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Working Paper No. 637

**Financial Stability, Regulatory Buffers, and Economic Growth:
Some Postrecession Regulatory Implications**

by

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* The author thanks Charles Whalen for his comments and edits.

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ABSTRACT

Over the past 40 years, regulatory reforms have been undertaken on the assumption that markets are efficient and self-corrective, crises are random events that are unpreventable, the purpose of an economic system is to grow, and economic growth necessarily improves well-being. This narrow framework of discussion has important implications for what is expected from financial regulation, and for its implementation. Indeed, the goal becomes developing a regulatory structure that minimizes the impact on economic growth while also providing high-enough buffers against shocks. In addition, given the overarching importance of economic growth, economic variables like profits, net worth, and low default rates have been core indicators of the financial health of banking institutions.

This paper argues that the framework within which financial reforms have been discussed is not appropriate to promoting financial stability. Improving capital and liquidity buffers will not advance economic stability, and measures of profitability and delinquency are of limited use to detect problems early. The paper lays out an alternative regulatory framework and proposes a fundamental shift in the way financial regulation is performed, similar to what occurred after the Great Depression. It is argued that crises are not random, and that their magnitude can be greatly limited by specific pro-active policies. These policies would focus on understanding what Ponzi finance is, making a difference between collateral-based and income-based Ponzi finance, detecting Ponzi finance, managing financial innovations, decreasing competitions in the banking industry, ending too-big-to-fail, and deemphasizing economic growth as the overarching goal of an economic system. This fundamental change in regulatory and supervisory practices would lead to very different ways in which to check the health of our financial institutions while promoting a more sustainable economic system from both a financial and a socio-ecological point of view.

Keywords: Financial Crisis; Financial Regulation; Banking Supervision; Sustainability

JEL Classifications: E12, E58, G18, G28, Q01

INTRODUCTION

The three decades preceding the Great Recession were marked by a strong return of free-market ideas around the world. Those ideas justified an extended period of financial deregulation that peaked around the year 2000 in the United States (1999 Financial Modernization Act, 2000 Commodity Futures Modernization Act, and the 2000 amendments to the Employee Retirement Income Security Act) and in 2005 at the international level (Basel II Accord). Risk management, self-regulation, and market discipline became central financial-sector “pillars” that ought to be promoted and applied to as many institutions and countries as possible. According to the era’s guiding philosophy, there was to be minimal government regulation, supervision, and enforcement. The overriding goal of regulators was to avoid limiting the creativity of financial institutions, creativity that was seen as vital to economic competitiveness.

The Great Recession shattered the core foundations of that view. Risk management techniques encouraged unsound financial schemes involving massive leverage; self-regulation led to loose, hazardous and even fraudulent business practices; and market discipline meant an emphasis on short-term profitability and a “race to the bottom” in terms of lending standards. The end result was so disastrous that even prominent free-market advocates, including Former Federal Reserve Chairman Alan Greenspan, expressed disbelief and conceded that their ideological framework had failed. At Congressional hearings, officials from the US Securities and Exchange Commission and other regulatory institutions were publicly humiliated for failing to detect signals of an impending crisis, and further inquiries revealed extraordinarily lax supervisory practices (US Senate 2009a, 2009b).

Given that such a disastrous regulatory and supervisory failure occurred, one may wonder why there has not been a radical change in the way we approach the regulation of financial institutions. Instead, discussion has aimed primarily at improving the existing regulatory framework. Thus, the focus has been on introducing liquidity requirements and flexible capital requirements, on mandating maximum leverage ratios, and on increasing the size of common equity (Basel Committee on Banking Supervision 2010). These reforms are supposed to yield the highest sustainable growth rate and simultaneously provide adequate protections against future financial crises. However, the core problem is that the entire analytical framework underlying

this approach has failed. The heart of the matter is not that the mathematical models failed to recognize the economic risks, it is that the underlying economic principles also failed.

This chapter argues that a much more radical reform of financial regulation is needed to account for the intrinsic instability of market economies. It also argues that promoting financial stability may not be enough and that it may be necessary to change the management of our economic affairs in order to achieve broad sustainability. The first section briefly surveys the foundations of the current regulatory system. The second section critically assesses the popular position that improving capital and liquidity requirements is the solution to our current problems. The third section outlines an alternative approach to financial regulation.

FOUNDATIONS OF THE CURRENT SYSTEM

The current regulatory system rests on a particular understanding of financial crises and a specific view of the central goal of an economic system. These conceptions complement each other to create a coherent policy vision in which the economic goal is to maximize economic growth, while the regulatory goal is to provide the least intrusive oversight, but also a high enough financial buffer in the event of financial problems.

Efficient Markets and Sophisticated Participants

According to the viewpoint underlying the current regulatory system, market mechanisms have an inherent ability to promote stability, respond to the wants of the population, and correct for misallocations of resources. From that perspective, markets are not prone to financial instability and resource misallocation. Adair Turner, chair of the UK Financial Services Authority (FSA), explained this mindset in a recent speech:

In the past, in the years running up to the crisis, it was the strong mindset of the FSA—shared with securities and prudential regulators and central banks across the world, it was almost part of our DNA—that we assumed that financial innovation was always beneficial, that more trading and more liquidity creation was always valuable, that ever more complex products were by definition beneficial because they completed more markets, allowing a more precise matching of instruments to investor demand for liquidity, risk and return combinations. And that mindset did affect our approach—and the approach of the whole

world regulatory community—to the setting of capital requirements on trading activity; it affected our willingness to demand risk reduction in the CDS [credit default swaps] market; and it influenced the degree to which we could even consider short-selling bans in conditions of exceptional market volatility....[Stepping out of that mindset] poses for regulators the challenge of complexity, because it involves rejecting an intellectually elegant but also profoundly mistaken faith in ever perfect and self-equilibrating markets, ever rational human behaviors. (Turner 2009)

This free-market approach to economic affairs has three consequences. First, it suggests that financial crises are rare events induced by specific types of imperfections. A major category of imperfections is associated with the difficulty of establishing pure and perfect competition, which requires atomicity, transparency, homogeneity, perfect mobility, and free entry/exit. In most discussions of this difficulty, emphasis is usually placed on the lack of transparency—on asymmetry of information between lenders and borrowers as a source of instability (Mishkin 1991). However, the lack of homogeneity of some financial products has also recently received much attention for preventing market mechanisms from working properly (credit default swaps are an example). Another class of imperfections includes not only overconfidence and other “biases” studied in behavioral finance, but also the limited cognitive capacities studied by Herbert Simons. Government intervention is still another type of imperfection. The argument is that government promotes inefficiency and instability through discretionary fiscal and monetary policies, programs that allocate resources to particular economic units at preferential terms, and regulations that suppress financial innovations and waste resources (Taylor 2009). In the end, if incentives are set properly *and* market participants are taught how to respond to incentive properly, market mechanisms will promote stability and efficiency.

