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The Financial Instability Hypothesis Applied to the 2007 Financial Crisis

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The serious dysfunctions observed in the financial markets following the collapse of the mortgage market in the United States have given new life to the ideas of Hyman Minsky,a post-Keynesian economist. Indeed, there are many who believe that thanks to his work, the current financial crisis could have been anticipated. The key mechanism that drives an economy to a crisis is the accumulation of debt during the boom period. The economy becomes more and more fragile. Financial innovations and deregulation in a context of globalization are responsible for this situation. This is an important point of his analysis. This is one of the aspects of the "financial instability hypothesis" (FIH). The other aspect is that during periods of growth, banks and other financial intermediaries try to convince investors to buy debts through sophisticated financial innovations. The role major of financial intermediaries in the crisis process is thus highlighted. Finally, it is possible to show that the current crisis is an application of the Minsky model.

A financial crisis is characterized by a sharp and sudden increase in the cost of financing linked to a scarcity of the supply of capital. This definition, taken up in particular by Boucher and Raymond (2009), shows that the financial system is no longer functioning satisfactorily, which makes it possible to affirm that the crisis arises from its dysfunction. This observation leads logically to seek to establish the responsibilities of the various actors and to analyze the causes of instability. The so-called *subprime crisis* affects the entire global economy. Some liken it to the crisis of 1929 and consider it even more serious, especially because of the internationalization of capital markets, deregulation and financial innovations that make it almost impossible to put in place national regulations.

This crisis, unprecedented in magnitude, seems to be the end of monetarism. Indeed, the choice made everywhere to fight against inflation on the assumption that money and prices are linked has shown its limits even though inflation was defeated thanks to the action of central banks (paradox of credibility), with as a corollary, the acceptance of a high natural rate of unemployment. This reasoning is based on a strong idea that a market free of impediments is inherently stable, which the facts currently deny. This observation gives a new relevance to the Keynesian and Post-Keynesian theories more relevant to understand the current economic crisis.

In particular, the work of Hyman Minsky highlights the limits of an organized economy around financial markets and financial intermediaries by introducing a hypothesis of financial instability (inherent in the capitalist system according to him) which originated in times of economic growth so that the actors do perceive not(or do not want to perceive) the increase of the risks which can lead to a financial crisis. The originality of his work lies in the fact that his model shows the endogenous nature of the financial crises induced by a level of excessive debt linked to the behavior of the banking system. He also emphasizes that they are inherent in the

functioning of the capitalist system and that a shock is not necessary to trigger one. All its analysis is built around the role of banks that provide more or less poorly their functions, which leads to situations of over-indebtedness and liquidity crisis in a context of financial globalization and competition that drives players to taking excessive risks and systematically short-term positions to maximize their profit, hence the decisive role played by the price of financial assets. Their decline, resulting from the interest rate policy of banks, will indeed lead to a deterioration in the balance sheets of financial intermediaries and borrowers who can no longer hope to repay their loans and/or contract new ones because of the fall of the value of the assets used as collateral.

It should be emphasized, as Papadimitriou and Wray (1997) do, that Minsky has always refused to belong to a current theory since he believes that a theory must be adapted to the Capitalist system and that there are many forms of it. Nevertheless, despite this assertion, it is clear that he is much closer to the post-Keynes than any other current of thought, even if he takes over Fisher's work on over-indebtedness by enriching them. This independence allows him, from the works of Schumpeter, Fisher and Keynes, to propose a real theory of financial crises with the formulation of the hypothesis of instability financial that can be confronted with the reality of the current crisis.

The theory of Minsky's financial instability offers a grid Reading of financial crises. One of the interests of his work is to rely on the major contribution of Keynes, namely his analysis of the financial dynamics of capitalism. Minsky asserts that economic stability itself creates instability and that volatility of investment is the primary cause of instability in the financial system, which he calls the paradox of tranquility.

Minsky considers that the capitalist system is a monetary economy of production. Currency, endogenous, is at the center of decisions economic, the main objective being to remain liquid and solvent. The financial framework is then very important and is the central cause of the flexibility and instability of the capitalist system. Minsky's analysis consistently reveals the "constitutional effect " or "natural" of the financial structure: the need to take profitable positions that results from the normal operation of the system capitalist. In a complex financial system, this need can lead, in addition to financial fragility, to inflation, unemployment and increased inequality. This defect is linked to the existence of assets real, but is mainly based on the methods of financing capital. Thus, there is a difference in maturity between the assets and liabilities of the balance sheets of companies and banks, which originates in financial relations and can lead to instability. This defect "natural" is therefore directly related to the way in which economic activity is financed. In fact, in this logic, the weak point of the capitalist system is the banking and financial system itself.

