involved, the same sequence of events can be observed, mutatis mutandis, for the energy derivatives proposed by Enron. This was the era of the new economy and hopes of a dematerialization of economic activity: why sink investments into facilities for producing and transporting energy when there are substantial profits
to be made by organizing the futures market of the corresponding contracts, with a modest capital outlay with the added advantage of allocative flexibility. Just like LTCM, Enron was so successful that it became the flagship company to which many others aspired, so exceptional were the returns it posted.

In 2000, however, we learned that these results were largely achieved through accounting practices which, although legal, were extremely dubious. They consisted in discounting to present value all the returns associated with existing contracts, while at the same time concealing the corresponding costs in satellite accounts that were not consolidated with those of the parent company (Baker & Hayes, 2004; Benston, 2006; Healy & Palepu, 2003; Mistral, de Boissieu, & Lorenzi, 2003). Essentially, the problem raised therefore concerned the information available to the financial market: whence the call for greater transparency and for the accountability, including penal, of CEOs and financial directors, which gave rise to the Sarbanes-Oxley Act (Figure 5).

Figure 5: The fall of Enron: tougher accountability rules for senior executives, but with no reform of accounting practices or supervision of new derivatives.

However, several problems remained.

- First, the Enron executives had used their contacts in the political world to dissuade the financial supervisory authorities from imposing any control or regulation whatsoever over derivatives, under the two pretexts of a complexity they alone could master and the principle of freedom of enterprise. We were to observe a similar phenomenon for subprimes in the second half of the 2000s.

- Second, and above all, accounting practices oriented exclusively towards the financial community and implementing the principle of fair value
represented a serious threat to financial stability. They introduced strong procyclicality into the results posted, which were, moreover, virtual (Boyer, 2007). As much as investors were satisfied during periods of speculative boom, so they suffered a risk of sudden bankruptcy during periods of adjustment. We need look no further for the reason behind the collapse of Lehman Brothers, or the takeover of Merrill Lynch by Bank of America. As the products became ever more sophisticated and the volumes traded continued to increase, the sums committed grew so large, during the second half of the 2000s, that they threatened the financial stability of the whole American system.

- Third, the last paradox is that while securitization was supposed to spread the risk, which it did to some extent, it also led to the specialization of certain investment banks or insurance companies in certain segments of the market. The resulting concentration of risk therefore increased the probability and violence of financial crises when private firms are obliged to reveal to the market the extent of their losses, information that is kept private as long as possible. Whence the consternation of the public authorities, obliged to commission other private firms to verify the financial situation of companies they were thinking of taking over, as was the case for Bear Stearns.

4.4 The ambiguity of shared responsibilities in financial supervision: Northern Rock

This brings us to another central point, well-illustrated by the bank run that occurred in England in 2008. Because of the division of labour between the different financial supervisory bodies, and their sedimentation over time, the public authorities were initially confounded by the abruptness of the Northern Rock crisis (Figure 6).

The origins of this crisis lay in an innovation that initially met with great success: this bank, specialized in mortgages, decided to use massive bond issues as a means to grow its activity and win market share. After few years, Northern Rock became the leading company in the sector – as long as the British housing bubble continued to grow. The different supervisory authorities (the Bank of England, the Financial Services Authority, the Treasury and the City) remained silent, despite the fact that this strategy generated new risks for the bank and by extension for the British financial system. When the downturn in the housing market arrived, it triggered a spiral of asset depreciation, because
of both bad debts and the bank’s falling share price. Customers, alarmed by a statement from an external authority, rushed to withdraw their deposits from the bank.

To begin with, the Bank of England, governed by an economist well aware of the problems of moral hazard that the rescue of Northern Rock would raise, refused all aid. There was also ambiguity over the sharing of responsibilities between the different regulatory and supervisory authorities. In keeping with a British tradition, the government hoped that the City would manage to find a solution without any need for state intervention. But the panic started to grip the whole of the British banking system, and in the end the government was obliged to nationalize the bank. This was certainly not a measure that New Labour had included in their manifesto! Whence the pertinence of Ben Bernanke’s comment: “There are no ideologues in a financial crisis.”

