

Tymoigne, Eric

Working Paper

A Critical Assessment of Seven Reports on Financial Reform: A Minskyan Perspective. Part I: Key concepts and main points

Working Paper, No. 574,1

Provided in Cooperation with:

Levy Economics Institute of Bard College

Suggested Citation: Tymoigne, Eric (2009) : A Critical Assessment of Seven Reports on Financial Reform: A Minskyan Perspective. Part I: Key concepts and main points, Working Paper, No. 574,1, Levy Economics Institute of Bard College, Annandale-on-Hudson, NY

This Version is available at:

<https://hdl.handle.net/10419/57033>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



Working Paper No. 574.1

A Critical Assessment of Seven Reports on Financial Reform: A Minskyan Perspective, Part I:

Key Concepts and Main Points

by

Éric Tymoigne

The Levy Economics Institute of Bard College
California State University, Fresno

August 2009

The Levy Economics Institute Working Paper Collection presents research in progress by Levy Institute scholars and conference participants. The purpose of the series is to disseminate ideas to and elicit comments from academics and professionals.

The Levy Economics Institute of Bard College, founded in 1986, is a nonprofit, nonpartisan, independently funded research organization devoted to public service. Through scholarship and economic research it generates viable, effective public policy responses to important economic problems that profoundly affect the quality of life in the United States and abroad.

The Levy Economics Institute
P.O. Box 5000
Annandale-on-Hudson, NY 12504-5000
<http://www.levy.org>

Copyright © The Levy Economics Institute 2009 All rights reserved.

ABSTRACT

This four-part study is a critical analysis of several reports dealing with the reform of the financial system in the United States. The study uses Minsky's framework of analysis and focuses on the implications of Ponzi finance for regulatory and supervisory policies. The main conclusion of the study is that, while all reports make some valuable suggestions, they fail to deal with the socioeconomic dynamics that emerge during long periods of economic stability. As a consequence, it is highly doubtful that the principal suggestions contained in the reports will provide any applicable means to limit the worsening of financial fragility over periods of economic stability. The study also concludes that any meaningful systemic and prudential regulatory changes should focus on the analysis of expected and actual cash flows (sources and stability) rather than capital equity, and on preventing the emergence of Ponzi processes. The latter tend to emerge over long periods of economic stability and are not necessarily engineered by crooks. On the contrary, the pursuit of economic growth may involve the extensive use of Ponzi financial processes in legal economic activities. The study argues that some Ponzi processes—more precisely, pyramid Ponzi processes—should not be allowed to proceed, no matter how severe the immediate impact on economic growth, standards of living, or competitiveness. This is so because pyramid Ponzi processes always collapse, regardless how efficient financial markets are, how well informed and well behaved individuals are, or whether there is a “bubble” or not. The longer the process is allowed to proceed, the more destructive it becomes. Pyramid Ponzi processes cannot be risk-managed or buffered against; if economic growth is to be based on a solid financial foundation, these processes cannot be allowed to continue. Finally, a supervisory and regulatory process focused on detecting Ponzi processes would be much more flexible and adaptive, since it would not be preoccupied with either functional or product limits, or with arbitrary ratios of “prudence.” Rather, it would oversee all financial institutions and all products, no matter how new or marginal they might be.

See also, Working Paper Nos. 574.2, 574.3, and 574.4.

Keywords: Regulation; Supervision; Financial Reform Minsky; Central Banking

JEL Classifications: E58, G01, G18, G28, G38

KEY CONCEPTS

- *Cash flow*: Movement of a monetary instrument in or out of an economic entity. Cash inflows and outflows are induced by asset operations and from portfolio operations (selling/buying assets, financing and funding of assets). A positive net cash flow (net of all cash payments) increases cash reserves, whereas a negative net cash flow decreases cash reserves.
- *Cash-flow mismatch*: A difference between the pattern of cash inflows from operational assets and the pattern of cash outflows from liabilities, both in terms of timing and level. Usually this concept is used to mean that, at a given time, cash outflows are of a larger size than cash inflows, thus position-making operations are expected to be needed.
- *Financial Instability Hypothesis*: The idea that over periods of enduring economic expansion that only record a few small recessions, more and more economic units are involved, voluntarily or not, in Ponzi finance. Balance sheets become more sensitive to the non-realization of expected cash inflows, changes in interest rates, changes in taxes, changes in asset prices and other factors that affect cash flows and funding methods.
- *Hedge finance*: A financial position that is expected to be strong enough not to require the use of position-making operations. This is so either because net cash flows from operations (i.e. cash inflows from core activity less cash outflows from the latter) are expected to be large enough to meet debt commitments and/or because (unencumbered) cash reserves are large. Ultimately, however, the cash-flow criterion is what defines a hedge process because, if it does not hold, cash reserves are depleted rapidly. If position-making operations are unexpectedly needed, channels to do so are solid and highly liquid. Hedge finance can be subject to fraud, excessive optimism in the valuation of net cash flows from operation, and shrinking margins of safety (which makes it more prone to become speculative or Ponzi).
- *Liability*: Any commitment to make a payment at a specific time in the future (dated liability), if an event occurs (contingent liability), or at the demand of creditors (demand liability). Payment can be made in cash or any other means that creditors and debtors see fit. Liabilities can be on- or off-balance sheet.
- *Margins of safety*: Buffers that allow an economic unit to protect itself against expected and unexpected adverse events, and to prevent or limit position-making operations. These buffers take the form of net worth, the difference between expected cash inflows from operations and

debt commitments, cash reserves, and liquid securities. The smaller a margin of safety, the higher is the risk that unexpected position-making operations will be needed.

