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Kim de Glossop

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THE INHERENT INSTABILITY OF THE FINANCIAL SYSTEM

KIM DE GLOSSOP*

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Abstract: The article explores one of the causes of the financial crisis of 2008 and of financial crises generally. The argument of the paper is that rather than tend toward equilibrium, financial and asset markets have a tendency to become unstable after prolonged periods of stability. The main driver of this process is the expansion of credit. Debt feeds its way into higher asset prices which in turn justify the accumulation of more debt to purchase further assets, and so on. The basis for the idea is Hyman Minsky's Financial Instability Hypothesis, itself a reinterpretation of The General Theory of Employment, Interest and Money by J.M. Keynes. The main proposal the article suggests is that monetary and regulatory policy should become more stringent as the boom proceeds, since even rational individuals cannot be expected to refrain from perpetuating the cycle.

INTRODUCTION

Apart from its ruinous and protracted impact, one of the most remarkable aspects of the recent financial crisis is surely its seemingly endless list of causes.¹ Much like Agatha Christie's *Murder on the Orient Express*² in which all the main

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¹ The large number of books and articles that have been written about the subject in a relatively short period of time is arguably testament to this.

² AGATHA CHRISTIE, *MURDER ON THE ORIENT EXPRESS* (Reissue Ed., Harper Paperbacks 2011)

suspects are implicated, the net of culpability has been cast wide, to catch everything from risky mortgages to misunderstood financial innovation, skewed incentives at investment banks, and regulators asleep at the wheel. Some commentators have even gone so far as to suggest that China's one-child policy played a part in the debacle,³ while others blame whoever was not listening to them before the crunch.⁴

Countless rules have been proposed and enacted in response, many invariably involving more government powers and oversight.⁵ This is understandable – to an extent – given that there have indeed been widespread regulatory shortcomings.⁶ However, and as this paper will suggest, more regulation will not prevent another crisis if it does not address the underlying deficiencies of the financial system. Despite President Obama's claim that the Dodd-Frank Act will prevent another crisis from “ever happening again,”⁷ history shows that regulation designed “for the last crisis does not prevent the next.”⁸ Higher accounting standards, for example, introduced earlier this decade did nothing to prevent the recent fiasco. In order to formulate an effective regulatory response, a close look at the underlying nature of the financial system is needed.

This paper will try to do just that. It will look at what it is about the financial system that makes it so prone to waves of bubbles followed by recessions, and how government policies – both regulatory and monetary – have contributed to the fiasco that has engulfed the global economy in recent years.⁹ Part I will look at a number of economic theories in order to attempt to explain the system's inherent weaknesses, and Part II will try to shed some light on recent events in this context. Part III will look at what the regulatory response should be.

The main argument of this paper is that, rather than settle for an optimal equilibrium, the financial system is in fact inherently unstable, and, after periods of stability, ends up in a self-reinforcing spiral towards instability. The expansion of credit is the key driver behind this process.¹⁰ It fuels the cycle, helps create asset

(1934) (renamed “*Murder in the Calais Coach*” in the U.S.).

³ Posting of Patrick Love to OECD Insights, *Chinese demography: One child, many consequences*, <http://oecdinsights.org/2010/03/26/chinese-demography-one-child-many-consequences/> (Mar. 26, 2010). Introduced in China in the late 1970s, one of the effects of the policy has been a proportionally higher number of boys in relation to girls. *Id.* Worried about their sons' prospects of finding a bride, Chinese families feel that the accumulation of wealth is one way to compete for the attention of brides-to-be. *Id.* It is suggested these savings have contributed to the global imbalances and loose monetary policy in the West, in turn contributing to asset price bubbles and the ensuing crisis.

⁴ *See, e.g.*, GEORGE SOROS, *THE CRASH OF 2008 AND WHAT IT MEANS: THE NEW PARADIGM FOR FINANCIAL MARKETS* (2008).

⁵ *See, e.g.*, Dealbook, *New S.E.C. Powers in Dodd-Frank Act*, N.Y. TIMES, Oct. 28, 2010; *see also The Dodd-Frank Act*, SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP & AFFILIATES COMMENTARY AND INSIGHTS, July 12, 2010, http://www.skadden.com/Cimages/siteFile/Skadden_Insights_Special_Edition_Dodd-Frank_Act1.pdf.

⁶ *See, e.g.*, Michael Pomerleau, *The failure of financial regulation*, FIN. TIMES, Jan. 15, 2009 available at <http://blogs.ft.com/economistsforum/2009/01/the-failure-of-financial-regulation/>.

⁷ *A decent start*, ECONOMIST, July 1, 2010, available at <http://www.economist.com/node/16481494>.

⁸ GEORGE COOPER, *THE ORIGIN OF FINANCIAL CRISES*, vii (First Vintage Books ed. 2008).

⁹ *See infra* Part I.D.

¹⁰ *See infra* Part I.D.

bubbles, leaves debtors woefully ill-prepared to cope with shocks and prolongs the hangover that inevitably follows.¹¹ It follows that any serious attempt to prevent a repeat of the crisis should aim to manage the credit creation process as well as the accumulation of debt. The implication is that regulatory policy should become progressively more stringent as the boom proceeds, as even rational individuals cannot be expected to refrain from perpetuating it.

Of course, systemic risk cannot be eliminated, and the idea would not be to purge the system of crises altogether, but to reduce the risks they pose while increasing the financial system's resilience.¹² The paper will also recognize the limitations of regulation or any other proposals: if the system is indeed inherently unstable then no amount of intervention – by central banks or regulators – will be able to eliminate the risks we face, short of a switch to a different system altogether. In addition, economic theories are of course just that, and each will have a counterargument, which raises the question of whether these theories should form the basis of policy responses at all.

I. THEORY

A. *Why Financial Markets are Different*

Of all of Adam Smith's insightful statements, the notion of an "invisible hand"¹³ is surely the most famous. In its original context, the term implied that society's interests are best advanced through an individual's pursuit of his own. However, today the phrase is widely interpreted to mean that markets tend towards equilibrium; that is, a situation where demand and supply are in balance.¹⁴ If for some reason that balance is disturbed, the market will adjust and move towards a new equilibrium.¹⁵

This, in essence, is the basis for the efficient market hypothesis.¹⁶ The premise of the hypothesis is that the price of an asset reflects all available information, and thus that all prices are in fact correct and in equilibrium.¹⁷ If asset prices are too low, informed buyers will promptly take advantage of these and drive the price back up, just as overvalued assets would attract short sellers who will drive the price down again. The theory has been extremely influential: It has formed the basis of the federal securities laws,¹⁸ court decisions interpreting

¹¹ See *infra* Part II.D.

¹² William Murden, Director, U.S. Treasury, Office of Int'l Banking and Sec. Mkts, Speech presented at the Derivatives and Risk Management Symposium on Stability in World Financial Markets at Fordham University School of Law, Banking Supervision and Government Policy: The Role of Regulators in International Financial Reform (Jan. 28, 1999) <http://law2.fordham.edu/publications/articles/600flspub9510.pdf>.

¹³ ADAM SMITH, THE WEALTH OF NATIONS book IV, ch. II (1776).

¹⁴ COOPER, *supra* note 8, at 93.

¹⁵ MATTHEW BISHOP, ESSENTIAL ECONOMICS A-Z (Bloomberg Press 2d ed. 2009).

¹⁶ Although this does not imply that Smith himself would have agreed with the claims made on behalf of the efficient market hypothesis today.

¹⁷ BISHOP, *supra* note 15.

¹⁸ WILLIAM ALLEN ET AL., COMMENTARIES AND CASES ON THE LAW OF BUSINESS ORGANIZATION (Aspen Publishers 3d ed. 2008).

them,¹⁹ and the financial engineering that takes place on Wall Street.²⁰

Notably, efficient market hypothesis does not allow for the existence of bubbles nor do adherents of the theory believe that government intervention to respond to them is justified until after these have burst. Writing about the real estate mania of the time, the *Chicago Tribune* of April 13, 1890 summed up the elements of a bubble: “men who bought property at prices they knew perfectly well were fictitious, but who were prepared to pay such prices simply because they knew that some still greater fool could be depended on to take the property off their hands and leave them with a profit.”²¹

Economists differ in their opinions on the causes of the existence of bubbles, but a salient feature is a rise in the price of assets that cannot be explained by fundamentals, i.e. the income likely to be earned from holding the asset.²² This is at odds with the efficient market hypothesis, which posits that prices are always justified.