This new episode confirms the lessons to be drawn from previous crises and provides some new elements for consideration.

- First, given the plasticity of finance, an innovation implemented by a second-tier bank is capable of generating a movement of sufficient power to endanger the bank itself and even the whole financial system. It is then easy to understand the importance of having regulations and supervisory authorities covering the whole of the financial system.
- Second, when a crisis does arise, there may be ambiguity as to the supervisory authority concerned, because modern innovations connect up all

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**Figure 6:** The financial innovation that caused the first bank run since 1856 in the United Kingdom.
sorts of different financial instruments (including loans, derivatives, bonds, swaps, insurance and options). This ambiguity can be prejudicial to an orderly resolution to the crisis. The different authorities may have different ideas about how to address financial crises. Some prefer to avoid the next crisis at the risk of exacerbating the present one by refusing the public bail-out of inept or reckless speculators. Others consider that in a market economy, nothing can be more important than monetary and financial stability, even if that means paying out money to save the firms that started the crisis.

- Lastly, the speed of the downturn, the growing interconnectivity between different markets and the facility with which a vicious circle of generalized asset depreciation can be triggered generally tip the balance in favour of public rescue, whatever the political programmes of the governments concerned, the warnings of economists or the protests of opposition parties. The American trajectory since 2007 provides a good illustration of the improvisation that seems to govern the management of systemic financial crises.

5 A crisis foreseen, but of an unprecedented scale

This brief historical review throws a different light on the financial crisis that originated in the United States and then spread through the world due to the high degree of interconnection between financial networks, the mimicry that prevails in the evaluation of risk and the interdependencies related to international trade.

5.1 The US mortgage derivatives crisis: silence from the regulatory authorities followed by massive intervention

This episode leads us to another factor in the genesis of bubbles associated with financial innovations, namely the role of the central bank in fixing low interest rates. This was the case in the United States after the bursting of the Internet bubble, which prompted a programme of stimulus involving tax reductions and the maintenance of low interest rates to relieve financial institutions and indebted households. The Republican administration also announced a programme of access to home ownership for minorities and disadvantaged groups in the US population. Mortgage establishments leapt at
the new opportunities for profit that this opened up: they offered loans without bothering to make any request for collateral or for information about income, in the hope that the continuing surge in real estate prices would be the best guarantee. There was also particularly active lobbying, which succeeded in ensuring that the corresponding financial products and their securitization were not covered by any regulations whatsoever. Thus, all the ingredients were brought together for the typical development of a high-risk financial innovation (Figure 7).

When it became apparent, in March 2007, that default rates were rising and house prices were falling, there was a sharp downturn in the market, and the previous classification of tranches of credit proved to be hopelessly over-optimistic. The subprime market disappeared, and as it had figured prominently on the books of many banks, this triggered a liquidity crisis to which the Fed responded by providing easier access to liquidities, but initially only to a modest degree. Given the huge scale of the assets involved, of the order of 3,000 billion dollars, it soon became apparent that defaults were still rising and that the banks were incapable of evaluating a growing number of assets. This was because the subprime market was now closed, and the ad hoc models drawn up by each bank, assuming constant access to liquidity and a low risk correlation, no longer provided any relevant information. We can qualify this as a

**Figure 7:** A theoretically dangerous innovation, but in line with the policy of promoting home ownership.
systemic crisis, because the very principle of asset valuation was at the root of the discord, so that interbank lending, in particular, completely dried up (Biondi & Fantacci, 2012).

A new stage in the crisis was then reached in 2008, when the Fed guaranteed unlimited access to liquidity, encouraged mergers between financial establishments and accepted recapitalization by sovereign funds, which, not long before, had been denounced for their lack of transparency and the threat they posed to the stability of the world financial system! The most remarkable phenomenon was probably the way US policy-makers appeared to be groping in the dark. The Treasury Secretary minimized the scale of the crisis, the Fed granted facilities of access to credit and both of them called for Wall Street to act responsibly, without taking full measure of the origins and depth of the crisis. In fact, the whole system of valuation of assets and liabilities had frozen up. Under such conditions, monetary policy is a very crude and indirect tool for resolving this crisis of a largely new nature.