Thus, Minsky's analysis refers directly to the way in which economic activity is financed. The terms of indebtedness of economic agents and the weight of bank loans will indeed explain the outbreak of financial crises. He believes that economic agents are rational and make trade-offs between all assets based on expectations of future rates of return and expected capital gains. Decisions are based on conventional judgments. The conventions, present in its analysis since the 1980s, play a major role since they define the relations between the borrowers and the banking system. They are used to determine the acceptable criteria that borrowers must meet to

obtain credit. In this selection process, project initiators and lenders are actively involved conventions state of expectations normal margins of security (if external financing is needed).

The whole problem is then to explain why the conventions and safety margins are changing. Entrepreneurs are thus led to define their profit and their level of investment taking into account the cost of obtaining external resources (loans and securities issues) depending on the evolution of interest rates. Any change in this cost induces effects stock and flow and contributes to the destabilization of the economy. In his first study on financial instability published in 1964, Minsky introduces what he calls the *cash box conditio* : an economic unit where the entire economy must be sure to generate enough internal resources or to have enough funds unused to have the capacity to go into debt. If the net internal funds are negative and if unused funds are not available, the contractor, or the economy, will be considered illiquid or even insolvent. In addition, in order to avoid damaging one's reputation and facing a loss of net wealth, an economy must try to generate liquidity before compromising its activity or being in default. The sale, or downfall, of strategic assets is only a final solution and involves a loss related to the non-receipt of credits on good terms. The last step is bankruptcy. The *cash box condition* provides a good overview of how an economy may be at risk and what its margin of safety is. This framework analytical leads to determining the profit and investment made by entrepreneurs.

To explain the determination of aggregate income, Minsky uses Kalecki's aggregated profit equation. The level of aggregate gross profit after tax, $P = P^* - t\,P^*$with t tax rate of gross profit, is as follows: $P = I + (G - T) + (X - M) + Ck - Sw$
with I: investment; G - T: budget balance; X - M: external balance; C*k* : consumption of capital; S*w* : employee savings.
Because the decision process depends on different actors, P is not under the control of any agent since I, G, T, X, M, C, and S are determined by a decision process that depends to a large extent on banks credit behavior and the situation on the securities market (bonds in particular). A central point of this equation is to show that there are two key variables in the system economic, I and G. These two variables are not determined by the current level of income and public expenditures can be used to stabilize the opposite effect of a decline in investment on profit. Another important point is that the profit is determined independently of the margin (*mark-up*) that the firm incorporates in its prices. It is the structure of aggregate demand that determines it and more specifically, it is in the consumer goods sector that it is generated *via* the expenditures of economic agents who do not work in this sector. Profits are determined in the production of goods consumer when the purchases of these goods are higher than the wages paid to ensure their production. Note that decisions microeconomic on the *mark-up* only influence the distribution of profit.

From this follows the determination of the minimum profit required in relation to the level of internal resources: $Pif = P - (i + a)\,L$
Naturally, depending on the structure of the debt, there can be several interest rates and depreciation rate and, in this case, it is necessary to differentiate them. More generally, iL represents all income component of cash *and*L the whole capital as cash balance of financial commitments. For the business sector, the level of commitments, their interest rates (or income) and their maturity determine the minimum profit required.

The determination of the level of investment then depends on profit and risk, reflecting the importance of financial factors: prices, the desired and current financial structure, but also the rate of
implicit return to the extent that a contractor has to choose between several types of assets, which depends on the relative profitability and liquidity of each of them. From the profit equation, we obtain the Kaleckian version of the equality between savings and investment. It appears that the causal relationship goes from I to P. Thus, a capitalist economy can only work if there is investment, the decision to invest depends on the gap between the demand price of capital evaluated by the market financial and the price of capital supply. At the same time as determining the amount of current profits, the investment expenditure determines the extent to which past financial commitments can be met. The volatility of the investment is therefore the first cause of instability of the financial system. There will be a financial crisis when the current profits generated by the investment of the period will no longer make possible to meet the commitments without recourse to
extraordinary resources resulting from the sale of accumulated assets. The fundamental question is therefore why the investment fluctuates. Minsky's answer is that these fluctuations are caused by the spontaneous evolution of financial structures.

Crises can be situated in a historical perspective of the transition from one stage to another of capitalism. Currently, the system is dominated by the power of shareholders who are always looking for more profits. The decisions made by companies on investment are largely conditioned by the prospects short-term profitability, concealing any long-term policy that weakens large companies and all financial intermediaries.