For the market in goods and services, this is a plausible argument.²³ Yet whereas people buy a consumer good because of its inherent value, they buy financial assets for a different reason: to make them financially better off.²⁴ When they invest, they are therefore looking for an asset which is scarce, the supply of which cannot be increased easily. As Ben Bernanke explained before becoming Chairman of the Federal Reserve, “[l]ike gold, U.S. dollars have value only to the extent that they are strictly limited in supply.”²⁵ “By increasing the number of U.S. dollars in circulation,” he went on to say, “the U.S. government can also reduce the value of a dollar in terms of goods and services.”²⁶ Likewise, if the supply of assets could be increased at no cost, they would have little value as an investment. Public companies could certainly issue additional shares whenever their price reaches a certain level (thereby diluting the wealth of existing holders), but those in the habit of doing so routinely would soon have difficulty attracting investors.²⁷

Instead of demand stimulating supply, in asset markets a lack of supply

¹⁹ See, e.g., *Wielgos v. Commonwealth Edison Co.*, 892 F.2d 509 (7th Cir. 1989); *Seaboard World Airlines v. Tiger Int'l*, 600 F.2d 355, 362 (2d Cir. 1979).

²⁰ *Efficiency and beyond*, ECONOMIST, July 16, 2009, available at <http://www.economist.com/node/14030296>.

²¹ BISHOP, *supra* note 15.

²² *Id.*

²³ When demand for a good goes up, so does its price. This is then met with an increase in supply as producers take advantage of the situation to maximize their income. Once demand for the product falls again, perhaps because consumers have consumed enough of it or a competitor enters the market, the producer will lower his prices to accommodate this new level of demand, and there is a new equilibrium.

²⁴ *Buttonwood: A special case*, ECONOMIST, Aug. 21, 2010, available at <http://www.economist.com/node/16792858>.

²⁵ Ben S. Bernanke, Governor, Fed. Reserve Bd, Remarks Made Before the National Economists Club, Washington, D.C.: Deflation: Making Sure “It” Doesn’t Happen Here (Nov. 21, 2002) (available at <http://www.federalreserve.gov/boarddocs/speeches/2002/20021121/default.htm>).

²⁶ *Id.*

²⁷ COOPER, *supra* note 8, at 8.

stimulates demand, and rising asset prices are seen as a cause to buy.²⁸ Rather than move toward equilibrium, prices can thus steadfastly move away from it. The way consumers and investors react differently to supply constraints and price changes indicates that an altogether different mechanism seems to operate in the financial and asset markets,²⁹ and one might question if there is another paradigm through which the financial system can be evaluated.

B. Reflexivity

George Soros' concept of "reflexivity," published in 1987,³⁰ itself a re-interpretation of older non-economic theories, echoes this belief.³¹ In sociology, the theory reflects the notion that individuals will act according to their calculations of how *they believe* others will act.³²

Soros believes that as applied to economic theory, it is the bias of participants in the market and their imperfect understanding that drives events. It is not the sole driver,³³ but its presence is enough to "render the equilibrium position unattainable."³⁴ While markets have numerous participants with individual biases, these may cancel each other out to leave what he terms the "prevailing bias," with a stock's price the common denominator.³⁵ A change in this price (which way will depend on whether the prevailing bias is positive or negative) will further affect this bias, and so on.³⁶ As the interplay is on-going, there is no tendency toward equilibrium, and the variables reinforce each other in one direction before going on to another after a particular event.³⁷

This statement is of course merely an elaborate way to describe the business cycle, or boom and bust. The model takes into account that stock prices are also driven by the "fundamentals" of earnings, dividends, cash flow and the like: the reinforcing process therefore does not operate unrestrained, but undergoes orderly corrections. However, this tends to happen in the early stages. As the cycle advances, these corrections become scarcer and the likelihood of a bust grows.³⁸ Thus, rather than move toward equilibrium, Soros asserts that asset markets

²⁸ *A special report on the future of finance: Wild animal spirits*, ECONOMIST, Jan. 22, 2009, available at <http://www.economist.com/node/12957779>.

²⁹ *Id.*

³⁰ GEORGE SOROS, *THE ALCHEMY OF FINANCE: READING THE MIND OF THE MARKET* (1987) [hereinafter *ALCHEMY OF FINANCE*].

³¹ *See, e.g.*, GEORGE SOROS, *THE CRISIS OF GLOBAL CAPITALISM* (1998); *THE CRASH OF 2008 AND WHAT IT MEANS: THE NEW PARADIGM FOR FINANCIAL MARKETS*, *supra* note 4 (expanding upon Soros's theory).

³² In sociology this is known as the "Thomas Theorem," named after sociologist William I. Thomas. Robert K. Merton, *The Thomas Theorem and the Matthew Effect*, 74 *SOC. FORCES* 379, 389 (1995). As he put it, "if men define situations that are real, they are real in their consequences." *Id.* at 380. In other words, prophecies may well turn out to be self-fulfilling.

³³ *ALCHEMY OF FINANCE*, *supra* note 30, at 43.

³⁴ *Id.*

³⁵ *Id.*

³⁶ *Id.* at 52.

³⁷ *Id.* at 70.

³⁸ *ALCHEMY OF FINANCE*, *supra* note 30, at 52.

actually have a tendency to move away from it.

C. Introducing the Financial Instability Hypothesis

The accumulation of debt has the capacity to greatly accentuate this process. That is the view expounded by Hyman Minsky, an American economist who spent much of his career analyzing financial crises.³⁹ His hypothesis,⁴⁰ in his own words, is a theory of “the impact of debt on system behavior,” and his key observation was that people’s attitudes to risk – and thus debt – develop in stages.⁴¹ In each stage a different type of economic unit (with its own income-debt characteristics) dominates the economy, with each unit more cavalier in its approach to risk as time goes on.⁴² He divided these units into three categories: *hedging*, *speculative*, and *Ponzi*.⁴³

Hedging units are borrowers that have sufficient cash flows to finance payments of principal and interest, and the equity component in their financing structure is relatively sizeable.⁴⁴ If this type of financing is prevalent, the economy is more likely to tend toward equilibrium. *Speculative* units are those borrowers who have enough income to meet interest payments but cannot afford to pay their entire obligations, and have to issue new debt to finance their existing liabilities.⁴⁵ *Ponzi* units, the most unstable, are those borrowers whose cash flows will at some point be insufficient to meet their obligations, and depend on the liquidation of assets or rising asset prices in order to refinance and honor their debts.⁴⁶

An economy’s financing stages are thus either stable or unstable, and it is the confidence (some might say complacency) that prolonged periods of economic stability and growth bring that moves an economy from one stage to the next.⁴⁷ As Walter Bagehot, a 19th Century editor of *The Economist* observed, “people are most credulous when they are most happy.”⁴⁸ In assuming the future will be like the recent past, consumers as well as companies develop the mistaken belief that such conditions will continue.⁴⁹ They extrapolate recent trends into the future, become more predisposed toward making investments, and are willing to take on more debt. Bankers, as “merchants of debt,”⁵⁰ have the incentive to lend as much as possible, and susceptible to the same bias, are only too happy to oblige.

³⁹ See Justin Lahart, *In Time of Tumult, Obscure Economist Gains Currency*, WALL ST. J., Aug. 18, 2007, available at <http://online.wsj.com/article/SB118736585456901047.html>.

⁴⁰ HYMAN P. MINSKY, *STABILIZING AN UNSTABLE ECONOMY* (McGraw Hill 2008) (1986) [hereinafter *STABILIZING AN UNSTABLE ECONOMY*].

⁴¹ *Id.*; Hyman P. Minsky, *The Financial Instability Hypothesis* 6 (Jerome Levy Econ. Inst. of Bard Coll., Working Paper No. 74, 1992), <http://www.levyinstitute.org/pubs/wp74.pdf>.

⁴² *Buttonwood: Minsky’s moment*, *ECONOMIST*, Apr. 2, 2009, available at <http://www.economist.com/node/13415233>.

⁴³ *STABILIZING AN UNSTABLE ECONOMY*, *supra* note 40, at 7.

⁴⁴ Minsky, *supra* note 41.

⁴⁵ *STABILIZING AN UNSTABLE ECONOMY*, *supra* note 40, at 79.

⁴⁶ *Id.* at 226.

⁴⁷ *Minsky’s moment*, *supra* note 42.

⁴⁸ *Wild-animal spirits*, *supra* note 28.

⁴⁹ *Minsky’s moment*, *supra* note 42.

⁵⁰ *STABILIZING AN UNSTABLE ECONOMY*, *supra* note 40, at 279.