5.2 A crisis all the more serious because of the accumulation of financial fragilities underlying the crises since 1987

Thus the American subprime crisis combined all the features already diagnosed in the previous crises: increasing numbers of ad hoc innovations largely incomprehensible to third parties, confidence in models estimated over relatively short periods of time, certainty of permanent access to liquidity, the race for leverage to obtain ever higher returns on equity in response to the pressures of shareholder value, remuneration structures of financial intermediaries encouraging risk-taking by transferring it onto third parties, lobbying of the political authorities to prevent any intrusion by supervisory bodies into particularly profitable markets. One can understand why this crisis should be of such an unprecedented scale, because it accumulates all the problems and imbalances that have been denied or kicked down the road throughout the 2000s.

When the bubble burst and the extent and depth of the consequences for the whole of the financial system became apparent, both the market players and the experts were taken by surprise. But this is in itself astonishing because, as we have just seen, there have been plenty of warnings since the end of the 1980s, because the various crises have brought to light the different shortcomings of the financial organization of the United States. Excessive confidence in theoretical models was seen in the stock market crash of 1987 and even more so in the collapse of LTCM. The danger of
giving free rein to a company to create and then manage a mass market for a potentially unstable financial product sustained by creative accounting was demonstrated by the Enron scandal. Collusion between financial operators and the political authorities to exempt the financial innovations of investment banks from any public control could be observed in energy derivatives and, of course, American mortgage derivatives. The helplessness of the political authorities, related to the fragmentation of public control, when a local bankruptcy threatens to lead to systemic collapse was apparent in the bankruptcy and nationalization of Northern Rock and the difficulty the US authorities have had in adapting their strategies to the depth of the subprime crisis since September 2008 (Figure 8). And yet one of the lessons to be drawn from the history of financial crises is that they are all the more serious and persistent when the public authorities are slow to take stock of the situation. That is one of the reasons why the current period, although different, follows in the line of the 1929 crisis (Lenglet, 2007).

Figure 8: The subprime crisis combines most of the features of the crises that have succeeded each other since 1987.
5.3 The antinomic nature of the division of labour in finance: a systemic crisis linked to the end of direct liability of financial operators

Following a dialectic process, the combination of these mechanisms produces an original form of crisis, certain aspects of which are unprecedented. The above description does not fully explain the heart of the subprime crisis. The roots of the crisis also lie in the belief, shared by financial operators and many experts, that thanks to its new techniques of risk transfer, modern finance had achieved the equivalent of the division of labour in the traditional productive sector. Securitization was believed to mark a new stage in the management of risk, by transferring it to those most capable of evaluating and assuming it (Brender & Pisani, 2001). It was therefore held to represent a major contribution to the efficiency of capital allocation and consequently to the growth and welfare of modern societies. The separation between funding and risk (i.e. the originate and distribute model) was even presented at the time as a decisive move in reducing the scale and frequency of crises.

The chain of events set off in March 2007 clearly refuted this optimism, but the analysts developed rather superficial interpretations of the failure of securitization: it was all due to the absence of transparency, to the lack of education of poor Americans who accepted housing mortgages they could not afford, or the corruption and collusion of certain financial operators with the political authorities. The reason for the failure is in fact much more fundamental and it hoists the theorists of liberalism with their own petard. Does the Chicago School not stress the need for a clear definition of property rights and hence of contracts? Have the theorists of information asymmetry not developed numerous models to demonstrate that the principal must obtain the maximum information and draw up suitable contracts to prevent opportunistic behaviour, responsible for inefficiency or even market failure?

The creation of the subprime market diametrically opposes the recommendations of these schools of thought. The invention of securitization opens the possibility of transferring the risk of default onto the buyer of a financial security constructed from a set of loans, supposed to be homogeneous according to the valuation of credit rating agencies. The financial intermediary in turn sells some or all of the corresponding products to banks and insurance companies, who do not judge it necessary to conduct their own appraisal of the value and default risk of these securities. Even less when an insurance company, AIG for example, offers them a Credit Default Swap (CDS). In the midst of this euphoria, with few mortgage defaults, the corresponding contracts proved to be particularly
profitable. And so began a cycle of generalized irresponsibility among the actors of the financial system (Figure 9).