Above all with Minsky, it is the concept of institutional fragility that fundamentally explains the sources of the crisis. In fact, with financial globalization, financial markets and financial intermediaries have become internationalized, increasing competition between stakeholders, encouraging them to take more and more risks and to offer new types of financial assets. Thus, in order to facilitate the circulation of capital and encourage the development of international finance, a vast movement of deregulation progressive has been made. The absence or the virtual absence of rules has thus favored the development of risky practices. He then indicates that systemic risk is not the juxtaposition of individual risks, but the fact that agents' rational responses can lead endogenously to abrupt changes in expectations leading to problems of allocation of savings and valuation of the price of the assets.

As a result, the analysis of financial instability depends on the role played by financial intermediaries and financial innovations, as they both finance economic activity and offer diversified investments. Minsky considers that financial intermediaries have a strategic role both in stabilizing the financial structure and in stopping the disruptive spiral that can precipitate the system into a crisis phase. However, they may be responsible for triggering or aggravating a crisis because of their pro-cyclical behavior, which encourages economic agents to become increasingly indebted in times of prosperity. According to Minsky, investment fluctuations are caused by the spontaneous evolution of financial structures, the basis of his theory of over-indebtedness. Based on the work of Fisher and Keynes, it will highlight the financial instability of the economy and establish a process of triggering crises endogenous to the model.

Thus, it links the degree of financial fragility to the business cycle and defines a financial crisis as a turning point. He distinguishes three types of financial structures:
- Structures that he qualifies as sound: they are those in which profits expected current exceed commitments for all maturities possible. Commitments are essentially made up of long-term debts;
- speculative structures: these are those in which short- term profits are lower than immediate commitments, but are sufficient to pay interest, while anticipated long-term liquid revenues exceed future commitments. In this situation, the rescheduling or refinancing of the debt is necessary to face the nearest deadlines, but the net present value for the entire duration of the projects in progress remains positive;
- finally, Ponzi financing structures: those where the net profit available in the short term does not even make it possible to pay current interest. You have to increase the debt to meet the financial obligations, otherwise you would have to liquidate your assets. This distinction allows Minsky to clarify the concept of instability financial, which is different from that of financial fragility, which can be defined as the propensity of an economic system to generate financial instability.

The level of fragility of an economy depends on the weight of the three kinds of financing structures, the willingness and ability of the authorities to refinance economic units, when current market rates shift units into Ponzi units, and the power of the authorities to support profits and wages. An unstable system is, according to Minsky, a system that does not ensure full employment and price stability. *Ultimately*, financial instability is related to the impact of financial fragility on non-financial variables.

The financial crisis then characterizes the distress situation of an economy. Minsky's hypothesis of financial instability asserts that any financial system is driven by the very dynamics of capitalist accumulation to evolve from a financing sound structure to a Ponzi financing structure, which carries with it a risk of global insolvency. Also, he analyzes it as the process endogenous of degeneration that, on the one hand, would condemn any structure healthy to become Ponzi and that, on the other hand, would gradually make any Ponzi structure insolvent. These are the profit opportunities offered by a sound financial structure that make the weakening of the system an endogenous phenomenon, hence the importance that Minsky attaches to asset price fluctuations, which is verified in light of the current crisis.

In this context, the role of banks, defined as any institution that contributes directly or indirectly to the financing of economic activity, is essential. They are both a source of dynamism and destabilization and, as a result, they must be monitored. Their main role is to assess the value of' credits borrowers. In general, they are often very optimistic when it comes to selling credits because they assume that they will always be able to refinance at a relatively low cost in the upper part of the cycle. They naturally tend to promote speculative and Ponzi financings because the maturity of the credits they grant is often shorter than that of assets financial and because they seek to increase their market share.

Finally, Minsky specifies the role of financial innovations which, with deregulation, constitute the second factor explaining fragility institutional. They play a vital role in the long-term weakening of the financial system, but they also improve the flexibility of the capitalist system.

They are linked to competitive pressures to make profit and diversify the balance sheet structure. Banks innovate to circumvent the barriers imposed by regulation and the system itself or to adapt to the process of financing different economic activities. This importance of financial innovations is emphasized by Minsky in 1957 in two articles that shed light on his theory of financial instability as they establish the link between the use of financial innovations, the liquidity of balance sheets and cyclical instability. He is already alerting about their dangers, which will become evident fifty years later. In fact, it first studies the consequences of the endogeneity of money by linking the behavior with respect to liquidity and the greater or less availability of financing, and then provides an analysis of the dynamics debt that takes into account the specificity of investment behavior in a situation of uncertainty, as pointed out by Brossard (1998 and 2001).