D. The Problem with Debt

Despite the advice that Polonius gives his son in William Shakespeare's *Hamlet* to "neither a borrower nor a lender be,"⁵¹ borrowing has its merits. It gives the thrifty an opportunity to earn interest on their savings, and allows individuals and companies to consume more or make investments which could otherwise not have been made, contributing to economic growth.⁵² Furthermore, it can enable risk to be efficiently allocated between parties. However, it has an important side effect, namely that it feeds its way into asset prices.

Minsky himself partly attributed his ideas to the works of J.M. Keynes and the Polish economist Michał Kalecki, who made the assertion that the structure of aggregate demand determines profits.⁵³ To escape from the "paradox of thrift," in which a section of the economy undermines its own income by saving and thus reducing the income (and demand) of other sections, Keynes reckoned that if one agent – the government – would spend enough money, it could boost demand and increase profits, setting off a benign cycle of economic expansion.⁵⁴ Whereas Keynes' *General Theory* emphasized the aggregate quantity of investment which through the spending multiplier affects output, Minsky's contribution was to focus on how the investment is financed.⁵⁵ Minsky took Keynes' position a step further, and argued that the accumulation of debt could lead to a self enforcing spiral.⁵⁶ As the availability of credit reaches higher levels, so does disposable income and thus demand.⁵⁷ This in turn feeds into higher profits and, consequently, higher asset prices, thereby ratifying the decision to borrow more money to spend on these assets.⁵⁸

Soros' theory takes into account the effects of credit on the reflexive process, namely on the relationship between the number of loans being made and the value of collateral.⁵⁹ As borrowing stimulates economic activity, higher profits and asset prices also raise the value of collateral.⁶⁰ More lending can thus positively affect borrowers' creditworthiness, enabling them to borrow even more.⁶¹

⁵¹ WILLIAM SHAKESPEARE, *HAMLET*. Although Polonius' chief concern was that lending money to friends would cause resentment (putting the lender at risk of losing his money as well as his friend) rather than any financial crises. *Id.*

⁵² BISHOP, *supra* note 15.

⁵³ Minsky had even declared that his hypothesis was "an interpretation of the substance of Keynes' *General Theory*." Paul McCulley, *The Shadow Banking System and Hyman Minsky's Economic Journey*, Global Cent. Bank Focus, May 2009, http://media.pimco-global.com/pdfs/pdf/GCB%20Focus%20May%2009.pdf?WT.cg_n=PIMCO-US&WT.ti=GCB%20Focus%20May%2009.pdf.

⁵⁴ COOPER, *supra* note 8, at 119.

⁵⁵ Dimitri B. Papadimitriou & L. Randall Wray, *Minsky's Stabilizing an Unstable Economy: Two Decades Later*, in *STABILIZING AN UNSTABLE ECONOMY*, *supra* note 40, at xi-xxxv (McGraw Hill 2008) (1986).

⁵⁶ COOPER, *supra* note 8, at 119.

⁵⁷ Papadimitriou & Wray, *supra* note 55, at xxiv.

⁵⁸ *Id.*

⁵⁹ *ALCHEMY OF FINANCE*, *supra* note 30, at 81.

⁶⁰ COOPER, *supra* note 8, at 100.

⁶¹ For example, consider an economy with one bank and only one company, whose stock is worth \$100 million and consists of 1 million shares of \$100. A broker might buy these at \$100 and sell them at \$101. The broker's customer, looking to invest, buys 100 of them and the broker, noting the increase

The problem however is that as this process continues, prices of assets stop reflecting their underlying value, and instead reflect the amount of credit available as well as people's (biased) expectations of what the future holds, and a bubble is formed. Note that at this stage the ability of investors to objectively judge the correct price of assets is significantly undermined.⁶² As credit creation, profit formation and asset price inflation all affect each other, it becomes apparent that the fundamentals which themselves reflect cash flows fail to provide investors with any external measures of value. Bernanke has stated that Minsky and Kindleberger, in arguing for the inherent instability of the financial system, "have had to depart from the assumption of rational behavior,"⁶³ but once one takes into consideration how the fundamentals are themselves unreliable it seems entirely rational for investors to be misled by balance sheets. Unfortunately, in the midst of rising asset prices, the incentive to refrain from borrowing and investing is muted, and by relying on these figures investors themselves also fuel the boom. As an inherent feature of the system, credit expansion thus has the propensity to perpetuate the economic cycle.

Unfortunately, it does more than just that. Leverage can enhance returns on equity, but it also exposes the borrower to additional risk,⁶⁴ as payments to creditors stay fixed regardless of incomes. When these dwindle or costs rise, the highly leveraged debtor – such as the subprime borrower – is more likely to face insolvency, and excessive levels of debt thus leaving individual borrowers badly positioned to absorb adverse shocks. As the economy reaches a stage where *Ponzi* financing dominates, a change in investor sentiment, or attempts by the authorities to purge inflation through monetary constraint, the risk grows that *speculative* units become *Ponzi* units. These, in turn, see their net worth vanish, as rising interest rates mean their expenses rise above their incomes, and they are forced to liquidate their assets in order to repay their loans, triggering a fall in asset prices.

The word "credit" is Latin in origin, and comes from the word "credere," or "to believe."⁶⁵ Creditors must believe their borrowers to be creditworthy; if they suspect otherwise, they might demand payment of existing debt or refuse to roll it over. Lending – like a *Ponzi* scheme – thus depends on confidence. Large build ups of debt in continuous need of refinancing – like Minsky's *Ponzi* units – make an economy especially prone to crises of confidence.⁶⁶ These units, with little to

in demand, now sells them at \$102, while buying them at \$101. The bank, meanwhile, notes that its customers are now holding \$1 million in extra collateral, and its risk management systems are telling it that it can safely lend another \$1 million. Borrowers who take the bank up on its offer meanwhile see that stock prices have gone up, and invest the money they borrow in shares, pushing up the price even more, in turn affecting the value of their collateral. See COOPER, *supra* note 8, at 103 (providing a modified version of this example).

⁶² *Id.* at 119.

⁶³ Rajiv Sethi, *Dynamics of Learning and the Financial Instability Hypothesis*, 56 J. ECON. 39, 41 (1992), <http://www.springerlink.com/content/lq36n26607x46475/fulltext.pdf>

⁶⁴ RICHARD. S. CARNELL ET AL., *THE LAW OF BANKING AND FINANCIAL INSTITUTIONS* 45 (4th ed. 2009).

⁶⁵ *A special report on death: Repent at leisure*, *ECONOMIST*, June 24, 2010, available at <http://www.economist.com/node/16397110>. Rather ominously, the Aramaic words for "debt" and "sin" are the same. *Id.*

⁶⁶ KENNETH S. ROGOFF & CARMEN M. REINHART, *THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY* 25 (2009).

no margin for error, are thus extremely vulnerable to shocks, most notably rises in short term interest rates, the drying up of liquidity or a fall in asset prices, all of which played a role in propagating the recent crisis. The key is that a seemingly trivial event – such as a change in investor sentiment, attempts by the authorities to purge inflation through monetary constraint or the unexpected failure of a firm previously considered in good health⁶⁷ - is enough to generate a violent downturn when there is an excess accumulation of risky debt.⁶⁸

E. Destabilizing a Stable Economy

The gist of Minsky's thesis is simple: that, as memories of recession fade, the spurious belief that asset prices can only climb takes hold, and indebtedness deepens as it is used to finance investments.⁶⁹ This in turn perpetuates an asset price spiral upwards, inducing a speculative euphoria – irrational exuberance in Alan Greenspan's words⁷⁰ – and, as the process continues, more borrowing. In the process, economies become susceptible to shocks and more unstable. Debt reaches unsustainable levels, and a small shock is sufficient to send the system crashing. Charles Kindleberger likened the economic situation after a few bubble years to a young person riding a bike.⁷¹ There is no middle ground, and the bike, like the economy, will become unstable lest its momentum is kept. As *Ponzi* units with cash shortfalls are forced to liquidate their positions, asset values collapse,⁷² leading to more defaults and further rounds of price reductions. Concerns that asset prices will further fall thus becomes a self fulfilling prophecy.⁷³ As the payments system freezes up, so does credit. Runs extend to healthy as well as unhealthy banks, the economy is deprived of one of its main lifelines, and businesses that find themselves unable to raise financing go bust.⁷⁴ Recession follows.

A core difference between the efficient market hypothesis and the financial instability hypothesis is what makes prices move. Whereas the efficient market hypothesis posits that any movement in price is caused by external shocks, the key to Minsky's model and Soros' theory of reflexivity, is that it does not rely on these exogenous shocks to move the economy into a particular direction, but instead generates its own cycles, causing waves of credit expansion and asset price inflation which perpetuate themselves. Booms and busts are thus inherent in the

⁶⁷ CHARLES P. KINDLEBERGER & ROBERT Z. ALIBER, *MANIAS, PANICS AND CRASHES: A HISTORY OF FINANCIAL CRISES* (5th ed. 2004).