In contrast to the pursuit of transparency, the players gradually lost awareness of the factors on which the profitability of their investments depended, all the more so with the proliferation of derivatives of derivatives, of which it is not even certain that their creators were capable of explaining the conditions of viability, especially at the macroeconomic level where solvency and liquidity both play an important role. Liquidity was assumed to be ever-present, whatever the economic situation, given the depth of the corresponding capital markets, and this was to have devastating

Figure 9: The dissolution of loan liability at the origin of the subprime crisis.
consequences when interbank credit and the trade in derivatives seized up. Simultaneously, countless derivative instruments were created based on the same underlying debt. Thus, in December 2007, CDS represented 62,000 billion dollars, while the maximum value of the underlying debt was no more than 5000 billion dollars. Far from indicating a division of labour in the assumption of risk, this proliferation revealed the scale of a purely speculative phenomenon (Crotty & Epstein, 2008). Ultimately, this process of creative financial innovation accentuated the procyclicality of risk-taking: during the boom, everybody wanted these products; when the crisis emerged, nobody wanted them.

Even more fundamentally, the explosion in derivatives was associated with a reduction in their quality, since the transfer of risk makes the issuer more and more insensitive to the correct valuation of the risk. All the more so since the credit rating agencies, baffled by the complexity of derivatives, nevertheless continued to rate them favourably, without applying the same techniques as those used for top-tier financial assets. The explosion in the volume of derivatives of all natures, not only those linked to mortgages (Figure 10) went hand in hand with a continuous deterioration in the valuation of risk (Figure 11).

To sum up, finance itself organized the antinomy of the division of risks which precipitated the almost complete collapse of the American financial system. A New York Times cartoonist had the following take on it.
Whoa, didn't see that coming.
Figure 9 illustrates not only the process leading up to it but also the unfolding of the crisis. When house prices started to fall, the losses affected not only American households evicted from their homes and mortgage companies, but almost every operator in the domains of finance and insurance. Compared with the Savings and Loan crisis of the mid-1980s, in which the overproduction of housing was accompanied by a symmetrical increase in bad debts, it was now the whole pyramid of financial instruments that came crashing down, in a deflationary spiral of financial assets (Fisher, 1933). The most striking phenomenon was the way derivative spreads rocketed (Figure 12a). Indirectly, many financial establishments were either permanent or temporary holders of these products, of which the expected loss of value was so large that it threatened to bankrupt even the high-grade financial institutions. Interbank credit became more and more problematic, because each bank doubted the solvency and liquidity of the others (Figure 12b).

Figure 11: The dispersion of risk leads to deterioration in the quality of mortgage credit. Note: *2007 vintage includes deals completed through September. Source: Standard and Poor’s.
problem of technique; it results from the ill-defined nature of the assets piled up on the basis of overstretched credit relations. This is far-removed from traditional financial panics in which crowd behaviour precipitates the collapse of a whole system. So most of the crisis from March 2007 to September 2008 took place within the American financial system: “who owes how much to whom?” Nobody knew. The Treasury had no idea, nor did the Fed... or even Wall Street, for that matter. It is this sense that the subprime crisis was systemic. This complexity was largely deliberate and organized in order to circumvent banking regulations and hide debts off balance sheets, thereby increasing distributable profits and consequently bonuses.

Ironically, we might affirm that this crisis is a triumph of the Hayekian conception of prices as a vector of information: for having constantly perverted that conception, Wall Street destroyed itself an organizational model and as a hegemonic power in defining the economic priorities of the United

Figure 12: The interbank credit freeze and accumulated mistrust of capital markets. Source: Artus (2008a).
States. This was evidenced by the collapse of stock prices in the banking sector, because the mistrust of investors was focused decisively on the viability of the current configuration of the US system (Figure 12c). But contrary to Hayek, the financial system can only function smoothly and without crisis if it is regulated by an institutional framework outside the market. This had been the case after the Second World War until the emergence of the movement of deregulation.