Financial innovations can lead to increased liquidity risk, which translates into increased systemic risk. They paradoxically consolidate the weaknesses responsible for financial instability. The complexity of structured products favors asymmetries of information and the phenomenon of moral hazard l, which complicates investment strategies (problem of adverse selection). This gradual shift from a healthy structure to a Ponzi scheme, encouraged by banks, leads to greater dependence of the system on market conditions. While the first funding structure is vulnerable only to rising costs and declining revenues, but cannot be jeopardized in its viability by financial shocks, the other two are, on the contrary, very sensitive to financial fluctuations so that rising rates interest and changing credit market standards may affect their viability. Any change in financing conditions will translate into asset prices, which can then vary sharply and rapidly in relation to the price of production. The rise inevitable in interest rates means that the margins of security (which determine the anticipated liquidity and solvency of an economy) related to the financing structure change and that liquidity condition Minsky's is no longer met. Investment falls as well as profits. Financial instability can then lead to financial crises that may or may not degenerate into major depressions, depending on the institutional context in which they operate and the policies adopted in response.

Thus, to summarize, during the growth phase, it is possible to use Fisher's scheme as a reminder that during this period, interest rates rise: innovation expectations of strong returns, indebtedness, excess of optimism, indebtedness. During the downward phase, the crisis process will begin. The state of the financial system will deteriorate in a context of rising interest rates and pessimism. It is becoming clear to agents that the price of assets will no longer increase and that it is urgent to sell to minimize losses. Hence sales lead to even greater losses. This vicious circle initiates deflation and raises the interest rate. At the same time, with market yields becoming negative, the repayment of debt becomes more and more uncertain. Companies wanting to repay their debts cannot do it anymore because the banks refuse to finance them. The latter, seeing the quality of their debts deteriorate, are drying up the supply of credit (*credit crunch*), thereby reinforcing the rise in interest rates. It is at this level that the crisis spreads, reducing the liquidity of the entire economy. As a result, balance sheet reorganization becomes essential to trigger the exit from the crisis.

Minsky shows that because of the financial fragility linked to deregulation and financial innovations, all in a context of internationalization of the economies, the balance sheets of the intermediaries financial have also been weakened and very dependent on the conditions of the

markets where the significant impact of any change in interest rates and asset prices, which can generate a crisis liquidity. The price to pay is therefore the interconnection between bank and assets liquidity. The economic analysis of Minsky's financial instability provides a good framework for understanding the financial crises inherent in the capitalist system. In this, his analysis is not based on the emergence of a shock to generate a crisis. For example, it is sufficient to modify the liquidity linked to an increase in interest rates to trigger one.

Unlike the theoretical models of recent years built *ex post* from the stylized facts from the analysis of a crisis, the Minsky proposes a framework adapted to analysis of the financial crisis current. First of all, the paradox of tranquility is proven. During the cycle expansion, the ordinary Fischer/Minsky scheme was observed. The decline in vigilance of the actors then allows the over-indebtedness and financial fragility peculiar to the capitalist system.

In the case of the current financial crisis, the behavior of the financial intermediaries has been decisive, according to analysis Minsky's. Indeed, the fall in the price of assets is directly related to the interest rate policy practiced by the banks. The wage deflation policy pursued in the United States since the 1980s has resulted in a reduction of household resources making them very dependent on loans to finance their expenditure consumption. If we add to this the desire of the government US to facilitate homeownership, we can only lead in time to over indebtedness situations. Thus, the financial institutions have granted financing to households without sufficient resources by taking as collateral the real estate purchased. In other words, household debt capacity was correlated with the value of collateral assets. The higher the value, the more banks gave credits. These practices made the economy more and more fragile, especially as banks increased their lending rates (from 4.3% to 6% in 2006) thus increasing the financial difficulties of households forced to sell, hence the fall in the price of real estate and then that of other assets resulting in the depreciation of bank assets.

The observation of events makes it possible to distinguish five stages in the evolution of the crisis that affects all economies today (Kirrane 2018). The financial crisis from the United States in August 2007 (step 1) from *Subprime* mortgage loans to particularly fragile elements of the American middle class. To understand the mechanics of the crisis, we must start from the American terminology that distinguishes three types of borrowers according to their solvency: *premiums* (most solvent borrowers), "Alt-A", intermediate category of people *a priori* solvent, but who have difficulties in justifying regular income (craftsmen, for example) and *subprimes* (less creditworthy borrowers). These solvency levels are essentially determined on the basis of a grid*scoring*. The most common score in the United States is the FICO (Fairscore Isaac Corporation). A FICO score is between 300 and 850, 60% of the scores are between 650 and 799. A borrower *subprime* is generally a score lower than 620. It has more of a credit history checkered with late payments. At the end of 2007, subprime *mortgages* accounted for about 17% to 18% of outstanding loans in the United States.

