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Financial Armageddon Routs Law Again

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Abstract: This essay, after highlighting the unique aspects of financial markets, offers a mostly rational account for financial crises, centering on the 2008 crisis as an example. The thesis is that market participants overestimate the duration of high

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productivity growth due to new technologies and produce occasional—and likely unavoidable—bubbles. Considering potential changes in the regulation of financial markets, the conclusion is grim. Regulators appear to have exhausted the effective legal levers against overestimations of continued high growth. The legislative responses to the last few crises were likely unproductive. The sole (but still unrealistic) effective protection would be the constitutional development of a financial legislative branch.

I. INTRODUCTION

The years since 2008 have produced much work about the financial crisis that started at the end of 2007 (the “2008 crisis”) and brought about the Great Recession: a steady stream of articles and books, a Congressional investigation committee report, and a


2. Extraordinary are the books of the protagonists, the Fed Chair and the Secretary of Treasury: Ben S. Bernanke, The Federal Reserve and the Financial Crisis (2013); Henry Paulson, On the Brink (2010). The academic, World Bank, and central banker insight appears in Raghuram G. Rajan, Fault Lines (2012) (the author is a professor at the University of Chicago, was the chief economist of the World Bank, and is the Chair of India’s central bank). See also Alan Blinder, After the Music Stopped: The Financial Crisis, the Response, and the Work Ahead, 2013. Many journalists with an intimate understanding of the financial markets who reported on the crisis as it unfolded have also produced vivid accounts, David Wessel, In Fed We Trust (2009); Andrew Ross Sorkin, Too Big to Fail: The Inside Story of How Wall Street and Washington Fought to Save the Financial System—and Themselves (2009); Gretchen Morgenson and Joshua Rosner, Reckless Endangerment (2011). The financial understanding and vivid narration of Michael Lewis make his The Big Short: Inside the Doomsday Machine (2010) one more interesting read. Leading economists held a conference on the crisis and their contributions, which are much less radical than, e.g., Morgan Ricks’s, supra note 1, form the chapters of The Squam Lake Report: Fixing the Financial System (2010). The brilliance of Judge Posner is once again evident in his recounting of the crisis, A Failure of Capitalism: The Crisis of ’08 and the Descent into Depression (2009), and his subsequent The Crisis of Capitalist Democracy (2010). A slightly more distant and self-
massive legislative response, the Dodd-Frank Act. From the perspective of securities regulation, this crisis had the unusual feature that the investors whose errors contributed most to the euphoria that led to the crisis were sophisticated institutions, not the retail, unsophisticated investors that conventionally need protection.

This essay has three purposes. First, it seeks to satisfy the law student who is not familiar with finance and seeks an understanding of the crisis. Therefore, the essay begins by explaining how financial markets, particularly stock markets, work and discussing why and how a financial crisis can cause trouble for the non-financial (real) sector of the economy. The real sector suffers because financial crises tend to impede the ability of businesses to borrow.

Second, this essay offers a mostly rational (i.e., traders merely and realistically fall somewhat short of the ideal of perfect rationality rather than exhibiting the systematic errors of bounded rationality) account of euphorias that lead to crises, with the 2008 crisis as an illustration. Producing a rational account for crises is more disquieting, and more accurate, than theories of mass delusions. The rational account is more disquieting because we cannot expect foresight or caution to protect from such crises, more accurate because none of the extremely sophisticated regulators and businesspeople in positions of power did forecast the crisis.

Reality validated Yogi Berra’s tenet that predicting is difficult, particularly about the future.

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5. Out of all the extremely sophisticated regulators and businesspeople populating the financial markets, the few who forecasted the crisis were not in positions of power. Indeed, Michael Lewis’s book *THE BIG SHORT: INSIDE THE DOOMSDAY MACHINE* (2011), is a recounting of the difficulties faced by a handful of hedge fund managers who had made trades assuming that mortgage backed securities were overvalued. As the bubble kept growing, their investors complained and tried to abandon their funds. One of those in a position of power managed to avoid its consequences, Jamie Diamond, the CEO of JP Morgan Chase. Still, it is doubtful that he and his organization forecast the crisis because they did not take positions that would profit from it. More likely is that JP Morgan merely showed the conservatism to avoid harm.

6. In the US, this quip is usually credited to Yogi Berra, the philosophizing catcher for the New York Yankees in the mid twentieth century, but Europeans give credit to Neils Bohr, the well-known Danish physicist. See **EUROPE WITHOUT ILLUSIONS: THE PAUL-HENRI SPAAK**
Finally, the essay looks for anti-crisis features in the law of securities regulation writ large. The backbone of securities regulation was created in the 1930s as a reaction to the crash that led into the Great Depression. Surveying securities regulation reveals some surviving anti-crisis features but also warns that a slow-building bubble like the one that led to this crisis may be impossible to address in a flexible legal system because it subverts the very flexibility on which the legal system relies for remaining up to date.7 The timeframe of the buildup to the 2008 crisis indicates that even if the anti-euphoria features of the law had the highest resistance to change that our legal system can provide, constitutional protection, they still could have succumbed to the pressures that built the bubble.8

Parts II and III introduce, respectively, financial markets and stock markets. Part IV discusses the interdependence of financial and non-financial (real) markets. Part V explores the issue of contagion infecting the real sector after a rational euphoria and crash in the financial sector, and Part VI shows how the Great Recession is an illustration of such a contagion. Parts VII and VIII turn to the ramifications for the legal system, assessing the legislative, administrative and caselaw environment of securities law, explore small room for improvement, but conclude that trusting the legal system in the short run to prevent rational euphorias is futile. In the long term, a desirable change would be to enshrine constitutionally a specialized legislative branch with heightened independence that would have exclusive authority on financial legislation.

7. As technology, tastes, and socioeconomic conditions change, law needs to change to continue serving society. Inflexible legal systems are not viable in the long term. The Anglo-American common law systems, as we can infer from the age of their institutions, seem to be especially adaptable, as confirms theory and evidence. Examples of the theoretical work are Nicholas L. Georgakopoulos, Predictability and Legal Evolution, 17 Int’l Rev. L. & Econ. 475 (1997); Steven Shavell, Risk Aversion and the Optimality of Attenuated Legal Change, American Law and Economics Association Annual Meeting (May 17, 2013). Examples of the empirical work are the pieces that constitute the law and finance literature, e.g., La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 1998. Law and Finance, 106 J. Pol. Econ. 1113; collectively reviewed in Nicholas Georgakopoulos, Statistics of Legal Infrastructures: A Review of the Law and Finance Literature, 8 Am. L. & Econ. Rev. 62 (2006).

8. See below, Part VIIIB, text accompanying notes 118-120.
II. DIFFERENCES BETWEEN FINANCIAL AND REAL MARKETS

Paradigmatic markets for real goods are farmers’ markets, retail malls, grocery stores, and retail neighborhoods. Real markets focus on satisfying consumers’ desires by matching goods with individuals. Financial markets are about money rather than goods. Investors or savers place their money in investments that they hope will safely store it for some duration and produce interest (in the case of loans) or dividends and price appreciation (in the case of stocks and the aggregation of stocks into mutual funds or variable life insurance and annuity policies). Investors often move their money between investments and then liquidate when they need to finance major expenditures or retirement. Financial intermediaries such as banks or brokerage houses help move money between investments.