- *Maturity mismatch*: A difference between the maturity of the liability side, and the maturity of the asset side of the balance sheet. The monetary value of assets declines at a greater or lower rate than the monetary value of liabilities. Usually this concept is used to say that assets are funded with liabilities of a shorter term, and that when the latter come due, equity capital is not as high as the value of assets. In this case, assets are still on the book but liabilities are disappearing; therefore, there is a funding problem that requires position-making operations.
- *Operational assets*: Assets that represent the core economic activity of an entity. They are the main source of cash inflows and are the main determinant of the solvency of an economic unit. These assets may be an off-balance sheet item, for example, individuals' main operational asset is their labor power. These assets may be used to generate income (profit) or may be used in strategic portfolio operations (capital gains).
- *Ponzi finance*: A financial position that is expected to require a growing use of position-making operations. Position-making channels and cash reserves may be strong at the beginning but they weaken rapidly and ultimately rely on exotic and unreliable channels.
- *Position making*: Portfolio transactions (buying/selling assets, borrowing/lending) induced by the existence of an excess or a shortage of cash relative to the needs of an economic unit. Minsky especially focused on situation of shortage of cash (i.e. "defensive/forced" position-making operations), in which case, position making is the act of meeting financial commitments with the help of other economic entities (usually the financial sector). This help comes either from borrowing operations (refinancing) and/or from selling assets (liquidation) in financial markets or to creditors. Position making occurs when internal sources of cash have been exhausted, i.e., net cash inflows from business operations are too low relative to debt commitments and cash reserves have been drained, which leads to the need to acquire more cash. The safest position-making sources are central-bank refinancing channels, long-term contractual credit lines, and unencumbered highly liquid assets (cash reserves are not part of this because position making is concerned with meeting debt commitments with the help of an external agent, i.e. once cash reserves have been exhausted). The most unreliable position-making sources are illiquid encumbered assets and short-term contingent credit lines.

- *Pre-loss creditworthiness*: Probable capacity to repay based only on the net cash inflow from business operations and the liquidation of highly liquid unencumbered assets (cash reserves and markets in which the Federal Reserve act as a specialist in normal times); i.e., excluding liquidation of collateralized asset and access to public or private refinancing sources. Rather than determining the probability that lenders will be able to recover their stake by any means, pre-loss creditworthiness measures the capacity of the borrowers to meet payments from his going concern.
- *Speculative finance*: A financial position that is expected to require a rolling-over of outstanding debt or liquidation of assets at a given price. Position-making channels depend on external funding with medium-term credit lines and on less liquid assets.

INTRODUCTION

Traditionally, the regulatory financial framework has been organized in order to detect frauds and “imprudent” risk management, and to make sure that economic incentives are set “properly” to promote smooth economic growth. The current financial crisis has shown one more time that this type of framework is not appropriate.

As the severity of the financial crisis deepened, several reports have been published to provide some advice to reform the financial system. All the reports note that a reform is necessary in order to account for systemic risk and to improve risk management. Unfortunately, most of those reports are based on a framework of analysis that is not able to account for systemic risk other than through the traditional market/incentive approach that has been the backbone of regulation for the past 30 years. In this framework, systemic risk emerges from market imperfections (asymmetry of information, mispricing, etc.) or individuals’ imperfections/biases (irrationality, bounded rationality, greed, etc.), which, while having some merit, limits dramatically the scope of analysis and policy recommendations.

Minsky has provided us with a framework that tackles systemic issues in a very precise and comprehensive way. Over his entire academic career, he developed an explanation of the emergence and rise of systemic risk that is not based on market structures, imperfections, and improper incentives. He did so by focusing his analysis on the notion of position-making operations and on what he called the financial instability hypothesis. This led him to argue that the regulatory framework should be organized in such a way that Ponzi financial practices can be quickly detected, discouraged and, if necessary, forbidden. The current willingness to improve risk management and market incentives is not enough, even if they can be refined to account for systemic risk over the whole business cycle. Indeed, this approach is both too permissive and too rigid to account for continuous changes in financial practices and for the market dynamics at play. We need a financial regulation not based on institutions, functions, or products, but one based on financial practices. This regulation should be comprehensive and highly adaptable, and should not be based on the criterion of size or government-insurance.