Thus, in keeping with Minsky's analysis, the US banking system is at the heart of the crisis it helped to trigger by providing credit to risky clients with full knowledge of the facts. Why? The logic is simple. Guided by their goal of maximizing profit and gaining market share, banks have attracted customers without worrying about their level of income by granting credit at advantageous rates, at least initially (fixed rate on two or three years, then variable rate

significantly less favorable then). This action, encouraged by the American state, which wanted a significant increase in the number of owners of their principal residence and was facilitated by policy the Federal Reserve's low interest rate, led to price pressures on the real estate property, the demand being stronger and the appearance of a housing bubble magnifying with the increase of the credits granted by the banks. Insofar as the real estate came as collateral, the risk of non-repayment was assumed to be under control. In the event of default, the property was seized and sold, which allowed the financial institution to pay. For that, it was necessary to anticipate the continuation of the increase of the price of goods. But this is not what happened as real estate prices on the contrary fell with the bursting of the bubble, resulting in a decline in the value of assets for the banks involved who were then in a situation critical financial situation initiated by their own behavior.

Subsequently, all banks will be affected by the fall in the price of assets caused by the uncertainties of securitization (step 2), a new phenomenon of transferring risks by transforming these loans into securities on the stock markets. They are thus carrying debts of which they do not know the value. This financial innovation shows, as pointed out by Minsky, the double role that plays all innovation generally: initiated by the banks, it allows a better distribution of the risks (here, it is a question of covering oneself against the risk of no - repayment, which allows banks to grant more credit to poor credit customers), but at the same time, it increases the fragility of the system, which is currently demonstrated (spread of the crisis to all the institutions that bought securities *subprime* in the United States and the rest of the world). Securitization appears here as a factor of contagion due to financial globalization and the decompartmentalization of the financial markets. Considering only the financial innovation of CDOs (*collateralized debt obligations*), major US investors withdrew from the market financial at the end of 2003. US real estate should have slowed since 2004. was pushed back in 2007 is that US banks were able to find other types of investors to buy the CDO, including banks of countries that have surplus trade balance (such as Germany or China). The fall in the price of these securities led to the fall of the stock markets not only American. As a result, banks are wary of each other and no longer lend themselves to liquidity (step 3). The crisis of confidence in the interbank markets will lead to the bankruptcy of some banks. The panic wins then the financial markets in 2008 (step 4). Bank losses are greater than expected. From then on, the crisis that was initially a banking crisis will turn into a stock market crisis. Finally, in the face of this disaster, the central banks, lenders of last resort, will come to the aid of institutions in difficulty (step 5) avoiding the collapse of the banking systems. These stylized facts make it possible to understand the factors and the sequences that led to the crisis as described particular in the 2008 report of the Economic Analysis Council (EAC) and the 2009 report of the International Monetary Fund (IMF) on financial stability in the world, descriptions that are similar to the theoretical proposed framework by Minsky (CAE, 2008, IMF, 2009).

The current financial crisis follows other crises that can also be described using the Minsky model. In fact, for any crisis financial, a breakthrough innovation must in the first place be contradictory to the endogeneity of the crisis, insofar as it is an innovation that can be located at several levels within the financial system. This may concern technology (Internet), a change in macroeconomic policy (opening of borders, increasing global trade), a change in policy interest rate or a financial innovation such as securitization of mortgage loans and their recomposition in diversified bond securities (CDOs). Subsequently, the prices of the assets concerned start to

increase (technology companies, emerging-country securities, residential real estate in the United States). The upward momentum is becoming rapidly visible by a larger number of investors. As a result, there is an increase in low-interest, low-interest loans, which lead to a euphoric period: asset prices continue to rise and serve as a "solid" guarantee for borrowing new funds. Speculators and Ponzi are the cause, as are financial institutions. This euphoria does not prevent some from being realistic and withdrawing in time, allowing asset prices to stabilize before collapsing as a result of non-repayment of massive debts. Thus, we can cite, for example, the Latin American crises of the 1980s, the crisis of the EMS (Monetary System International) of 1993, the Asian crises of 1997 analyzes these different crises that gave birth to the models first, second and third generations (Kirrane 2017).

The period before the crisis is a period of prosperity characterized by a fairly steady economic growth reflecting the success of the capitalist economy marked by the global liberalization of financial markets, the integration of economies and the victorious action of central banks against terrorism. 'inflation. Minsky considers that it is during the upward phase of the cycle that all the triggers of a crisis are set up because of the optimism of agents economic and banking systems that always anticipate higher profit levels leading to an increase in investments which actually generate profits.