Significant distinctions between financial and real markets are found in the variety of goods and markets, the centrality of seller identity, the ratio of sellers to buyers, and the way dealers set their prices: the bid-ask spread. Let’s consider each of these in turn.

A. Variety of Goods and Markets

In markets for real goods, the variety of types of goods is so large as to be nearly infinite. Department stores, for example, offer an encyclopedic selection of goods, from furniture to clothes, fragrances, and appliances. Grocery stores offer wines, meats, flowers, stationery, health, and pharmacy products. Furthermore, sellers are legion. Indeed, in the age of eBay and craigslist, anyone can sell almost anything. Markets for real goods are virtually everywhere as stores in neighborhoods and small villages demonstrate.

An unusual non-financial asset, real estate, is worth a digression because it has played a central role in at least two crises, the S&L

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9. Mutual funds aggregate the investment of many investors and hold a portfolio of securities that is professionally managed. Life insurance and annuities are investments that also have a mild insurance function. They are investments due to the lack of uncertainty about the insured event: all those whose life is insured will die. Their mild insurance function cancels the timing of that event for each insured. Life and annuity that are variable adjust the payout to the policy holders depending on the performance of stock market indices or mutual funds. Conceptually, one can envision variable life insurance as having the insurance company place a fraction of the insured’s funds in those investments and, upon the insured event, having the company pay the beneficiaries from the proceeds of their sale.
crisis of the early nineties and in the much graver 2008 crisis, and probably also the Great Depression and several others. Real estate is a real good because its users put it to non-financial use. Homeowners, for example, use it for housing, businesses for facilities, and farmers to make agricultural products. Real estate, however, is unusual among real goods because land tends not to deteriorate with time. Therefore, it has investment value,\(^\text{10}\) and lenders trust it to an unusual degree as collateral securing mortgage loans. No lender would make a thirty-year car loan, but thirty-year home loans are routine. Moreover, the social importance of housing has produced significant government involvement in home financing. This involvement is mostly the bundling of many mortgage loans into funds or pools. Investors or lenders can buy fractions of these funds and have much lower risk than they would if they bought or made loans to individual homeowners. This is the \textit{securitization} of mortgage loans.\(^\text{11}\)

Whether real estate prices were erroneously high (artificially inflated) due to government involvement or due to widespread underestimation of the possibility of drops of real estate prices, those drops triggered the S&L and the 2008 crises and aggravated other crises. The drops are harmful because lenders used too small a safety margin when lending before the crisis: they lent too large a fraction of the value of the real estate that secured their loan. When real estate prices dropped, lenders found their claims not to be collectable, leading to further issues discussed later (in the context of financial crises and their transmission to the real sector).\(^\text{12}\)

In stark contrast to the virtually infinite types of real goods and the ubiquity of their markets, financial goods tend to be traded in few markets and have few categories or types. It is important to realize that this is a difference in the number of the types of goods rather than the goods themselves. Consider the smallness of the ratio of types of cars to the number of the types of real goods, which must be in the hundreds (for example, try to count each of eBay’s categories of goods). Compare that to the magnitude of the

\(^\text{10}\) This does not make real estate into a financial good because its real use is significant. Many durable goods have a financial component. Car buyers, for example, may take into account which cars retain more value.

\(^\text{11}\) \textit{See} Adam J. Levitin & Tara Twomey, \textit{Mortgage Servicing}, 28 \textit{Yale J. on Reg.} 1, 13 (2011).

\(^\text{12}\) \textit{See} below Part V, text accompanying notes 46-50.
ratio of the number of stocks, which number several thousands, to the number of financial goods, which is a handful. The difference in those ratios is striking and influences the introduction to finance. Learning what a corporate stock happens once and differs from learning about a specific corporation’s stock the same way that learning the features of a specific car differs from learning what a car is. Furthermore, rarely does learning the features of a type or genus of a real good—like a car—pose difficulties, whereas both learning the basic financial goods—what is a stock and what is a bond, for example—and the specific ones—individual stocks or bonds—tends not to be intuitive. When learning about a field of real goods, the participants tend to already have a basic understanding of those goods. For example, someone learning about car racing likely knows already what a car is. That may not be true in finance. Newbies may lack even a basic understanding about the artificial and recent universe of finance.

Before the introduction of trades enabling individuals to invest as members of a group, financial markets traded only stocks and bonds—namely fractions of business ownership or slices of loans mostly to businesses, but also to governments and municipalities. Eventually, in the US in the late 19th and early 20th centuries, financial intermediaries gradually introduced more complex instruments, starting with aggregations of stocks or bonds into closed-end funds, [open-ended] mutual funds, or exchange-traded funds, and reaching derivatives, contractual arrangements the value of which depends on—derives from—one or more underlying, more basic goods like stocks or bonds. Furthermore, financial markets are centralized and, therefore, few in number. Typically, each developed country has a single major stock market.


14. Closed end funds trade like stocks: they have a fixed number of outstanding shares which investors trade as a stock. Open-ended mutual funds have the flexibility to accept new capital and to redeem investors’ shares, which they do at the end of each trading day. Exchange-traded funds trade throughout the day with the issuer likely buying/redeeming and selling/issuing shares.

15. Some derivatives are options, financial futures, and swaps; understanding them is not necessary here. Options are rights to buy or sell the underlying good. Financial futures are contracts that simulate purchases or sales of the underlying good, such as a stock, index or interest rate, at the value it will have at a future time. Swaps are the exchange between the parties of, usually a stream of, obligations denominated in different underlying goods.
The United States, with both the New York Stock Exchange (NYSE) and NASDAQ, is an exception. A further round of centralization has occurred with the merger of stock exchanges into even larger groups of exchanges.

The laws regulating these markets also specialize. Banking law, insurance law, and securities law are governed by separate statutes and, at least in the US, different regulators.\textsuperscript{16} As this essay focuses on securities law, we can leave behind bank- and insurance-related financial goods and their respective regulations.\textsuperscript{17} Within securities law, the financing of businesses is the central activity that ties the financial system to the real economy; therefore the focus is on stocks and bonds, ignoring funds and derivatives.

\textbf{B. Seller Identity and Credit}

In non-financial goods, the identity of the seller or producer often does not matter. The irrelevance of the seller’s identity is so common that it is part of contract law doctrine which, for example, states that a promissee may not refuse performance by someone other than the promissor.\textsuperscript{18} Parties often contract for goods defined in generic terms—t-shirts or tomatoes, for example (granted, of a specific quality). For many real goods, the buyer has no interest in the identity or personal attributes of the seller or the producer. The appeal of a shirt or a tomato lies mostly in its features rather than its provenance. Obviously, exceptions exist. Provenance is important in the art market or in high-end fashion but features that are unrelated to provenance still dominate. Most consumers would not willingly buy a product that they did not enjoy simply because of its

\textsuperscript{16} Financial regulation in the US has produced a multiplicity of regulators. Some countries have much simpler regulatory systems, with the commentary usually dividing them into single-peak systems, that have a single top financial regulator, and twin-peak systems, that have two, often one for capital adequacy and consumer protection and one for central banking. See, generally, e.g., Eric J. Pan, Understanding Financial Regulation, 2012 Utah L. Rev. 1897 (2012). The legislative reaction to the Great Recession, however, has been to move authority from independent agencies to the more political finance ministries, see generally Stavros Gadinis, From Independence to Politics in Financial Regulation, 101 Cal. L. Rev. 327 (2013).