Second, the free-market approach argues that an effective way to promote financial stability is to aim for perfect competition. This can be done by improving the transparency of information in financial markets, which would give participants a better understanding of economic risks and improve market signals. For example, greater transparency could be achieved by creating new financial indices or improving existing ones. Aiming for perfect competition can also include supporting “fundamentals-oriented” financial education, which proponents see as a way to help market participants make better-informed decisions (Shiller 2000). This aim can also

be pursued through the use of stock options and other compensation mechanisms that link the pay of managers and employees to the performance of their business.

Third, the free-market approach calls for protection against random shocks that may affect the system and create financial difficulties. This can be done by putting in place capital, liquidity, and loan-loss reserve requirements to provide buffers against unexpected and expected losses. Ideally, however, the adequacy of these buffers should not be determined by regulators, they should be market determined. After all, according to this viewpoint, financial-market participants know their line of business better than regulators and have an incentive to preserve their business as a going concern. Thus, with the help of market signals, bankers are the most qualified to calculate the appropriate buffers against potential financial problems given existing risks. This is the essence of the thinking behind Basel II, now being amended by Basel III.

The idea that business managers and other market participants know best—and would not implement decisions harmful to themselves and the economy—has been pushed forward by the US Treasury even during the Great Recession: “Treasury believes market participants will be reluctant to self-certify rules harmful to the market place” (Department of the Treasury 2008: 116). Thus, while Turner hints at a change in the mindset among regulators and Greenspan admits to a flaw in his laissez-faire philosophy, one has reason to doubt that there has been a real shift in thinking among business leaders, bankers, and policymakers. Perhaps the best recent evidence of this is the lack of fundamental regulatory reform analogous to that seen in the 1930s.

Growth and Investment as Overriding Economic Priorities

The free-market view of financial crises and how to prevent and protect against them is complemented by a specific conception of the primary goal of an economic system. The goal is not social provisioning; it is to achieve economic growth, and to constantly create and satisfy new wants. Thus, economic growth must be preserved for its own sake, and this affects how the financial system is regulated and supervised. Indeed, the goal becomes to regulate in such a way that economic growth is minimally impaired, and, if possible, promoted. This was reemphasized recently by U.S. Treasury Secretary Timothy Geithner (2010) after the passage of the Dodd-Frank financial legislation: “The reforms that are now the law of the land will help us rebuild a pro-growth, pro-investment financial system.”

As shown below, the emphasis on economic growth leads regulators to focus on specific indicators of financial health to guide their supervisory actions, but those indicators are not effective at identifying financial fragility. In addition, whenever regulatory actions are proposed to restrain innovations in financial practices, opponents argue that such regulations would lead to a decline in economic growth. Given that economic growth is considered sacred, an argument tying financial innovation to growth is usually powerful enough to delay or even reverse a regulatory action. This is especially so after a long period of stability, when regulations are widely seen as burdensome and irrelevant because there has not been any recent crisis. And all this is reinforced by the associated argument that individuals and businesses will not be able to thrive—and will, in fact, be prevented from leading a better life—in an economy that restricts financial activities. A recent example illustrates this point.

In December 2005, five federal regulatory agencies proposed to issue a so-called “guidance” in response to their concern about innovations in the subprime mortgage sector. A guidance is not a law, but a statement to guide the priorities of in-field supervisors. It also provides financial institutions with an idea of what to expect from supervisors. The proposed guidance stated that financial institutions should carefully underwrite subprime mortgages by qualifying people on the basis of the full debt-service payment (instead of the initial interest payments) and by verifying income, assets, and employment. All these are reasonable demands that deal with practices that have proven toxic since the earliest days of banking.

The guidance was submitted to the industry for comments and received a barrage of criticisms. One argument against the guidance was that low default rates on mortgages proved the reliability of the mortgage practices and that there was no need to constrain them; stability “proves” markets are stable and regulation is an unnecessary burden. Opponents also argued the guidance would deny “good people” access to the American Dream and reduce the competitiveness and flexibility of the U.S. financial system. Here is a typical statement by an industry spokesperson, in this case George Hanzimanolis, president-elect of the National Association of Mortgage Brokers, testifying on the proposal at a Senate hearing:

Many innovative loan products, such as the interest-only ARM [adjustable-rate mortgage] or the 40-year mortgage, have contributed to the greater availability of diverse loan products and enhanced consumer choice, which has directly resulted in increased competition and more affordable credit....

[I]nnovation and technological advancement in the mortgage marketplace has occurred because the market has been free to identify market needs and develop loan products to satisfy that need. Government regulation of this innovative spirit, whether in the area of pricing, compensation, or in product development, will only result in firm boundaries that will prevent the marketplace from adequately responding to consumer needs in the future.... The bottom line is that unwarranted tightening of underwriting guidelines could hurt the robust housing industry and deny deserving consumers the chance at homeownership. (Hanzimanolis 2006)

As a result of such opposition, the guidance was not implemented until June 2007. By that time, there were no more profits to be made on subprime mortgages and the guidance no longer mattered to the financial industry (Office of the Comptroller of the Currency et al. 2007). In addition, the guidance was limited to subprime lending even though the same practices were also associated with prime lending (Tymoigne 2009c).

A similar story can be told about leaving credit default swaps unregulated or allowing pension funds to buy dangerous securitized products. And the opposition's arguments were the same: the regulation of innovation constrains economic growth, profitability, societal well-being, and even national competitiveness.¹ These arguments were all the more compelling because many people benefitted from continuation of business as usual, regardless of the growing danger of financial fragility and the fleeting nature of the access to the American Dream.

Capital Buffers and Economic Stability

This section assesses the capacity of capital and liquidity buffers to promote financial stability. In the wake of the recent global financial crisis, it is often argued that greater financial stability can be achieved by the introduction of capital and liquidity buffers that are larger and better (in

¹ An aversion to financial regulation is found not just within the financial industry. Consider the following from a 2008 U.S. Treasury Department document, for example:

The business conduct regulator should not have the ability to broadly prohibit products, limit entry through excessive licensing requirements, or control prices. In general, business conduct requirements that are too rigid can result in less competition, less innovation, and diminished flexibility to adapt to market conditions. For example, broad prohibitions on products should only be considered in circumstances where disclosures and regulation of business practices prove insufficient. (Department of the Treasury 2008: 171)

the sense of capturing risks more accurately) than in the past. In fact, however, no matter how buffers are improved, they will not promote financial stability. And they will give regulators an inaccurate indication of the economic system's financial health.