6 The end of the household debt-driven regime of accumulation

The subprime crisis probably marks the end of an era both for financialization and for the mainsprings of growth in the United States. To understand its importance, it is helpful to consider the crisis of 2007–2008 as a combination of three processes.

● The United States suffered a perfectly classical crisis in which the overproduction of housing was accompanied by the creation of bad debt. Building permit applications started to collapse in 2006, but the stock of unsold housing has grown by inertia. Just like at the end of the Internet bubble, financial operators had convinced the public that prices (in this case the price of housing rather than shares of firms in the “new economy”) could only rise, but overproduction set off a movement of deceleration, followed by a moderate and then rapid decline in prices (Figure 13a and 13b). This phenomenon is consistent with the competitive regulation of a very fragmented sector. In this respect, the price surge was less pronounced in the eurozone, and in 2008 real estate prices had not fallen. The suddenness of the downturn in prices struck derivatives particularly hard, because it confounded all the forecasts that had been based solely on observation of the most recent boom period. We must therefore reject the interpretation offered by the financial community, that they were the victims of a “once-in-a-century” event.

● The housing crisis had two groups of victims. First, the Americans who were evicted from their homes en masse, to the point of creating new ghost towns – which the United States has seen in the past. But second, in keeping with the idiom of the biter bit, the financial operators were well-placed to appreciate the depth of the crisis. Realizing that none of their partners knew how solvent they were, they made haste to cut all credit, except for day loans
Figure 13: A traditional crisis of housing over production.

Source: Patrick (2008a)
at rates reminiscent of the mistrust shown towards the financial establishments of emerging countries in crisis during the 1990s (Figure 14a). As the semi-public regulatory organizations on the mortgage market had been encouraged to be more dynamic and take greater risks – another sign of the convention of “home ownership for the poor” –, Fannie Mae and Freddie Mac only escaped bankruptcy through a total public takeover, in the hope that this would prevent a domino effect in the mortgage market (Figure 14b). The scale of the repercussions within the American financial system is quite apparent.

- In the autumn of 2008, the recessionary effects on the real economy started to appear. But it would be wrong to think of this as a business cycle like any other. As we have already shown in our analysis of previous crises (Figures 3–7) and as had been anticipated by using a very simple model of finance-led growth (Boyer, 2000), the subprime crisis marked the moment when growth in the United States reached its limits. Not only had easy access to credit and the hopes of getting rich on the stock market reduced household savings almost to zero (Figure 15a) but this process had only been possible through a continuous rise in the household debt-to-income ratio (Figure 15b). In this respect, the United States has only been surpassed by Great Britain, also the victim of a major crisis, and earlier than the rest of Europe.

This is another novelty compared with the analyses based on Minsky’s model or the financial accelerator model, which share a common hypothesis: that the instability is due to the excessive indebtedness of non-financial companies, which take leverage to such extremes that it eventually causes an endogenous downturn. This was not the case for non-financial companies (or the federal government) in the United States in 2008, for they had learnt the dangers of over-indebtedness from previous crises (Figure 16). Financial companies, on the contrary, misused leverage, and that is why they have gone bankrupt one after another. So this is a first originality in relation to the hypothesis of financial instability. As credit became ever harder to obtain, they in turn suffered the effects of the subprime crisis and fuelled a second depressionary wave. This was therefore a systemic crisis, because even the firms that had not made management errors could find themselves on the brink of ruin.

A second originality in relation to the Hyman Minsky deserves repeating: it was households that were engaged in a kind of Ponzi strategy, since the
Figure 14: A systemic crisis: the collapse and bankruptcy of financial intermediaries.

Figure 15: An end to growth driven by growing levels of household debt.
only way they could pay back their loans was through the endless pursuit of rising house prices. In theoretical terms, original formalizations are therefore required to analyse the properties of such a configuration (Charpe, 2009).

7 Conclusion

In the light of the issues raised by this historical and comparative approach to financial crises, it emerges that 2007–2008 marked a turning-point in the relations between finance, politics and the economy.