\textsuperscript{17} The financial goods that banks offer are bank accounts and certificates of deposit. Life insurance companies offer variable annuity and variable life insurance policies.

\textsuperscript{18} A contracting party can refuse performance by someone other than the counterparty in specific circumstances. 29 Williston on Contracts § 74:27 (4th ed. 1990) (“Contractual duties are…not delegable if they involve the personal qualities or skills of the obligor, in the absence of consent by the obligee” or “unless prohibited by statute, public policy or the terms of the contract.” (citations omitted)).
impressive provenance. Granted, the identity of the manufacturer is also important for some durable goods, especially complex ones like cars or appliances, but often not for less complex ones. Most buyers of ping-pong tables, countertops, and other simple durable goods place little importance on provenance.

By contrast, in financial goods, the identity and creditworthiness of the issuer is vital to the product’s appeal. Ownership stakes (stocks) in well-run corporations are very different from stocks of those with dubious prospects. Loans to (bonds of) safe corporations are very different from bonds of risky or failing enterprises. So central is the identity of the issuer in financial goods that the notion of buying a share of stock or a bond of an unnamed corporation is strange. Rather, because retail investors cannot monitor issuers (effectively, study the provenance of stocks), they often invest through mutual funds or other professionally managed investments.

C. Seller and Buyer Mix

In markets for real goods, most businesses only sell items to the public rather than both buy from the public and sell to it. Few are the stores for used electronic games, used CDs, used books, and antiques. Those merchants are not merely sellers but rather dealers because they both sell and buy significant amounts of their merchandise. As consumers of real goods, we interact mostly with sellers. Furthermore, the final sellers that consumers meet may conceal many more. Looking behind a good can take us to the manufacturer who assembled the item, a cascading sequence of component sellers and more manufacturers, and the producers of the raw materials. Sellers dominate real markets.

In financial markets, the most visible participants sell and buy about equally. The stock markets, bond markets, and brokerage houses (the principal intermediaries) cater equally to investors when they are buyers as when they are sellers.

D. Bid-Ask Spreads

The term bid-ask spread comes from financial markets, but it applies to real markets as well. It originates from the practice of calling the price at which a dealer is willing to buy a security the “bid” and the price at which the dealer is willing to sell the same security the “ask” price. Bid-ask spreads are important for under-
standing the behavior of the players in financial markets. Therefore, recognizing how small financial bid-ask spreads are compared to real ones is important.

The relatively few dealers who operate in markets for real goods exhibit a large difference between their bid and ask. Used bookstores that ask $2-$6 for used paperbacks might bid only $0.25 to buy used ones. Music stores that sell used CDs at about $8 rarely bid more than $2 to buy them. As a percentage of the ask price, these bid-ask spreads exceed 75%. The spreads on used cars can be several thousand dollars. They are not quite so large in percentage terms as those on books and CDs, but they can still easily exceed 20% of price.19

Financial bid-ask spreads are hair-thin by comparison. Stocks can have bid-ask spreads of a few cents or even just one.20 The giant mutual fund firm Vanguard posts the average bid-ask spread for its exchange-traded funds, which reach as low as one cent and 0.02% of price.21

The causes of the vast difference between the bid-ask spreads in real and financial markets are many and not fully understood.22

19. The price a used car dealer is willing to pay for a used car may be thousands of dollars lower than the price at which the dealer asks for the same car. For example, in April of 2013, the Kelley Blue Book reported the price to sell to a dealer a 2010 Ford Mustang coupe in excellent condition as $12,584. The amount that CarMax.com asked for the cheapest one it had on sale was $15,998, which is a low estimate since its condition may not be excellent. As a percentage of the ask price, this bid-ask spread of over $3,000 is much smaller than that of books or CDs but it is still over 21%.

20. For example, on the morning of May 8, 2013, Goldman, Pfizer, Home Depot, Merck, Ford, Citigroup, Microsoft, Google, and Apple, had an average spread of 0.04%:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Bid</th>
<th>Ask</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS</td>
<td>$150.13</td>
<td>$150.17</td>
<td>0.03%</td>
</tr>
<tr>
<td>PFE</td>
<td>$28.91</td>
<td>$28.92</td>
<td>0.03%</td>
</tr>
<tr>
<td>HD</td>
<td>$75.38</td>
<td>$75.39</td>
<td>0.01%</td>
</tr>
<tr>
<td>MRK</td>
<td>$45.35</td>
<td>$45.36</td>
<td>0.02%</td>
</tr>
<tr>
<td>F</td>
<td>$14.20</td>
<td>$14.21</td>
<td>0.07%</td>
</tr>
<tr>
<td>C</td>
<td>$48.66</td>
<td>$48.67</td>
<td>0.03%</td>
</tr>
<tr>
<td>MSFT</td>
<td>$32.90</td>
<td>$32.91</td>
<td>0.03%</td>
</tr>
<tr>
<td>GOOG</td>
<td>$863.96</td>
<td>$864.97</td>
<td>0.12%</td>
</tr>
<tr>
<td>AAPL</td>
<td>$462.85</td>
<td>$463.01</td>
<td>0.03%</td>
</tr>
</tbody>
</table>

A statistical study under a previous trading technology estimated the bid-ask spreads in 1998 at around 1% for the NYSE and 1.46% for NASDAQ. See Hendrik Bessminder, Issues in Assessing Trade Execution Costs, 6 J. FIN. MARKETS. 233, table 2 (2003) (estimating the half-spread in NYSE as .486% and on NASDAQ as .739%).


22. While the research into the components of the bid-ask spread in finance is enormous, the bid-ask spread of real goods is almost ignored. A search for bid-ask in a publication’s abstract in the Econlit database of ProQuest on June 7, 2013, produced hundreds of hits (895 articles and 12 books). Only one appears to address non-financial goods. Not surprisingly, that study discovers a component of the bid-ask spread that does not exist in financial markets, one related to the probability that eligible buyers and sellers meet. See Brian W. Buckles, Liquidity Dynamics in Commercial Real Estate, 14 J. REAL EST. PORTFOLIO MGMT. 307 (Oct. 2008).
Primary ones include the expense of handling tangible goods, the cost of their storage, the risk that natural events may deteriorate their condition, the lower degree of trading activity, and the risk that a delay in reselling may expose the dealer to unforeseen adverse price movements. Dealers in financial goods do not have to spend anything on handling or storing their goods because nowadays they are intangible—electronic entries rather than the old paper certificates of stock ownership. The dealers do bear some risk that price may move against them, but two phenomena mitigate this risk. First, the fast pace of securities trading means that dealers can unwind their positions and shorten their exposure to such a risk. Second, financial markets let dealers hedge—neutralize—their risk by taking positions in other securities that can cancel out the risk the dealers want to avoid. Traders finding themselves with too much of a stock, for example, can trade in futures or options to cancel that position out. A car dealer with too many SUVs may not have a way to mitigate the risk of a drop in demand for SUVs.