Capital and liquidity buffers in place during a financial crisis are usually too small to provide an adequate protection. This is so not only because available buffers are too small but also because the regulatory buffers are set too low to provide a good protection against significant financial difficulties. In addition, merely putting in place buffers does not prevent financial fragility from growing and may not lower moral hazard and risk taking.

Long Period of Stability and Inadequate Buffers

Significant financial crises are almost always preceded by a long period of economic stability during which financial institutions lower their credit standards (as explained in Tymoigne [2009a]), which decreases the effective protection provided by a given buffer. Today, despite the recent crisis, several bankers argue that their less restrictive lending standards were necessary for business survival in a competitive environment. Blankfein, CEO of Goldman Sachs, stated: "I regret that we participated in transactions that brought too much leverage into the world.... But those were the standards of the moment" (Blankfein in Vikraman and Nair 2010). Previously, he made very similar comments: "We rationalized and justified the downward pricing of risk.... We did so because our self-interest in preserving and extending our market share, as competitors, sometimes blinds us—especially when exuberance is at its peak" (Blankfein 2009).

Charles O. Prince III, former CEO of Citibank, recognized that his bank was involved in dangerous financial practices that contributed significantly to the crisis. In his view, the bank was merely responding to the demands of hedge funds, institutional investors, and private equity funds, which were seeking high returns through leveraged buy-outs and exotic mortgage-related deals. And he believed its practices were justified: "When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing" (Prince in Nakamoto and Wighton 2007). John Maynard Keynes (1936: 157) understood this phenomenon. More than 80 years ago, he wrote: "Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally."

As the effectiveness of a given level of buffers decline because of the increase riskiness of financial deals (in terms of assets and liabilities), institutions also have an incentive to lower

the available buffers. Indeed, a long period of stability means that default rate will be low, profitability will be high, and other financial information will be positive. Thus, a long period of stability will lead to lower financial buffers, not necessarily because of irrationality and other “biases,” but simply because the economy is performing better. Moreover, over a long period of stability, this tendency is all the more pervasive since the data used in the calculation of necessary buffers rarely looks back beyond two years, thus excluding financial crises (Gallati 2003: 362). In addition, bankers make predictions over a limited time horizon, typically one year for credit risk and only a few days or months for portfolio value at risk (Gallati 2003: 146, 371ff., 384). The result is buffers appropriate for only minor financial problems. This problem is reinforced by the fact that predictions are backward looking rather than forward looking and so failed to account for the implication of increasing risk taking on the asset and liability sides of balance sheets. Recently, all these dynamics have led to a very low level of loan-loss reserve not seen since 1985, even though the quality of loans declined dramatically (Best 2007).

Profitability and Required Buffers

The capital and liquidity needed to deal with a significant financial crisis is more than financial institutions find economically attractive. This has been acknowledged by the financial industry’s Counterparty Risk Management Policy Group:

To some extent...all risk management tools are unable to model/present the most severe forms of financial shocks in a fashion that is credible to senior management....To the extent that users of stress tests consider these assumptions to be unrealistic, too onerous, ...incorporating unlikely correlations or having similar issues which detract from their credibility, the stress tests can be dismissed by the target audience and its informational content thereby lost. (Counterparty Risk Management Policy Group III 2008: 70, 84)

A proper determination of the adequate buffer would consider events like the Great Depression and the Great Recession even decades after their occurrence, but the results would be unacceptable to the financial industry. That means the capacity of a capital buffer to absorb significant problems is limited from the start. Moreover, a long period of stability dims the

memory of past crises at the same time that it intensifies competition and thereby erodes sources of profitability.

The Persistence of Financial Fragility: ROE and Financial Innovations

If one assumes that adequate buffers could be set, this would not prevent the development of financial fragility. From the point of view of the current regulatory system, merely applying buffers makes sense because financial crises are random, rare events. However, if one considers that financial crises are not random in the sense that the conditions for their occurrence are progressively laid out during a period of stability, then it makes sense to do more than provide buffers. The latter are necessary, but they are only a last and limited line of defense. By taking preventive actions, it is possible to avoid some situations in which using those buffers becomes necessary.

A good way to see why buffers are not enough is to study the return on equity (profit divided by equity). The latter can be decomposed into its two components: the rate of return on assets (profits divided by assets) and the leverage ratio (assets divided by equity).

As an economic expansion proceeds, the rate of return on equity tends to decline because profit is added to equity and the growth rate of profit tends to decline over time as markets saturate.² Thus, economic prosperity creates tensions that promote instability. To counter a decline in the return on equity, financial institutions can increase their return on assets or their leverage. Improving the return on assets involves creating new markets or expanding existing

² More formally, the $\Pi/E = \Pi/A \times A/E$ and $ROE_t = \Pi_t/E_t$ with $E_t = E_{t-1} + \Pi_{t-1}$ and $\Pi_t = \Pi_{t-1}(1 + g)$. Knowing this, one can compute the dynamics of ROE and given the growth rate of profit ($g = g_0$):

$$ROE_t = \frac{\Pi_t}{E_t} = \frac{ROE_0}{\frac{1}{(1+g_0)^{t-1}} + ROE_0 \left(\frac{1}{g_0} - \frac{1}{g_0(1+g_0)^{t-1}} \right)} \quad \text{if } g_0 \neq 0$$

$$ROE_t = \frac{\Pi_0}{E_0 + t\Pi_0} \quad \text{if } g_0 = 0$$

Therefore:

$$\lim_{t \rightarrow \infty} ROE_t = \begin{cases} g_0 & \text{if } g_0 \in]0, +\infty[\\ 0 & \text{if } g_0 \in [-1, 0] \end{cases}$$

If $ROE_0 = g_0$ then $ROE_t = g_0 \forall t$. If ROE is smaller (bigger) than the growth rate of profit, ROE goes up (down). Overall, the actual dynamics of ROE over time depends on the value of ROE relative to the growth rate of profit and on the evolution of the growth rate of profit. However, as markets saturate the growth rate of profit declines and so the steady-state value of ROE declines, too. In addition, in new markets ROE is probably greater than g so ROE goes down over time to its steady-state value, which itself declines overtime.