7.1 Radical rethinking of the virtues of financialization

In the conventional theories, finance is assumed to help stabilize economic fluctuations, improve the efficiency of capital allocation and meet the financing
needs of the real economy. The present analysis shows, on the contrary, that the real sector is the next victim of the excesses of liberalization and uncontrolled financial innovation. So it is that American public opinion, usually prompt to criticize the negative role of Washington and federal regulations, is now asking for financial organization to be taken in hand by the state. The slogan “let us get rich quickly even if we don’t know why” has been replaced by an urgent plea to “deliver us from predatory finance and protect our assets”.

Another irony of the period is that up until September 2008, the countries that had been “backward” in adopting financial modernity resisted better than Wall Street and the City. In October, however, with the continued inability of the American government to resuscitate the US financial system, the crisis started to spread, with the bankruptcy of various British, German, Belgian, French and Icelandic firms, to such an extent that the G8 leaders envisaged taking over control of finance on an international level (Table 3).

### Table 3: The US mortgage crisis as the end of the finance-led accumulation regime.

<table>
<thead>
<tr>
<th>Components</th>
<th>Before 2007</th>
<th>After 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>General design</td>
<td>Fundamentally self-regulating markets</td>
<td>Need for vigorous and multiform public interventions to avoid financial collapse in the United States</td>
</tr>
<tr>
<td>Leading products</td>
<td>Derivatives of all sorts, especially “over the counter”</td>
<td>Return to basic financial products</td>
</tr>
<tr>
<td>Key players</td>
<td>Wall Street, Equity Funds, FMI (for DCs)</td>
<td>Sovereign funds, the Fed, US Treasury, central banks of DCs</td>
</tr>
<tr>
<td>Type of public intervention</td>
<td>“Horizontal” rules</td>
<td>“Vertical” rules issued by the state</td>
</tr>
<tr>
<td></td>
<td>• Financial laissez-faire</td>
<td>• Nationalizations, public takeovers</td>
</tr>
<tr>
<td></td>
<td>• Ideal of self-regulation by finance</td>
<td>• Guarantee of the state as last resort</td>
</tr>
<tr>
<td>Public opinion</td>
<td>“Let us get rich quickly, even if we don’t understand why”</td>
<td>“Deliver us from predatory finance and protect our savings”</td>
</tr>
<tr>
<td>Regime of implicit accumulation</td>
<td>Finance-led... ...for all. The latecomers are the losers.</td>
<td>Sustained with great effort by budgetary, fiscal and monetary policy. The “latecomers” are called to the rescue to maintain the viability of the system.</td>
</tr>
</tbody>
</table>
7.2 The complete inadequacy of anti-crisis tools inherited from the past

The perception of finance may have changed considerably, but politicians have failed to reassess the suitability of the tools at their disposition, be it the essential role of the central bank as lender of last resort, defeasance structures for “toxic” assets, or the role of public spending and fiscal policy in supporting economic activity (Lordon, 2008). The specificity of the subprime crisis is obvious: the financial community created a pyramid of increasingly esoteric financial instruments, far-removed from the underlying products. This ended up making it impossible to value all the corresponding assets from the moment the housing market turned down, and the conventions by which these assets were valued (mark to market, model to market) were demolished. It is then easy to understand the ineffectiveness of traditional policies aiming to avoid a repetition of 1929. It was in vain that the Fed flooded the retail banks and then the investment banks with liquidities, that the Treasury pursued a Keynesian policy of fiscal stimulus or announced the creation of a defeasance structure endowed with 700 billion dollars to relieve financial operators of subprime-related products: the financial institutions continued to doubt each others’ liquidity and solvency, because they were incapable of valuing the net worth of their balance sheets. Intervention at the root of the problem of market seizure, that is to say the appropriate valuation of each asset, is the only way to generate an endogenous recovery of confidence and thus of stock prices and credit (Table 4).

7.3 An uncertain outcome: lost decade or depression?

The slowness of the public authorities in perceiving the origin and scale of the subprime crisis had macroeconomic consequences. Initially, many observers thought that the United States was going to follow the same path as the Japanese economy of the 1990s of long stagnation accompanied by the risk of deflation. This danger cannot be excluded, but the magnitude of the financial paralysis and the speed of the adjustment of macroeconomic activity after September 2008 suggest a typical scenario of deflation/depression, although there is nothing self-evident about that diagnosis. In this respect, we cannot avoid reference to the famous article in which Irving Fisher (1933) explains how over-indebtedness can lead to deflation.