The small size of bid-ask spreads in financial markets is both a cause and a consequence of the vast volume of trading that occurs in these markets. The narrow bid-ask spread facilitates the trading of financial goods, and the intense trading activity enables market-makers to cover their costs with a narrow spread. The physical

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23. A price movement against a trader is one that produces loss for the trader. Thus, if a market maker has bought heavily in a security, a movement against the market maker is a drop of the price. Vice versa, if the market maker has sold, it would be a rise in price.

24. Hedging means engaging in transactions that neutralize risk; to avoid confusion, note that we will soon also encounter the misleadingly named “hedge funds” which do not cancel out risk but rather take risk to provide their investors with higher returns.

The failure of Lehman Brothers revealed a stark example of good hedging. When it entered bankruptcy on Sep. 15, 2008, Lehman had open trades in interest rate swaps corresponding to $9 trillion of underlying loans but Lehman’s exposure was hedged. Its clearinghouse was able to apply Lehman’s hedges and liquidate the entire portfolio without taking any loss. The clearinghouse returned the majority of Lehman’s security deposit to the bankruptcy estate. Julia Lees Allen, Note, Derivatives Clearinghouses and Systemic Risk: A Bankruptcy and Dodd-Frank Analysis, 64 Stan. L. Rev. 1079 at 1090 (describing that the clearinghouse only had to use 35% of Lehman’s margin in liquidating Lehman’s $9 trillion of swaps). See also, Douglas G. Baird & Edward R. Morrison, Dodd-Frank for Bankruptcy Lawyers, 19 Am. Bankr. Inst. L. Rev. 287 at 312-14 (discussing the Lehman experience liquidating within two weeks 80% of the over 1.5 million transactions it had when entering bankruptcy).

25. For example, the average daily trading volume on the NYSE between June 18, 2013 and July 9, 2013 was over 900 million shares. The highest single daily volume in the same time period was over 2 billion shares. National Market Volume Summary, NYSE TECHNOLOGIES: MARKET DATA, http://www.nydata.com/Data-Products/National-Market-VolumeSummary (last visited July 10, 2013).
nature of tangible goods prevents markets for real goods from accelerating to the trading intensity of financial markets. Trading one’s car on a weekly basis would be a hassle, but many investors hold stocks or bonds for less than a week.\footnote{Indeed, the phenomenon of day trading involves systematic round-trip trading on a single day. See, eg. Justin Kuepper, \textit{Day Trading Strategies for Beginners}, \textsc{Investopedia} (June 25, 2011), http://www.investopedia.com/articles/trading/06/daytradingretail.asp.}

In sum, markets for real goods are characterized by a vast variety of types of goods offered at many markets, the usual irrelevance of the seller’s identity, the fact that they consist mostly of sellers, and substantial bid-ask spreads. By comparison, in financial markets, the types of goods are no more than a handful, the markets are few, the identity of the issuer is crucial, dealers rather than sellers predominate, and bid-ask spreads are hair-thin. The difference between a farmer’s market and an electronics store is minuscule compared to their difference from financial markets. Let us take a closer look at the structure of the financial markets central to financial crises: stock markets.

III. THE STRUCTURE OF STOCK MARKETS

To gain a basic understanding of stock markets, consider three aspects: their basic operation with a focus on the New York Stock Exchange; the cast of characters that populate them; and finally, the type of media attention that they draw.

A. Basic Function

Stock markets stand between investors as both sellers and buyers and also between corporations as issuers of stocks or bonds and investors as buyers. Technology has changed the trading mechanics dramatically, from handwritten agreements to telegraphic transmissions and finally to today’s automated trading. Figure 1 illustrates this transition. While the NYSE is now part of a group of stock markets and has international and domestic competition that erodes its dominance, it remains the most active by trading volume\footnote{The latest available annual trading volume of over $11 trillion in 2004 makes the NYSE twice as active as London, almost three times as Tokyo, about seven times as Frankfurt, and about 30% more active than NASDAQ. See \textit{Global comparison of annualized value of}} and the largest by capitalization.\footnote{Indeed, the phenomenon of day trading involves systematic round-trip trading on a single day. See, eg. Justin Kuepper, \textit{Day Trading Strategies for Beginners}, \textsc{Investopedia} (June 25, 2011), http://www.investopedia.com/articles/trading/06/daytradingretail.asp.}
Consistent with the earlier observation that new types of financial goods are not introduced frequently, stocks only appeared and started changing hands in the 17th century (most of human history knew no trading of financial goods; to the extent debt was transferrable, trading debt preceded the trading of stocks).\textsuperscript{29} The “buttonwood agreement” that gave birth to the NYSE was signed over a century later, in May 1792.\textsuperscript{30}

The central features of the modern NYSE trading environment are the kiosks that house the “designated market makers” (previously “specialists”) to whom the NYSE assigns the privilege and obligation of “making the market.”\textsuperscript{32} To make the market for a security effectively means to stand ready to buy or sell the security if a trader cannot find a counterparty. Each designated market maker is responsible for a handful of stocks on the NYSE. Other

\textsuperscript{28} The last comparative data, from 2005, have the NYSE with a total market capitalization of $13.3 trillion greater than the sum of the capitalization of NASDAQ and the Tokyo, London, and Frankfurt stock markets. See \text{Global comparison of market capitalization of domestic listed companies}, NYSE FACTBOOK HISTORICAL STATISTICS, http://tinyurl.com/omayvcc, (last visited May 6, 2013).

\textsuperscript{29} See Andrew Beattie, \textit{The Birth of Stock Exchanges}, \textsc{Investopedia} (Feb. 26, 2009), http://www.investopedia.com/articles/07/stock-exchange-history.asp.

\textsuperscript{30} \textsc{Jerry W. Markham, A Financial History of the United States} at 139 (2002).


\textsuperscript{32} The NYSE rules define designated market makers as those approved by the exchange, NYSE Rule 2(i). NYSE Rule 104.10 adds detail to the role of the market maker, including an obligation to “maintain[…] a fair and orderly market” by “engag[ing] […] in dealings for his or her own account when lack of price continuity, lack of depth, or disparity between supply and demand exists” which translates into requiring the market maker to post a bid if no public buy orders exist and an ask if no public sell orders exist.
exchanges use market makers that are not designated and may overlap, as does NASDAQ. Exchanges need not organize around market makers. In exchanges without market makers, traders must find counterparties for their transactions.

The profit of the market maker comes from having the bid lower than the ask under uneventful trading conditions. At turbulent times when prices change fast, the market maker is exposed to the risk of buying before a drop of the price or selling before a rise. Not surprisingly, the stock market may suspend trading in response to major releases of information during trading hours until traders have had the opportunity to digest the new information.33

Retail investors do not have direct access to stock markets. Rather, they interact with the market through financial intermediaries such as brokerage houses, mutual fund companies, or banks. Financial firms, on the other hand, often have direct access to the exchange so they can trade for their customers or on their own account.