In order for the reader to understand the point of view from which this report is written, one may be reminded that, for Minsky, the main sources of financial instability are internal forces of the capitalist economic system that progressively increase financial fragility (Tymoigne 2009a, 2010). In order to conceptualize the degree of financial fragility, Minsky created three

categories that characterize a specific financial state: hedge finance, speculative finance, and Ponzi finance. Each of these categories is expected to require more or less defensive position-making operations, i.e. refinancing and asset liquidation. According to Minsky's financial instability hypothesis, over enduring economic expansions, there are forces in the economic system that push more and more economic units away from hedge finance and toward Ponzi finance. This growing use of Ponzi finance results from deliberate choices and from forces beyond economic agents' control that unexpectedly transform their financial position, from hedge and speculative, into Ponzi.

In a hedge finance process, it is not expected that position-making operations will be needed to meet financial commitments, i.e., all debt commitments are expected to be met by the net cash flows from business operations and, if necessary, cash reserves. Thus, hedge finance is a very strong financial position because there is no expected dependence on creditors to meet financial commitments due to creditors. In addition, if position making is unexpectedly needed, it can be done smoothly at low or no cost. The main potential sources of problems are at the operational level with an unexpected lack of revenue and/or rise of costs of operation. However, hedge finance can still be a source of systemic risk if optimism becomes too strong and inflates too much expected cash inflows from business operations, and if margins of safety are small. This has a higher chance to occur during a long period of economic expansion that only records small recessions.

In a speculative finance process, it is expected that position-making operations will be needed to meet capital servicing (i.e. to repay outstanding debts); however, income servicing (interest, dividend, etc.) are expected to be met by the net cash flows from business operations and, if necessary, cash reserves. Thus, position-making operations are expected to be stable in relation to a given amount of outstanding debts. An alternative name for speculative finance is rollover finance. It is "speculative" in the sense that there is an expectation that an access to position-making channels will be available when needed.

The central concept that defines financial fragility is Ponzi finance, which is an extreme version of speculative finance. It means that the servicing of a given amount of outstanding debts requires a growing amount of refinancing operations and/or asset liquidation at rising prices; both income and capital servicing on outstanding debts are expected to be met by position-making operations. A Ponzi process is an unsustainable financial process. Indeed, in order to

persist it requires an exponential growth¹ of financial participation, which is not possible because, ultimately, there is a limited number of economic agents that can participate either physically or financially. This unsustainability is all the more true in that Ponzi finance creates a strong pressure to perform because creditors must be paid (to avoid legal, reputational, and financial costs), which gives the incentive to take more risk and to be involved in fraud. In addition, Ponzi processes may not be masterminded by a single individual, or a small group of individuals, but may be sustained (and approved) by the whole society. In any case, those already in the Ponzi process have an incentive to picture a good view of the future to entice others to join the process. This is reinforced by the great returns that the Ponzi scheme may have provided in the past, which, combined with competitive pressures and social pressures, gives additional incentives to join.

Some forms of Ponzi finance are more dangerous than other forms, which depends on the way the economic units involved in it plan to get out of it. The most dangerous of all Ponzi finance processes are those for which liquidation and/or unlimited growth of refinancing are necessary for the process to continue (pyramid schemes); there is no way to terminate the process besides collapse or widespread restructuring of financial commitments. Examples of those processes are the mortgage practices of the 2000s, consumer finance practices of the past two decades, and the Madoff scandal. The least dangerous Ponzi finance practices involve the temporary use of growing refinancing before net cash flows from an assets operation are expected to become large enough; this usually implies that the economic units involved in the Ponzi process have some market power. For example, the construction of investment goods takes time and must be financed; however they do not generate any cash inflows (for producer and acquirer) until they are finished and installed in the production process. Thus, a producer's (and his creditors') profitability depends on the capacity to sell the finished product at a high enough price. The buyer's profitability depends on generating, from the use of the investment good, revenues large enough to meet payments on the portion (if any) of the investment purchase that has been externally funded, which requires some pricing power on the output generated.

From the point of view of systemic stability, however, both types of Ponzi finance (pyramid/structural or production/temporary) are a source of concern because, as long as they

¹ The rate of growth of cash inflows of a Ponzi process must be at least as high as the sum of the redemption rate and income-servicing rate of the financial scheme.

exist, the economy is potentially subject to a debt-deflation process. It is thus important to forbid pyramid processes, and to discourage, as much as possible, the Ponzi financing of economic activities. In addition, production Ponzi processes, even though “respectable” (Minsky 1991: 16), become highly dangerous when they sustain a pyramid process. In this case, the buyers of new capital assets borrow extensively to acquire the latter, and, independently of their motive (speculation or operation), plan ultimately to meet debt services through growing refinancing and/or by selling the capital assets at a higher price. The housing boom of the past decade is a good illustration of a case for which the two types of Ponzi finance were interconnected (Wray 2007; Kregel 2008; Tymoigne 2010).