In other words, even when all the indicators are favorable, there is fragility of the system, which is proven. This situation confirms paradox Minsky's tranquility that debt distress is prepared when everything goes well and that economic agents take advantage of economic growth and low interest rates to borrow beyond reasonable, which underlines the role of the banking system and the way in which economic activity is financed. From there, how is the crisis going? Minsky insists that there is no need for a trigger shock and that, for example, there is a need for a change in liquidity.

The observation of events shows that in a world of plenty of liquidity, the subprime *crisis* is a liquidity crisis of some banks and interbank markets. It can be explained by the mistrust that has developed between the banks, as a result of the uncertainty of each of the situation of the others and of the exposure direct and indirect to the crisis (the importance of loans *subprime* securitized in the balance sheets). Interbank refinancing is becoming scarce, forcing central banks to supply the market. This lack of liquidity stems from the lack of repayment of certain mortgages, repayment made impossible by the fall in the price of real estate in the United States resulting in an imbalance in the balance sheets of the institutions concerned may lead to bankruptcy because the decline in the value of collateral in the absence of refinancing possibilities. Here we find the mechanism depicted by Minsky. This resulted in the end of the real estate bubble caused by the abundance of liquidity resulting from central bank policy.

The credit market, here the mortgage market, is at the center of the process. Indeed, even though financial institutions have massively developed their activities in all markets capital, lending remains the main activity of banks and, consequently, the main source of financing for economic agents. They are at the heart of the financing of the activity. Competition is therefore fierce, which may explain, in a context of growth, the granting of financing to risky customers. At this level of analysis, one cannot help but compare classification of Minsky's sound, speculative and Ponzi financial structures with that operated by FICO in the United States, which distinguishes

three types of borrowers: *premiums*, the "Alt-A" and the *subprimes*. Events show that Minsky's instability hypothesis finds its application. There was a favorable shift in Ponzi structures weakening the entire system and making dependent on conditions the economic actors market. In response, interest rates inevitably rise, leading to a change standards in credit that affect the viability of financial structures. The conventions and margins of security that determine the liquidity of the economy and its solvency are also changing. As a result, Minsky's liquidity reserve is no longer respected, resulting in a drop in investment and profits. Banks then adopt an extremely cautious behavior that results in a rationing general of credit accentuating the crisis that finally affects the real sphere.

This crisis highlights the fragility of financial intermediaries as a result of deregulation and financial innovations that have enabled the interconnection of bank liquidity and assets. This weakening of bank balance sheets thus takes on a multiple dimension. In the face of reduced margins, banks will try to restore their profitability by increasing their risk taking. This evolution will affect both the portfolio of receivables and the rest of the assets banking. In addition, this reduction in margins and the increase in the portfolio of small business debt banks and household will accentuate the sensitivity of profitability bank during a recession. Faced with this situation, banks seek to readjust their risk premium, which leads to an increase in the cost of credit, which can then be supplemented by credit rationing. The fall in the price of heritage assets then reinforces this rationing phenomenon, while affecting directly the bank balance sheet.

In addition, deregulation leads to a loosening of the bond banking /corporate (for the larger ones with access to markets financial). Banks will then favor cyclical criteria solvency and liquidity to decide on the granting of loans, which will amplify the fluctuations. In general, financial intermediaries have an increased role in increasing the amplitude of fluctuations (behavior pro-cyclical) through the channel of their credit supply. One of the mechanisms of *debt-deflation is* again relevant. The deregulation of the credit cycle / business cycle therefore seems relevant. Finally, deregulation will also limit the microeconomic gains from establishing long-term relationships between banks and businesses. This shows a direct link between the deregulation of the behavior of financial intermediaries and a decrease in the long-term growth rate.

The CAE proposes, in its 2008 report, an analysis of the sequences at the origin of the subprime *crisis* and which verifies the relevance of the Minsky model. Thus, the authors of the report distinguish between macroeconomic imbalances and microeconomic dysfunctions caused by financial intermediaries. They reflect the paradox of Minsky's tranquility and that of the credibility of banks' successful anti-inflation policies central, thus clearly showing that the effectiveness of central bankers in this area has not prevented the crisis, contrary to the claims of liberalism (CAE, 2008). On the contrary, in a way, if they managed to avoid the collapse of the banking system, they could not avoid the crisis. In fact, the increase in liquidity generated by the increase in savings in emerging countries and the expansion of loans have not translated into higher inflation, with the consequent tightening of monetary and policies, the rise in interest rates that should have limited the development of bank credit. From a point microeconomic of view, the requirement of shareholder profitability and lower risk premiums reinforce the objective of profitability, which results in increased competition favoring the relaxation of criteria (conditions for granting financing, the *cash box condition* or liquidity reserve of Minsky), with the consequent expansion of loans and financial innovations which are integrated here in a strategy