⁶⁸ ROBERT J. BARBERA, *THE COST OF CAPITALISM: UNDERSTANDING MARKET MAYHEM AND STABILIZING OUR ECONOMIC FUTURE* 33 (2009).

⁶⁹ *See supra*, Part I.D.

⁷⁰ Alan Greenspan, Chairman, Fed. Reserve, Remarks at the Annual Dinner and Francis Boyer Lecture of the American Enterprise Institute for Public Policy Research, Washington, D.C.: The Challenge of Central Banking in a Democratic Society (Dec. 5, 1996) (available at <http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm>).

⁷¹ KINDLEBERGER & ALIBER, *supra* note 67.

⁷² *STABILIZING AN UNSTABLE ECONOMY*, *supra* note 40.

⁷³ KINDLEBERGER & ALIBER, *supra* note 67.

⁷⁴ *A survey of the world economy: On credit watch*, *ECONOMIST*, Oct. 18, 2007, available at <http://www.economist.com/node/9972531>.

system, and stable economies effectively sow the seeds of their own destruction.

The notion that assets are always correctly priced – as propagated by the efficient market hypothesis – is the main argument against countercyclical policies and pricking bubbles, even their existence; until they burst that is, when they miraculously become clear for all to see, and prices are suddenly declared to be wrong, prompting central banks to intervene. Defenders of the efficient market hypothesis also stoutly maintain that there is no such thing as an excessive level of credit creation.⁷⁵ There are numerous events that have violated the theory, including bank runs in the absence of deposit insurance, or Long Term Capital Management's implosion in 1998.⁷⁶ However, widespread belief in the theory has been a driving force behind the deregulatory shifts over the last couple of decades (such as repeal of the Glass-Steagall Act) as well as central bank policy, setting the stage for the most severe bursting of a bubble since the Great Depression.

II. REALITY

Over the last few decades, the savings rate in the U.S. has fallen by more than 10%, from nearly 11% of GDP in 1985 to around 1% of GDP in 2008.⁷⁷ This means that households have increased their spending by more than 10% of GDP, some of which has invariably found its way into higher asset prices. Credit growth as a percentage of GDP⁷⁸ and household debt⁷⁹ have similarly shot up. One of the causes of this shift from saving to spending has arguably been the Federal Reserve's loose monetary policy. "Money always seems free"⁸⁰ in manias, wrote Charles Kindleberger, and this crisis was no exception. Throughout the past two decades, cheap imports from emerging markets had kept inflation low, and the Fed was able to maintain a correspondingly low federal funds rate. When interest rates are low, consumers and businesses do not just borrow money for everyday expenses, but also for the purchase of assets. Unsurprisingly, homes shot up in value over the period, far outstripping gains in incomes.⁸¹

Beginning in the 1980s, Congress passed a series of statutes that deregulated the residential mortgage market and contributed to the bubble. The Depository Institutions Deregulation and Monetary Control Act of 1980⁸² repealed usury caps on residential mortgages, and the Alternative Mortgage Transaction Parity Act of 1982⁸³ granted lenders more freedom to sell adjustable rate mortgages, effectively

⁷⁵ COOPER, *supra* note 8, at 13.

⁷⁶ *Id.* at 13.

⁷⁷ U.S. BUREAU OF ECONOMIC ANALYSIS, ALTERNATIVE MEASURES OF PERSONAL SAVING 11 (2010).

⁷⁸ George Magnus, *The Credit Cycle and Liquidity: Have we arrived at a Minsky Moment?* PUBLIC RADIO, Mar. 6, 2007, <http://www.publicradio.org/columns/marketplace/farrell/Economics%20Insights%20-%20By%20George%20-%20March%202007.pdf>

⁷⁹ See Robert Guttman & Dominique Plihon, *Consumer Debt & Financial Fragility*, 24 INT'L REV. APPLIED ECON. 3, 269 (2010).

⁸⁰ KINDLEBERGER & ALIBER, *supra* note 67.

⁸¹ BARBERA, *supra* note 68.

⁸² Depository Institutions Deregulation and Monetary Control Act, Pub. L. No. 96-221, §§ 101-108, 94 (1980).

⁸³ Alternative Mortgage Transaction Parity Act, 12 U.S.C. § 3801 (1982).

transferring interest rate risk from lenders to borrowers. The Federal Reserve was given the power under the Home Ownership and Equity Protection Act of 1994⁸⁴ to issue rules to restrict abusive lending practices, but Alan Greenspan, then the Fed's chairman, declined to implement them, explaining later that case by case evaluations would have been needed to evaluate which loans were unfair.⁸⁵ Interestingly, the much maligned Community Reinvestment Act of 1977, which is often cited as a cause of the crisis, had decidedly little to do with it. Critics assert the act "forced" banks to make loans in poorer communities which would have otherwise been unsafe and unsound,⁸⁶ although it in fact merely encouraged banks to be aware of profitable opportunities in these areas.⁸⁷ Figures show that CRA related loans accounted for only a small portion of subprime mortgages, and in any case actually compared favorably to other types of subprime loans.⁸⁸

In any case, many mortgage lenders operated with little oversight: The Wall Street Journal estimates that a few years before the crisis more than half of all subprime mortgages originated by companies that were not subject to federal supervision⁸⁹ and banks were able to conceal from their borrowers the true implications of their contracts, while borrowers were no less adept at concealing their true financial position from their creditors.⁹⁰ Coupled with low interest rates, the housing market boomed. A 2004 study by the National Association of Realtors revealed that fully 23% of all houses in the U.S. had been bought as an investment (not for owner occupation) and another 13% were bought as second homes.⁹¹

As homes increased in value, homeowners felt richer and were likely to spend more. Two mortgage related innovations introduced in the 90s made this possible.⁹² First, banks facilitated the refinancing of existing loans, allowing borrowers to obtain lower interest rates, though at the cost of higher principal, depending on house price appreciation.⁹³ Second, home equity loans were introduced, which were essentially second mortgages with the benefits of tax

⁸⁴ Home Ownership and Equity Protection Act, 15 U.S.C. § 1639 (1994).

⁸⁵ See Carol A. Needham, *Listening to Cassandra: The Difficulty of Recognizing Risks and Taking Action*, 78 FORDHAM L. REV. 2329, 2332 (2010).

⁸⁶ See, e.g., Lawrence H. White, *Housing Finance and the 2008 Financial Crisis*, CATO INST. (Aug. 2009), available at <http://www.downsizinggovernment.org/hud/housing-finance-2008-financial-crisis>.

⁸⁷ See Randall S. Kroszner, Governor, Fed. Reserve Bd., Speech at the Confronting Concentrated Poverty Policy Forum, Washington, D.C.: The Community Reinvestment Act and the Recent Mortgage Crisis (Dec. 3, 2008) (available at <http://www.federalreserve.gov/newsevents/speech/kroszner20081203a.htm>).

⁸⁸ See Neil Bhutta & Glenn Canner, *Did the CRA cause the mortgage market meltdown?* COMMUNITY DIVIDENT, FED. RES. BANK OF MINNEAPOLIS, Mar. 2009, available at http://www.minneapolis.fed.org/publications_papers/pub_display.cfm?id=4136.

⁸⁹ See J. Scott Colesanti, *Laws, Sausages & Bailouts: Testing the Populist View of the Causes of the Economic Crisis*, 4 BROOK. J. CORP. FIN. & COMM. L. 175 (2010).

⁹⁰ *Credit: Beware of miracle cures*, ECONOMIST, Sept. 6, 2007, available at <http://www.economist.com/node/9767665>.

⁹¹ *The global housing boom: In come the waves*, ECONOMIST, June 16, 2005, available at http://www.economist.com/node/4079027?story_id=E1_QDSJDNS.

⁹² Guttman, *supra* note 79.