One final distinction is important when considering markets, that between primary and secondary markets. Primary markets are those where the first sale occurs, in the case of securities where businesses issue securities to investors. Secondary markets are those where transactions subsequent to the first sale occur. Stores for used books and the NYSE, thus, are secondary markets: the bookstores because they deal in used books and the NYSE because the vast majority of trades are not issuances. Unlike the division of bookstores into those dealing in new books and those dealing in used books, securities markets do not physically separate into primary and secondary ones.

That said, the distinction between primary and secondary markets is important from two perspectives. First, the regulation of issuances is vastly different from the regulation of subsequent trades. Second, the primary markets play an important economic function: issuances perform the capital allocation function of the markets by moving funds from investors to businesses. Secondary

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33. See, e.g., NYSE Rule 123D (establishing the procedure for halting trading pursuant to a warning by the listed corporation about impending information) available at rules.nyse.com (visited June 6, 2013). Notable opinions about securities fraud involve a suspension of trading when the fraud comes to light. See, e.g., Dirks v. SEC, 463 U.S. 646, 650 (1983) (“[The information Dirks brought to light] led the New York Stock Exchange to halt trading on March 27 [1973 in the stock of Equity Funding of America].”)
trades have a merely indirect capital allocative function. Nonetheless, secondary markets are essential to make purchases in primary markets appealing by offering a venue for subsequent sales.

B. The Cast of Characters

Understanding the flurry of activity in stock markets requires knowing what roles their main participants play. While market makers stand at the center of stock market activity, the traders who swarm around them divide according to various categorizations.

From the perspective of finance scholarship, traders divide into three groups according to motivation: life-cycle or uninformed investors, rational speculators or informed traders, and fad chasers, irrational, or noise traders. Of these, life-cycle investors are the least active. They are the millions of passive investors who store value in direct stock ownership, mutual funds, variable annuity, or life insurance policies. Many may not even realize that they become traders by merely participating in their workplace retirement fund, where a small fraction of every paycheck becomes a small purchase of a mutual fund. These are life-cycle investors because their trading patterns follow their life-cycle. They buy during their earning years and sell when retiring or undertaking other major expenses. Rational speculators or informed traders are those who tend to be active and let proper valuation methods drive their trading. Fad chasers, noise, or irrational traders are those who trade on information that is not truly relevant or try to ride waves of sentiment or spurious correlation.

A different categorization of market participants—one that divides financial professionals by their traditional specializations—helps decode business news. These roles tend to be loosely defined by the business press and may change over time. Financial professionals in brokerage firms act as: (1) underwriters when they bring new issues to the market; (2) as brokers or dealers when they facilitate their customers’ trades; (3) as speculators when they trade in their own account betting on market moves (what is nowadays called proprietary trading); (4) as hedgers when they use market

34. However, secondary securities markets do have indirect allocative functions. For example, firms can use their securities as currency to acquire other firms.
transactions to hedge risk for themselves or their clients; and (5) as *arbitrageurs* when they observe a discrepancy in pricing that allows them to make trades that cancel out, take advantage of the error, and tend to correct it by buying the cheap and selling the dear of two equivalent types of goods.

The financial markets host a plethora of other players. Financial institutions, sovereign wealth funds, and the wealthy (“accredited investors”) can avoid the restrictions of mutual funds, by investing in less regulated alternative investment vehicles, for example hedge funds or private equity funds. The tradeoff is that these investors also forego the protections that mutual fund regulation provides. In the chase for higher returns, accredited investors may find themselves exposed to the likes of Bernie Madoff, who defrauded his accredited investors out of about $50 billion.

Among the cast of market professionals are entities that try to innovate and in the process siphon some activity away from traditional players. *Discount brokers*, for example, compete by omitting some of the services traditional *full-service* brokerage houses provide. *Alternative trading systems*, some of which are called “*dark pools*” due to the anonymity they provide, compete with the exchanges by offering different trading technologies or environments.

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35. See the example of effective hedging that Lehman’s bankruptcy revealed, above note 24.

36. Variations of alternative investment vehicles take names that further specify their activity. Some tend to require that investors commit capital for a minimum period, as do *private equity funds*, *leveraged buyout funds*, *venture capital funds*, *angel funds*, *mezzanine funds*, or the even more colorfully named *vulture funds* that invest in securities of troubled corporations or countries. This leaves *hedge funds* as the investment vehicles that usually provide the expectation of exit at will, akin to mutual funds. Hedge funds further divide according to their primary trading objective into, e.g., *absolute return funds*, *index arbitrage funds*, *foreign exchange funds*, *option trading funds*, or *long-short funds*. This is not vocabulary that the reader needs to know; just avoid being confused by it.

The vocabulary of stock markets gets knottier. The financial press and financial marketing give names, often misleading ones, to other aspects as well. These include trading strategies (such as *dollar-cost-averaging* or *portfolio insurance*) or patterns of prices (e.g., *head-and-shoulders*, from the vague shape that it creates in the chart of the stock price, or *support and resistance levels*).


Concluding the list of private entities that are active in the stock markets are the non-financial business corporations themselves acting as acquirers or targets of acquisitions. Acquirers can be categorized by function into financial and strategic ones. Financial acquirers are motivated by a price they perceive as attractive. Strategic acquirers seek to expand or restructure their businesses through acquisitions or mergers and thereby realize commercial gains, e.g., from synergies, from applying advantages they may have, or from reaping economies of scope and scale. The takeover market and, to a lesser extent, the courts react differently to strategic acquirers than they do to financial acquirers. Listed corporations also create market activity by dividing themselves. They can spin off components of themselves to their shareholders. Understanding these ways in which issuers influence the market is important.

Of special interest to lawyers is the regulatory environment of stock markets. Besides being subject to the federal (and state) securities statutes, financial markets are also subject to rules from two layers of lesser authorities: administrative agencies and the exchanges themselves as self-regulatory organizations.

The primary agency that regulates stock markets is the Securities and Exchange Commission (SEC), but the Commodity Futures Trading Commission (CFTC) also has a role. Like other administrative agencies, these act as legislators when they have statutorily delegated authority to enact rules, as enforcers, and as initial adjudicators of regulatory violations.

Securities laws make the exchanges into self-regulatory organizations because the laws share the interest of the exchanges in having good internal rules and enforcing them. The exchanges are supervised in their self-regulation by the SEC and the CFTC.