Ponzi finance is different from speculation and is not generated necessarily by greed or fraud. Speculation is defined as taking an asset position with the expectation of making a capital gain from selling the asset. In a speculative deal, liquidation is a means to make a monetary gain, whereas, in a Ponzi process, liquidation is a means to service financial commitments, without necessarily involving making a gain from liquidation. In fact, people involved in a Ponzi process may hope that they will never have to liquidate their position (at least in net terms) because this would lead to a collapse of the process. Speculation with borrowed money is a form of Ponzi finance; however, the latter occurs in speculative and non-speculative activities. For example, the recent mortgage boom was sustained by a Ponzi process that involved individuals who truly wished to stay in their homes (Tymoigne 2009b, 2010). In addition, Ponzi finance may not be entered by choice but may be forced on individuals by rising interest rates, rising cost of operations, unexpected large decline in after-tax revenues, and other unexpected factors affecting cash inflows and cash outflows. Thus, initially, an economic unit may have hedge financed its asset position but, overtime, may be dragged unexpectedly into speculative and then Ponzi finance. Finally, Ponzi finance is also different from fraudulent behaviors because some individuals may enter Ponzi processes while playing by the rules of law and following the norms of behaviors established by society. Thus, everybody may behave “wisely” or “properly” but still may contribute a great deal to a rising financial fragility.

In order to detect Ponzi financial processes, several things should be analyzed. Most important of all is the analysis of cash inflows and cash outflows induced by assets and liabilities (both on- and off-balance sheet), and the determination of the position-making needs and practices. Once this is done, supervisors should focus their attention on detecting the sensitivity

of balance sheets to declines in asset prices and to the unavailability of expected refinancing channels. Theoretically, this can be done for a single financial institution, a specific sector of the financial sector, the entire financial sector, or the whole economy. For the moment, this has been mainly restricted (in a limited way) to individual financial institutions in order to detect fraudulent activities, but a macroeconomic perspective would be very helpful to catch legal Ponzi practices. In terms of balance sheet, a Ponzi process usually implies high maturity mismatch, high leverage, and the use of exotic refinancing sources, but this state of affairs can be hidden by complex “creative” accounting practices and by the fact that it is relatively recent. In addition, the central characteristic of Ponzi processes is that there is a cash-flow mismatch (even if asset and liability maturities are matched).

In terms of policy, Minsky advocates regulations that strongly discourage, if not forbid, Ponzi finance and that promote hedge finance. Minsky, however, is aware that financial institutions make money on the expectation that refinancing channels will be available. As a consequence, speculative finance should be authorized but everything should be done to avoid a transformation of speculative finance into Ponzi finance. This, more than bubbles or frauds, should be a central concern for regulatory authorities because of the financial instability hypothesis. It is during smooth economic times that dangerous financial practices grow rapidly, even if everybody acknowledges that there is no bubble or fraud. Thus, regulatory and supervisory authorities must be especially careful and vigilant when everybody else is concerned with improving market shares and potential economic growth as much as possible.

MAIN POINTS OF THE ASSESSMENT

❖ Ponzi Finance and Financial Fragility

- o We need a proactive framework built around the core concepts of (defensive) position-making operations and financial instability hypothesis.
- o Ponzi processes:
 - Do not necessarily involve fraudulent activities and may be generated by the overall society rather than by a specific individual.
 - Can be sustained by numerous small economic entities rather than a few large companies.
 - Take more less dangerous forms: Pyramid/structural vs. production/temporary.
- o The discovery of actual and potential Ponzi processes and of the growth of financial fragility (erosion of hedge and speculative financial positions) should be the core preoccupation of systemic and prudential regulation and supervision. This implies analyzing:
 - The strength of hedge and speculative financial position: Analyze the sensitivity of those positions to adverse changes in expectations, the non-realization of expected cash inflows, changes in interest rates, and other elements that affect cash inflows and cash outflows.
 - The nature of existing Ponzi processes: production vs. pyramid, size, and the potential relation between the two forms of Ponzi finance.
 - The needs for position-making operations and the strength of the channels for doing so.
- o Ponzi processes are intrinsically unstable because they require an exponential growth of financial participation in order to be sustained. The longer they continue the more destructive they become if they collapse, because they involve a larger number of participants and larger sums of money.
- o Efficient market pricing, and well-informed and highly sophisticated financial investors cannot prevent the collapse of a Ponzi process. It is not a question of efficiency or sophistication, but one of exponential growth process.

- Ponzi process usually implies a high maturity mismatch between assets and liabilities, and a high leverage ratio. But those two criteria are not sufficient to determine the existence of a Ponzi process because:
 - Creative accounting can hide mismatch and true leverage.
 - Even if there is a high maturity mismatch and a high leverage, cash flows may still be matched.
 - What is crucial is the size of expected cash inflows from business operation relative to the size of cash outflows from liabilities, i.e. the expected dependence on position-making activities to meet financial commitments.
 - A low reserve of cash is also an indicator of a Ponzi process but only a secondary criterion (and only in comparison to debt commitments). Indeed, an economic unit engaged in a Ponzi process might have a large amount of cash reserves at a point in time, but the process will deplete them very fast.
- An unsustainable financial practice is not determined by a reference to a fair value (“bubble”) or a balance sheet ratio (“high” leverage). An unsustainable financial practice is one that relies on a Ponzi process. “Bubble” and “high” leverage are too loose concepts to provide a reliable means to regulate financial institutions and they weaken the power of persuasion and justification of regulators and supervisors.

