

GREENSPAN'S LAMENT: INCENTIVE MECHANISMS AND THE CONTAMINATION OF THE SAFETY AND SOUNDNESS OF DEPOSITORY INSTITUTIONS FROM RISKY DERIVATIVE SECURITIES

DANIEL J. BOYLE*

INTRODUCTION

On October 23, 2008, economist and former Federal Reserve Chief Alan Greenspan lamented, “[t]hose of us who have looked to the self-interest of lending institutions to protect shareholders’ equity, myself included, are in a state of shocked disbelief,” noting further that, “[t]his modern risk-management paradigm held sway for decades,” and “[t]he whole intellectual edifice, however, collapsed in the summer of last year.”¹ Greenspan’s lament was not well received,² least of all by those of us who behaved in our borrowing practices but found ourselves underwater on our mortgages, found our retirement account values dwindling, and even found our money market funds frozen. Indeed, the well had been poisoned by the errant behavior of others.

Greenspan’s worldview was premised on centuries of research and empirical data on the benefits of an economic and political system that emphasized freedom of contracting and privatization of ownership.³ To doubt this collective human wisdom

* J.D. 2008, McGeorge School of Law; M.A. 1997, B.S. 1977, University of Delaware. Mr. Boyle is the founder and Managing Director of Heuristic Strategies, LLC. He may be reached at danielboyle@heuristicstrategies.com.

¹ Edmond L. Andrews, *Greenspan Concedes Error on Regulations*, THE NEW YORK TIMES, Oct. 24, 2008, at B1, available at http://www.nytimes.com/2008/10/24/business/economy/24panel.html?_r=1&hp&oref=slogin.

² *Id.* (“Critics, including many economists, now blame former Fed chairman for the financial crisis that is tipping the economy into a potentially deep recession . . . that he failed to rein in the explosive growth of risky and often fraudulent mortgage lending. ‘You had the authority to prevent irresponsible lending practices that led to the subprime mortgage crisis’ [inquiry by Representative Henry A. Waxman] . . . ‘Do you feel that your ideology pushed you to make decisions that you wished you had not made?’ Mr. Greenspan conceded: ‘Yes, I’ve found a flaw’.”)

³ See Avinash Dixit, *Governance Institutions and Economic Activity*, 99 AM. ECON. REV. 5, (MARCH 2009) (explaining that market economies are premised on governance for the security of property rights, the enforcement of contracts, and for collective action); see also JOHN KENNETH GALBRAITH, *ECONOMICS IN PERSPECTIVE: A CRITICAL HISTORY* (Houghton Mifflin 1987) (tracing these concepts through history).

would be to deny the benefit of global growth from market economics. Yet in retrospect and viewed from a different perspective, the combination of imbalances in borrowing and investment in the American economy, high levels of public and private leverage, the housing boom, and the extensive cross-collateralization and speculative trading through structured financial derivatives appeared bound to collapse the edifice.

This article attempts to unravel this paradox and to better diagnose and correct the mistakes that led to the current crisis by looking deeper into the incentives, policies, and ideologies upon which Greenspan's world view rested. This exploration does not attempt to provide short term suggestions to mend the economy or even purport to know the precise formulation of regulatory regime corrections. This article uses the economic and legal theories, governmental policies, and rules of the game to illustrate how those inform and guide banking and securities regulations, which in turn inform and guide the behavior of market participants.

The different policy objectives and regulatory mechanisms of banking regulations—to preserve the safety and soundness of the system through oversight—and those of securities regulations—to preserve confidence in public securities through a regime of disclosure—operate with different dynamic responses and can be at odds during times of crisis and panic. The reality of complex regulations and financial products, real time trading, the involvement of speculators, and the externalization of risk through derivatives all challenge the underlying assumptions of competitive markets. In response, optimal regulatory regimes need to have the flexibility to respond dynamically, and this can include prophylactic components until longer term solutions are devised.

Greenspan's choice of words reminds us that the architects of modern economic theory have built an edifice of rules, regulations, and policy recommendations upon assumptions and premises about the behavior of markets, individual participants, and groups. The result is a set of policies and regulations that form the "rules of the game" and establish the incentives for people and groups to behave, react, and respond.⁴

For all the theoretical and architectural genius behind this edifice, we are now experiencing the disastrous and unintended consequences wrought when the assumptions underlying the edifice cannot sustain dynamic external pressures. How did the regulatory mechanisms in banking, securities, and financial services provide

⁴ See *infra* Parts I, II.B-D, III.A (discussing several landmark concepts in the evolution of these ideas).

incentives for persons and institutions across the economy to poison the well? Is the ideology of privatization and deregulation to blame for building up the imbalances that led to the current meltdown, or is it simply a matter of a few incremental tweaks that are needed to realign incentives? The question is not a trivial one because we must take immediate measures to avoid further economic collapse while finding the correct structural adjustments to build a solid edifice for the future. Making the structural and regulatory adjustments is among the main challenges of our times, requiring a clear understanding of how the current structures behave dynamically.

With that goal in mind, this article retraces several key premises in economic theory and the process of formation, implementation, and adjudication of the statutes and regulations that form the legal framework to implement those theories.⁵ The article begins by framing the problem in both an historical context and by indicating the regulatory challenges. Next, the article reviews the economic theories that influenced the regulatory regimes and rules of the game that encouraged and permitted the situation to arise. This includes a description of the dynamic nature of policy formation and social choice in the context of our democratic institutions for formation, implementation and adjudication of “the law.” By contrasting the Glass-Steagall Act of 1933 with the Gramm-Leach-Bliley Act of 1999,⁶ the article illustrates the implications of these theories and dynamic realities. This contrast exposes the challenge in solving for safety and soundness with tools designed for disclosure that are premised on allowing risk takers to make informed decisions that might lead to failure or loss. The article concludes with some structural implications for revising the regulatory regimes affecting our banking and financial system.

I. FRAMING THE PROBLEM

The historical context for the ongoing banking and financial crisis lends insight into the theoretical discussion and comparison of regulatory regimes. As of mid November 2008 and “[s]ince late 2006, 303 major U.S. lending operations have ‘imploded.’”⁷ In perspective, in the ninety-three-year period from 1867 to 1960, there were six periods of severe economic downturn that led to widespread distress

⁵ This article does not attempt to provide a survey of the vast literature on the subject, nor does it purport to reflect a comprehensive view of the field. The aim is to illustrate the dynamic interdependencies connecting the influence that seminal economic theories have on our institutions of law and social choice and how these might explain the behavior of individuals and institutions in the context of the current crisis.

⁶ See *infra* notes 19, 93-95 and accompanying text (discussing these acts).

⁷ The Mortgage Lender Implode-O-Meter, *Tracking the Housing Finance Breakdown: A Saga of Corruption, Hypocrisy, and Government Complicity*, <http://ml-implode.com> (last visited Nov. 13, 2008).

and unemployment; four of these included major banking crises.⁸ In particular, from 1929 to 1933, one third of the nation's banks disappeared, failed, or merged, resulting in a one-week cessation of all banking activities.⁹ In response, regulators in 1933 suspended payments in an attempt to stabilize the downward spiral, but the system response was less than favorable.¹⁰ As described by Friedman and Schwartz:

Deposits of every kind in banks became unavailable to depositors. Suspension occurred after, rather than before, liquidity pressures had produced a wave of bank failures without precedent. And far from preventing further bank failures, it brought additional bank failures in its train. More than 5,000 banks still in operation when the holiday was declared did not reopen their doors when it ended, and of these, over 2,000 never did thereafter. . . . The "cure" came close to being worse than the disease.

One would be hard put to it indeed to find a more dramatic example of how far the result of legislation can deviate from intention than this contrast between the earlier restrictions of payments and the banking holiday under the Federal Reserve System, set up largely to prevent their repetition.¹¹

The disconnect between regulatory intention and the systemic dynamic response stand as a lesson to regulators. Today's crisis, while not entirely unique, has its own set of driving forces. Attempting to avoid a repeat of the 1933 banking panic, Congress implemented numerous regulatory authorities, institutional measures, and mechanisms.¹² Over time, changes in the underlying markets, financial products, and behavior of participants have diminished, leading the International Monetary Fund to conclude recently that "an adverse feedback loop between the banking system and the global economy appears to be unfolding, as weakening economic conditions reinforce the credit deterioration and stress in mortgage, credit, and funding markets, with risks also rising in certain emerging

⁸ MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, A MONETARY HISTORY OF THE UNITED STATES, 1857-1960 677 (Princeton Univ. Press 1971) (1963).

⁹ *Id.* at 678.

¹⁰ *See id.* at 330.

¹¹ *Id.*

¹² Among those authorities and measures, the Glass Steagall Act disallowed common ownership between investment and commercial banks. *See infra* notes 93-94 and accompanying text.

markets that had shown considerable resilience until recently.”¹³ One key change has been the relative importance of nonbank financial institutions to the function of the global economy.

Several conditions and factors converged to precipitate the current financial crisis in the United States, but mortgage lending practices are like the straw that broke the camel's back. This straw was loaded on several macroeconomic imbalances of concern for decades: negative savings, both public and private, and decades of trade deficits. These imbalances persisted within a world of increasing integration of financial services and banking, a growing role for nonbank financial institutions, a period of low bank failures, and a proliferation of structured credit instruments.¹⁴ With foresight in 2006, the President and CEO of the New York Federal Reserve said:

[T]he greater relative importance of nonbank financial institutions also means that distress among these institutions has the potential to have a substantial impact on market behavior and liquidity. Understanding these relationships is an important part of the risk management challenge for banks, even in a world where derivatives have helped spread risk more broadly.

The innovations that have taken place in the credit derivatives market were driven to a significant degree by the losses experienced in past crises, but most of the growth in this market has occurred in relatively favorable overall economic and financial conditions

....

Against the backdrop of an apparently healthy financial system, market participants report a substantial rise in transactions leverage, erosion in the use of loan covenants, more favorable financing terms for hedge fund counterparties, and especially a

¹³INTERNATIONAL MONETARY FUND, GLOBAL FINANCIAL STABILITY REPORT: FINANCIAL STRESS AND DELEVERAGING, MACROFINANCIAL IMPLICATIONS AND POLICY (Oct. 2008) *available at* <http://www.imf.org/external/pubs/ft/gfsr/2008/02/pdf/text.pdf> (assessing the key issues, fault lines and systemic vulnerabilities in global financial markets).