markets by moving toward more risky endeavors in terms of creditworthiness, liquidity, and funding sources. Increasing leverage (given existing asset quality, funding sources, and regulatory requirements) also involves financial innovations in order to bypass leverage limits that regulators impose.³

In short, even if some constraints are put on the leverage ratio and asset quality, unless innovations are regulated, the constraints are bypassed because financial institutions must find ways to maintain their return on equity. As Campbell and Minsky write:

To the extent that the examination procedure lags rather than anticipates financial innovation, higher insurance premiums [and capital requirements] on what examiners take to be riskier institutions may not be a deterrent to risk-taking. In an expanding economy, the increased cost of doing business caused by higher deposit insurance premiums [and capital requirements] will be an incentive for banks to invent new, unregulated forms of financing. (Campbell and Minsky 1987: 258)

Financial institutions do not have a choice; market mechanisms compel them to find techniques that counter the tendency of the return on equity to decline over time during an expansion. This pressure to lower underwriting criteria, engage in high-stakes activities, and increase leverage is compounded by the fact that institutions (and their investors) have in mind some targeted return on equity and competition among financial institutions can be expected to be strong. As a consequence, it is not difficult to see how financial fragility can emerge over a period of economic stability and why bank executives defend their actions in the way illustrated above.

³ A recent article shows that regulatory arbitrage is already at play following the US regulatory reforms enacted in the summer of 2010 (Jenkins and Masters 2010). Given the high cost of capital in the regulated financial industry, financial institutions have started to move further away from traditional banking, and some nonfinancial institutions are getting even more involved in financial activities. Regulated financial institutions have been creating their own hedge funds and private equity funds, and “oil companies such as Total and BP and traders including Cargill and Vitol are in effect shadow banks for the commodities industry, replicating the services that the likes of Goldman Sachs and Morgan Stanley monopolised for years.”

Risk-Taking and Capital Buffer

Although a major argument for better and higher capital requirements is that they would limit the moral hazard and thus reduce risk-taking activities, this is not necessarily so. Having some “skin in the game” may not prevent financial institutions from taking massive risks. In fact, quite the opposite might happen: a “large” buffer might foster more risk taking by providing a greater sense of security and by fueling the return on equity mechanics described above (Kregel 2006; Wray 2006).⁴

The recent crisis shows that unexpected results of this sort do indeed occur. Greenspan acknowledges he was baffled by what happened: “I made a mistake in presuming that the self-interest of organizations, specifically banks and others... [was] best capable of protecting their own shareholders and their equity in the firms” (Greenspan in U.S. House of Representatives 2008: 34). Toward the end of the S&Ls crisis, James B. Thomson (1991), of the Federal Reserve Bank of Cleveland, concluded that “book solvency is positively related to failure” and he noted that: “One possible explanation is that banks beginning to experience difficulties improve their capital positions cosmetically by selling assets on which they have capital gains and by deferring sales of assets on which they have capital losses” (Thomson 1991: 13). This is typical of Ponzi finance as explained below.

Although it runs counter to the current regulatory and supervisory approach of banking, the conclusion generated by the preceding discussion is that regulators should not wait for declining profitability, declining net worth, or other signs of payment difficulties to take strong actions. That conclusion is also consistent with recent US economic experience. For example, most of the companies involved in highly dangerous financial activities during the housing boom recorded large profits and a high credit rating, and were able to meet their capital requirements; they were deemed healthy when they were, in fact, very fragile. The same is true for households, which were said to be in good shape (Greenspan 2004) when their increases in net worth were actually based on weak financial positions. Thus, the gains they accumulated since 2003 disappeared with the housing-market collapse and financial crisis (Tymoigne 2010). There were also no profitability or payment difficulties before the savings and loan crisis, even though the

⁴ In other words, a higher level of capital may give a false sense of protection and boost optimism, and a higher capital ratio depresses the return on equity, which gives an incentive to search for higher return on assets and boost leverage on any excess capital.

most profitable thrifts were involved in massive, unsustainable, and fraudulent financing in commercial real estate (Black 2005).

Strict underwriting requirements would be much more effective at promoting financial stability than buffers. Because asset values are prone to fluctuating, collateral-based lending is highly prone to instability and is exceedingly hard, if not impossible, to buffer properly (Suzuki 2005; Knutsen and Lie 2002). Meanwhile, financial fragility may grow long before losses materialize and capital and liquidity buffers decline. And when losses do materialize, years of bad underwriting may make the losses so large that buffers are woefully inadequate. Even worse, the entire economic system is at risk when growing financial fragility has served as the foundation for widespread profitability and economic growth.

Alternative Regulatory Reform

An alternative regulatory framework starts by recognizing that financial crises are created during periods of stable prosperity that recorded only minor recessions. Such crises are not random, rare events that can be addressed only by means of defensive protections. Financial instability, rather than market efficiency, is the inherent result of a market economy performing well for a relatively long period of time. Buffers may help to contain a problem, but they are of limited usefulness when the aim is to prevent crises and maintain financial stability. And asking financial-market participants to determine those buffers is destined to fail because their incentive is to preserve growth and their main indicators of financial health are increasing profits and a high return on equity. This alternative framework also notes that, rather than putting investment and economic growth on a pedestal, the regulatory system should be tilted toward promoting financial and economic sustainability.

The Financial Instability Hypothesis

Minsky (1986) provides a framework for understanding and measuring how financial fragility develops. He distinguishes between three types of financial position: hedge, speculative, and Ponzi.

Hedge finance means an economic unit is expected to be able to pay its liability commitments with the net cash flow generated from its routine economic operations (such operations entail work for most households and production and sale of goods and services for

most companies). Thus, even though indebtedness may be high, an economy in which most economic units rely on hedge finance will not experience a debt deflation (that is, a severe financial and economic crisis) unless there are unusually large declines in routine cash inflows and/or unusually large increases in cash outflows. Even then, cash reserves and liquid assets are usually large enough to cope with unforeseen problems.

Speculative finance means routine net cash flow sources and cash reserves are expected to be too low to pay the capital component of liabilities. In other words, an economic unit engaged in speculative finance would not be able to make principal payments or meet margin calls on the basis of its routine operations. As a consequence, such a unit needs either to borrow funds or to sell some less-liquid assets to pay part of liability commitments.