❖ **Systemic Relevance, Moral Hazard**

- A financial institution is systematically relevant if it promotes Ponzi financing. It does not matter how big it is, how new it is, or if it is government insured or not.
- No financial institution should be unregulated. Ponzi processes have a greater chance to emerge first in unregulated parts of the financial sector because they are easier to start there.
- Moral hazard emerging from government insurance should not be the main concern of financial regulators and supervisors. As stated above, unregulated, and so non-government-insured, financial companies are not prone to the previous moral hazard problem but still matter because they are Ponzi prone. The latter is the main source of emergence of systemic moral hazard and fraud.

- “Systemic moral hazard” rather than idiosyncratic moral hazard is of greater concern. That is, a government that provides buffers that stabilize the economic system, whatever the nature of those buffers and their cost to the private sector, encourage an increase in risk taking and creative financial practices.
- Rather than a “bad-bank” approach to regulation, we need a “Ponzi-finance” approach to regulation both at the prudential and systemic levels of regulation. This does not mean that there is no place for the discovery of lenient behaviors (i.e. fraud and over-optimism). Indeed, hedge financing (and Ponzi financing, of course) can be based on fraudulent or over-optimist expectations about cash inflows.

❖ Risk Management

- The risk-management approach is a very permissive approach that allows financial institutions to justify and to rationalize all sorts of financial practices as long as they can be buffered “prudently.”
- The risk-management approach is also too rigid to account for changes in financial practices to evade “prudent” risk management practices.
- Excessive risk taking cannot be prudently managed, no matter how large the buffer is in terms of capital or liquidity ratios.
- Setting regulatory “normal” leverage ratios, or other “normal” ratios creates several problems:
 - The period of time during which regulators and supervisors should be the most concerned is when everything is normal, i.e., leverage ratios are low (relative to the norm), liquidity ratio is high, etc. Indeed, it is during normal times that Ponzi processes emerge as confidence rises and margins of safety shrink, and so it is during those times that supervisors should be especially careful and thorough in their investigations.
 - As long as financial institutions meet the normal regulatory ratios, it is assumed by regulators that those financial institutions are well protected, safe, etc. The problem is that this may cover unsustainable financial practices. Normal ratios give a false sense of safety and completely miss the underlying evolution of financial practices. Thus, what matters is not how well companies

are doing in relation to a “normal” balance sheet ratio, nor how asset prices are growing in relationship to a norm or a trend (i.e. existence of a bubble or not). What matters are the financial practices that sustain a given asset-price growth pattern or leverage ratio pattern. Everybody may agree that there is no bubble or that companies are not highly leveraged but this may be sustained by unsustainable financial practices.

- Setting too stringent criteria for “normalcy” may constrain economic growth potential. Especially if the “normalcy” of those criteria is set right after a big financial debacle.
 - What is considered normal changes over time, with changes in confidence and economic results. There will be strong political pressures, from the financial community and the public, to loosen criteria of normalcy or to be more lax, because the pursuit of economic growth may require a loosening of underwriting criteria. This is especially so if the economic system has been relatively stable for decades (like the 1950s and 1960s) and if competitive pressures are strong.
- o The leverage ratio, or debt-to-income ratio, may not be an appropriate measure of Ponzi finance because cash flows may be matched. A cash-flow analysis is essential to discover actual and potential Ponzi processes and to capture the growth of financial instability. Thus, an effective systemic approach to financial regulation and supervision should emphasize the analysis of cash flows and position-making channels:
- Analyze expected cash inflows and cash outflows generated by items on- and off-balance sheet. Distinguish between operational and exceptional cash flows and emphasize operational cash flows.
 - Analyze the strength of, and need for, refinancing and liquidation channels if a net cash outflow is expected. Do the analysis under different economic conditions (recession, stagnation, growth), without assuming that any of these conditions is the normal state of the economy.

- This analysis should be done at the firm, sectorial, and macroeconomic levels. The latter would require significant developments in macroeconomic accounting.
- The discovery of actual and potential Ponzi processes and of the erosion of strong financial positions are the main goal, which implies discovering the expected and actual position-making needs of financial institutions as well as assessing the strength of position-making channels.
- Regulation should be highly proactive in risk management by forbidding some financial practices that lead to excessive risk taking (excessive being defined as Ponzi process).

❖ **Asset Valuation and Solvency Issues**

- Capital is not a measure of the financial strength and health of a company.
 - Capital is a measure of the buffer available to senior creditors in case of financial problems (i.e. when a company is financially unhealthy). It is a measure of the buffer available before losses of market value (or writedowns) prevents senior creditors from recovering their financial stake.
 - A high capital equity may be backed by highly illiquid assets, which does not allow a company to meet large demand or contingent debt commitments that may come due, even if the company is highly profitable.
 - A high capital equity may help to find funding sources in the preceding case (liquidity crisis), but there is no guarantee that this will be the case.
 - Profit is not a measure of the capacity to generate cash flows: profit can grow even though net cash inflow does not grow. Profit is a measure of the difference between the change in the monetary value of assets and the change in the monetary value of liabilities, independently of the sources of the changes. For example:
 - Distressed institutions can “increase their reported earnings by marking to market of certain of their own liabilities as the credit risk on their debt has increased” (Group of Thirty 2009).
 - Rising inventory raises profit.