of circumventing the capital requirements generated by the new prudential standards and in principle by the expansion of credits. Thus, the abundant liquidity has led economic agents to seek riskier assets for their investments. The conditions of a sudden reversal are put in place. Instead of taking them into account and bending their behavior, the various actors financial decided to wait, thinking that it would be time to react. They were short-sighted by the disaster (impending Guttentag-Herring1986), favoring short-term, immediate profit-seeking behavior in the belief that central banks would continue to monitor the
stability of the system.

The CAE's analysis highlights the fact that the current crisis is indeed a liquidity crisis, as shown by the Minsky model. Here, the abundant global liquidity is coupled with an illiquidity of the banks affected. The banking system is therefore at the heart of the mechanisms leading to the financial crisis. This observation obviously has consequences for the strategic choices that must be made to get out of the crisis.

The IMF, for its part, distinguishes four main axes (IMF, 2009). The first is that the stakeholders did not appreciate the extent of leverage used by many institutions financial, nor the risks of uncoordinated settlement that result. The second emphasizes the excessive risk-taking associated with management private sector risk, information, sector control financial and regulation, which have not kept pace with the financial innovations (which provoked at the same time disturbances and a crisis of confidence), and the evolution of trades. The third emphasizes the fact that the risks that were thought to have been extracted from balance sheets bank were underestimated and caused considerable tension in these balance sheets. The fourth, despite the intervention of central banks, indicates that the financial markets do not work better, which refers to a study of interbank behavior. Thus, the IMF's analysis is articulated around the functioning of the credit market, risk assessment and behavior stakeholder, in particular those of banks and financial institutions non-bank whose balance sheets have been deteriorated by losses from deterioration in credit and lower profits. It estimates at $3,400 billion the depreciations of assets of banks and other financial institutions in 2010. It therefore revised its estimate downward since the figure was $4,054 billion in its report of April 2008. It seems that the world economy is on the road to recovery.

As a result, the macroeconomic spillovers are not just a liquidity problem (the link between liquidity market, the ability to sell or buy an asset) and the liquidity of the financing, which allows a solvent institution to make the agreed payments on time, is analyzed in detail), but can also be explained by deep balance-sheet vulnerabilities and weaknesses in own funds. This conclusion is in line with Minsky's analysis which, as has already been said, considers that a financial crisis is a liquidity crisis and that financial intermediaries are responsible for it largely. It insists in this perspective on the structure of bank balance sheets and the imbalances in terms of maturity of their assets and liabilities. Kregel (2008), in his analysis of systemic risk and the *subprimecrisis* mortgage market in the United States, discusses Minsky's concept of financial fragility. He believes that it is the structure of the capitalist economy that becomes more fragile after a period of prosperity and concludes that the current crisis is in fact the result of insufficient safety margins based on the way in which they are granted. credits through the financial system. He has therefore a more reductive vision of crisis mechanisms than Minsky. Plihon (2008 and 2009) also considers that the Minsky model is suitable for analyzing the current financial crisis.

He insists that Minsky has developed a long-term approach to the process of financial instability, sometimes referred to as the second theorem of instability financial, which he believes is perfectly suited to the current crisis. Indeed, when growth phases are long, as was the case in the United States, imbalances and indebtedness become very important. The adjustments that then take place are then necessarily violent, which is not the case when the cycles are short insofar as they make it possible to clean up the economies and to eliminate the Ponzi structures. This lengthening of the cycles is largely explained by the monetary and accommodating fiscal policies which instead of correcting the imbalances have aggravated them over time (over-indebtedness of households in the United States).

The current financial crisis could not be avoided. States must therefore find the appropriate means to contain it and reduce its effects on all economies. As part of analysis Minsky's, how can one stabilize an unstable economy? How can we protect people from the consequences catastrophic of financial crises? For him, only deep structural reforms, such as State ownership of investments, are able to provide an answer to these questions. To complete, we must put in place an income policy and a stabilization policy that will help to control financial crises and define the conduct of financial practices. Financial intermediaries and their activities must be controlled. In this context, what can be the place of the central bank? For him, the solutions will be different depending on whether the economy will be in a favorable situation or not. In the first case, it must let the financial market that can take initiatives *via* financial innovations, but must define the financial techniques allowed by accepting them or not in the context of its refinancing operations or by accepting them at a higher cost. high. It therefore emits a signal heard by the banking system which must then adapt its behavior. If it disapproves of certain financial behaviors and disrupts then the system, it must not intervene, but must also protect other markets that are not responsible. On the other hand, in times of financial fragility, the role of the central bank is more limited. She can no longer direct the system. It endorses innovations and existing practices and occasionally acts as lender of last resort. This function is essential since banks can be affected at any time by a liquidity crisis. In the current crisis, it is the central banks that have fueled the interbank market. Monetary policy must prevent crises or mitigate their consequences. The same true for fiscal policy.