Ponzi finance means an economic unit has neither the cash reserves nor the ability to generate net cash flow from its routine economic operations to meet the capital and income service due on outstanding financial contracts. If a majority of economic units is involved in Ponzi finance, the economic system is highly prone to debt deflation. According to Minsky's financial instability hypothesis (Minsky 1986), when an economy is stable and performs well over an extended period of time, more and more economic units move away from hedge finance and become involved in Ponzi finance.⁵

As illustrated during the recent housing boom, Ponzi processes (economic activities sustained by Ponzi finance) do not need to be masterminded by a single individual or a small group of individuals. Rather, they may be sustained and approved by the entire society because, in the short run, they may raise standards of living and promote economic growth, employment, and competitiveness. In any case, those already in the Ponzi process have an incentive to promote an optimistic view of the future and entice others to participate. And the attractiveness of their message is enhanced by the high returns the process often generates before collapsing. As a result, even more cautious individuals and firms eventually feel the pressure to participate (Galbraith 1961; Shiller 2000).

From the vantage point of the financial instability hypothesis, the goal of financial regulation and supervision should be to detect—and, ultimately, to prevent—financial fragility, rather than to protect against financial crises (Tymoigne 2010). Focusing on financial fragility

⁵ Ponzi finance is named after the infamous financier Charles Ponzi, whose pyramid schemes have become legendary in financial history.

implies a change in perspective regarding the proper means to regulate the financial system. Currently, no regulator dares to touch the profitable institutions at the center of a growing economic sector; if they do, then they are likely to be quickly challenged. But changing the viewpoint about what is a “healthy” financial institution would allow regulators to intervene much earlier. And, more importantly, it would provide them with a solid reason to do so.

Contrary to the current regulatory framework, indicators such as a low or decreasing default rate, rising net worth, rising business profitability, and dynamic private-sector lending may not accurately reflect an economy’s underlying health. The case against business profits and net worth as sources of financial strength has already been described (above). And the fact that these indicators were the overarching concerns and means of judging health before the Great Recession was clearly stated by Senator Dodd: “Banks’ regulators were so focused on banks’ profitability, they failed to recognize that loans so clearly unsafe for consumers were also a threat to the banks’ bottom line” (US Senate 2009a: 2). Defaults are also problematic because low default rates may be based on looser underwriting practices rather than a robust capacity or willingness to service debts. This is what was observed during the recent housing boom, when various unsustainable underwriting practices and securitization techniques allowed banks to lower debt services for a short time (Tymoigne 2009b). Economic growth is also not necessarily an indicator of a healthy economy, as will be explained in greater detail below.

In short, one needs to look past the conventional variables of financial robustness. The key is to see how balance sheets are affected by financial practices, and that requires some alternative indicators.

Detecting Ponzi Finance

The central concept that defines financial fragility is Ponzi finance, also called interest-capitalization finance. As described above, a common way to define Ponzi finance is that net cash flow from core economic operations is expected to be insufficient to cover expected income and capital commitments from financial debts. Economic units differ in their core economic operations. Some are directly related to income creation (households earn wages, bankers earn interest, etc.); others are only indirectly related to income creation and rely on dealing in securities and profiting from fees and capital gains. In the latter case, financial institutions routinely perform simultaneous purchases and sales of asset positions.

Instead of defining Ponzi finance in terms of cash flow, one may also define it in terms of position-making operations (i.e., from a balance sheet viewpoint). In Ponzi finance, debt is expected to be covered by growing cash flows from defensive position-making operations (i.e., an expected growth of refinancing loans and/or an expected liquidation of asset positions at growing asset prices). Ponzi finance does not require the existence of a bubble, and measuring financial fragility is different from detecting asset-price bubbles. It requires only rising prices of collateral assets or other assets held by the entity involved in the Ponzi process. This condition is required for cheap refinancing or for asset liquidation at a price that covers debt services. The main advantage of the balance-sheet definition of Ponzi finance is that its detection does not require the measurement of cash flows for which data is nonexistent, incomplete, or unreliable. Instead, one looks at the interaction of debts and asset prices (given a unit's income level) through an analysis of underwriting procedures and the type of asset involved.⁶

Ponzi finance differs from speculation and is not necessarily generated 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 of making a monetary gain. In contrast, in a Ponzi process liquidation is a means of servicing financial commitments; it does not necessarily involve making a gain from liquidation. In fact, people involved in a Ponzi process may hope that they will never have to liquidate their asset position (at least in net terms) because this would lead to a collapse of the process.⁷

To be sure, speculation with borrowed money is a form of Ponzi finance, but Ponzi processes can be associated with speculative or nonspeculative activities. For example, the recent mortgage boom was sustained by a Ponzi process that involved prime borrowers who truly wished to stay in their home (Tymoigne 2009c). Ponzi finance is also different from fraudulent and abnormal liability practices because some individuals may enter Ponzi processes while playing by the existing legal rules and following established financial norms. Thus, everybody may behave “wisely” or “properly” and still contribute to rising financial fragility. Indeed, a central point of Hyman Minsky's approach is that lending norms loosen over time and that what

⁶ Ponzi finance can be described as follows: $E(CF_{PM}) = \Delta L_R + \Delta P_A Q_A > 0$ and $\Delta(E(CF_{PM})/L) > 0$, where CF_{PM} is net cash flow from position making operations, P_A is the price of assets, and L is the amount of outstanding liabilities. Note that Ponzi finance does not require P_A be above its “fundamental” value, however defined.

⁷ Gains for individuals involved in the Ponzi process come from holding the asset (e.g., a home), fees from managing the scheme, and other monetary and nonmonetary compensation associated with attracting additional participants.

was previously considered a “too risky” funding method may become commonly accepted (Minsky 1986). However, this change in norms over time does not make Ponzi finance harder to detect; the Ponzi process is defined independently of those norms.

Some forms of Ponzi finance are more dangerous than others, depending on the way the economic units involved plan to exit the process. This, in turn, depends heavily on the types of asset involved. The most dangerous of all Ponzi processes are those for which continuous liquidation and/or unlimited growth of refinancing are necessary for the process to continue. In such cases, called pyramid schemes, there is no way to terminate the process besides collapse or widespread restructuring of financial commitments. This type of Ponzi process usually involves the funding of assets that do not produce any cash flow from operation (e.g., an owner-occupied home) or that generates cash flows over which the owner has little or no control (e.g., shares of companies) and cannot be adjusted to meet the demands of debt service. Examples of those processes are the mortgage practices of the 2000s and the Madoff scheme (Wray 2007; Kregel 2008; Tymoigne 2009b).