¹⁴ Timothy F. Geithner, President and Chief Executive Officer of the Federal Reserve Bank of New York and current Secretary of the Treasury, Remarks at the N.Y. Univ. Stern School of Bus.: Implications of Growth in Credit Derivatives for Financial Stability, (May 16, 2006) *available at* <http://www.newyorkfed.org/newsevents/speeches/2006/gei060516.html>.

pressure to reduce initial margin against OTC derivatives exposure to hedge funds. But the concern is that this sustained period of very low credit losses and low volatility works to hold down measures of the underlying economic risk in these exposures. This combined with the range of factors I just discussed, raises the odds that market participants will be faced with negative surprises in the event of a more adverse macroeconomic environment. And this could have more negative implications for market dynamics and liquidity as market participants react to those losses and attempt to reduce their exposure to future losses.

....

. . . [W]e believe that the major dealers, as well as the large commercial and investment banks, should take a cold, hard look at financing conditions and margin practice, particularly with respect to hedge fund counterparties and in OTC derivatives . . . to try to better understand the potential scale of losses the firm may face, and to carefully examine how well risk exposures reflect the overall risk appetite of the firm, and the size of the capital and liquidity cushion maintained in relation to those exposures. . . .

....

. . . We have been through a period of relatively favorable financial conditions, and the prospect for future stability will depend in part on the degree of care and conservatism market participants bring today to judgments about opportunity and risk management.¹⁵

Greenspan's lament is that "market participants" did not heed Geithner's exhortation. What's a regulator to do? One might start by recognizing the magnitude of the problem and taking a quantitative look at risk exposure:

Notional amounts of interest rate derivatives outstanding grew 22 percent to \$464.7 trillion in the first half of 2008. For the year as a whole, interest rate derivatives notionals rose 34 percent. The notional amount of outstanding of credit default swaps (CDS)

¹⁵ *Id.*

dropped 12 percent to \$54.6 trillion in the first half of 2008. CDS notional growth was 20 percent for the year as a whole.¹⁶

The notional value of derivatives held by U.S. commercial banks increased \$1.8 trillion in the second quarter, or 1 percent, to \$182.1 trillion. . . . Changes in notional volumes are generally reasonable reflections of business activity, and therefore can provide insight into revenue and operational issues. However, the notional amount of derivatives contracts does not provide a useful measure of either market or credit risks.¹⁷

Even though notional volumes are not themselves a measure of market or credit risk, in context, the data and remarks are ominous. As for the data, in comparison to the notional value of \$464.7 trillion, the total Gross Domestic Product (GDP) for the entire world in 2007 was \$54.3 trillion, and the market capitalization of all the world's stock markets combined was \$64.6 trillion.¹⁸ More recently, on September 23, 2008, the Chairman of the U.S. Securities and Exchange Commission commented on the regulatory relationship to these figures:

The failure of the Gramm-Leach-Bliley Act to give regulatory authority over the investment bank holding companies to any agency of government was, and based on the experience of the last several months, a costly mistake. There is another similar regulatory hole that must be immediately addressed to avoid similar consequences. The \$58 trillion notional market in credit default swaps [CDS]—double the amount outstanding in 2006—is regulated by no one. Neither the SEC nor any regulator has authority over the CDS market, even to require minimal disclosure to the market. This is an area that our Enforcement Division is focused on using our antifraud authority, even though swaps are not defined as securities, because of concerns that CDS offer outsized incentives to market participants to see an issuer referenced in a CDS default or experience another credit event.

¹⁶ International Swaps and Derivatives Association, Inc., Summary of Recent Survey Results, <http://www.isda.org/statistics/recent.html> (last visited on Nov. 2, 2008).

¹⁷ COMPTROLLER OF THE CURRENCY, OCC'S QUARTERLY REPORT ON BANK TRADING AND DERIVATIVES ACTIVITIES, SECOND QUARTER 2008 (2008) *available at* <http://www.occ.treas.gov/ftp/release/2008-115a.pdf> (last visited Feb. 03, 2009).

¹⁸ World Bank Development Indicators Database, *available at* <http://www.worldbank.org>.

. . . CDS buyers can ‘naked short’ the debt of companies without restriction. This potential for unfettered naked shorting and the lack of regulation in this market are cause for great concern.¹⁹

For its part, The Office of the Comptroller of the Currency (“OCC”) allowed national banks to “enter into contingent credit default swaps (“C-CDS”) and hold below-investment grade debt to hedge and manage the counterparty credit risks and liability exposures that arise from its derivative activities.”²⁰ Under its “safety and soundness” review, the OCC noted that the “proposed risk management activities raise unique reputation risk issues.”²¹ The views of these three regulatory bodies—the Federal Reserve, SEC, and OCC—frame the analysis which follows as an inquiry into the theoretical, economic, and practical regulatory foundations of the current crisis. Following the discussion of those policies and decisions which led to these regulatory “lacuna,”²² this article will illustrate the theoretical principles behind the dynamic evolution from the Glass-Steagall Act to the Gramm-Leach-Bliley Act.

II. ECONOMIC FOUNDATION

Contrasting views of the role of government regulation between the Glass Steagall Act and the Gramm-Leach-Bliley Act illustrate the tension between traditions of free market economics and the need for regulatory restraint of market forces, both of which have been a theme of modern political economy. The contours of the debate center on efficiency, ownership, social cost, and incentives. In other words, how to optimize public welfare through the institutions of society. Entrenched views on these matters have, in turn, become the contours of political ideology, the proper role of government, and the design of regulatory incentives. The behavior of market participants in balancing their gains with their risk exposure and potential losses is the paradigm of “self-interest” which appeared to go off the

¹⁹ Christopher Cox, Chairman of U.S. Sec. and Exch. Comm’n, Testimony Before the Comm. on Banking, Housing, and Urban Affairs, U.S. Senate, Concerning Turmoil in U.S. Credit Markets (Sept. 23, 2008), *available at* <http://www.sec.gov/news/testimony/2008/ts092308cc.htm>.

²⁰O.C.C. Interpretive Letter #1051 (March 2006) *available at* <http://www.occ.gov/interp/mar06/int1051.pdf>.

²¹ *Id.*

²² The press and others have referred to the regulatory gaps as “lacuna,” clearly a polite euphemism for loopholes. In light of the opaque consequences of these loopholes, they seem more like financial black holes.

rails, causing Greenspan's "state of shocked disbelief."²³ It is here that we need to retrace the "whole intellectual edifice."²⁴

A. Efficiency

In theory, inefficiency wastes resources, benefiting no one.²⁵ The foundation principle of exchange efficiency in market economies is known as "Pareto Efficient Allocation" because it is "[a]n allocation of resources in which no mutually beneficial trading opportunities are unexploited."²⁶ That is, an allocation in which no person can be made better off without someone else being made worse off."²⁷ Under this principle, "individuals decide for themselves whether particular trades improve utility."²⁸ Thus, the first brick in the economic foundation of a market economy is freedom of contract, because it allows individuals to optimize their utility and, in the aggregate, optimizes society's welfare.²⁹

The next row of bricks in the foundation expands on the premise that when persons exchange freely, using the competitive equilibrium price as the medium of

²³ See *supra* note 1 and accompanying text.

²⁴ See *supra* note 1 and accompanying text.

²⁵ One economics textbook for undergraduates compares efficiency in economics to how the term is used in mechanical engineering by comparing outputs to inputs. For example, the text analyzes the quantity of usable power obtained from a given quantity of fuel input. CAMPBELL R. MCCONNELL, *ECONOMICS* 25 (6th ed. 1975); see also CARLTON & PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 102-105 (2d ed. 1994) ("The competitive equilibrium of price and quantity has two desirable efficiency properties . . . production is efficient in the sense that all products are produced at the minimum possible cost . . . there is no possible rearrangement of resources (such as labor, machines and raw materials) among firms that can increase the output of one product without also reducing the output of at least one other product. . . . The amount of each product produced and consumed is efficient. . . . No rearrangement of goods among consumers can benefit one consumer without harming at least one other. . . . The cost to society of a market not operating efficiently is called deadweight loss.").

²⁶ WALTER NICHOLSON, *MICROECONOMIC THEORY: BASIC PRINCIPLES AND EXTENSIONS* 235 (6th ed. 1995).

²⁷ *Id.*

²⁸ *Id.*

²⁹ See *id.* at 106, 546-547 (tracing Adam Smith's "invisible hand" through Pareto, Edgeworth, and others to explain the efficiency optimizing role of free exchange between parties and the use of price to ensure optimal allocation of resources across society).

exchange, they will optimize their utility and participate in uncoerced bargaining.³⁰ In the aggregate, this leads to the optimal allocation of resources for society without a formal market mechanism.³¹ Libertarians and proponents of laissez-faire theories of economics might stop here, but the mortar that holds this row together is a set of assumptions about when, if ever, we have “competitive equilibrium prices.”

Key among the assumptions underpinning the notion of competitive equilibrium that need to be understood before developing policy recommendations and institutional incentive mechanisms include the following: that actors are rational, that they have complete information, and that the market is not distorted by imperfect competition because agents assert market power.³² Another essential assumption in this paradigm is that the market interactions of participants do not include externalities whereby prices no longer capture benefits and costs because such externalities interfere with the ability of the price mechanism to optimally allocate resources.³³ Even this partial set of caveats should cause us to pause and ask if the “competitive equilibrium price” exists at all in practice. Another point worth mentioning is that the theoretical foundation for this efficient allocation mechanism has no premise in equity; the theory does not address anything concerning the initial allocations to the parties.³⁴

³⁰ *Id.* at 229-251 (describing exchange benefits from voluntary trade, deriving the Edgeworth Box diagram of Pareto efficiency, and using those to derive contract curves whereby market equilibrium prices show traders how to obtain efficient allocations of resources).

³¹ *Id.*

³² *See* CARLTON & PERLOFF, *supra* note 25 at 86-87 (“Perfect competition provides a benchmark against which the behavior of other markets is judged. . . . We define perfect competition as a market outcome in which all firms produce homogeneous, perfectly divisible output and face no barriers to entry or exit; are price takers; and there are no externalities.”); *see also* NICHOLSON *supra* note 26, at 563 (“Although the number of departures from perfect competition that we might discuss is practically infinite, they can be classed into three general groupings that include the most interesting cases: (1) imperfect competition, (2) externalities, (3) public goods. . . ‘Imperfect competition’ includes all those situations in which economic agents exert some market power in determining price.”).

³³ *See id.* at 546, 559-60, 565-68.

³⁴ *See* JOHN RAWLS, A THEORY OF JUSTICE 136-42 (The Belknap Press of Harvard University Press 1977) (1971) (giving a discussion of equity and initial allocations and positing a thought experiment based on a contract that we might have wanted to strike with each other and with the institutions of society before we were born into our initial endowments. Rawls calls this the “original position” behind the “veil of ignorance.” He goes on to derive two fundamental fairness rules for organizing our “contract” that might be paraphrased as “to do unto others as you would have others do unto you,” and to organize institutions to create the opportunity to receive as much benefit as possible without taking away from everyone else).