⁹³ *Id.*

deductible interest payments.⁹⁴ Both effectively allowed homeowners to convert home equity appreciation into cash.⁹⁵

This extra spending fed into higher corporate profits and the economy thrived. Defaults and insolvencies were fewer in number, and lenders became more willing to lend on lax terms. For example, the Office of the Comptroller, in its 2006 Survey of Credit Underwriting Practices, noted that due to competitive pressures, lenders had relaxed credit underwriting standards for a third year in a row.⁹⁶ Homebuyers took advantage of these generous terms and low interest rates, relying on rising house prices to repay the loans, reflecting the third or *Ponzi* stage of Minsky's hypothesis.⁹⁷ Financing was made available based on the assumption that house prices would keep rising,⁹⁸ and borrowers with loans of 125% of the value of the house were a typical example of Minsky's *Ponzi* financing units.⁹⁹ By 2006, around one third of all homebuyers in the U.S. had purchased risky mortgages of some sort.¹⁰⁰

A collective wave of elation had seemingly taken hold. Economic growth was robust, and rising house prices vindicated risky financing strategies. As Kindleberger points out, there is always a sense that "we never had it so good" during an upturn.¹⁰¹ Because of globalization, improvements in technology and securitization,¹⁰² it was widely reckoned that "this time would be different."¹⁰³ As Minsky hypothesized, people believed the good times would continue, and borrowed staggeringly large amounts of money to buy assets. Had the efficient market hypothesis been true, these might have been justified investments, or prices wouldn't have risen by as much as they did. Instead, asset prices merely reflected excessive credit creation and a specious euphoria. Rising house prices encouraged borrowers to borrow more, and the high levels of debt they had accumulated were enough to leave them badly positioned to deal with adverse shocks. A long period of stability had inevitably spawned its own instability, and when the shock came, the bubble inevitably ended not with a pop, but with a crash.

⁹⁴ *Id.*

⁹⁵ *See id.*

⁹⁶ *See* George Magnus, *The Credit Cycle: Getting Closer to a Minsky Moment?* (July 3, 2007), <http://www.publicradio.org/columns/marketplace/farrell/George%20Magnus%20020707.pdf>.

⁹⁷ *See supra* Part I.C.

⁹⁸ *Buttonwood: Ponzificating*, *ECONOMIST*, Mar. 15, 2007, available at http://www.economist.com/node/8864415?story_id=E1_RRGQQT&CFID=159562473&CFTOKEN=15079749.

⁹⁹ *See Minsky's Moment*, *supra* note 42.

¹⁰⁰ BARBERA, *supra* note 68, at 34.

¹⁰¹ KINDLEBERGER & ALIBER, *supra* note 67.

¹⁰² *See* ROGOFF & REINHART, *supra* note 66, at 20.

¹⁰³ *Id.*

II. THE BUBBLE BURSTS

In order to combat inflationary pressures as a result of rising energy prices, in April 2004 the Fed raised its funds rate from 1% by twenty-five basis points.¹⁰⁴ Seventeen¹⁰⁵ consecutive interest rate hikes over the next few years eventually found their way into higher mortgage rates, and demand for new housing slackened.¹⁰⁶ Faced with higher loan repayments, strapped homeowners started to default. Risky mortgages bore the brunt of the defaults at first, but as waves of foreclosures saw the value of banks' collateral fall, prime borrowers soon followed.

The initial disruption may have been small, but it was enough to burst the housing bubble and eventually precipitate the economy into a descending spiral of margin calls, sour loans and a credit crunch leading to the soup kitchens.¹⁰⁷ Just as the previously "virtuous" cycle of rising asset prices and profits had reinforced itself, so the damaging hangover that followed spiraled downwards in what is known as a positive feedback loop. According to Soros, it is the sudden liquidation of accumulated positions that gives busts such a different shape: The frenzied liquidation of collateral in order to satisfy creditors leads to a rapid decline in collateral prices,¹⁰⁸ thereby depriving many more creditors the chance to recover. Minsky, too, recognized that as *Ponzi* units with cash shortfalls are forced to liquidate their positions, asset values collapse.¹⁰⁹ Irving Fisher's words, from the early 1930s, seem presciently appropriate today:

Over-investment and over-speculation are often important; but they would have far less serious results were they not conducted with borrowed money. The very effort of individuals to lessen their burden of debts increases it, because of the mass effect of the stampede to liquidate [T]he more debtors pay, the more they owe. The more the economic boat tips, the more it tends to tip. It is not tending to right itself, but is capsizing.¹¹⁰

III. CAPITAL

The demise of the subprime borrower went on to highlight the dangers of overleveraging at a different type of borrower altogether, namely financial institutions. Banks and other financial firms, which had invested heavily in securities linked to subprime mortgages, saw the value of their assets drop and a number of them suffered crises of confidence resulting in bailouts and government rescue packages. Many of these banks relied on short term financing to fund their operations while investing long in illiquid (and toxic) assets. Their capital positions were flimsy: Lehman Brothers at one point had a debt to equity ratio of

¹⁰⁴ See BARBERA, *supra* note 68, at 141.

¹⁰⁵ Guttman, *supra* note 79, at 14.

¹⁰⁶ See BARBERA, *supra* note 68, at 141.

¹⁰⁷ COOPER, *supra* note 8, at 104.

¹⁰⁸ See ALCHEMY OF FINANCE, *supra* note 30, at 322.

¹⁰⁹ See STABILIZING AN UNSTABLE ECONOMY, *supra* note 40.

¹¹⁰ Irving Fisher, *The Debt-Deflation Theory of Great Depressions*, 1 *ECONOMETRICA* 334, 337 (1933).

35:1,¹¹¹ and Bear Stearns had a similar ratio.¹¹²

Northern Rock, a British mortgage lender, was a particularly painful reminder of the dangers of overreliance on money market funding and few deposits to rely on. Despite starting the year promisingly and announcing pretax profits of £627 million (\$1.2 billion) for 2006,¹¹³ it suffered a liquidity crisis it was not able to weather. Fear that it would default in the future – thanks to its losses on mortgage securities – was enough for commercial money market lenders to refuse to renew its loans, sending it cap in hand to the British government.¹¹⁴ A few had previously voiced concerns about the practice of relying on short term financing. MIT alumnus and Italian banker Tommaso Padoa-Schioppa, then on the Board of Directors at the ECB, stated as far back as the beginning of the decade that for all its advantages, this type of “liquidity may be more prone to dry up when it is most needed.”¹¹⁵ Even Moody’s, which would go on to be widely berated for its fallacious ratings, warned of British banks’ vulnerability to disruption in the wholesale markets.¹¹⁶

Many others, however, including regulators, failed to see this, and as a result of its funding problems, Northern Rock went on to suffer Britain’s first bank run in 140 years.¹¹⁷ As its failure proved, a sudden lack of liquidity can destroy a balance sheet in a short period of time,¹¹⁸ and the implosion in 2007-2008 came about precisely because many highly leveraged firms financed their illiquid investments using short term borrowing¹¹⁹ which they were unable to renew.

IV. PROTRACTION

When the system does implode, the contraction is “a mirror image of the expansion.”¹²⁰ Whereas growth during the boom was higher than it should have been, so the bust will be more severe. According to Rogoff and Reinhart, the average downturn following a debt-fuelled housing bubble is four to six years – in sharp contrast to the “pure stock market crash”¹²¹ at the beginning of this century which, even though preceded by a record high composite index value, was a much

¹¹¹ See Colesanti, *supra* note 89.

¹¹² Roddy Boyd, *The Last Days of Bear Stearns*, CNN, Mar. 31, 2008, available at http://money.cnn.com/2008/03/28/magazines/fortune/boyd_bear.fortune/.

¹¹³ *Northern Rock: Lessons of the fall*, ECONOMIST, Oct. 18, 2007, available at http://www.economist.com/node/9988865?story_id=E1_JJRRRGV.

¹¹⁴ Helen Nugent, *Northern Rock is bailed out by Bank of England*, THE TIMES (UK), Sept. 14, 2007, available at http://business.timesonline.co.uk/tol/business/industry_sectors/banking_and_finance/article2449595.ece.

¹¹⁵ *Lessons of the fall*, *supra* note 113.

¹¹⁶ *Id.*

¹¹⁷ The last bank in Britain to suffer a bank run before this was Overend, Gurney & Company in 1866. Douglas McWilliams, *Northern Rock was a preventable crisis*, INDEP., Sept. 18, 2007, available at <http://www.independent.co.uk/opinion/commentators/douglas-mcwilliams-northern-rock-was-a-preventable-crisis-402706.html>.

¹¹⁸ PHILIPPE F. DELHAISE, ASIA IN CRISIS: THE IMPLOSION OF THE BANKING AND FINANCE SYSTEMS 27 (John Wiley & Sons 1998).

¹¹⁹ ROGOFF & REINHART, *supra* note 66, at 145.

¹²⁰ ALCHEMY OF FINANCE, *supra* note 30.