At least three mechanisms combine to make a period of contraction lasting several years possible and likely. At a first level, the American housing market is already showing the chain of events that lead to the gradual absorption of the
overproduction of housing provoked by the removal of credit constraints. In the absence of securitization, we might have witnessed a repetition of the American Savings and Loan crisis of the 1980s. But in this case the boom in derivatives transmitted the crisis to the balance sheets of the investment banks. Under a fair value accounting regime, the corresponding losses are immediately translated into a loss of capital and a drastic downturn in the expectations that govern

<table>
<thead>
<tr>
<th>Characteristics of the crisis</th>
<th>Solutions</th>
<th>Relevance</th>
</tr>
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<tbody>
<tr>
<td>Home repossessions</td>
<td>• Federal aid for renegotiating loan conditions</td>
<td>• Return to the principle of private contract, important but neglected factor</td>
</tr>
<tr>
<td>Fall in house prices</td>
<td>• Reduce interest rates</td>
<td>• Cannot replace a return to the long-term housing-cost-to-income ratio</td>
</tr>
<tr>
<td></td>
<td>• Fiscal measures (tax deductible Interest charges)</td>
<td></td>
</tr>
<tr>
<td>Rising mortgage default rates</td>
<td>• Renegotiation of subprimes</td>
<td>• Lack of information about incomes</td>
</tr>
<tr>
<td>Interbank lending freeze</td>
<td>• More Fed lending to banks, including investment banks</td>
<td>• Does not solve the problem of the valuation of assets and complex derivatives</td>
</tr>
<tr>
<td>Disappearance of the subprime market</td>
<td>• Defeasance structure</td>
<td>• Traditional solution, but which procedure and valuation?</td>
</tr>
<tr>
<td>Fall in stock prices</td>
<td>• Reconsideration of fair value</td>
<td>• Risk of loss of confidence</td>
</tr>
<tr>
<td></td>
<td>• Ban on short selling</td>
<td>• Marginal factor in price falls</td>
</tr>
<tr>
<td></td>
<td>• Market closure</td>
<td>• Measure of last resort</td>
</tr>
<tr>
<td>Financial institutions losing more than their equity capital</td>
<td>• Application of bankruptcy law, exchange of debts for shares</td>
<td>• Theoretically, the most logical solution but too slow</td>
</tr>
<tr>
<td>Credit freeze to non-financial firms</td>
<td>• Extended credit lines from the Fed</td>
<td>• Insufficient to overcome the crisis in confidence and radical uncertainty about the outcome of the crisis</td>
</tr>
</tbody>
</table>
Figure 17: Three “deflation–depression” feedback loops à la Irving FISHER and adjustment under credit constraints.
stock prices. This system has a paradoxical, not to say pernicious effect, as observed by Vincent Bignon, Yuri Biondi and Xavier Ragot (2009, p. 5) and Biondi and Fantacci (2012, p. 576):

When the borrower’s liabilities are estimated at their fair value, the borrower can take advantage of his loss of credibility by posting the loss of market-value of his debts as a profit. Thus, accounting no longer protects investors, because it provides no information about the emerging crisis of this borrower, whose net result and profitability appear to be unaffected by the crisis. While governments are not allowed to, banks – both in Europe and the United States – are already doing this [...].

Even if the real estate market was structurally stable, the stock market could amplify the transition from naive optimism to black pessimism ... to the point of provoking a deflation of almost all financial assets, even those that were yesterday considered to be the safest.

The probability of a depression increases still further when radical uncertainty about the value of their assets prompts financial intermediaries to drastically reduce new credit. This has immediate repercussions on the purchase of durable goods by households, all the more so since they feel poorer due to the depreciation of their stock market and real estate wealth. In the winter of 2008–2009 a new depressionary spiral started when the profits of almost all non-financial, non-real-estate agents were revised downwards, setting off a new downward spiral of stock prices (Figure 17).