39. When commodity futures were only about non-financial commodities, mostly grains and meats, the two regulators had clearly separate jurisdictions, and that of the CFTC did not touch financial markets. The development and the enormous activity of financial futures, contracts about interest rates, stock market indices, exchange rates, and the like, created a regulatory overlap which only became deeper as derivatives became more prevalent. The Dodd-Frank Act established a separation, assigning to the SEC the regulation of derivatives based on specific securities and to the CFTC the regulation of derivatives based on interest rates and indices. Dodd-Frank Wall Street Reform and Consumer Protection Act TitleVII, Pub. L. No. 111-203, 124 Stat. 1376 (codified as amended in scattered sections of 7 U.S.C. and 15 U.S.C. 40. See Richard J. Pierce, Jr. Administrative Law (2d ed.) (2012), at 1-6.
For example, the SEC has used its authority to require exchanges to move from pricing in fractions to pricing in cents. While all these actors create the storm of activity that buffets the financial markets, the fourth estate—the press and mass media—reports on this activity and in so doing, colors and influences it.

C. Mass Media and Stock News

The daily flow of financial information tends to ignore the stock markets’ structural issues and focuses on which stocks to buy and sell. The focus of the media on trends and prices can be frustrating for those new to finance because such stories may not have meaningful information about events and changes in the markets. It is analogous to reporting on a war by giving weapon advice or bullet counts, instead of explaining troop movements, battle outcomes, and their strategic importance. Lively stories about secondary aspects of financial markets or specific corporations receive comparable or greater attention than important phenomena.

Moreover, when the media focus on prices and trends, they confuse the novice because they may rely on spurious approaches to valuation. Granted, the media may not ignore proper approaches to valuation, but those do not make for sensational headlines. Proper approaches to valuation focus on firms’ profits (called earnings). The capitalization of


42. For example, on June 15, 2013, the two arguably most important stories were indications of concerns over inflation or raised interest rates and a World Bank report that excessive fiscal restraint hampered US growth. Comparing the top business/finance news on Google, Yahoo, Bing, the Wall Street Journal, and the New York Times, however, reveals that none of these news venues carried both stories in their top five. Three of these venues carried one of the two stories in their top five. Instead, greater prominence was given to stories about specific entities (Boeing, Chrysler, Groupon, the insolvency of Detroit, Lululemon) and markets (Boston parking space cost, coal, and nuclear energy).

43. Through the Center for Computer Assisted Legal Instruction (CALI at cali.org), I have published a lesson on basic valuation and one on advanced valuation. See N. Georgakopoulos,
earnings] method is the cruder of the proper valuations (not to be confused with market capitalization, the sum of the value of all shares of the stock of a corporation). It assumes that the future will be analogous to the past. By examining similar stocks, the capitalization method derives the average ratio of the price of these stocks to their per share earnings, their price-to-earnings ratio or P/E ratio. Then, assuming the stock under consideration has earnings, finds the price that would produce the same ratio. The discounting [of cash flows] method is the more refined approach to valuation. It discounts to the present the value of the stock’s future earnings. Finance theory has contributed further sophistication with the capital asset pricing model.44

The metrics that correspond to these methods (earnings per share, PE ratio, growth estimates, and beta) do not appear in front pages if at all. The barrage of news about stocks revels in trends and other shapes that fluctuations of price leave on charts, the feelings perceived among traders or in the retail marketplace, and spurious correlations such as those of royal weddings and sports to stock market behavior. While psychology can influence pricing significantly, the focus on it by the news media is grossly misleading.

By focusing on specific stocks and industries, the media fail to deliver news on the impact of the financial system on the overall economy. Thus, the shortcomings of the media provide a segue to the next topic: the interdependence between financial and real markets.


IV. THE INTERDEPENDENCE OF THE REAL WITH THE FINANCIAL SECTOR

In a stylized but accurate simplification, the real sector of the economy is where people work to earn and spend to satisfy their needs. The financial sector is where they invest their savings for interest or for dividends and capital gains. From a business’s perspective, the real sector is where it hires and sells goods or services. The financial sector is where the business obtains financing for its operations and pays for that financing by providing either interest and debt repayment or dividends and capital gains.

Figure 2. The interdependence of the real and the financial sector.45

Figure 2 illustrates this interdependence of the financial and real sectors of the economy. The top half corresponds to the real sector. The two arrows pointing from the family to the city and back represent flows of money. From the perspective of individuals and families, the family members provide employment to the real sector to earn wages and spend part of what they earn again in the real sector on the goods and services that they desire as consumers. From the perspective of the businesses as producers, the

corresponding activities are the hiring of human resources and the production and sale of goods and services.

The bottom half of the figure illustrates the financial sector. Again, the arrows pointing from the family to the city and back represent the flows of money, but now the money is capital invested and returned. Individuals and families (now seen as investors) invest the funds that they do not spend to receive the interest, dividends, or capital gains the investments will produce. From the perspective of the firms (now seen as borrowers or as issuers of securities), they obtain capital and pay for its use (the cost of capital).

The trap that financial crises pose for the real economy is already visible. If the financial sector is in shambles, with many banks failing, for example, then the businesses of the real sector have trouble financing their operations and meeting their payroll expenses. Families, in turn do not receive wages and cannot spend. The financial crisis may further reduce spending by impeding access to invested wealth. The reduction of spending has a feedback effect that aggravates the crisis. When demand for goods and services declines, businesses reduce their production and their expenses, including their spending on labor, further depressing families’ incomes and their capacity to spend. The regulation of financial markets cannot afford to ignore this risk; as the Great Depression and the rise of Nazism—to the extent they are consequences of financial calamities—demonstrated, the consequences can be devastating.

Even before reaching the issue of financial crises, the interdependence of the real and the financial sectors demonstrates the need for effective securities regulation. A regulatory structure that facilitates investment translates into lower cost of capital for businesses. When the cost of inputs drops, as it does when the cost of capital drops, then businesses can produce and sell their goods or services more cheaply, increasing the purchasing power of individuals and families. Good securities regulation is a vital component of a legal system that enables the market to better fulfill consumers’ desires.

V. THE TRANSMISSION OF FINANCIAL CRISES TO THE REAL SECTOR

Euphorias and panics are the one constant companion of financial markets despite modernization, scientific inroads into
finance, and technological improvements in the communication and processing of financial information and the structure of markets. The cycle has persisted from the late medieval times (e.g., tulip mania) through the 2005-06 mortgage backed securities bubble and the great recession that followed it. For panics to arise, euphorias must precede them, and euphorias seem to be an unavoidable component of the psychology of human interaction, especially in capital markets.

Euphorias need not be entirely irrational. Possibly, the only error may be the inaccurate prediction of when a new technology stops contributing significantly to economic growth, when the implementation of a new technology is effectively complete. The seed is an innovation that truly increases productivity. As businesses reap the gains, they show unusual growth. Because the adoption of the new technology is gradual, the unusually high growth also appears to be persistent. The adoption of the new technology may reach saturation at some point, and growth will return to its normal level. Even investors who realize the growth is temporary cannot tell beforehand when it will stop, i.e., when the new technology will reach its saturation point.

The result of high growth with an unknown end date influences the pricing of the goods that will form the bubble, usually stocks. Estimates for the future economic performance include an assumption of continued growth at the high rate. Applying this estimation to the valuation process produces escalating price increases that continue past the point in time when the new technology reaches saturation and economic growth returns to the normal level. Stock prices continue rising when the economy slows, forming a pricing bubble.