¹²¹ ROGOFF & REINHART, *supra* note 66, at 162.

less protracted affair, with more benign growth rates and lower unemployment figures in its aftermath.¹²²

As the U.S., Britain, Ireland, Spain, and other countries set for periods of fiscal austerity are now discovering, households and companies paying off their debts will inevitably spend less money on consumption or investment, thereby depressing profits and keeping economic recovery fragile. The debt build-up of the last few decades has been unprecedented in size, and, during the time required to reduce it, the U.S. economy (and others) will likely experience depressed rates of growth,¹²³ which in turn will reduce tax revenues¹²⁴ and employment prospects. Excessive levels of debt thus not only reinforce asset price spirals that end up destabilizing the economy, but they also amplify the severity of the ensuing downturn.

V. ASIAN CRISIS

The recent financial crisis was by no means the only one with credit at its root. The unhindered expansion of credit also played a role, in varying degrees, in the Great Depression,¹²⁵ the Japanese stock market crash of the late 80s, and the Asian financial crisis of the late 90s.¹²⁶ The latter, in particular, shares a number of further traits with the recent crisis.

For example, large numbers of banks in countries such as Thailand, where the weakness of the banking system was arguably the chief cause behind the panic that followed, were also highly leveraged (many in fact technically insolvent), leading the way for crises of confidence in which foreign investors fell over each other to withdraw their investments.¹²⁷ Few countries in the region had banks with capital ratios even close to 8%.¹²⁸ Thai banks excessively expanded credit during the upturn, employing weak credit controls. Rather than assess cash flow or the strength of balance sheets, banks would lend solely on the basis of collateral.¹²⁹ Much of the money that was being lent found its way into real estate, which also was being used as collateral, further artificially inflating the bubble and allowing banks to look healthier than they were. When the bubble burst, collateral turned out to be worth much less than banks had anticipated, and numerous banks were bailed out by their governments.¹³⁰

Furthermore, just as loose monetary policy, excess savings from abroad and

¹²² U.S. DEPT. OF LABOR BUREAU OF LABOR STATISTICS, DATABASES, TABLES & CALCULATORS BY SUBJECT (Apr. 27, 2011), http://data.bls.gov/pdq/SurveyOutputServlet?data_tool=latest_numbers&series_id=LNS14000000.

¹²³ See ROGOFF & REINHART, *supra* note 66, at 160.

¹²⁴ *Id.* at 164.

¹²⁵ *Id.*

¹²⁶ DELHAISE, *supra* note 118, at 1.

¹²⁷ *Id.* at 14-15.

¹²⁸ Only banks in Japan, Hong Kong, Singapore, and the Philippines had capital ratios around this level. *Id.* at 76.

¹²⁹ *Id.* at 25.

¹³⁰ *Hot Property*, ECONOMIST, Sept. 30, 1999, available at <http://www.economist.com/node/245104>.

sub-par lending standards helped fuel the boom in the United States prior to the recent crisis, during the Asian crisis an overflow of cash from developed economies resulted in overinvestment in unproductive assets and a similar misallocation of capital on a grand scale. The financial crisis that engulfed Asia in the late 90s was due to structural weaknesses different from America's today and eventually manifested itself in a currency panic.¹³¹ However, its underlying nature was the same: an investment boom fueled by easy money.¹³²

While the features of each crisis are never identical, there is often a similar pattern.¹³³ The experience of the recent crisis, as well as that of the Great Depression and the Asian Crisis, suggest that the common denominator is the expansion of credit. The similarities may therefore serve as an indicator that in order to avoid future crises or at least mitigate their impact, the availability of credit and levels of debt and bank capital are the key issues that need to be addressed.

VII. PROPOSALS

A. Credit Creation

The cost of debt is measured by the interest paid on it, and interest rates – at least in the short to medium term – are determined by central banks, be it the Federal Reserve in the United States or the Bank of England in the U.K.¹³⁴ Through monetary policy, central banks manage the credit creation process. Although mandates vary,¹³⁵ a key focus for many central banks is price stability, particularly consumer price inflation. In addition, central banks act as lenders of last resort, in order to reduce the likelihood of bank runs by offering a form of insurance to depositors.¹³⁶

Low interest rates encourage people to borrow rather than save, as returns from savings decrease whereas it becomes cheaper to borrow. Investors put money into bonds (of which prices move inversely to interest rates) and riskier assets such as stocks, which promise higher returns. As it becomes cheaper for companies to fund acquisitions with debt, they go on a buying spree. When the markets tumble, central banks intervene and will lower interest rates in order to stop the decline. While politically expedient at the time, the pain is merely postponed as it simply encourages people to borrow again, “saving the economy from disaster but raising the stakes still further when the next crisis comes

¹³¹ DELHAISE, *supra* note 118, at 1.

¹³² BARBERA, *supra* note 68, at 125.

¹³³ KINDLEBERGER & ALIBER, *supra* note 67.

¹³⁴ See BD. OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, THE FEDERAL RESERVE SYSTEM: PURPOSES & FUNCTIONS (2005); *see also*, Bank of England, About the Bank, <http://www.bankofengland.co.uk/about/index.htm#> (last visited Apr. 27, 2011).

¹³⁵ BD. OF GOVERNORS, *supra* note 134. Mandates vary among central banks. The Federal Reserve's mandate is the promotion of stable prices and maximum employment, whereas the main focus of the European Central Bank is price stability. The Bank of England focuses on both price and financial stability.

¹³⁶ *On Credit Watch*, *supra* note 74.

around.”¹³⁷ Thus, central banks in effect exacerbate the credit cycle, fueling demand and stoking asset price inflation to create bubbles.

While still a Federal Reserve governor, Ben Bernanke argued that it was simply not the job of monetary policy to target housing bubbles; instead, he thought, targeting housing bubbles should be the job of regulatory policy.¹³⁸ As some of the blame for the housing bubble has rightly been reserved for residential mortgage deregulation, one can see why. However, had a housing bubble been prevented, an asset bubble in another sector of the economy might have formed, as cheap money would have found its way into other types of assets. Managing the credit creation process properly is therefore crucial if these damaging cycles are to be avoided.

If central banks keep refusing to prick asset bubbles and continue to focus on consumer price inflation, this is highly unlikely to happen. The most effective policy would surely be to have higher interest rates and require central banks to avoid the creation of excessive bubbles by preemptively pricking them before they reach a point where they pose a systemic risk.¹³⁹

By shifting a central bank’s mandate from targeting consumer price inflation to asset price inflation, its monetary policy would shift to the supervision of inherently unstable financial markets, thus “leaning against” the use of *speculative* and *Ponzi* finance.¹⁴⁰ One possible way of achieving this could be to compare credit growth or growth in asset prices to the level of growth in an economy generally. Other indicators that would inform a central bank when to act could include growth in lending activity, the stock of debt as a fraction of the economy, or the debt service burden as a fraction of income.¹⁴¹ The attraction of using these variables is that other macroeconomic data become distorted by financial bubbles, and so credit growth becomes the key variable.¹⁴²

Another possible solution would be to monitor credit spreads. Some have suggested that bubbles form when risk appetites are high and credit spreads are tight,¹⁴³ which was also apparent during the years in the run up to the crash of 2007-2008. If credit spreads had been monitored more closely by the Federal Reserve when it was raising interest rates in 2004 through 2006, it might have tightened policy in a more aggressive manner, and house prices would have fallen earlier, albeit followed by a milder recession.¹⁴⁴

The proposal is not without its flaws. The main argument against the approach is that because it is impossible to identify the correct price of an asset, central bankers can only spot a bubble *ex post*. However, this is marred by the assertion that asking central banks to spot bubbles does not necessarily involve

¹³⁷ *Buttonwood: credit and blame*, ECONOMIST, Sept. 11, 2008, available at http://www.economist.com/node/12209655?story_id=E1_TNNDJGVV.

¹³⁸ ROGOFF & REINHART, *supra* note 66, at 213.

¹³⁹ COOPER, *supra* note 8, at 164.

¹⁴⁰ STABILIZING AN UNSTABLE ECONOMY, *supra* note 40.

¹⁴¹ COOPER, *supra* note 8, at 164.

¹⁴² *Id.* at 124.

¹⁴³ BARBERA, *supra* note 68, at 189.

¹⁴⁴ *Id.*

identifying the correct price of an asset, in the same way that central banks are not required to know what the appropriate prices of everyday goods are in order to monitor consumer price inflation.¹⁴⁵ Both policies merely require an assessment of what an acceptable increase in price is. However, this leads to another problem, which is that central banks will inevitably employ arbitrary benchmarks by which to measure acceptable increases in these variables. If the central bank errs on the side of caution, the expansion will come to a halt sooner than it might otherwise have; taking a liberal approach will similarly prolong the boom, but make the downturn more serious. There is a degree of truth to this. However, it may be argued that much government intervention is arbitrary, but nevertheless desirable in that it achieves predictability and in this case a degree of stability.