Of course, the edifice still has many stories, but given this partial—yet substantive—list of imperfections, like Greenspan's own introspective comment, one might begin to ask how the craze over deregulation and privatization ever gained so much capital. Indeed, the explanatory retort to Mr. Greenspan could proceed along numerous lines, but because this article is dedicated to exploring the intersection of banking and securities regulations with respect to the recent financial crisis, the analysis emphasizes the role of externalities and information and how they affect participants. This leads us to a string of Nobel Prize winning economists and to their thoughtful explorations of how these assumptions affect outcomes and the behavior of participants.

B. Externalities

In economic terms, “[a]n externality occurs whenever the activities of one economic agent affect the activities of another agent in ways that are not reflected in market transactions.”³⁵ Coase explained that when markets face externalities, governments are in a position to participate and thereby change the delimitation of rights, but they do so with transactional costs.³⁶ Coase cautioned:

The problem which we face in dealing with actions which have harmful effects is not simply one of restraining those responsible for them. What has to be decided is whether the gain from preventing the harm is greater than the loss which would be suffered elsewhere as a result of stopping the action which produces the harm. . . .³⁷

....

. . . [T]he problem is to devise practical arrangements which will correct defects in one part of the system without causing more serious harm in other parts.³⁸

....

A second feature of the usual treatment of the problems discussed in this article is that analysis proceeds in terms of a

³⁵ See NICHOLSON, *supra* note 26, at 802.

³⁶ R. H. Coase, *The Problem of Social Cost*, J.L. & ECON., Oct. 1960, at 1, 18.

³⁷ *Id.* at 27.

³⁸ *Id.* at 34.

comparison between a state of laissez-faire and some kind of ideal world. . . . A better approach would seem to be to start our analysis with a situation approximating that which actually exists, to examine the effects of a proposed policy change and to attempt to decide whether the new situation would be, in total, better or worse than the original one. In this way, conclusions for policy would have some relevance to the actual situation.³⁹

. . . .

It would be clearly desirable if the only actions performed were those in which what was gained was worth more than what was lost. But in choosing between social arrangements within the context of which individual decisions are made, we have to bear in mind that a change in the existing system which will lead to an improvement in some decisions may well lead to a worsening of others. Furthermore we have to take into account the costs involved in operating the various social arrangements (whether it be the working of a market or of a governmental department), as well as the costs involved in moving to a new system. In devising and choosing between social arrangements we should have regard for the total effect. This, above all, is the change in approach I am advocating.⁴⁰

Continuing with the discussion of externalities and resting on the firm foundation laid by Coase, Demsetz elaborated on the connection between laws granting property rights, which express the “consent of fellowmen to allow him to act in particular ways,” their specification of how persons may be harmed or benefited, and who must pay to modify the actions of others.⁴¹ After recognizing that society grants property rights through laws, customs, and regulations, Demsetz explained:

A primary function of property rights is that of guiding incentives to achieve a greater internalization of externalities. Every cost and benefit associated with social interdependencies is a potential externality. One condition is necessary to make costs and benefits externalities. The cost of a transaction in the rights between

³⁹ *Id.* at 43.

⁴⁰ *Id.* at 44.

⁴¹ Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 347 (May 1967).

the parties (internalization) must exceed the gains from internalization. In general, transacting cost can be large relative to gains because of “natural” difficulties in trading or they can be large because of legal reasons. In a lawful society the prohibition of voluntary negotiations makes the cost of transacting infinite. Some costs and benefits are not taken into account by users of resources whenever externalities exist, but allowing transactions increases the degree to which internalization takes place.⁴²

Demsetz helps us understand that laws and regulations change the boundaries of ownership rights, creating externalities. This is a dynamic process:

If the main allocative function of property rights is the internalization of beneficial and harmful effects, then the emergence of property rights can be understood best by their association with the emergence of new . . . and harmful effects.

. . . .

. . . New techniques, new ways of doing . . . things—all invoke harmful and beneficial effects to which society has not been accustomed. It is my thesis in this part of the paper that the emergence of new property rights takes place in response to the desires of the interacting persons for adjustment to new benefit-cost possibilities.

The thesis can be restated in a slightly different fashion: property rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization. Increased internalization, in the main, results from changes in economic values, changes which stem from the development of new technology and opening of new markets, changes to which old property rights are poorly attuned. A proper interpretation of this assertion requires that account be taken of a community's preferences for private ownership. . . .

. . . These adjustments have arisen in Western societies largely as a result of gradual changes in social mores and in common

⁴² *Id.* at 348.

law precedents. At each step of this adjustment process, it is unlikely that externalities per se were consciously related to the issue being resolved. These legal and moral experiments may be hit-and-miss procedures to some extent but in a society that weights the achievement of efficiency heavily, their viability in the long run will depend on how well they modify behavior to accommodate to the externalities associated with important changes in technology or market values.⁴³

The balance of Demsetz's paper deals with the dichotomy between communal and private ownership and how internalization under private ownership avoids the externalities associated with problems such as the "tragedy of the commons," and is used to preface the body of property law in a major textbook on the subject.⁴⁴ Seen in the context of the Cold War and the contemporary debate between communism and capitalism, the fact that Demsetz's disciples focused more on the ideological implications of his paper illustrates two of Demsetz's points: that legal rules need to be seen in their social context and that the adjustments comprise a dynamic set of "hit and miss procedures."⁴⁵

As a bookmark at this point, let's apply the principles described by Coase and Demsetz to the recent history of the collateralization of mortgage backed securities and the broad based explosion of derivatives like credit default swaps. As financial services integrated and the deregulation of banking allowed the creation of commonly owned holding companies in the investment and banking fields, the regulations in response to these new techniques provided incentives to market participants like banks and hedge funds to internalize the benefits of these changes while externalizing the costs. This raised a systemic risk to the rest of society. Both the revolution in products and technology and the regulatory changes were externalities. Because the transaction costs were lower than the gains, the market actors modified their ownership boundaries to capture the benefits by internalizing revenues from these new products while externalizing their risks and costs.⁴⁶

⁴³ *Id.* at 350.

⁴⁴ JESSEE DUKEMINIER ET AL., PROPERTY 35-50 (6th ed. 2006).

⁴⁵ *See supra* note 43 and accompanying text. Demsetz's paper was published in 1967, the height of the Cold War.

⁴⁶ This is what I mean when I say they "poisoned the well." Excluding acts of fraud, and without reference to intent or scienter to misrepresent, the intentional behavior of executives, directors, and officers of financial companies seeking to optimize return to their shareholders, to the extent permitted within the boundaries of fraud, was rational. Practicing attorneys who seek to find liability on the part of officers and directors of these firms might consider borrowing a page from

Recognizing this in the context of the current financial crisis leads to significantly different policy prescriptions than those associated with problems of information asymmetry, the subject of the next section.

C. Information Symmetry

Another deviation from competitive equilibrium results from asymmetric information. In his seminal work on the relationship between quality and uncertainty, Akerloff notes that in markets where buyers use statistics to judge quality, “there is incentive for sellers to market poor quality” resulting in a difference between social and private returns and a case for either government intervention or the possibility that private institutions (i.e., insurance) will rise to capture the welfare benefits.⁴⁷ Akerloff warned that a concentration of power in private institutions may lead to “ill consequences.”⁴⁸ Exposing the interplay among dishonesty, trust, and gaming for advantage, Akerloff explained how the tension between adverse selection and moral hazard in insurance, reflecting the underlying quality uncertainty, leads to market imbalances and the rise of institutional mechanisms to establish trust and restore balance.⁴⁹

Beyond the laws and regulations protecting against outright dishonesty or fraud, insurance, public and private guarantees, brand value, ratings agencies, ratings, and disclosure rules are all institutional responses to this fundamental tension that creates a market to bridge the gap between an asset's true underlying value and the uncertainty surrounding that value. Indeed, the Efficient Capital Market Hypothesis⁵⁰ is built on the principle that market prices for financial assets, which are regularly traded, reflect all available information. This hypothesis motivates an array

environmental law and tort theories of nuisance, but such an exploration is beyond the scope of this paper.

⁴⁷ George A. Akerloff, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488, 488 (Aug. 1970).

⁴⁸ *Id.*

⁴⁹ *Id.* at 492-500.

⁵⁰ *See, e.g.*, DOUGLAS R. EMERY & JOHN D. FINNERTY, *PRINCIPLES OF FINANCE WITH CORPORATE APPLICATIONS* 26 (1st ed. 1991) (“Formally, the Principle of Capital Market Efficiency states that *Market Prices of financial assets that are traded regularly in the capital markets reflect all available information and adjust fully and quickly to ‘new’ information.*”).

of Securities and Exchange Commission rules and regulations on disclosure, and it is further embedded in the jurisprudence surrounding securities cases.⁵¹

Without challenging the validity of the hypothesis, the question we need to address is the role of information in resolving the current crisis. The effective use of securities laws and the governing of institutions and principles to correct the problems that have surfaced depend on a clear understanding of the role of disclosure, as opposed to other deficiencies such as the externalities described above and dynamic gaming described below. Practically speaking, the fact that market traders react in milliseconds to perceived and real variations in asset values exacerbates the fundamental conflict in objectives between a regulatory regime optimized around transparency and information disclosure and one that optimizes around protecting the safety and soundness of banking institutions, especially when they come under stress.

Jumping ahead to more recent literature, the voice of Joseph Stiglitz further illuminates the importance of information asymmetry in the design of our institutions:

The recognition that information is imperfect, that obtaining information can be costly, that there are important asymmetries of information, and that the extent of information asymmetries is affected by actions of firms and individuals, has had profound implications for the wisdom inherited from the past, and has provided explanations of economic and social phenomena that otherwise would be hard to understand. . . .⁵²

. . . .

. . . [E]ven small information costs can have large consequences, and many of the standard results—including the welfare theorems—do not hold even when there are small imperfections of information. While one of the standard *informal* arguments for decentralization using the price system is its

⁵¹ See, e.g., STEPHEN J. CHOI & A. C. PRITCHARD, SECURITIES REGULATION: CASES AND ANALYSIS 22 (2d ed. 2008) (“The primary goal of securities regulation in the United States is to reduce the informational disadvantage facing outside investors.”); *Id.* at 149-237 (providing a long list of related SEC regulations, explanations, and cases on “Disclosure and Accuracy”).

⁵² Joseph E. Stiglitz, *The Contributions of the Economics of Information to Twentieth Century Economics*, 115 Q.J. ECON. 1441, 1441 (Nov. 2000).

“information economy,” information economics showed that, in general, efficient decentralization through the price system, without extensive government intervention, does not result in a *constrained* Pareto optimum, that is, even taking into account the costs of information.⁵³

....