Economists have studied bubbles and crises. From a theoretical perspective, the hurdle to bubbles is that they would produce an opportunity for trading profits. For example, if prices tend to rise every January (as they do47), then traders would know to buy at the

end of December. This trading would eliminate the unprincipled price change (although the January effect persists, arguably for behavioral reasons). However, economists have devised mechanisms that produce bubbles (overvaluations) by relying only on pricing information (whereas the month is not) that would not give rise to trading profits (whereas the January effect would). Those are called “intrinsic bubbles.” The “rational euphoria” posited here is distinguishable from economists’ theories of “intrinsic bubbles” or “rational bubbles.” For example, a theory of intrinsic bubbles can rest on the change in dividends, as that of Froot & Obstfeld. Rational speculators cannot profit from the overvaluation, despite that they know proper valuation should rest on actual earnings alone.

The rational euphoria presented here has some similarities to the intrinsic bubble literature but also differences. The similarities of rational euphorias with intrinsic bubbles lie in the overvaluation and in the usual correspondence of new technologies with increases of earnings and dividends. The differences are that intrinsic bubbles assume false valuations, valuations based on erroneous concepts of what drives value. Rational euphorias, however, allow perfectly proper valuation while merely allowing inaccurate foresight about the end of the impact of a new technology on growth. This makes rational euphorias more plausible. Rational euphorias, however, do not seek to preclude the possibility of profitable trading. This does not reduce the plausibility of rational euphorias because of the impossibility of predicting the end of the impact of a new technology on economic growth.

Returning to the mechanism of the rational euphoria, the point is that when the impact of the new technology on industry reaches its saturation point, the acceleration of economic growth ceases. The return to normal growth rates defies the optimistic projections, investors recognize the error of the lofty valuations, and the euphoria collapses. All those caught having borrowed or having lent based on euphoric valuations wake up with a jolt: the borrowers unable to repay and the lenders unable to collect. If the

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overvaluation was large and widespread, then this malady hits a vast number of businesses and families.

The financial sector is the one most sensitive to this predicament. Financial firms need to collect from failed firms of the real sector but they are not unique in this. Firms of the real sector also have trouble collecting their bills. The two aggravating factors are that financial firms extend credit as a matter of course and that they have significant borrowing. They provide investment services, meaning their customers invest through them, to a significant extent as depositors but also as lenders in different guises, such as direct lenders or bond investors. As the euphoria recedes and the financial crisis begins, the widespread financial difficulties are already widely known or anticipated, but unknown is which financial firms have the most exposure to losses. As soon as investors identify the most exposed, they withdraw their (uninsured) deposits and stop lending to the endangered financial firms. The failure of those firms is virtually unavoidable.

In normal economic times, the economic system can easily withstand the failure of a few firms, real or financial. Some failures are even part of the natural casualties of innovation through creative destruction.\footnote{The “gale of creative destruction” from competition as the engine of economic growth was identified by Joseph Shumpeter, CAN CAPITALISM SURVIVE? 24 (1978).} When a large bubble collapses, however, the number and size of the failed financial firms may be so large that a majority of the financial institutions in an economy may be at risk. In such a case, the danger arises that the financial collapse may infect the real economy and become a recession or depression.

The businesses of the real sector of the economy depend on the financial system to fund their expenses as their cash fluctuates. When the financial sector experiences a massive shock, financial firms that were lenders (or funders through equity) need to hoard their cash to make up for their losses and do not make loans (or provide equity funding). The result is a \textit{credit crunch}, the borrowing difficulty that a financial crisis produces. A real business that finds itself short of cash is likely unable to find a lender, even if it is sound and would be able to borrow in normal times. Therefore, even healthy businesses may default on their obligations as a result of the crisis and close. Businesses that can pay their expenses still protect themselves from the risky environment by shrinking and
reducing their expenses: their purchases from other businesses, their employment rolls, and the wages they pay. These closures and reduced spending begin the vicious cycle of the recession, leading to further reductions in expenses and even less spending.

VI. THE 2008 CRISIS AS AN ILLUSTRATION

The Great Recession illustrates this sequence of events. Numerous books and a Congressionally authorized commission investigation report agree on the details. Unlike the preceding, account of a largely rational euphoria and panic, several authors have treated the bubble that led to the 2008 crisis as a mass delusion. Seeing euphorias and panics as products of rationality should be even more disquieting than attributing them to mass delusions. We cannot expect even wise regulators and hardnosed businesspeople to protect the economy or themselves from such euphorias. A caveat and a ray of hope arises from the story of this crisis, however. Regulators and businesspeople might not have been able to avert the euphoria but they did mitigate the effect of the crisis, at least in the United States.

A. An Innovation: Securitization

An innovation that fueled the bubble that preceded the Great Recession was securitization. Securitization is the aggregation of obligations that makes them safer as assets than obligations of single firms. The aggregation of obligations creates a diversified

51. See notes 2-3.
52. See, e.g., Robert J. Shiller, The Subprime Solution: How Today’s Global Financial Crisis Happened, and What to Do about It 4 (“The view that the ultimate cause of the global financial crisis is the psychology of the real estate bubble … has certainly been expressed before”) (2008); see also generally Michael Lewis, The Big Short (2010); Morgenson, Gretchen and Rosner, Joshua, Reckless Endangerment: How Outsized Ambition, Greed, and Corruption Led to Economic Armageddon (2011).
group of obligors and reduces the credit risk of the aggregation. The probability that all obligors would fail together is ordinarily minuscule. The securitization transaction often becomes even safer by receiving an outside guarantee.55

Securitization started by aggregating assets of real businesses. For example, the receivables of numerous businesses would be aggregated—securitized—into a fund, shares of which institutional investors would purchase without requiring as great an interest rate or a return as they would if they were lending to the individual businesses. The businesses are able to obtain cheaper financing than they would by pledging their receivables to a single lender. From this perspective, securitization is a true improvement of the business environment because it reduces the cost of capital.

The trouble began when securitization expanded to the claims of home mortgage lenders. The claims on homeowners’ mortgage payments were securitized into mortgage backed securities, and the very similar collateralized debt obligations.

Other design details sought to further reduce risk. For example, mortgage backed securities were divided into tranches (slices), with the riskiest tranche assigned to suffer the first losses from any defaults, leaving the safest tranche extremely safe. Their designers made them even safer by adding the guarantee (as a credit default swap) of a large financial institution, all too often AIG. To further increase their appeal, credit rating agencies would rate the resulting securities as extremely safe (triple-A). Furthermore, mortgage backed securities paid a slightly greater interest than other similarly rated securities. This made them very appealing, especially to banks who had regulatory reasons to hold securities rated so safe.56

B. The Euphoria

Mortgage lending reached a high of well over four times its level in the nineties.57 The flow of money pushed local lenders to make

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55. The guarantee usually took the form of a credit default swap. FCIC Report 50 (“AIG [accumulated] a one-half trillion position in credit risk”).
56. Thus, the reliance of bank regulation on credit ratings has been considered a contributing factor to the crisis. FCIC Report (at xvii “major firms and investors blindly relied on credit rating agencies”; at xxv “regulatory capital standards were hinged on them”).
more loans, borrowers to buy more housing than they could otherwise afford, pushing housing prices ever higher, justifying refinancings, buying houses for resale (known as flipping), and more lending.  