- The accounting depreciation of physical assets lowers profit.
- Cash flow from business operations is the core or “normal” source of funds for companies and so is the main source of their financial strength.
- High capital equity may or may not prevent moral hazard.
 - Relationship is non-linear because a high level of equity may give the confidence to take excessive risk.
 - Management and shareholders usually have different objectives.
 - With the emergence of credit default swaps (CDS) and equity default swaps (EDS), shareholders may have an incentive to let a company become insolvent.
- Asset valuation should follow a conditional valuation method instead of a mark-to-market or historical cost method.
 - Solvency is ultimately the expected capacity to generate positive net cash flows over the existence of a company, i.e. the capacity of a company to meet liability claims on its own (i.e. without recourse to refinancing and liquidation). This implies cash-flow matching and maturity matching (as well as, as a secondary matter, large cash reserves).
 - Historical cost approach totally ignores the importance of cash-flow analysis.
 - Mark-to-market approach may ignore totally the long-term viability of a company and is influenced by all sorts of factors that have nothing to do with the capacity of a company to generate a significantly positive net cash flow from operations. Thus, a negative net worth may not reflect insolvency. This point is all the more important that now CDS and EDS give an incentive to financial-market participants to undervalue, and to create artificial problems for companies in order to obtain gains from derivative bets.
 - Mark-to-market approach is especially inappropriate for illiquid idiosyncratic assets.
 - Conditional approach focuses on determining the expected streams of cash inflows and cash outflows under different economic conditions. None of the conditions should be judged “normal” but a good understanding of the financial position of a company under different scenarios helps to determine

its viability. This would require the use of a cash-flow analysis presented above.

❖ **Competition, Innovation and Economic Growth**

- There is too much belief in the almighty benefits of competition, innovation, and economic growth
- Too high competition promotes sloppy underwriting procedures, sloppy innovations, and a process of *fuite en avant*. The latter means that economic agents only care about their own economic survival without any consideration for the indirect and lagged feedback implications of their actions on systemic fragility (when the survival of the system is required for the survival of economic agents).
- Not all financial innovations are worth existing and some of them can threaten the competitiveness of financial institutions that created them. This is especially the case of Ponzi-prone financial innovations.
- The idea that financial inventions should always be given a trial period in the real world before they are judged as “good” or “bad” is very different from the way we treat inventions in others parts of the economic system. Mechanical inventions and drugs, for example, are subject to long trial periods before they are allowed to enter the economy, and the criterion to judge if they are “good” is not their profitability (this is determined by companies before the trial period through extensive market analysis) but the safety of the population.
- Economic growth needs to rest on solid financial practices in order to be smooth and to contribute to welfare gains. Economic growth just for the stake of economic growth, which unfortunately is a major drawback of for-profit enterprises that require growth to stay alive, is not good economics. This leads to wasteful spending sustaining the continuous creation of new wants, and to dangerous financial practices to sustain growth by any means.

❖ Financial Education, Disclosure of Information, and the Responsibilities of Financial Companies

- Better disclosure of information and better financial education will not help to promote financial stability because:
 - Many borrowers are too poorly educated to understand something as “simple” as compounding.
 - More information does not imply a better decision-making process:
 - Psychologists have shown that only confidence is positively related to information while the quality of decisions declines after a certain level of information is achieved: more information gives a sense of control and knowledge that gives an incentive to take more risk.
 - More than the information itself, it is the interpretation of this information that matters. During good economic times, this may imply disregarding information that could threaten the continuation of a profitable economic practice, or the transformation of bad information into good information.
 - Financial investors and borrowers may understand perfectly the financial implications of a financial product and may have all the information necessary to make a decision; they may also be highly “sophisticated.” This does not mean that they will not enter in unsustainable financial practices. They may just hope that the “hot potato” will not remain in their hands, or they may truly believe that a “long” period of stability means that it is normal and convenient to enter Ponzi practices, or the latter may be required for a business (or an economic sector) to temporarily prolong its economic survival and competitiveness.
- It is the responsibility of financial companies to judge the relevance of a financial product for a specific customer. This is the way it works in other sectors of the economy where professionals (dentist, mechanic, etc.) tell a client what is wrong and what they recommend. Financial companies are the financial experts, not the customers, so the burden of proof lies on the former to justify the relevance of a