The least dangerous Ponzi financial practices involve the temporary use of growing refinancing. This usually implies that the economic units involved in the process have some market power and assumes that the underlying assets are expected to eventually provide sufficient and reliable net cash flow in the course of unit operations. For example, the construction of investment goods takes time and must be financed; however, they do not generate any cash inflow from operation (for the 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.

In short, detection and measurement of financial fragility should be based on an analysis of balance sheets (“off balance sheet” items should not exist), cash flow, underwriting, and the underlying assets. Essential questions include: Is continuous refinancing needed? Is this need growing relative to outstanding debt? Is underwriting collateral based or income based? Are rising asset prices needed for this economic process to continue? In exploring these questions, key financial indicators include the following: the proportion and growth of refinancing loans, the dynamics of debt and asset prices, and the source and time structure of net cash inflows relative to cash outflows. For residential housing finance, for example, home price, mortgage debt, cash-out refinance, and cash-flow margin enable the detection of growing financial fragility

(Tymoigne 2010). Minsky (1975) and Campbell and Minsky (1987) used this framework to develop a framework for banking supervision that heavily relies on cash flows and an analysis of defensive position-making operations. Recently Hadley and Touhey (2006) at the Federal Deposit Insurance Corporation have suggested an equivalent approach.

Note that ideally one wants to rely purely on financial indicators to detect fragility; it is an accounting matter and it is different from discovering the cause of financial fragility. The point is to understand how economic units finance and fund their economic activity, regardless of the merits of this activity. Moreover, even if an activity is beneficial to the population in the short term, its continued existence is difficult to justify when those gains rest on an unsustainable financial base.

Managing Financial Innovations

Financial innovation is defined as a structural change in the financial sector. This includes the creation of new financial products, companies, and other business practices, as well as changes in existing business practices. Given that financial innovations often lead to qualitative changes in the financial sector, it is important to ensure that current regulations can cope with such changes. As explained above, financial institutions have a strong incentive to bypass regulations through innovations, so regulators must keep up with innovations.

Measuring financial fragility is not enough; a regulatory system that seeks to prevent the growth of financial fragility must keep abreast of financial innovations. In contrast, the regulatory approach followed in the United States over the past thirty years has allowed financial market participants to experiment with new innovations and has left those innovations alone as much as possible. This approach has been shown to lead to catastrophes, and it is at odds with what goes on in other economic sectors. In consumer products, mechanical tools, medical drugs, and many other areas, products are made available to customers only after inventions undergo extensive testing, and new regulations or changes in existing regulations are applied immediately when a new product enters a market. As a result, new products have been studied in detail so their properties and potential dangers are fully understood by regulators and shared with the public. In addition, their use is sometimes limited to a specific segment of the population. It seems inconceivable that this sort of approach does not also apply to financial innovations.

No financial innovation should be left unregulated or unsupervised. History has shown time and again that, when left unchecked, financial innovations become a fertile ground for the growth of Ponzi finance and thus financial instability. Stocks, bonds, certificates of deposit, hedge funds, securitization, CDS, pay-option mortgages, and many others have all ended up generating financial fragility leading to a financial crisis. While constraining the growth of financial innovations may have an impact on short-term growth, the evidence link between financial innovation and long-term economic growth has not been demonstrated.

Take housing as an example. Most of the gains in homeownership were obtained before securitization; the recent frenzy in interest-only mortgages, CDS, collateralized debt obligations (CDO), and other exotic loans and securities contributed to an increase U.S. homeownership, but the gains did not last and the subsequent pain has often been devastating to households and entire communities. Regulators should have stepped in to slow the growth of homeownership at least a decade ago because the subsequent run-up was based on unsustainable practices. This would have involved forbidding or severely constraining the use of many of the era's hottest financial innovations.

How to regulate financial practices? If regulators must wait until there is a bubble, then they will be hard-pressed to determine when to contain particular financial practices. Part of the problem is that there are many uncertainties regarding what constitutes the fundamental value of an asset and thus it is difficult to detect a bubble. In addition, since it is hard to get a solid measure of fundamental value, financial market participants with a strong financial interest in the continuation of rising asset prices will find ways to justify their position (Galbraith 1961; Shiller 2000). The reticence of regulators to intervene and “remove the punch bowl after the party gets going” will be even greater when a large part of the population benefits from the continuation of rising prices and when the underlying financial practices are associated with economic growth. Indeed, there was even a backlash when Greenspan expressed concerns about irrational exuberance in 1996; numerous financial market participants, economists, and legislators were outraged by the suggestion that “the market” might yield improper asset values.

Thus, we need a more solid criterion that is not based on the views of people regarding the proper asset price level. The concept of Ponzi finance satisfies this criterion. From the point of view of systemic stability and long-term economic growth, both types of Ponzi finance—pyramid/collateral-based and production/income-based—are a source of concern because, as

long as they exist, the economy is exposed to the risk of debt deflation. At the same time, banning income-based Ponzi finance may put too heavy a burden on economic growth; therefore, income-based Ponzi finance may be tolerated in government-insured activities, but should be strictly regulated and carefully monitored. In addition, financial innovations involving hedge finance should be promoted, possibly by means of incentives that promote the research and development of financial products and practices that are safe and that foster sustainable economic growth.

Collateral-based Ponzi finance should be forbidden in all activities that have an implicit or explicit government guarantee. It might be tolerated in other economic activities, but even then regulators should check for potential spillover effects. Collateral-based Ponzi finance includes a number of recent practices and innovations: compensating loan officers via fee-based remuneration; introduction of CDO-squared (a security backed by a CDO pool); allowing pension funds to buy securities backed by toxic collateral; permitting pension funds to participate in hedge funds' activities; allowing commercial banks to do proprietary trading directly or through their affiliates; reliance on level-3 security valuations (based on unobservable data); and provision of pay-option mortgages to borrowers who cannot make their full debt service payment.

It is also important to engage in regulatory follow-up after a financial innovation has been allowed to exist. This is necessary because the use of an innovation often changes over time, especially as the return obtained from a product starts to decline and financial institutions feel pressed to find creative ways to keep their profitability on target. An example was securitization, which was progressively transformed from a hedge process into a Ponzi process (Tymoigne 2009b). One may also cite interest-only mortgages that were given initially only to a very limited number of prime borrowers and were later extended to all prime and subprime borrowers. Thus, regulation should be flexible enough to deal with changes in business practices as they come along. As Campbell and Minsky (1987: 258) write: "Anticipatory vigilance upon the part of the regulators is required to prevent increased risk exposure. But such vigilance, combined with intelligence, could contain particular unit risk exposure without the imposition of risk-related premiums or capital requirements."