The key question is one of dynamics: how the economy adapts to new information, creates new knowledge, and how that knowledge is disseminated, absorbed and used throughout the economy.

....

Market forces also create the incentive to make noise, which induces price dispersions, or which induces managers to undertake activities that obfuscate information (thereby increasing their own rents).⁵⁴

D. Game Theory, Mechanism Design, and Implementation

Mention of “dynamics” and the “actions of firms and individuals” brings us to the vast body of research and literature conducted in parallel with the inquiry into competitive equilibrium, namely the set of mathematical tools and analytical techniques known broadly as game theory.⁵⁵ Although a thorough discussion of game theory would be well beyond the scope of this article, game theory was integral to the development of these theories because it approaches the problem from the view of the players and the rules of play, their assessment of outcomes based on their imperfect information regarding the strategies and moves of the other players, and the number of sessions of play involved.⁵⁶ Optimal outcomes in each state of play are based on a concept known as Nash equilibrium.⁵⁷ “In general, a Nash

⁵³ *Id.* at 1443-44.

⁵⁴ *Id.* at 1469-70.

⁵⁵ *See, e.g.*, JOHN VON NEUMANN & OSCAR MORGENSTERN, *THEORY OF GAMES AND ECONOMIC BEHAVIOR* 1 (Princeton Univ. Press 1944).

⁵⁶ *Id.* at 12-13.

⁵⁷ *See infra* note 58 and accompanying text.

equilibrium is a specification of strategies—one for each individual—from which no individual has the incentive to deviate unilaterally.”⁵⁸

Looking back on how game theory evolved, Maskin explained that “[t]he theory of mechanism design can be thought of as the ‘engineering’ side of economic theory,” where Nash equilibrium concepts are used to determine if a desired social goal can be achieved through the design of social mechanism or institutions.⁵⁹ He elaborated:

A *mechanism* is an institution, procedure, or game for determining outcomes. Not surprisingly, who gets to choose the mechanism—i.e., who is the mechanism designer—will once again, depend on the setting. In the case of public goods, we normally think of the government providing the goods as also choosing the method by which the levels of provision and financing are determined. Similarly, when it comes to sales of assets—where an *auction* is the typical mechanism—the asset seller often gets to call the shots about the rules, i.e., he is the one who chooses the auction format.

. . . .

Now, in the public framework, if the government knows at the outset which choice of public goods is optimal, then there is a simple—indeed, trivial—mechanism for achieving the optimum: the government has only to pass a law mandating this outcome. Similarly, if the auctioneer has prior knowledge of which bidders value the assets the most, he can simply award them directly to those bidders (with or without payment).⁶⁰

. . . .

The work inspired by Hurwicz and others has produced a broad consensus among economists that von Hayek and Mises were,

⁵⁸ Eric S. Maskin, *Mechanism Design: How to Implement Social Goals*, 98 AM. ECON. REV. 567, 571 n.4 (June 2008) (providing an overview of mechanism implementation theory when accepting the Nobel Prize in Economics in Sweden on December 8, 2007).

⁵⁹ *Id.* at 567.

⁶⁰ *Id.* at 568.

in fact, correct—the market *is* the “best” mechanism—in settings where (a) there are large numbers of buyers and sellers, so that no single agent has significant market power; and (b) there are no significant externalities, that is, an agent’s consumption, production, and information do not affect others’ production or consumption. However, mechanisms improving the market are generally possible if either assumption is violated.⁶¹

Maskin’s co-recipient of the Nobel Prize for Economics, Roger Myerson, spoke contemporaneously and traced the history of inquiry into incentive mechanisms to communicate information.⁶²

A coordination mechanism is a plan for how social decisions should depend on people’s reported information, and changing the coordination mechanism in a society effectively changes the game that its members will play. Given the information, preferences, and resources that people have in a society, different social coordination mechanisms could yield different games, each of which could have many different equilibria. But remarkably, the set of all possible equilibria of all possible games can be simply characterized by using the *revelation principle* . . . [whereby a] feasible set essentially coincides with the set of *incentive-compatible mechanisms*, which satisfy certain *incentive constraints*. These incentive constraints express the basic fact that individuals will not share private information or exert hidden efforts without appropriate incentives.⁶³

....

. . . To decide whether we have a good social institution, we want to ask how it performs in this communication and coordination role. If we do not like the performance of our current institutions, then we may want to reform them, to get an institution that implements some desired social plan, where a social plan is a

⁶¹ *Id.* at 572.

⁶² Roger B. Myerson, *Perspectives on Mechanism Design in Economic Theory*, 98 AM. ECON. REV. 586, 586-87 (June 2008) (providing an overview of mechanism design and the tension between adverse selection and moral hazard when accepting the Nobel Prize in Economics in Sweden on December 8, 2007).

⁶³ *Id.* at 587.

description of how everyone's actions should depend on everyone's information.⁶⁴

....

... A feasible social coordination plan could be implemented by many different social institutions, but it is helpful to begin by considering a very centralized institution where every individual communicates separately and confidentially with a trustworthy central mediator.

....

First, to the extent that our social plan depends on individuals' private information that is hard for others to observe, we need to give people an incentive to share their information honestly. This problem of getting people to share information honestly is called *adverse selection*. Second, to the extent that our social plan requires people to choose hidden actions and exert efforts that are hard for others to monitor, we need to give people an incentive to act obediently according to the plan. This problem of getting people to act obediently to a social plan is called *moral hazard*. If it is a rational equilibrium for everyone to be honest and obedient to the central mediator who is implementing our social coordination plan, then we say the plan is *incentive compatible*.

... [A]lthough we defined incentive compatibility by thinking about honesty and obedience in communication with a central mediator, in fact these incentive-compatible plans characterize everything that can be implemented by rational equilibrium behavior in any social institution or mechanism. This assertion of generality is called the *revelation principle*.⁶⁵

Eh voila! All we have to do is design and implement reforms to our incentive mechanisms and institutions governing banking and securities such that actors rationally share information honestly and are honest and obedient. That done, we can move on to solve global warming—but before we buy a new set of snow skis, we

⁶⁴ *Id.*

⁶⁵ *Id.* at 588.

might want to consider human nature, competition, and incentives to win, taking our analysis to actual institutions and the legal infrastructure in which we design and implement these rule sets of incentive compatible mechanisms. Thereafter, we can analyze the results of the adjustments and modifications to approximate the “incentive compatible” ideal balance—a dynamic process subject to the limitations of real institutions and vulnerable to the law of unintended consequences.

This proposal takes for granted that we are less than satisfied with the performance of our current institutional mechanisms, and want to reform them, but we do not want to abandon our belief in individual liberties and free markets. For that, we turn to a legal analysis.

III. LEGAL FOUNDATION

How we go about developing these incentive compatible institutions and mechanisms deserves some discussion. Some procedures or rules are described long in advance, such as procedures or rules established in constitutions. The framers of the United States Constitution were mechanism designers.⁶⁶ In addition, when we speak of a “central mediator,” we are undoubtedly referring to the “government.”⁶⁷ The government, however, is not a monolithic actor: it has three distinct branches at both federal and state levels, in addition to numerous levels of local government authority. Moreover, there are additional hierarchies and regulatory authorities within those branches. In discussing banking and securities, this article will simplify matters by focusing only on the federal government. However, it is impossible to lump the three branches of federal government together and retain the degree of completeness needed to explore incentive compatibility and mechanism design reform in the securities and banking fields.

Using a systems perspective, this section offers a simplified view of how laws are formed, implemented, and adjudicated in a dynamic process involving social choice theory, and feedback—much like genetic adaptation in natural systems that optimize heuristically through learning, trial, and error.⁶⁸ Breaking the overall system

⁶⁶ See Maskin, *supra* note 58, at 568 (“In the case of national political elections, by contrast, a mechanism is an electoral procedure, e.g. plurality rule, run-off voting, or the like. Moreover the procedure is ordinarily prescribed long in advance, indeed sometimes by the country’s constitution. Thus, here we should think of the framers of the constitution as the mechanism designers.”).

⁶⁷ *Id.* (“[I]n the public framework, if the government knows at the outset which choice of public goods is optimal, then there is a simple—indeed, trivial—mechanism for achieving the optimum: the government only has to pass a law mandating this outcome.”).

⁶⁸ See, e.g., RALPH W. PIKE, OPTIMIZATION FOR ENGINEERING SYSTEMS 5, 304 (Van Nostrand Reinhold Co. 1986) (1935) (“Dynamic programming converts a large, complicated

into the stages of formation, implementation, and adjudication, the law can be seen in a dynamic programming context through which we can explore the questions of system optimality, mechanism design, and implementation.⁶⁹

optimization problem into a series of interconnected smaller ones, each containing only a few variables. The result is a series of partial optimizations requiring a reduced effort to find the optimum, even though some of the variables may have to be enumerated throughout their range. . . . Then, the dynamic programming algorithm can be applied to find the optimum of the entire process by using the connected partial optimizations of the smaller problems.”); Lynn M. LoPucki, *The Systems Approach to Law*, 82 CORNELL L. REV. 479, 481 (1997) (“‘Systems analysis’ is a methodology developed in the fields of engineering, business information systems, and computer programming specifically to manage complexity. Instead of screening complexity out, the systems analyst attempts to accommodate as much complexity as possible. A comprehensive description of the system’s functioning is a precondition to the analysis. Abstraction is employed sparingly, and, in the kind of systems analysis that is advocated in this Article, every concept is operationalized, so that every proposition can be tested empirically. Systems analysis proceeds by identifying systems, discovering their goals or attributing goals to them, mapping their subsystems and the functions each performs, determining their internal structures, depicting them with attention paid to efficiency of presentation, and searching for internal inconsistencies. These methods generate analytical power by increasing the number of goals, elements, and circumstances that the analyst can take into account simultaneously. These methods also provide a language by which to express the kinds of relationships that are commonly encountered.”); *id.* at 485 (“Systems analysis regards systems as goal-seeking. That is, systems analysis regards each system as having one or more purposes or functions.”); Matthew O. Jackson, *Mechanism Theory* 4-5 (Dec. 8, 2003), <http://www.stanford.edu/~jacksonm/mechtheo.pdf> (“A theme that comes out of the literature is that it is often impossible to find mechanisms compatible with individual incentives that simultaneously result in efficient decisions (maximizing total welfare), the voluntary participation of the individuals, and balanced transfers (taxes and subsidies that always net out across individuals). Nevertheless, there are important settings where incentives and efficiency are compatible and in other settings a ‘second best’ analysis is still possible”); Oliver Wendell Holmes, Jr., *The Path of the Law*, 10 HARV. L. REV. 457, 476 (1897) (Oliver Wendell Holmes, Jr. admonished against thinking the law could be worked out like a mathematical equation, but he also considered jurisprudence as “simply law in its most generalized part . . . [the means for which is] to follow the existing body of dogma into its highest generalizations by the help of jurisprudence; next, to discover from history how it has come to be what it is; and, finally, so far as you can, to consider the ends which the several rules seek to accomplish, the reasons why those ends are desired, what is given up to gain them, and whether they are worth the price.”).