The real challenge, however, will likely come not from macroeconomic variables, but the electorate. The cost of pricking asset bubbles and avoiding an aftermath bogged down by debt would invariably involve a larger number of smaller, less damaging credit cycles, which would still negatively impact the economy in their own ways. Economic growth would certainly not be as high as a result, and shorter term cyclicalities would likely negatively impact employment levels and asset prices. As a rejoinder to these arguments, it is helpful to quote Ludwig von Mises on the subject:

There is no means of avoiding the final collapse of a boom brought about by credit expansion. The alternative is only whether the crisis should come sooner as the result of a voluntary abandonment of further credit expansion, or later as a final and total catastrophe of the currency system involved.¹⁴⁶

Credit, it has been noted, is an integral part of our financial system, and one which has its benefits if used appropriately. If Minsky's theories are indeed correct, an expansion of credit, unless halted by government, will end in a crash.¹⁴⁷ The dilemma before us, it thus seems, is simply how severe we want the downturn to be. No outcome is without its drawbacks, but the key will be to convince voters that the costs associated with a credit fuelled expansion are simply too high, and that monetary policy cannot be used to counteract all economic downturns.¹⁴⁸ Given the ordeal the United States and other economies have been through in recent years, the choice should not be difficult.

B. Capital Requirements

The crisis may have had its origins in the subprime borrower, but, as noted above, it was the over-extended financial institutions that caused the system to crash.¹⁴⁹ People tend to be guilty of the "sin of extrapolation" – that is, "they look

¹⁴⁵ COOPER, *supra* note 8, at 164. Cooper proposes, only half in jest, that if central banks cannot spot asset price bubbles of the magnitude recently experienced, they should perhaps follow Milton Friedman's advice and consider shutting up shop altogether. *See id.*

¹⁴⁶ LUDWIG VON MISES, HUMAN ACTION: A TREATISE ON ECONOMICS Ch. XX.8 (1949), available at <http://mises.org/humanaction/chap20sec8.asp>.

¹⁴⁷ *See supra* Part II.B.

¹⁴⁸ COOPER, *supra* note 8, at ix.

¹⁴⁹ *See* ROGOFF & REINHART, *supra* note 66, at 145.

back at the performance of assets and extrapolate an even rosier future” – and bankers are no exception.¹⁵⁰ Banks play a role not just in the perpetuation of the credit-asset cycle, but also in providing the catalyst to send the system downhill. Because of their over-reliance on debt, fractional reserve banking and other methods of short term financing, financial institutions are more susceptible to crises of confidence than firms in other industries.¹⁵¹ One study of banking crises has found these crises to be most common at the peak of a boom in house prices,¹⁵² and there is empirical evidence that banking crises significantly amplify recessions.¹⁵³ Therefore, improved regulation at financial institutions might therefore reduce the likelihood that these will pose a systemic risk.

Minsky stressed that any regulation and supervision in banking would be a never-ending struggle, given that what might be “an appropriate structure at one time is not appropriate at another.”¹⁵⁴ If we take Minsky’s hypothesis to its logical conclusion this is surely the correct analysis. Counter-cyclical policies could be an effective safeguard against the excessive build up of debt, while preventing institutions from becoming too fragile to pose systemic risks. A key argument against higher capital requirements is that they reduce the amount of capital available for lending, and can thus dent growth and economic expansion.¹⁵⁵ Minsky’s insights, however, can be applied to suggest that capital restraints might be strengthened as the boom progresses, and the aim is to vary capital ratios according to credit growth and market circumstances. If higher capital standards are imposed gradually as the cycle progresses, it will make banks more resilient, and thus would reduce speculative lending as fewer funds are available for borrowing.

This approach will result in accumulating capital during upswings that are used as buffers during downturns. Additionally, the variable – credit – used to determine the capital ratio, is flexible, and which ratio to maintain would depend on each bank’s circumstances, while still nevertheless restraining aggregate credit growth in a given economy; perhaps an increase in the value of a bank’s assets can provide a mechanism through which to determine appropriate levels. This proposal mirrors Spain’s system of “dynamic provisioning,” to which there are several counter-arguments.

First, the period through which banks would be required to hold higher levels of capital would presumably extend to economic downturns, thus reducing the amount banks can lend precisely when credit is already in short supply.¹⁵⁶ Yet the scarcity of credit is a common feature that follows all banking crises as borrowers

¹⁵⁰ *Buttonwood: The very long view*, ECONOMIST, Feb. 25, 2010, available at <http://www.economist.com/node/15580336>.

¹⁵¹ See CARNELL, *supra* note 64, at 45.

¹⁵² ROGOFF & REINHART, *supra* note 66, at 159.

¹⁵³ *Id.* at 147.

¹⁵⁴ Ronnie J. Phillips, *Rethinking Bank Examinations: A Minsky Approach*, 13 J. ECON. ISSUES 509, 512 (1997).

¹⁵⁵ Vikram Pandit, *We Must Rethink Basel, or Growth Will Suffer*, FIN. TIMES, Nov. 10, 2010, available at <http://www.ft.com/cms/s/0/6a490e8a-cd03-11df-991200144feab49a.html#axzz1JeMARS Cm>.

¹⁵⁶ *Id.*

default and force a pullback in other bank lending.¹⁵⁷ Banks with low levels of capital may also resist the temptation to make loans out of fear that capital cushions are insufficient,¹⁵⁸ and even relaxed capital requirements or improved liquidity may not encourage banks to lend more. To quote, from an article by Andrew Ross Sorkin, an anonymous senior official at a big bank which had received money from the government: “[i]t doesn’t matter how much [former Treasury Secretary] Hank Paulson gives us. . . no one is going to lend a nickel until the economy turns.’ The official then added: “Who are we going to lend money to?” before repeating an old saw about banking: ‘Only people who don’t need it.’”¹⁵⁹

Second, even though Spain’s banks came out of the crisis in relatively better shape than their Northern European counterparts, they were still heavily exposed to the real estate sector, and Spain has been grappling with Europe’s worst unemployment rates over the last few years.¹⁶⁰ Note, however, that Spain’s unemployment rate never dipped below 8% even before the boom, and its current high rate is as much a result of its competitiveness and its restrictive labor regulations.¹⁶¹ Even if Spain did not escape unscathed, its rules nevertheless helped its banks avoid some of the catastrophes that countries such as Britain and the United States have suffered by preparing for the downside of the cycle.¹⁶²

There are two systems which can be used to implement dynamic provisioning: a formula driven system, which would depend on using a predetermined metric, and a discretionary system, that would require the bank regulator to judge what levels of capital would be feasible given the stage of the macroeconomic cycle.¹⁶³ The success of the discretionary system would depend on the quality and the independence of the judgments made.¹⁶⁴ In addition, the system would hinge – as with all rules – on how regulators, who don’t necessarily have the proper incentives, enforce it. In the United States, the problem is one of interagency competition, with regulators competing for territory at the expense of prudent standards.¹⁶⁵ In Europe, where a shift from national regulators to a European Union wide regulatory body is occurring, the danger is that risk is in fact exacerbated since the authorities in charge will not be the ones to pick up the bill when another meltdown occurs.¹⁶⁶ All regulators are susceptible to lobbying. For

¹⁵⁷ ROGOFF & REINHART, *supra* note 66, at 145.

¹⁵⁸ Mara de Hovanesian & Christopher Palmeri, *Why Banks Still Won’t Lend*, NEWSWEEK, Jan. 7, 2009.

¹⁵⁹ Andrew Ross Sorkin, *One Day Doesn’t Make a Trend*, N.Y. TIMES, Oct. 20, 2008, available at <http://www.nytimes.com/2008/10/21/business/21sorkin.html>.

¹⁶⁰ *Unemployment in Spain: Not working*, ECONOMIST, May 7, 2009, available at http://www.economist.com/node/13611650?story_id=E1_TPGTTGVD.

¹⁶¹ *Id.*

¹⁶² *Spanish Steps*, ECONOMIST, May 15, 2008, available at <http://www.economist.com/node/13278750>.

¹⁶³ Santiago Fernandez de Lis & Alicia Garcia-Herrero, *Dynamic Provisioning: Some Lessons From Existing Experiences* (Asian Dev. Bank Inst., Working Paper No. 218, 2010).