Reducing Competition in the Financial Industry

Commercial banking used to be far less complicated. In fact, banking used to be treated much like a public utility (Kregel 2010). This was made possible by protecting banks and thrifts from competition and by providing them a reliable and cheap refinancing source through the central bank.

Thus, a better system of financial regulation requires a vital role for the central bank in protecting banks and the payment system from competition. The cost of funding should be kept low and stable; ideally, the short-term policy rates of the central bank should be at zero or at the very low rate paid on reserves (Wray 2007; Fullwiler 2006, 2009, 2010; Tymoigne 2009a). At the same time, much more emphasis should be put on the Federal Reserve's discount window in order to better grasp changes in the practices of financial institutions and to influence their business practices (Kregel 1992). This commitment to market protection and to low and stable refinancing costs has progressively eroded since the 1960s, culminating in the collapse of savings and loans in the Volcker area (Minsky 1969; Cargill and Garcia 1982).

It might also be useful to reward financial innovations that promote hedge finance by providing a patent to some financial institutions. Competition in the financial industry is currently so ferocious that companies have no incentive to spend time creating financial products that respond to the needs of customers:

We need 'innovation,' we were told. We created increasingly odd products. These obscure structures allowed us to earn higher margins than the cutthroat vanilla business. The structure business also provided flow for our trading desks.... New structures that clients actually wanted were not that easy to create. Even if somebody came up with something, everybody learned about it almost instantaneously.... Margins, even on structured products, plummeted quickly. (Das 2006: 41)

Hall (2009) and Merges (2003) have studied the potential impact of a patent system in the financial industry, but their goal was to examine whether a patent system would help spur more innovation. Instead, we need is a patent system that can promote high-quality, reliable financial innovations—products and practices that fulfill the needs of economic activity while also promoting hedge finance and helping to ensure sustainable economic activity.

Ending “Too Big To Fail” and Making Finance Work for the Economy

When a Ponzi process collapses (as most do), then it should be allowed to unwind. If the problem spills over to the payment system and government-protected activities, then some temporary assistance to collateral-based Ponzi processes could be provided to avoid a complete financial collapse. However, this would only serve as bridge finance while the entire process is dismantled in an orderly fashion (such as receivership).

For example, some bridge financing should have been provided to Lehman Brothers, but this should have not prevented closing down the company in an orderly fashion. The same should have been done with the major banks, hedge funds, and other institutions that recorded devastating losses in the recent crisis and required more assistance from the government. Many (either directly or through their affiliates) should have been placed in receivership; management should have been fired and investigated for fraud; assets should have been valued carefully; and the least costly solution should have been used to deal with the problem institutions (Black 2009). If it is necessary for some institutions to remain “too big to fail,” then nationalization may be required.

While the United States and United Kingdom are praised for their competitive financial sector, Wall Street has had only one goal in mind: to maximize shareholder value. Although it is a largely unsavory world (see, for example, Das [2006]), large numbers of young and talented individuals are lured toward the financial sector, instead of toward solving social problems, by the extremely high pay. And in recent decades even nonfinancial companies have moved away from traditional business operations and toward financial services. As a consequence, in the United States, the profit share received by the financial sector has gone from about 10 percent in the mid-1980s to a peak of 45 percent in 2005 (Palley 2007; Crotty 2005).

In recent years, a number of well-known business leaders have suggested it is not healthy to have a finance-driven economy. For example, Turner expressed his concern before a London audience as follows:

Not all financial innovation is valuable, not all trading plays a useful role, and...a bigger financial system is not necessarily a better one. And, indeed, there are good reasons for believing that the financial industry, more than any other sector of the economy, has an ability to generate unnecessary demand for its own services—that more trading and more financial innovation

can under some circumstances create harmful volatility against which customers have to hedge, creating more demand for trading liquidity and innovative products; that parts of the financial services industry have a unique ability to attract to themselves unnecessarily high returns and create instability which harms the rest of society.... Yes, financial services form a vital industry and source of high-skilled employment. Yes, the City will continue to play a key and vibrant role in the UK economy. But not everything that a financial system does is socially useful; and sometimes bits of it can get too big and it would be better for society if they got smaller. (Turner 2009)

A complementary view is held by Jack Welch, the father of shareholder value (i.e., the idea that boosting the company's share price should be a central goal of executives). Welch stated recently:

On the face of it, shareholder value is the dumbest idea in the world...shareholder value is a result, not a strategy.... Your main constituencies are your employees, your customers and your products.... The idea that shareholder value is a strategy is insane. It is the product of your combined efforts—from the management to the employees. (Welch in Guerrera 2009)

High finance needs to be downsized and the original purposes of the banking system need to be restored. There was a time when investment banks were partnerships that cared about security underwriting rather than proprietary trading; when commercial banks were of a manageable size and cared about careful loan underwriting rather than mergers, acquisitions, and exotic endeavors; and when financial markets provided relatively reliable risk pricing under a well-regulated and supervised system. It was also an era of widening prosperity and more stable economic growth. To be sure, we cannot and should not try to turn the clock back to the 1950s or early 1960s, but we should be willing to admit that the US financial system of that era was in many ways superior to that of our own, and we should be willing to learn from the past.

Economic Growth and an Investment-led Economy

The challenge of promoting of financial stability extends beyond the matter of appropriate regulation; it also requires a critical examination of the goal and source of economic growth. The problem is not just that “growth for the sake of growth” is bad economics. It is also that the