⁶⁹ See generally Daniel J. Boyle, *The Dao of Jurisprudence: The Art and Science of Optimal Justice* (2007) (unpublished manuscript, on file with Transactions: The Tennessee Journal of Business Law).

A. An Explanation of the Dynamic Model

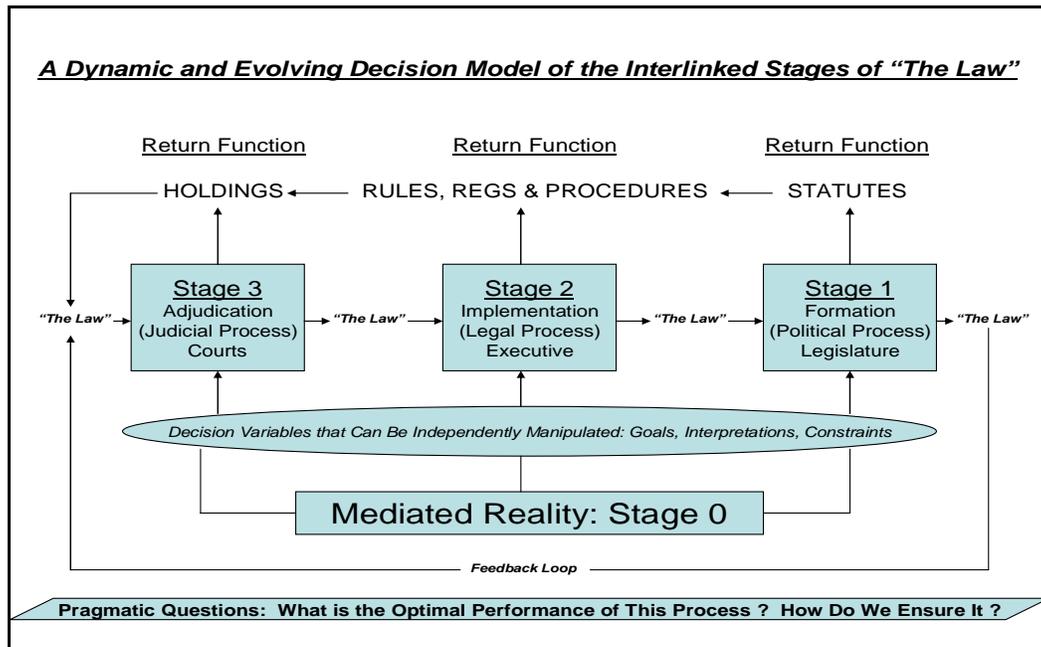
The figure below breaks “the law” into four distinct stages, each of which is an elaborate decision making process: Stage 0 is the mediation of reality.⁷⁰ Stage 1 is the formation of law in the political and legislative process. Stage 2 is the implementation of legislation through the regulatory and rulemaking process, which is usually performed as an executive function. Finally, stage 3 is the adjudication process, where individual cases or controversies are resolved in a series of state and federal courts, with some cases leading to the U.S. Supreme Court.⁷¹ The process is interlinked and interdependent. The nuance of each stage could be captured in elaborate process and substantive descriptions, but that effort would be beyond the scope of this article. For present purposes, assuming that the model roughly (but accurately) captures the essential elements of our legal processes, we can weigh the performance against the objectives of the system and its sub-stages, the separate and common constraints affecting decisions at each stage and level within the stage, and how the output of one stage places boundaries on the performance of subsequent stages.⁷² This model attempts to capture our American system of jurisprudence,

⁷⁰ *Id.* at 8 (explaining that reality is mediated in multiple stages in order to convert it into language).

⁷¹ This model is based on the U.S. system of jurisprudence. Variations would be required to describe the process in other countries and cultures. *See, e.g.*, BRIAN K. LANDBERG & LESLIE GIELOW JACOBS, GLOBAL ISSUES IN CONSTITUTIONAL LAW (West 2007). That said, there is no reason that U.S. style incentives and regulations are not compatible with those of Europe even though the details of parliamentary process and code based legal regimes (as opposed to common law) create differences in practice. One could even develop a system description based on other models, like that which exists in contemporary China, with a dominant and singular authority under the Communist party, but where legislation evolves toward approval in what leaders there call “democracy within the party.” 17th National Congress of the Communist Party of China, 2007: Planning China’s Next Five Years, CPC Inner Party Democracy: Theory Practice and Institutionalization, <http://www.china.org.cn/english/congress/228201.htm>. Skeptical and interested readers should also consult RANDALL PEERENBOOM, CHINA’S LONG MARCH TOWARD RULE OF LAW (2002); DANIEL C.K. CHOW, THE LEGAL SYSTEM OF THE PEOPLE’S REPUBLIC OF CHINA (West 2003).

⁷² To understand the impact of a given stage and process on subsequent stages and overall performance, imagine a power plant, with a fuel processing system, a boiler, a turbine, a generator, and an electrical substation. Our objective as a society is to optimize the transformation of the energy in the fuel into a form useful for people, widely disbursed through the electricity grid at a minimum cost and with a minimum of impact on the environment. The plant is subject to countless constraints: air pollution limits, noise levels, hours of operation, community setting, access to water sources, etc. Each level of the system has efficiency implications for the overall transformation process. Practical (cost constrained designs) efficiencies of boilers are in the 90% area, but a turbine’s ability to extract work energy from steam is in the upper 30% regime. Generators and substations are each in the upper 90% ballpark, while transmission systems vary based on numerous factors. Each of these stages needs to be optimized independently, but due to their interconnected nature, the best the overall system can perform is around 30%. Alternatively, consider the human body which needs air,

premised on the United States Constitution; although, adaptation for other systems could lead to corollary conclusions. The Constitution had multiple objectives: to establish and define the role and function of government, to define the interaction between the federal and state governments, and to lay out several basic principles regarding individual liberty.⁷³ As that document and its creators attempted to balance competing and multiple objectives while constrained in their efforts by their own limitations, time pressures and politics, the Constitution is commonly understood by Americans as the optimal symbol of democracy and legitimacy.



food and water to exist. To the extent that the lungs and the digestive track fail to perform their functions, the performance of the heart and circulation system are affected, ultimately diminishing the performance of the brain and nervous system. Too much or too little at any stage affects the overall performance; limits exist at all levels.

⁷³ See, e.g. NORMAN REDLICH, JOHN ATTANASIO & JOEL K. GOLDSTEIN, UNDERSTANDING CONSTITUTIONAL LAW 4-5 (3d ed. 2005) (commenting on the enormous undertaking of the framers who sought to protect individual liberty while empowering the government to respond to public needs. Quoting James Madison from The Federalist No. 51, "If men were angels, no government would be necessary. If angels were to govern men, neither external nor internal controls on government would be necessary. In framing a government which is to be administered by men over men, the great difficulty lies in this: You must first enable the government to control the governed, and in the next place oblige it to control itself.").

The above systems depiction provides a framework within which we can map the underlying dynamics of how laws are formed in one stage of the process by a group of actors with their own set of objectives. Then, the laws are implemented through multiple executive branch agencies that have another set of bureaucratic incentives and motivations. Finally, these laws are adjudicated within the context of particular cases and controversies involving individual factual circumstances by a multi-tiered set of judicial authorities, constrained at each stage by different rules and considerations. What is worse, within our system of democracy we impose the rule that decisions and rules cannot be made by a dictator. According to social choice theory and the Arrow Impossibility Theorem as well as the work of Sen and others, we are reminded that we cannot always achieve every goal.⁷⁴

Sen may have been thinking about the complex mess of banking regulations and its inscrutable interconnection to securities rules when he accepted the Nobel Prize in 1998 with these remarks:

“A camel,” it has been said, “is a horse designed by a committee.” This might sound like a telling example of the terrible deficiencies of committee decisions, but it is really much too mild of an indictment. A camel may not have the speed of a horse, but it is a very useful animal—well coordinated to travel distances without food or water. A committee that tries to reflect the diverse wishes of its different members in designing a horse could easily end up with something far less congruous: perhaps a centaur of Greek mythology, half a horse and half something else—a mercurial creation combining savagery with confusion.⁷⁵

To push the use of metaphor, when we speak of how the law evolves, we often use genetic or evolutionary references, and frankly, some babies are ugly.⁷⁶

⁷⁴ Amartya Sen, *The Possibility of Social Choice*, 89 AM. ECON. REV. 349, 351 (June 1999); see also William T. Mayton, *The Possibilities of Collective Choice: Arrow's Theorem, Article I, and the Delegation of Legislative Power to Administrative Agencies*, 1986 DUKE L. J. 948, 948 (1986) (decrying the fact that delegation of authority to modern administrative agencies as “technocratic governance” to get around Arrow’s dictatorship constraint); see KENNETH ARROW, SOCIAL CHOICE AND INDIVIDUAL VALUES (1963) (This theory shows that in the formation stage of the law, an individual’s optimal value outcomes are unachievable. “Collective rationality in the social choice mechanism is not merely an illegitimate transfer from the individual to society but an important attribute of a genuinely democratic system capable of fully adapting to a varying environment.”). *Id.* at 120

⁷⁵ Sen, *supra* note 74, at 351.

⁷⁶ Scholars of banking law and Title 12 of the U.S.C. should agree, but more seriously, by addressing the stages of the above model independently and recognizing that they are interlinked through the

What we have in the formation and implantation of mechanisms, far from those circumstances where theorists can devise a Nash Equilibrium solution, is a never ending dynamic game. The game is characterized by multiple actors whose actions are interdependent and affect each other like externalities—their own motives and strategies represent a complex mix of adverse selection and moral hazard. Our legal structure and its evolutionary and dynamic responses are ill-suited to self-correct when short term external pressures threaten systemic collapse.