¹⁶⁴ *Id.*

¹⁶⁵ See Richard S. Carnell, *Regulatory Deficiencies*, http://www.levyinstitute.org/pubs/conf_april_10/19th_Minsky_PPTs/19th_Minsky_Carnell.pdf.

¹⁶⁶ *Europe’s new regulators: Continental shift*, ECONOMIST, Nov. 4, 2010, available at <http://www>.

these reasons, a formula based system would be more effective.

Whether the requirements will help avert another meltdown might ultimately come down to how much capital they will require banks to set aside. Spain's provisions did not stop the rise in house prices, and when a boom is large enough, the impact of additional provisions can be marginal.¹⁶⁷ For instance, core capital of around ten percent of risk-adjusted assets would have been sufficient to soak up the losses at most banks during 2007 through 2009.¹⁶⁸ However, no feasible ratios will be enough to avoid distress at banks whose losses were several times those of the average bank,¹⁶⁹ and firms such as UBS and Citigroup had write-offs that greatly exceeded the buffer built up by Spain's larger banks.¹⁷⁰ Furthermore, critics contend that dynamic provisioning, on its own, did not maintain the Spanish banks' health, and the way off-balance sheet entities were treated played a critical part. As a result of regulatory demands that firms set aside comparable amounts of capital against assets in off-balance sheet vehicles as against assets on the balance sheet, Spanish banks altogether avoided setting up special investment vehicles.¹⁷¹ However, this result suggests that the proposals could be workable if carried out in conjunction with other structural reforms, including a tighter monetary policy, which might have prevented some of the excesses in Spain's housing market.

CONCLUDING REMARKS

This paper has argued that the financial system, rather than being self-corrective, is in fact self-enforcing. The financial system, if left to its own devices, is inherently prone to busts, rather than tending towards a stable equilibrium which would see continued economic growth and prosperity. Or, to paraphrase Minsky, stability leads to instability. Regulators would do well to bear this theory in mind, as individuals cannot be relied upon to hold back from perpetuating the cycle. The key, therefore, would be to adopt progressively stricter measures that restrain the creation of debt and the level of indebtedness as the system edges closer towards instability.

The main attraction of this counter-cyclical approach, as applied to central banks as well as financial institutions, is that it manages to balance two competing and vital concerns. One the one hand, an over-zealous, one-size-fits-all approach to regulation of the economy may, at best, produce few benefits and, at worst, be counterproductive by stifling lending, innovation, and the efficient allocation of resources which have brought unprecedented prosperity to many parts of the world in recent decades.

On the other hand, if regulators fail to implement the appropriate reforms, we are likely to see a repeat of the last few years—surely, a no less undesirable

economist.com/node/17420116.

¹⁶⁷ Fernandez de Lis & Garcia-Herrero, *supra* note 163.

¹⁶⁸ *Killing them softly*, *ECONOMIST*, Aug. 26, 2010, available at <http://www.economist.com/node/16889009>.

¹⁶⁹ *Id.*

¹⁷⁰ *Inadequate*, *ECONOMIST*, Mar. 12, 2009, available at <http://www.economist.com/node/11325484>.

¹⁷¹ *Spanish Steps*, *supra* note 162.

alternative. A regulatory approach that reflects Minsky's ideas might thus allow the economy to go ahead, only pulling the reins as the economy overheats—or, in the now famous words of the longest-serving Federal Reserve chairman, William McChesney Martin Jr., “to take away the punch bowl just as the party gets going.”¹⁷² The suggested proposals reflect this idea.

I have purposefully refrained from focusing on suggestions that would target some of the housing-market related deficiencies that contributed to the recent crisis, although a few initiatives might certainly go some way toward preventing another housing bubble. More prudent supervision might certainly be in order, and lenders could be required to demand higher down payments on houses as the economic cycle progresses, which could be assessed through establishing whether houses themselves are overvalued as determined by rents. This measure would reduce speculative borrowing, and reduce risk to borrowers through lower debt repayments. In addition, more prudent supervision may require banks to progressively accept collateral of a higher value, or restrict the type of collateral that they can accept at the more advanced stages of the cycle.

However, we should arguably look beyond the details of the recent housing bubble and instead improve the system that helped facilitate it.¹⁷³ Churchill once quipped, “It is a joke in Britain to say that the War Office is always preparing for the last war.”¹⁷⁴ Likewise, regulators and policymakers risk falling into disrepute if they continue to adhere to an idea of market efficiency that is replete with flaws while focusing on yesterday's problems. The attraction of the views expounded by Minsky reflects the notion that the narrative of the recent financial crisis followed his theories, and in the years leading up to the crisis, the housing market saw the unraveling of a *Ponzi* type scheme.¹⁷⁵ The press has coined the phrase a “Minsky Moment” to describe the beginnings of the crisis, but Minsky's work was not concerned with moments, but rather the long-term view of system's structure.¹⁷⁶ The strength of his hypothesis is that it provides a framework through which to analyze not just this crisis, but others as well.

Defaulting homeowners and bank runs were important sources of fragility,¹⁷⁷ as repeated rises in interest rates were enough to push many into default, with consequences that are now well known. However, the frailty of borrowers extended beyond individuals and firms to economies as a whole: Iceland's and Ireland's debt-to-GDP ratios reached an astonishing 1,200% and 700%, respectively, before tumbling into crises¹⁷⁸ from which they have yet to recover. Empirical work has shown that the risk of a crisis is greatly elevated when a housing boom is accompanied by a sharp increase in debt,¹⁷⁹ and figures show that

¹⁷² BARBERA, *supra* note 68, at 74.

¹⁷³ COOPER, *supra* note 8, at 164.

¹⁷⁴ BARBERA, *supra* note 68, at 15.

¹⁷⁵ *Ponzificating*, *supra* note 98.

¹⁷⁶ See Jan Kregel, *Is This the Minsky Moment for Reform of Financial Regulation?* 145 (Levy Econ. Inst. of Bard Coll., Working Paper No. 586, 2010), available at http://www.levyinstitute.org/pubs/wp_586.pdf.

¹⁷⁷ See ROGOFF & REINHART, *supra* note 66, at 145.

¹⁷⁸ *Repent at Leisure*, *supra* note 65.

¹⁷⁹ ROGOFF & REINHART, *supra* note 66, at 212.

countries with large current account deficits, such as Iceland, Ireland, Spain, the United Kingdom, and the United States, suffered some of the more severe banking crises at the end of the 2000s.¹⁸⁰ If these anecdotes tell us anything, it is that the accumulation of debt can reach unsustainable levels. Debt is a crucial driver of the processes that Minsky described, and, while the extension of credit can be the source of investment and wealth creation, it is also the source of financial instability.¹⁸¹

Minsky himself was modest about his own policy prescriptions, declaring that he felt more comfortable “with [his] diagnosis of what ails our economy . . . than with the remedies” he proposed.¹⁸² Similarly, the suggestions here do not purport to act as a panacea and are not free from criticism. Apart from some of the specific limitations mentioned above, a number of general limitations should also be borne in mind. First and foremost, a vital component of the inherent instability of the system is that supposedly rational humans make it so; if this theory is correct, then surely the humans in charge of the regulators are no less prone to making the same mistakes. Placing too much faith in regulation may miss the point that many financial innovations occurred in response to incentives created by the same regulations.¹⁸³ Off-balance sheet vehicles and derivatives allowed banks to hold less capital, whereas credit default swaps allowed banks to convert risky assets that require higher levels of capital into assets that do not.¹⁸⁴ The danger is that banks in the future will merely circumvent the rules through more innovation, employing even more dangerous methods of hiding risk. While regulators “with spine are still better than invertebrates,”¹⁸⁵ any solution that necessarily relies on regulatory bodies must recognize these limits. These limits, however, should not be construed as indicative of the inevitable failure of improved regulations, but only as indicators of the existence of certain obstacles. The design of today’s financial and monetary architecture is the best in history,¹⁸⁶ and the tools at our disposal should nonetheless be sufficient to mitigate the effects of the system’s inherent instability, enhancing our prosperity in the long run.

¹⁸⁰ *Id.* at 158.

¹⁸¹ *See supra* Part I.E.

¹⁸² STABILIZING AN UNSTABLE ECONOMY, *supra* note 40.

¹⁸³ *See a survey of the world economy: Taming the beast*, ECONOMIST, Oct. 9, 2008, available at http://www.economist.com/node/12373748?story_id=E1_TNPSQRS.

¹⁸⁴ *See id.*

¹⁸⁵ *Financial deregulators: Finance’s other bosses*, ECONOMIST, Sept. 30, 2010, available at <http://www.economist.com/node/17147796>.

¹⁸⁶ COOPER, *supra* note 8, at 171.