It was therefore to be feared that we would experience a repetition mutatis mutandis of the Great Depression. But the Fed, under the leadership of Ben Bernanke, had learnt from the errors of the 1930s, and the urgent need for Keynesian-type plans to support economic activity was recognized by both Republican and Democrat governments. That is why the parallels with the period 1929–1932 came to an end in March 2009.

### 7.4 The factors blocking a return to growth

However, there was no endogenous return to growth, because a new slowdown struck the economy in 2010.

- First, because households sought to reduce their indebtedness, which put a brake on consumption in a context of falling house prices, evictions of families who could not meet their mortgage repayments and the stabilization of unemployment at a high level.
- Second, because the banks did not convert the liquidities they had received from the Fed at almost zero interest rate into loans to the economy because they had become highly risk-averse.
As for non-financial companies, their improving profits hardly led to a surge in investment, because the outlook for demand remained gloomy and they observed political deadlock on the question of fiscal policy, generating uncertainty prejudicial to economic activity.

The US crisis affected the world economy. It triggered a Eurozone crisis, resulting from international finance’s unfavourable assessment of the sustainability of the public finances of the weakest countries, damaged by the policies pursued to counteract the consequences of the US crisis. And the emerging countries, with China at the forefront, suffered the repercussions of the slowdown in world trade, whereas their dynamism had previously been a stabilizing factor in the subprime crisis.

Ultimately, the strong resurgence of liberal orthodoxy played a decisive role in blocking the reforms that are needed to restore the viability of financial systems and their contribution to a return to growth. Reference to Keynesian interventionism was therefore short-lived, and far from marking the beginning of a new era.

And yet a radical reappraisal of macroeconomic and financial theory is certainly needed.

### 7.5 The need for social control of finance

The above exposition suggests an alternative strategy to the one actually pursued since the 1980s. It derives from the hypothesis, largely confirmed by our historical comparative analysis, that financial crises are not always inevitable, and that methods exist to reduce their frequency and/or impact, although without eliminating them completely, for they are consubstantial with capitalism. But we can sketch the outlines of what could become a new financial system (Rochet, 2008; The Economist, 2009). The history of finance and the subprime episode show that the costs of the present strategy can be considerable for public finances and for society. One could therefore seek to design systems which, while conserving the principle of the efficiency of capital allocation, significantly reduce the frequency and impact of financial crashes. There is every indication that a cost–benefit comparison of the ex ante and ex post treatment of crises would be far from unfavourable to the former option (Table 5).

In 2008, one epoch was ending and another highly uncertain one was beginning, shaped by the complex interaction between political strategies, industrial conflicts and the reconfiguration of economic paradigms. In 2012, finance is still putting up resistance and orthodoxy is making a comeback, but the reality principle will win through in the end and justify the return to a virtuous synergy between finance and society.
Table 5: The future of financial systems: deal with crises when they come or seek to reduce their frequency and magnitude?

<table>
<thead>
<tr>
<th></th>
<th>Ex post</th>
<th>Ex ante</th>
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<tbody>
<tr>
<td>Advantages</td>
<td>• Legitimacy, because of the need to restore financial stability</td>
<td>• Reduction in the cost of a possible residual crisis</td>
</tr>
<tr>
<td></td>
<td>• No interference during boom periods</td>
<td>• Less volatility favourable to growth and the reduction of inequalities</td>
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<tr>
<td>Disadvantages</td>
<td>• Impact of the crisis proportional to prior inaction</td>
<td>• Interference with private initiative</td>
</tr>
<tr>
<td></td>
<td>• Cost in terms of growth and standards of living</td>
<td>• Possible errors of diagnosis</td>
</tr>
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<td></td>
<td>• Moral hazard</td>
<td>• Lack of instruments</td>
</tr>
<tr>
<td>Methods</td>
<td>• Lender of last resort</td>
<td>• Monetary policy taking the objective of financial stability into account</td>
</tr>
<tr>
<td></td>
<td>• Publicly funded defeasance structure</td>
<td>• Uniform regulation, limits imposed on leverage</td>
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<tr>
<td></td>
<td>• Nationalization</td>
<td>• Banning of certain innovations that endanger stability</td>
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<td></td>
<td>• Restructuring on the initiative of the profession</td>
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References