The legislative and regulatory dynamic responses are also ill-matched to that of market participants in the real game of the economy. Market participants trade in real time, with as much information as is available, and (presumably) based on a rational assessment of the impact of events on values. In a steady state situation, their trading leads to some fundamental fluctuations in prices, a sine wave type periodic function whose frequency and period vary according to the underlying asset and the dynamics of the industry.⁷⁷ These periodic fluctuations are superimposed upon trends of the underlying variables, such as interest rate tendencies, inflation, growth rates, and a host of industry specific supply and demand variables.⁷⁸ These trend variables can be in line or out of line with the underlying periodic changes, and their own periodicity between inversions can vary.⁷⁹ But when a shock occurs that affects all of the participants instantaneously, it throws this ebb and flow into chaos, and a fractal pattern emerges and dominates prices.⁸⁰ If this shock is large enough, it

evolving state variable labeled “the law,” one can begin to see how variations in the return function (objective) and constraints at each stage affect not only the stage’s performance but also the performance of the integrated system. Through the dynamic process, over time, with feedback, and with society’s evolving views of morality to mediate reality, “the law” evolves dynamically. This evolution mirrors genetic evolution, and this trend is clearly seen in the way U.S. Supreme Court cases evolve around the optimization of different principles through generations of cases. For instance, we can trace the evolution of the Supreme Court’s resolution of the inherent conflict between individual freedom to contract with a state’s rights to regulate economic behavior in a series of cases from *Lochner v. New York*, 198 U.S. 45, 49 (1905) (holding in a divided opinion that interference with the freedom of parties to contract with each other violates the Constitution) and its progeny to *Williamson v. Lee Optical of Oklahoma, Inc.*, 348, 491 U.S. 483 (1955) (rejecting the logic of *Lochner* and establishing the rational basis test to determine the validity of statutes governing economic activity).

⁷⁷ See, e.g., SIMON WREN-LEWIS & REBECCA L. DRIVER, REAL EXCHANGE RATES FOR THE YEAR 2000 (Institute for International Economics 1998) (explaining the various time domains of fundamentals, trends, and short term effects in the case of currencies).

⁷⁸ *Id.*

⁷⁹ EDGAR E PETERS, FRACTAL MARKET ANALYSIS: APPLYING CHAOS THEORY TO INVESTMENT AND ECONOMICS (1994) (offering the Fractal Market Hypothesis as an alternative to the Efficient Market Hypothesis)

⁸⁰ *Id.*

can create a herding effect, pushing the underlying system to a tipping point.⁸¹ This phenomenon mirrors natural systems, and it is characteristic of many organized social systems.⁸²

For the current crisis, Peters's comments provide helpful insight:

Liquidity is not the same as trading volume. The largest crashes have occurred when there has been low liquidity but high trading volume. Another name for low liquidity could be imbalanced trading volume.

The EMH [Efficient Market Hypothesis] says nothing about liquidity. It says that prices are always fair when liquidity exists or not, or, alternatively, that there is always enough liquidity. Thus, the EMH cannot explain crashes and stampedes; when liquidity vanishes, getting a "fair" price may not be as important as completing the trade at any cost.

A stable market is not the same as an "efficient" market, as defined by the EMH. A stable market is a liquid market. If the market is liquid, then the price can be considered close to "fair." However, markets are not always liquid. When lack of liquidity strikes, participating investors are willing to take any price they can, fair or not.⁸³

⁸¹ *Id.*

⁸² *See, e.g.*, BENOIT B. MANDELBROT, *FRACTALS AND SCALING IN FINANCE: DISCONTINUITY, CONCENTRATION AND RISK* (Springer 1997) (explaining how memory of recent events affects decisions and leads to the need to use non Gaussian statistics and mathematics to describe financial functions).

⁸³ PETERS, *supra* note 79, at 42.

B. An Illustration⁸⁴

The process of advocating regulation and deregulation and then gaming the loopholes in a given actor's best short-term interest is not a new phenomenon. Government involvement and oversight of the banking industry has been an integral part of U.S. jurisprudence and politics since the beginning of the Republic.⁸⁵ In *McCulloch v. Maryland*, the Supreme Court asserted the supremacy of the federal regulatory role over the states in regulating banking when it barred Maryland from interfering or inhibiting in the operation of the Second Bank of The United States.⁸⁶ Andrew Jackson vetoed a law to re-charter the Second Bank of the United States in 1832, leading states to over-issue bank notes and credit, which ultimately caused the collapse of hundreds of state banks during the depression of 1837.⁸⁷

Since then, the courts have periodically faced questions over the government's role in regulating commerce through the operation of banks.⁸⁸ Deregulation of interest accounts and deposits under the Depository Institutions Deregulation and Monetary Control Act of 1980 was influenced by nonbank

⁸⁴ This section uses banking regulations to illustrate the general points raised above, but similar illustrations could be found in the regulation and re-regulation of transportation, electric utilities, natural gas, and other industries. For example, witness ENRON's behavior following the Energy Policy Act of 1992 and the national move to deregulate the electricity sector, leading to the Congressional response of the Sarbanes-Oxley Act and the related wave of litigation over ENRON's gaming behavior as it related to the California energy crisis early in this decade. *See, e.g.*, Jeffrey D. Van Niel, *Enron—The Primer*, in ENRON: CORPORATE FIASCOS AND THEIR IMPLICATIONS 3 (Rapoport and Dharan, eds. 2003) (describing Enron's game playing schemes which they labeled as Death Star, Fat Boy, Ricochet, Load Shift, and others in California); Regents of the Univ. of Cal. v. Credit Suisse First Boston (U.S.A.), Inc., 482 F.3d 372, 377, 393 (5th Cir. 2007) (describing Enron's deceptive schemes but failing to find liability for the witting investment bankers who acquiesced silently).

⁸⁵ *See* MICHAEL P. MALLOY, BANKING AND FINANCIAL SERVICES LAW: CASES, MATERIALS, AND PROBLEMS 13 (2nd ed. 2005) (explaining that the first Bank of the United States was a "quasi-governmental banking entity designed to regulate or control the supply of credit and currency, and to monitor and facilitate transactions in credit and currency" and that it was developed after President Washington mediated a debate among Hamilton, Jefferson, and Madison over the Constitutionality of Congressional power to establish such a bank. It ran for twenty years until its Charter expired in 1811).

⁸⁶ *McCulloch v. Maryland*, 17 U.S. 316, 324-25 (1819) (holding the Supreme Court had ultimate authority to interpret the Constitution and that Congress had the power to incorporate the Bank of the United States despite the fact its formation was not an explicitly enumerated power).

⁸⁷ MALLOY, *supra* note 85, at 18-19.

⁸⁸ *Id.* at 1-81; *see, e.g., id.* at 25-27 (illustrating that between 1913 and 2001, Congress passed some thirty-seven acts to regulate and re-regulate banks and commerce).

competition in demand deposits, and it led to new products for the savings and loan industry.⁸⁹ The widespread failure of the saving and loan institutions ultimately cost the U.S. taxpayers some \$90 billion.⁹⁰ In each of these cycles, Congress responded to perceived market failures, and the market actors reacted by restructuring and reinvesting in the perceived opportunities to profit. This led to market failures and bank losses, which led to more regulation, deregulation, and re-regulation.

Greenspan's worldview is based on a paradigm integral to democratic society and institutions: the freedom to contract, the recognition of private property rights, and limited government interference to allow competition to determine outcomes. These views have been supported for centuries as the bedrock of efficiency and utility in democratic market societies.⁹¹ So, who wins when banks compete? American society considers this question to be rhetorical. As LendingTree.com notes in its corporate trademark: "When banks compete, you [the consumer] wins."⁹²

But can you win if we all lose? Isn't the invisible hand of the market the way to optimal outcomes for society? "Deregulation" supposes so—yet a prime suspect as the origin of the current mortgage foreclosure crisis is the Gramm-Leach-Bliley Act of 1999, which explicitly deregulated commercial and investment banks to allow them to combine forces and eliminated many of the provisions of the Glass-Steagall Act of 1933.⁹³ The Glass-Steagall Act had been a principal reform of the Great Depression and its banking crisis, and the act specifically prohibited common ownership, control, and product offerings between investment and commercial

⁸⁹ MALLOY, *supra* note 85, at 60-76.

⁹⁰ JERRY W. MARKHAM & THOMAS LEE HAZEN, CORPORATE FINANCE: CASES AND MATERIALS 30 (Thompson West 2008) (2004) ("When real estate values collapsed at the end of the 1980s, all of the problems that had been building in the S&Ls were exposed and hundreds of S&Ls failed. A majority of the distressed thrift associations were in California and Texas. In 1987, the S&L industry lost some \$7 billion. In 1988, over 700 banks and over 1,000 S&Ls were being closed down. Costs to taxpayers from the failed S&Ls were predicted to range from \$500 billion to \$1 trillion. One Congressional subcommittee called the S&L crisis 'the greatest financial fiasco the United States has ever seen.' Regulators estimated that forty percent of the thrift failures were due to fraud or insider abuse. By 1992, some 1,000 individuals had been charged with crimes in connection with S&L activities. . . . The final cost to American taxpayers for the S&L crisis proved to be much less than originally estimated, but still totaled at least \$90 billion.").

⁹¹ *See, e.g.*, RICHARD POSNER, ECONOMICS OF JUSTICE (1983); ADAM SMITH, THE WEALTH OF NATIONS (1776).

⁹² Lending Tree Home Loans, <http://www.lendingtree.com/> (last visited Jan. 20, 2009).

⁹³ Glass-Steagall Act of 1933, Pub. L. No. 73-66, 48 Stat. 162 (1933).

banking interests.⁹⁴ Advocates of Gramm-Leach-Bliley believed that Glass-Steagall was outmoded and that banks needed the freedom to offer the same services as investment banks in order to compete and survive.⁹⁵

Was there a causal link between the passage of Gramm-Leach-Bliley in 1999 and the subprime lending of recent years? If so, were there regulators who understood the history and should have known better? In fairness, by the time Gramm-Leach-Bliley passed, the integration of financial and banking services had progressed dramatically.⁹⁶ Undoubtedly, there were numerous competitive factors that pushed lending institutions in the race to the bottom along the primrose path we now find ourselves: simplifying the application process for loans to only checking credit scores, lowering the threshold of which scores would qualify, offering 100% and higher loan to value ratios (because real estate—presumably—would never decline in value), and providing subprime initial interest rates to capture the loan. It is rational to infer from this competitive behavior that banks intended to make up losses on individual loans by making more loans and charging hidden fees, or by simply passing the risk of default along through the bundling process. These competitive pressures were only amplified when co-owned commercial and investment banks began using the secondary market to shift the risk of these loans immediately to a broader market through the syndication process of bundling the mortgages into mortgage-backed securities and selling them to pension funds,

⁹⁴ Glass-Steagall Act of 1933: Definition from Answers.com, <http://www.answers.com/topic/glass-steagall-act-of-1933> (last visited Jan. 20, 2009) (“Many economic and political factors led to the financial crisis that began in 1929, but the general breakdown of the U.S. banking system during the period from 1929 to 1932 certainly played a significant role in the crisis. It was this systemic failure that led Congress to review and reform the Federal Reserve System and the national banking system as well. In particular, the Banking Act of 1933, known as the Glass-Steagall Act (GSA) (48 Stat. 162), made several significant changes in the federal regulation of banks. Primary among these was the separation of commercial banking from investment banking.”); *see also* Reem Heikal, What Was the Glass-Steagall Act?, <http://www.investopedia.com/articles/03/071603.asp?viewall=1> (last visited August 3, 2008) (explaining the rationale behind the restrictions between commercial and investment banks in the Glass-Steagall Act and the supreme court decisions leading to the modifications in the Gramm-Leach-Bliley Act).