- financial product to the latter. This implies a thorough analysis of the financial strength of a customer in a way presented above.
- o Most reports note that it is important to improve disclosure of relevant information for shareholders and other financial investors. This is problematic for several reason:
 - The information disclosure should also consider systemic stability and financial-market participants might not find that useful.
 - The shareholder-center approach to the problem assumes that shareholders are concerned with the viability of a company per se, and concerned with viability of the economic system (and so of the company). None of those two elements needs to be true:
 - Shareholders may have interests that are in direct opposition with the survival of a company as a going concern. The emergence of “empty voting” with CDS and EDS is especially a concern here, but more broadly, shareholders may impose demands that are in contradiction with the long-term viability of a company (sometimes without knowing it).
 - Shareholders (and managers) usually have no patience and concern for the systemic implications of their individual decisions; especially if they are in the way of lucrative businesses.
 - o Regulators and supervisors should have access to more systemic data and perform systemic analysis, and should get a better financial education:
 - We lack the data to do so, no macroeconomic cash-flow accounting, not all cash flows are tracked, etc.
 - The training of regulators and supervisors has not kept pace with the creativity of the financial sector, and is focused on detecting frauds rather than Ponzi processes.
 - o Off-balance sheet accounting was developed to avoid capital requirements. Now that it is proposed to include off-balance sheet exposures into the calculation of capital requirements, liquidity requirements, and risk management, there is no point in having off-balance sheet accounting.

- It is important to make sure that people in the company have a good understanding of the risk culture of a company. However, the culture itself should be such that it does not promote excessive risk taking and fraud.

❖ Financial Structure

- The size and concentration of the financial sector is of great concern for several reasons:
 - An oligopoly creates large financial interrelations among few financial institutions, which leads to a rapid spread of financial problems when one institution fails.
 - Large and diversified financial institutions are extremely hard, if not impossible, to supervise and to regulate properly. This is especially the case when they are engaged in many different activities that are inconsistent with their core business and culture.
- Most reports assume that the current structure of the financial system is a given, but it is still possible, and probably will be necessary, to break some of the biggest companies. The breaking down should be done to make sure that:
 - The economic activities of the company are consistent with the culture and core business of the company.
 - Financial companies are a means to sustain economic growth rather than a means to sustain speculative activities.
 - A company can be regulated and supervised properly.
- Financial companies should be structured so that their balance sheet has a strong cash-flow matching, a good maturity matching, and an adequate amount of liquid assets relative to the types of liability they have. That would limit the need to rely on position-making operations.
- Competition should be alleviated in the financial sector:
 - Like for other sectors of the economy, create a patent system that rewards companies that create safe financial products. This will give financial companies the time to focus their creativity and entrepreneurship skills toward

meeting the needs of customers, and toward creating reliable financial products and practices that sustain their competitiveness and economic growth.

- Compensation of employees should be based on the long-term survival of a company as a going concern. If the long-term survival is based on a Ponzi process, this is not good.

❖ **Macroeconomic Aspects**

- Fiscal sustainability is not a matter of concern for governments of countries that are monetarily sovereign. A monetarily sovereign government can never be insolvent, it can afford all spending necessary.
- Rather than focusing on the inflationary aspects of massive “bailouts” and government interventions, one should worry about the impact of highly liquid, highly deleverage balance sheets once the economic stabilizes and economic growth takes off, and once the private sector is focused on achieving the highest economic growth possible. High liquidity, combined with a long period of prosperity, progressively lead to the emergence of Ponzi processes.
- Macroeconomic policies (monetary policy, fiscal policy) should account for the financial state of the economy before they are implemented. A permanent willingness by the government to reach a fiscal surplus, and a high and highly volatile central bank rate, are not conducive to financial stability. Indeed, they reduce the cash inflows from business operations and increase cash outflows from debt commitments.

❖ **Policy Recommendations**

- Financial regulation and supervision should not be based on functions or institutions but on financial practices, and should aim at discovery and eliminating Ponzi processes and frauds induced by specific institutional set ups, market incentives, and crooks. Changing financial practices implies changing the structure of financial institutions and of the financial system, constraining unsustainable economic growth, changing incentives, and chasing thieves.

- Systemic stability should be a main concern of regulation and supervision. This concern should override any other concerns from Main Street or Wall Street because systemic stability is required for the fulfillment of the goals of the latter two economic categories. This macroprudential supervision would require:
 - Developing a cash-flow macroeconomic accounting system.
 - Developing measures of leverage and liquidity that account for both maturity mismatch and cash-flow mismatch.
- Focus prudential and systemic regulation and supervision on discovering and terminating unsustainable financial practices, i.e., Ponzi financial practices (fraudulent or not). Those practices should be discouraged (production/temporary Ponzi) and eliminated (pyramid/structural Ponzi) even if they are required for the maintenance of economic growth processes, and so the profitability of companies and the life style of households, because they are highly unstable, and destroy profitability and life style when they collapse.
- Concerns about Ponzi processes (both at the prudential and systemic levels) should be complemented by concerns about the discovery of lenient behaviors because hedge financing can be based on fraudulent or over-optimistic expectations about cash inflows.
- There is a need for a regulatory institution that meets frequently to discuss financial issues and developments. Something like the Federal Open Market Committee but focused exclusively on financial issues. This institution should regroup all regulators as well as members of all sectors of the economy (Main Street and Wall Street).
 - This would allow members of the regulatory system to understand the most recent developments in the financial system, which would allow them to improve the training of supervisors, to improve the detection of Ponzi practices, and to adjust the regulatory framework quickly to avoid regulatory arbitrages.
 - This would allow to them have a sense of the current position-making practices, and their extent.
- To promote smooth economic growth and a competitive financial system, regulators should promote hedge finance:

- Financial innovations should not be allowed to enter the economy before they pass an extensive trial period (performed by an independent government agency) that determines:
 - The patterns of cash flows of financial products.
 - The type of individuals that could meet the demand of these cash-flow patterns on their own, i.e., without refinancing and liquidation of encumbered assets and only with the net cash inflows from operation or unencumbered cash reserves. The primary criterion is the adequacy of net cash inflows from operation.
 - Promote financial products that help to smooth economic activity by promoting maturity and cash-flow matching. Regulators may be involved in creating financial products and promoting their use via monetary incentives.
 - Create a patent system that rewards safe financial inventions and gives an incentive to financial institutions to take the time to create hedge-finance products.
 - Once in the economy, financial innovations should be continuously monitored to make sure that they are not used in Ponzi processes. If they are, regulators and supervisors should correct the problem by:
 - Forbidding the extension of the financial products to new customers that use them in a Ponzi fashion.
 - Forbidding a financial product altogether if it cannot be used in a safe way anymore.
- Measures of creditworthiness should be revised by putting the concept of Ponzi finance at the center of the measurement: “How will you pay on time?” is the relevant question rather than “will you pay on time?”
- Credit ratings need more than a change in lettering. There needs to be a change in the information provided regarding the main way a rating is sustained.
 - The analysis of cash flows from operations and cash flows from liabilities is essential to determine the creditworthiness of a borrower. A creditworthy borrower should be able to meet his debt commitments on his own through net

cash inflows from operations or unencumbered highly liquid assets. The liquidation of collateralized assets and access to refinancing channels should not be a part of the measure of creditworthiness. Doing otherwise will lead to a positive feedback between creditworthiness and value of collateral, leading to a Ponzi process.

- *Pre-loss* capacity to repay is what matters for judging creditworthiness. That is, capacity to repay based on expected net cash inflow from operation and unencumbered liquid assets only. It asks “can you make the payment on your own?” rather than “will lenders be able to recover their stakes?”
- Financial education of customers will have only a marginal impact on financial stability. At best, it will help to improve consumer protection but only in a marginal way. Instead, regulators should improve their own financial education.
- Financial companies should be of a size that allows supervisors and regulators to analyze them properly. This may require them to not only to break down some of the biggest financial institutions, but also to increase the training and number of supervisors and regulators.
 - Structure financial institutions so that they have a coherent business model that is consistent with their culture.
 - Balance sheets should be set to a good maturity matching, high cash-flow matching, adequate cash reserve, and highly liquid unencumbered assets (especially if demand liabilities are in high proportion)
- Regulatory and supervisory agencies are only as good as the persons involved in them. We need to improve the training, staffing and independence (from politicians, Main Street, and Wall Street) of financial regulators:
 - Increase funding: provide better pay to attract the best people.
 - Increase education and financial information toward the detection of both fraud and Ponzi finance.
 - Senior regulators should be old enough to have their career behind them: no incentive to be lenient to be sure to find a job back in the financial sector.
- Off-balance sheet accounting should be eliminated.
 - All asset positions and funding methods should be known.

- It becomes irrelevant if included in the calculation of capital and liquidity requirements.
- Today, most special purpose entities are set up for arbitrage purpose rather than balance-sheet purpose, which promote Ponzi processes.
- o All financial companies should be regulated for both prudential and systemic purposes, independently of size, access to government insurance, or other criterion.

REFERENCES

- Group of Thirty. 2009. *Financial Reform: A Framework for Financial Stability*. Washington, DC: Group of Thirty.
- Kregel, J.A. 2008. "Minsky's Cushions of Safety: Systemic Risk and the Crisis in the U.S. Subprime Mortgage Market." Public Policy Brief No. 93/2008. Annandale-on-Hudson, New York: The Levy Economics Institute of Bard College.
- Minsky, H.P. 1991. "Reconstituting the United States' Financial Structure: Some Fundamental Issues." Working Paper No. 69. Annandale-on-Hudson, New York: The Levy Economics Institute of Bard College.
- Tymoigne, E. 2009a. *Central Banking, Asset Prices and Financial Fragility*. London: Routledge.
- _____. Forthcoming. "Securitization, Deregulation, Economic Stability, and Financial Crisis: Do We Need More of the Same Type of Regulation?" Working Paper. Annandale-on-Hudson, New York: The Levy Economics Institute of Bard College.
- _____. Forthcoming. "The U.S. Mortgage Crisis: Subprime or Systemic?" in Gregoriou, G. N. (ed.) *Banking Crisis*. London: Taylor and Francis.
- Wray, L.R. 2007. "Lessons from the Subprime Meltdown." Working Papers No. 522. Annandale-on-Hudson, New York: The Levy Economics Institute of Bard College.