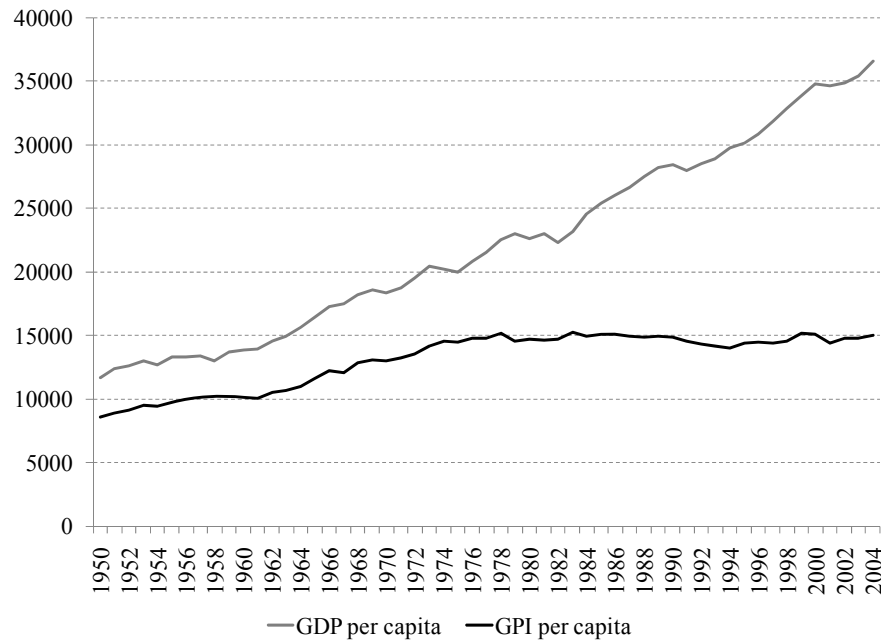
widespread emphasis on investment-led growth is highly prone to economic instability for economic and financial reasons.

One shortcoming of investment-led growth is the traditional Harrod-Domar issue: it is difficult for aggregate demand to keep up with the additional supply capacities created by previous investment. This is probably less of a problem in underdeveloped economies where improvements in standards of living are badly needed (provided, of course, that the capacities of production are used for internal markets rather than exports to developed countries). But it is definitely a concern for mature economies. As a result, in the latter case growth should be refocused on socio-ecologically durable domestic consumption. At the same time, it is important to avoid the financial dynamics that have been at play in the United States. The United States has been following a strategy of consumption-led growth for the past thirty years, but it has been based on unsound financial practices induced in part by growing income inequality.

Another shortcoming of investment-led growth is that it is prone to Ponzi finance. Minsky (1986) explained in detail how investment was prone to income-based Ponzi finance. As we observed in the wave of mergers and acquisitions in the 1990s and more recently in the housing market, investment is also prone to collateral-based Ponzi finance. Indeed, it creates durable assets that may rise in value, thereby providing an incentive to underwrite loans on the basis of rising asset prices rather than income (Suzuki 2005; Knutsen and Lie 2002; Black 2005). While rising collateral-based lending might be fine in financial markets, especially when no government insurance is provided, it is more dangerous in the case of durable illiquid assets such as investment goods. Indeed, liquidation is not a viable option to service debt for investment goods because of the absence of an organized exchange; therefore, any drying out of refinancing resources will lead to a massive debt-deflation process if collateral-based lending is allowed to persist for a few years.

It is also important to reexamine the goal of growth regardless of its sources. While economic growth may help to improve standards of living and to meet population growth, it is not clear that there is a direct relationship between improved welfare and economic growth, especially for developed economies. As shown in figure 1, alternative measures to the gross domestic product, such as the genuine progress indicator, show no significant improvement in US economic welfare since the mid-1970s. That is because rising socio-economic and environmental problems have outweighed the gains from increased output.

Figure 1. Gross Domestic Product and Genuine Progress Indicator per Capita in the US (Dollars, Base 2000)



Source: Talberth, Cobb, and Slattery (2007)

Although long-term economic growth may help improve standards of living up to a point, history shows that market mechanisms push economic units to focus on short-term results and to preserve short-term economic growth at all costs. As such, “more is always better” when it comes to quarterly economic growth—even though the underlying financial conditions may be deteriorating rapidly. Given the current view that places a positive value on any growth in economic output and profits, it is difficult for regulators or financial market supervisors to find a reason for action when the economy is growing. In fact, they see an argument to withdraw and avoid putting “unnecessary barriers” on pursuit of the American Dream.

The goal of long-term sustainable economic growth is laudable as a concept, but what often happens in practice is a complete disregard for sustainability, not only in financial terms, but also in socio-ecological terms. There are other means to promote well-being that look beyond constantly rising production and finding new wants to fulfill. These warrant economists’ increasing attention, not only because the aim of growth with sustainability is often ignored, but also because the risks to sustainability seem to be rising rapidly.

CONCLUSION: THE FUTURE OF FINANCIAL REGULATION

The Great Recession was preceded by decades of financial sector deregulation, reduced supervision, and a growing belief in self-regulation. Many of those who believed in market discipline have subsequently reconsidered their framework, but the economic philosophy underlying the regulatory framework has not changed significantly. Instead of a new regulatory direction, we now have a patchwork of reforms that have focused on creating new buffers and marginally increasing existing buffers against future crises. While a new regulatory framework has been put in place in the US that gives some importance to consumer protection, systemic risk, and the separation of commercial and investment banking, the framework contains many loopholes that are easily exploitable. More importantly, the new regulatory framework does not contain enough flexibility to be able to be proactive in handling regulatory arbitrages and financial innovations. Finally, the current reform has been discussed with a narrow framework that puts economic growth at the center of attention.

We need a different type of regulatory framework and a different philosophy of regulation. At its center must be the detection of financial fragility, which can emerge at any time but tends to develop and spread in periods of economic prosperity that recorded minor recessions. The framework should be accompanied by proactive policies that supervise financial innovations and put in receivership any company, regardless of its size, that is insolvent or on the verge of insolvency. In fact, a strong supervisory component—including enforcement of law through prosecution—is needed to ensure that honest and conscientious entrepreneurs have a chance to prosper.

Experience has shown that high profitability, a low default rate, rising net worth, and strong economic growth are not good indicators of financial robustness. In fact, these are often sustained by dangerous, collateral-based Ponzi finance. The goal of regulators should be to prevent Ponzi finance from emerging and to root it out once detected.

Some worry that this would lead to a much smaller financial system and that economic growth would be impaired, but the size of today's financial companies exceeds the needs of even the largest international nonfinancial corporations; moreover, nonfinancial corporations are now deeply involved in financial services themselves and community bank lending has been underpromoted. All this should be reversed. Meanwhile, we should be more concerned about

economists' obsession with economic growth and disregard for the consequences of not maintaining a sound financial system and protecting economic (and ecological) sustainability. The recent financial crisis has shown that near-term growth often comes at an extraordinarily high price.

Promoting financial stability is therefore more than just a matter of financial regulatory reform. It must also involve a de-emphasis of economic growth and a greater focus on broader measures of social well-being. And if the underlying economic rules are such that the survival of economic units forces them not only to rationalize fraud and dangerous financial practices, but also to overlook the adverse and long-term consequences of their actions, then perhaps the socioeconomic rules need to be reconsidered as well.

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