⁹⁵ Terry S. Schwakopf, *Gramm-Leach-Bliley Act: A New Frontier in Financial Services*, FEDERAL RESERVE BANK OF SAN FRANCISCO, <http://www.frbsf.org/publications/banking/gramm/> (last visited August 2, 2008).

⁹⁶ *See* MALLOY, *supra* note 85, for a discussion of several regulatory rulings and court cases allowing banks to compete in the financial services industry prior to the passage of Gramm-Leach-Bliley.

sovereign wealth funds, and other banks.⁹⁷ In the jargon of the day, the banks were selling hats to each other.

Title 12, Part 560 of the Code of Federal Regulations covers Banks and Banking, Lending and Investment. Generally, there are three categories of mortgage financing:

1. Conforming or Conventional Loans: These loans are for credit-qualifying borrowers who own and occupy the real estate, are not past due on child support, and meet individual loan guidelines. The financing is for residences, and the borrower pays a down payment ranging from at least five to twenty percent.⁹⁸

2. Alt-A Loans: This kind of loan occurs when the bank lends money to persons based on reduced documentation of income and assets (“stated income,” “stated assets,” or “no income verification”), where the debt to income is above conforming standards, where the credit history has problems that don’t quite rise to subprime loan levels but are not good enough for a conforming loan, or where the loan to value ratio or occupancy is non-conforming.⁹⁹ These loans were less likely to be picked up by the secondary market and carried considerably higher risk.¹⁰⁰ The IndyMac collapse, estimated to cost the Federal Deposit Insurance Fund between \$4 billion and \$8 billion, occurred because much of IndyMac’s portfolio was built on Alt-A loans requiring little evidence of buyer income or assets.¹⁰¹

⁹⁷ See, e.g., Michael P. Malloy, *The Subprime Mortgage Crisis and Bank Regulation*, 27 BANKING & FIN. SERVICES POL’Y REP. 1 (2008), reprinted in MICHAEL P. MALLOY, BANKING AND FINANCIAL SERVICES LAW: CASES, MATERIALS AND PROBLEMS 39 (2d ed. 2008-2009 Supp.) (providing a diagrammatic and systemic overview of the cyclic process from mortgage origination to debt collateralization and sale to institutional investors, and the cash flow returns back to originators as the engine of motivation propelling the process seemingly forever).

⁹⁸ See, e.g., General Loan Requirements, <http://www.ahfc.state.ak.us/loans/general-requirements.cfm> (last visited Jan. 20, 2009).

⁹⁹ See e.g., Mike Heayn, *Real Estate 101: The Next Catastrophe*, SANTA MONICA DAILY PRESS, Feb. 11, 2009, http://www.smdp.com/Articles-c-2009-02-10-48894.113116_The_next_catastrophe.html (last visited April 23, 2009); see also Alt-A, WIKIPEDIA, <http://en.wikipedia.org/wiki/Alt-A> (last visited Jan. 20, 2009).

¹⁰⁰ *Id.*

¹⁰¹ Catherine Clifford & Chris Isidore, *The Fall of IndyMac*, (July 13, 2008), http://money.cnn.com/2008/07/12/news/companies/indymac_fdic/index.hrtm?postversion=2008071210.

3. Subprime: “Subprime mortgage lending typically refers to a loan to someone whose credit history is insufficient to qualify that borrower for a ‘prime’ loan, such as a loan ‘conforming’ to the underwriting guidelines of Fannie Mae and Freddie Mac. Poor credit history, including a spotty history or a record of late and missed payments to creditors, or a recent bankruptcy on the part of the borrower often qualifies the loan to be considered subprime.”¹⁰²

Subprime lending provided credit to persons who otherwise would not have had the opportunity to own a home. Still, cities are now claiming lender practices were predatory.¹⁰³ The irony is that the government wanted lenders to provide more opportunity to less-qualified persons. Technology allowed for rapid application and decision processes, and the private sector priced in the added risk with higher fees and prices. Nonetheless, there has been a state and federal consumer protection outcry and legal action based on legislation such as The Federal Truth in Lending Act, 12 U.S.C. §§ 1601 *et seq.*,¹⁰⁴ and California’s Unfair Competition Law, California Civil Code section 17200.¹⁰⁵

As recently as late-August 2007, the effects of the subprime mortgage crisis on investment banks and lenders in their “race to the bottom,” where their competitive practices had ignored the need to price risk into their products, had not quite been realized.¹⁰⁶ Moody’s rating service was still hailing the strength of the U.S. investment banks and the five big names: Goldman Sachs, Morgan Stanley, Merrill Lynch, Lehman Brothers, and Bear Stearns.¹⁰⁷ By mid-September 2008, Lehman had failed; Merrill was bought by Bank of America; Morgan Stanley was “scrambling to find a buyer”; Goldman Sachs was concerned and losing value; Washington Mutual

¹⁰² Richard E. Gottlieb & Andrew J. McGuinness, *When Bad Things Happen to Good Cities: Are Lenders to Blame?*, 17 BUS. L. TODAY 13, 14 (Jul/Aug 2008).

¹⁰³ *See id.* at 14-15 (listing multiple examples of predatory lending lawsuits).

¹⁰⁴ Michael C. Tomkies, *Regulating the Subprime Market: Finding the Right Balance*, 17 BUS. L. TODAY 21, 23 (Jul/Aug 2008).

¹⁰⁵ Travis P. Nelson, *Trends in Subprime Lending: Legislation, Litigation, and Enforcement on the Rise*, 17 BUS. L. TODAY 27 (Jul/Aug 2008).

¹⁰⁶ *See supra* note 97 and accompanying text (discussing this “race to the bottom”).

¹⁰⁷ Jon C. Ogg, *U. S. Investment Bank Ratings OK, Or So Says Moody’s*, (Aug. 29, 2007) <http://www.247wallst.com/2007/08/us-investment-b.html> (“Here is a list of the major brokerage and investment banks in order of market capitalization that are listed as being able to absorb the malaise: Goldman Sachs (GS) \$70 Billion in market cap.; Morgan Stanley (MS) \$63+ Billion in market cap.; Merrill Lynch (MER) \$62 Billion in market cap.; Lehman Brothers (LEH) \$29 Billion in market cap.; Bear Stearns (BSC) \$15.7 Billion in market cap.”).

had put itself up for auction; and the government had propped up Bear Stearns, insurance giant AIG International, and the government-sponsored Fannie Mae and Freddie Mac.¹⁰⁸ Shortly thereafter, Congress passed the Emergency Economic Stabilization Act (EESA) and its Troubled Asset Relief Program (TARP).¹⁰⁹

Like his intellectual heirs more than two centuries later, in promoting the first Bank of the United States, Alexander Hamilton believed that private ownership and control would ensure the bank would behave in its own long-run interest and not be harmed by “public necessity.”¹¹⁰ In the aftermath of the subprime lending crisis, regulatory authorities have found it necessary to caution against “predatory lending considerations.”¹¹¹ These authorities have reminded private lenders that “[f]undamental consumer protection principles relevant to the underwriting and marketing of mortgage loans include: Approving loans based on the borrower’s ability to repay the loan according to its terms; and Providing information that enables consumers to understand material terms, costs, and risks of loan products at a time that will help the consumer select a product.”¹¹²

What really happens when banks compete? Clearly, some banks engage in predatory lending. For example, in Chicago, an elderly, blind, and ill woman lost her home to foreclosure.¹¹³ Because she was unable to read what she was signing, the mortgage broker visited her so that she could sign the final loan agreement from her hospital bed.¹¹⁴ Later, she and her attorney waded through a continuous flow of new offers to refinance and take on additional credit.¹¹⁵ “The government, for a long time now, has been on the side of the great corporations, on the side of Wall Street,

¹⁰⁸Christian Plumb, *Morgan Stanley in Talks, Financials Slide Resumes*, REUTERS (Sept. 18, 2008) <http://www.reuters.com/article/bankingFinancial/idUSHKG9362820080918> (describing Morgan’s frantic search for a buyer, Goldman Sachs concerns, as well as the recent failures of AIG International and the auction of Washington Mutual).

¹⁰⁹ Emergency Economic Stabilization Act, Pub. L. No. 110-343, 122 Stat. 852 (2008).

¹¹⁰ MALLOY, *supra* note 85, at 8 (citing Hamilton’s report to President Washington: 1 American State Papers 67, Treasury Report on a National Bank, December 13, 1790).

¹¹¹ Commonwealth of Massachusetts, Division of Banks, *Statement on Sub Prime Mortgage Lending*, Regulatory Bulletin 5.1-104, at 5 (September 10, 2007) (defining predatory lending to include either making loans based on collateral rather than the borrower’s ability to repay, repeatedly charging fees for necessary refinancing or loan flipping, or fraud or deception in concealing the loan obligation).

¹¹² *Id.* at 8.

¹¹³ *See id.*

¹¹⁴ *See id.*

¹¹⁵ *See id.*

on the side of the financial services industry. So who looks out for the little people?"¹¹⁶ It seems clear that we need regulations to control these externalities, but the exact nature is more elusive.

For its part, on July 14, 2008, the Federal Reserve issued its final rule prohibiting lenders from making loans without taking into account the borrower's ability to repay the loan, requiring borrowers to verify their income and assets, banning prepayment penalties if the payment can change in the first four years, and requiring creditors to establish escrow accounts for taxes and homeowners' insurance for all first-lien mortgage loans.¹¹⁷ The rules also protect real estate secured loans by prohibiting creditors and mortgage brokers from coercing appraisers into misstating a home's value and from pyramiding late fees and by requiring lenders to provide good faith estimates of costs and payment amounts.¹¹⁸

Like Greenspan, a fine financial mind like Hamilton's might find it incredible that the government would need to remind private actors of these common sense principles and that it would take laws and regulations like these to govern such behavior. But then again, Hamilton never got a mortgage from Countrywide. What motivations and incentive mechanisms led the attorneys and executives at the mortgage lenders, credit swap counter parties, insurers, and investment bankers to game the system and put so much at risk in their quest for returns? More importantly, what regulatory structures allowed it to happen, and what changes are needed to correct the deficiencies?