In general, the purpose of these policies is to increase the stability of the system, especially when full employment is achieved, by making speculative financing less attractive. Minsky recognizes Finally, that regulatory policies must adapt and that there are no definitive solutions that guarantee stability. The solutions proposed by the current governments are in line with those proposed by Minsky without being fully comparable and are, for the most part, focused on monetary policy measures and fiscal with a general reflection on the most effective way of control the activity of financial institutions. In addition, all states want to improve financial governance by improving the functioning of credit rating agencies, by strengthening prudential regulation of banks, by limiting open securities buying practices, by promoting the transparency of information on financial products and promoting European and global governance. The end of the crisis should be an opportunity for the implementation of a number of reforms that would aim to change the behavior of economic agents and make the system more stable. An upward phase of the cycle could then begin, allowing the global economy to return to growth until the next crisis.

The current financial crisis, known as the *subprime crisis,* has brought to the fore the interest of post-Keynesian analyzes, and in particular that of from Minsky. He asserts that a fundamental characteristic of the capitalist system is the alternation of phases of robustness and fragility and that it is during the upward period of the cycle that the conditions of instability related to over-indebtedness that can lead to a crisis. It shows that the banking system is at the heart of the malfunctions that can occur because it provides a large part of the financing of the economy. The race for profit, the investments that allow their realization and the competition make the structures financing that were healthy become Ponzi, making depend actors of economic life on market conditions. In this context, the issue of liquidity is crucial and for him, any crisis is a liquidity crisis, which is well demonstrated in light of the crisis current financial.

It is therefore necessary to be able to ensure the liquidity of the markets and that of the banks. This point, which has been of great concern to Minsky, is also interest to other authors such as Diamond and Rajan (2001) who proposed a theory of banking by combining liquidity risk, liquidity creation and financial fragility. Minsky thus proposed an original analysis of financial instability and crises centered on the endogeneity of the system financial, something that had never been developed by contemporaries and for whom the origin of a crisis resulted from an exogenous shock (first-generation models, such as Krugman's, for example). This singularity makes his model a reference today unavoidable insofar as following the work of Keynes, but also Schumpeter and Fisher, he forged the concept of systemic fragility that would be inherent in the difficulty of reconciling in a economy of the uncertain the degree of liquidity of the economic system and indebtedness as preferred mode of financing of investment. For him, debt is the normal way of financing companies that do not generate enough liquidity in each period to fully self-finance their investment projects. Minsky's model, an endogenous generation model of expansions and crises, proposes a dynamic of crises (sequence production crisis/financial crisis) and, thanks to its hypothesis of instability financial, explains the behavior of the agents in the face of liquidity and debt.

All of his work shows that crises are part of the normal functioning of the capitalist system and that they are inexorable. The distinction he makes between the three financial structures is fundamental. It shows that certain debt thresholds are reached and that there can be a risk of crisis. However, it does not specify these thresholds, any more than the magnitude of the changes in interest rates. It proposes an analysis of the system without providing quantitative indicators that would have to be built. The financial crisis unleashed the limits of liberalism and monetarist policies, asserting that controlling inflation would ensure the stability of the system as a whole. The evidence has shown that success in this area, ensuring the credibility of central banks has finally met its limits by indirectly encouraging high-risk behavior. The deregulation and decompartmentalization of financing channels coupled with a low interest rate policy have encouraged institutions financial to expand their activities in the markets and to distribute credit without really worrying about the solvency of customers. After the onset of the crisis, central banks were forced to massively inject central money into the interbank markets, which now results in a (high) abundance of liquidity without resuming credit activity. Thus, based on the analytical instruments proposed by Minsky, the financial crisis was predictable due to the race to profitability and the mimetic behavior of financial institutions, among others. Simply, the various actors probably did not want to believe because they always saw the possibility of making profits in the short term, which supports the conclusion of Guttentag and Herring (1986) that not only

banks (and other financial institutions) have a short-term behavior, but in addition, in the face of disaster, they are nearsighted, or even blind (Orléan, 2009).

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