The current crisis shows us that policy matters. As stated by Professor Malloy:

The 1999 Graham-Leach-Bliley Act (GLBA) is one of the most significant pieces of federal banking legislation since the Banking Act of 1933 itself. Among other things, it works a fundamental change in the scheme of regulation of securities activities of depository institutions. The GLBA eliminates prohibitions on affiliations between commercial and investment banking enterprises and on interlocking directorates between such enterprises by repealing

¹¹⁶ Interview by Bill Moyers with Bob Herbert (Aug. 8, 2008), *available at* <http://www.pbs.org/moyers/journal/08082008/transcript4.html>.

¹¹⁷ Press Release, Federal Reserve (July 14, 2008), *available at* <http://www.federalreserve.gov/newsevents/press/bcreg/20080714a.htm>.

¹¹⁸ *Id.*

sections 20 and 32 of Glass-Steagall. It also authorizes national banks to deal in, underwrite, and purchase municipal bonds for their own investment accounts.¹¹⁹

Through the evolution of products and changes in the financial industry, the pressures of competition had eroded the prophylactic separation between commercial banking and investment banking found in Glass-Steagall.¹²⁰ Early on, however, after the Office of the Comptroller of the Currency ("OCC") had allowed the First National City Bank of New York to establish and operate collective investment funds, the Supreme Court drew the line in *Investment Co. Institute v. Camp*.¹²¹ Speaking for the Court, Justice Stewart interpreted Congress's original rationale in separating investment banking activities from those of commercial banking:

The failure of the Bank of the United States in 1930 was widely attributed to that bank's activities with respect to its numerous securities affiliates. Moreover, Congress was concerned that commercial banks in general and member banks of the Federal Reserve System in particular had both aggravated and been damaged by stock market decline partly because of their direct and indirect involvement in the trading and ownership of speculative securities. The Glass-Steagall Act reflected a determination that policies of competition, convenience, or expertise which might otherwise support the entry of commercial banks into the investment banking business were outweighed by the 'hazards' and 'financial dangers' that arise when commercial banks engage in the activities proscribed by the Act.

The hazards that Congress had in mind were not limited to the obvious danger that a bank might invest its own assets in frozen or otherwise imprudent stock or security investments. . . . The legislative history of the Glass-Steagall Act shows that Congress also had in mind and repeatedly focused on the more subtle hazards that

¹¹⁹ MALLOY, *supra* note 85, at 553.

¹²⁰ *See id.* at 398-488 (providing an exposition of this evolution).

¹²¹ *Investment Co. Inst. v. Camp*, 401 U.S. 617 (1971) (denying the ability of national banks to engage in collective investment funds as securities despite the OCC's administrative view because Congress had clearly expressed a series of subtle concerns in stating the purpose of the prohibitions in Glass-Steagall).

arise when a commercial bank goes beyond the business of acting as fiduciary or managing agent and enters the investment banking business either directly or by establishing an affiliate to hold and sell particular investments. . . .¹²²

Before the passage of the Gramm-Leach-Bliley Act made the above quoted opinion moot, the prophylactic prohibition against common ownership between commercial and investment banking continued to hold. In 1984, in *Securities Industries Ass'n v. Board of Governors*,¹²³ the Court affirmed the “subtle risks created by mixing the two activities justified a strong prophylaxis,” and the Court used the Glass-Steagall Act to strike down an effort by Bankers Trust to place commercial paper for corporate customers.¹²⁴ However, after remand and in a later opinion in a lower court, Judge Bork inexplicably converted the string of subtle hazards into a judicial test.¹²⁵ He then used the test to let stand an administrative revision stating that the same sale of commercial paper did not take Bankers Trust into the realm of investment banking.¹²⁶ The rest, shall we say, is history.

IV. SUMMARY

1. The notion of “competitive equilibrium,” used to prove the conclusion that price and freedom to contract in a market system provide for the most efficient allocation of resources in the economy, is a myth—it is the equivalent of the “reasonable person” standard in the law. Though it provides a vital benchmark, it does not actually exist. The market is never in equilibrium because the conditions of equilibrium are never met in practice. Regulatory responses are a dynamic phenomenon, and market actors react to those responses. This process then loops back on itself. Participants take their grievances over the impact of the changes to the courts for “justice,” and the laws and regulations are adjudicated,

¹²² *Id.* at 629-634. The opinion goes on to list and explain these subtle hazards, which include promotional pressure, new temptations, impairment to public confidence due to the reputation effects in the public mind if investments turn sour, pressure to make its credit facilities available to firms whose securities it sells, pressure to provide issuers with unsound loans, and ultimately, concern that depositors are put at risk by these relationships and activities. *Id.*

¹²³ *Sec. Indus. Ass'n v. Bd. of Governors*, 468 U.S. 137 (1984).

¹²⁴ *Id.* at 148.

¹²⁵ *Sec. Indus. Ass'n v. Bd. of Governors*, 807 F.2d 1052 (D.C. Cir. 1986), *cert. denied*, 483 U.S. 1005 (1987).

¹²⁶ *Id.*

providing further incentive to modify behavior and impetus for further regulatory change.

2. The notion of competitive equilibrium, despite its merely theoretical existence, provides a useful benchmark to avoid wasteful allocations of resources. Several assumptions, including (a) the absence of externalities, (b) information asymmetry, and (c) rational behavior of the actors, are required in defining the notion of competitive equilibrium.

3. When confronted with changes in their environment due to the emergence of new techniques, technologies, or even regulatory changes, firms and individuals are free to buy, sell, or transact to reduce their costs. Demsetz and Coase reveal that at times regulatory changes motivate these adjustments. Regulations prompt actors to change their property boundaries to adjust their transaction costs and internalize the benefit created by the new regulations. This process of adjustment and internalization of benefits reveals that regulations themselves are a form of externality to any given firm. From a system-wide perspective, those who create laws and regulations are themselves players in a game-theoretic context. Mechanism design principles attempt to optimize the performance of these regulatory distortions of competitive equilibrium.

4. The *revelation principle*, the design and implementation of coordination mechanisms to serve as incentives to encourage firms and persons to simultaneously share information and to act honestly and obediently, is internal to a system of social choice and the process of formation, execution, and adjudication of laws and regulations. As such, like any system, it is subject to a set of optimization constraints and limitations. Among those are the constructs of social choice theories such as the Arrow Impossibility Theorem and capture theory.

5. The dynamic gaming response of those within the system of incentive mechanisms can create imbalances that are not always predictable, but its quantitative consequence can be monitored and detected. Players who have developed techniques to detect these consequences, such as hedge fund "quants," have learned to benefit speculatively.

6. The assumption of self-interested actors who behave rationally in making their choices and decisions survives once we allow for the presence of externalities in the form of regulatory incentives that create lacuna that allow them to reorganize, internalize benefits, and externalize risks that influence their choices; dynamic responses that reflect imperfect and imperfectly assimilated information; and the reality that our individual rationality is bound by these factors as well as the limited time we have to make decisions, the analytical framework, the ideology and

biases we bring to the decision, and our ability to incorporate the changing effects of all these factors on the decisions of the other players.

7. Complex, interdependent, and dynamic problems rarely have discoverable equilibrium solutions.¹²⁷ Real processes cannot achieve ideal results. Thus, the best dynamic strategy for all players within this complex framework is a heuristic strategy, which means that it adjusts and learns as facts and rule sets change within a general set of boundaries—specifically, the rules of a civil society.

8. As an illustration and as applied to the current crisis, the ideology of encouraging competition and privatization manifested itself in ways that allowed actors to organize in order to minimize transaction costs and internalize benefits (grow revenues through the fees collected from the sale of subprime mortgages and derivative credit instruments) while externalizing costs and risks of downturn and default—for example, through the collateralization of mortgage-backed securities and naked shorts on credit default swaps.

9. In terms of the current regulatory structure, after the Gramm-Leach-Bliley Act, the policy objectives of banking—safety and soundness of depository institutions—can be at odds with those of securities regulations—risking disclosure to allow investors the freedom to make informed, if risky, investment decisions. This is because the disclosure of news that triggers rapid and illiquid market reactions and movement can turn into fractal and self-reinforcing behavior that would undermine safety and soundness.

10. Aside from immediate measures to stem the decline in underlying asset prices in housing, regulatory policy prescriptions in recognition of these constraints, and the need for measures to protect the system from collapse, regulators need to include prophylactic prohibitions to prevent further

¹²⁷ CHRISTOPHER ENGEL & GERD GIGERENZER, *HEURISTICS AND THE LAW* 1-16 (MIT Press 2006) (“Heuristics are needed in situations where the world does not permit optimization. For many real-world problems (as opposed to optimization tuned textbook problems), optimal solutions are unknown because problems are computationally intractable or poorly defined. . . . Heuristics may be of help in making new laws. In civil countries, the ordinary mechanism for this is legislation. Consequently, the design of new law is best done by understanding political process. A standard model from political science, the policy cycle, helps do that. It structures an often messy chain of events into five steps: agenda setting, problem definition, policy choice, implementation, and evaluation (May and Wildavsky 1978). Each step is heavily influenced by the heuristics of those contributing to the legislation. Finally, the process of rule application can capitalize of heuristics. Yet the heuristics of judges and administrators can also be seen as a problem by the legislator, or by the scientific observers of the legal order.”).

contamination of the safety and soundness of depository institutions from the profitable sale of securities whose risk has been socialized.

V. WHERE DO WE GO FROM HERE?

The Gramm-Leach-Bliley Act is a fact of life at this point. We cannot turn the clock back, but as we seek to make regulatory adjustments, we should remember the lessons of history. The need to preserve the safety and soundness of banking and confidence in depository institutions, which was the purpose of banking regulation, at times stands in contrast to the more nuanced and factually-specific concerns of investments and securities regulation, designed not to inhibit risk taking ventures but to force disclosure of that risk to enable investors to decide.

Applying these two policy objectives to today's situation, where banks face heightened risk and exposure due to the "toxic" assets on their balance sheets, regulators should view prophylactic measures with respect to investments by regulated market participants in any type of speculative derivatives. The causal connection between these risks and bank reputation effects alone should give pause to those concerned with bank safety and soundness.

Even if followed, securities regime rules on disclosure cannot keep pace when rapid declines in values of derivatives or naked positions need to be covered immediately because illiquidity is self reinforcing. In this respect at least, the use of a heuristic tool, such as a prophylactic measure, may be the optimal regulatory approach until a more long-term, structural solution is found.¹²⁸ Banks and hedge funds that hold naked derivative default swaps are creating externalities and risking contamination of the financial system for the rest of us. Our government, of the people, by the people, and for the people, needs to step up and protect the people—not the banks and market participants whose self-interested behavior has contaminated our common source of livelihood.

¹²⁸ The use of prophylactic measures in law is not uncommon. A famous instance is law enforcement agencies use of the *Miranda* warning, which is a prophylactic that ensures that suspects are not compelled to self-incrimination in violation of the Fifth Amendment. *See generally* *Miranda v. Arizona*, 384 U.S. 436 (1966).