Not only did the government fail to stop the euphoria, it stoked the fire. Politicians of all stripes urged Fannie Mae and Freddie Mac, the quasi governmental entities that standardized and helped aggregate mortgage loans, to loosen their standards so more borrowers could share the American dream of home ownership. Some lone regulators tried to stem the tide to no avail. Congress protected credit default swaps, the guarantees that backed securitized home mortgages, from the jurisdiction of regulators who worried.

The arrival of the innovation of securitization to the home mortgage market was initially excellent, since it reduced borrowing cost and increased the amount of capital available for borrowing. At some point, however, a securitization fever took over the banking and the housing markets. Instead of serving them, mortgage backed securities were driving them. This changed the source of risk for real estate and several financial institutions. When demand for real estate drove price, then aggregating real estate from many different metropolitan areas provided true diversification, since each area had different industries, was exposed to different natural disasters, and generally had independent sources of risk. When the price of real estate became driven by demand for mortgage backed securities, all real estate was exposed to a single risk, that of securitization. Thus,

58. See, FDIC Report pp. 157 et seq.
the diversification designed into mortgage backed securities disappeared due to their dominance. While securitization seeks to protect against the failure of borrowers, the success of securitization made the failure of borrowers so likely that, at the depth of the crisis in 2008, these triple-A rated mortgage backed securities became unmarketable and took the label toxic assets.

C. Crash! They All Fall Down

The party was fun while it lasted, generating and enormous boom for mortgage brokers and delighting borrowers. However, housing prices relate to incomes, the incomes that buyers use to service their debt. While the prices of homes were skyrocketing, incomes were not. The party was unsustainable. Eventually, housing prices started falling. Everyone suddenly realized the folly of mortgage lending on the expectation of perpetual increases of housing prices. The borrowers could not be expected to repay; they never had the necessary income and their houses no longer had the value to secure the loans. The insurer, AIG, could not cover the large fraction of the US residential loan market that it had guaranteed. So the banks found themselves with assets—their securitized claims—that had lost their value. As a result, banks violated their capital requirements or even became insolvent. By September 2008, what had started as the March failure of Bear Stearns had expanded to infect and knock out Lehman Brothers, Merrill Lynch, AIG, Wachovia, Washington Mutual, Fannie Mae, and Freddy Mac. Citigroup was teetering. Lending was frozen. Borrowing was so dysfunctional that debtors as credible as General Electric had to receive financing from Warren Buffet’s Berkshire Hathaway at high interest rates. The difficulty that real businesses had in borrowing was the first symptom: the financial crisis had infected the real sector.

62. FCIC Report 13 (“more than 200,000 new mortgage brokers”).
63. FCIC Report 13-14.
64. FCIC Report 17 (by March 2007 housing prices had been declining for a year).
D. The Danger to the Real Sector

The failure of financial firms, painful as it is, is vastly less disruptive than the failure of real firms. Simplified, a financial firm consists of its professionals, its clerical personnel, the premises (usually leased), the computer systems, its capital, and its debtors and creditors. Consider the fate of those upon its failure. The pace of change in the information technology industry limits the value of the computer systems and, therefore, the waste from idling them. The failure of a financial firm means merely that its employees, the landlords who lease space to it, its debtors, and its creditors have to find new matches: new employers, new tenants, new lenders, and new borrowers. The extraordinary mobility of modern capital makes the last two moves, of lenders and borrowers, virtually costless. Employees and landlords may miss several months of compensation, which involves some pain, but the non-clerical employees tend to be skilled, clerical employees can obtain other employment, and the premises tend to easily accommodate alternative uses. In the language of industrial organization, this means that compared to real firms, financial firms have fairly little firm-specific financial and human capital. Compared to real firms, financial firms’ physical plants are not especially customized and their employees are capable of being productive in other businesses with little retraining.

Compare this to the consequences of the failure of real firms. If Chrysler or General Motors, for example, were to close, then four consequences would ensue that would tend to be much graver than those following the failure of a financial business. One, massive factories and other production facilities would remain idle. Finding new users for them, given the specialized structures, would be unlikely. The repurposing of these structures would be a major undertaking. Two, vast numbers workers with firm-specific skills would be unemployed and difficult to reemploy. Three, numerous suppliers and retailers would find their major if not only customer or producer gone, and four, governmental units, from national to local, would find their tax revenues shattered and their obligations, explicit such as those for social services or retirement guarantees, as well as implicit such as those for assisting in the retraining of the employees or the repurposing of the idled real estate, sharply higher. Contrary to financial firms, some real businesses have vast
amounts of firm-specific human and financial capital that would dissipate with their closure.

This does not mean that real firms should not be allowed to fail. Failures are necessary adjuncts of the creative destruction of economic competition and innovation.\textsuperscript{66} If the economy and the financial sector are in normal conditions, letting real businesses who cannot cover their costs fail is necessary to move their resources to more productive uses and let the obsolete businesses disappear.

However, a credit crunch may cause credit-worthy real businesses to fail due to temporary cash shortages. Businesses that have valuable assets but no cash could have survived if they could borrow and pay their obligations, but the credit crunch impedes borrowing.\textsuperscript{67} Not only does letting them fail aggravate the crisis, but also the large cost of their failure may not be necessary. A business may be unable to meet its expenses only temporarily due to the crisis. After the crisis, the business may be able to survive indefinitely or, if it is indeed obsolete, it may go through an orderly restructuring.

If a financial crisis starts infecting the real sector, businesses start failing due to the crisis rather than their inefficiency. Failing to buttress those businesses allows the financial crisis to expand to the real sector with catastrophic consequences.

\textbf{E. Emergency Resuscitation}

The Chairman of the Federal Reserve in 2008 was Ben Bernanke, a Princeton economics professor and scholar of the Great Depression.\textsuperscript{68} Along with Treasury Secretary Henry Paulson, former head of Goldman Sachs, he was determined not to let the financial crisis spread to the real sector. The Fed used long-forgotten emergency authority for the first time.\textsuperscript{69} Aided by the firepower that Congress eventually gave them through the Troubled

\begin{footnotes}
\textsuperscript{66} Schumpeter, note 50, above.
\textsuperscript{67} The credit crunch also reduces the potential buyers for such businesses’ assets. Therefore, the credit crunch also harms the squeezed businesses’ capacity to convert assets to cash. They can neither borrow nor sell.
\textsuperscript{68} See, e.g., BEN S. BERNANKE, ESSAYS ON THE GREAT DEPRESSION (2004).
\end{footnotes}
Asset Relief Program—after voting it down led to a 8.8% point drop of the S&P500 index—Bernanke and Paulson staved off disaster with several measures that included (a) helping real businesses borrow through the commercial paper market; (b) guaranteeing most obligations of most financial institutions; and (c) injecting massive funding into banks so that (i) nobody could fear that they would fail, and (ii) banks had to start funding businesses in order to cover the cost of the new capital. What could have developed into a depression with unemployment rates eclipsing those of the Great Depression became merely a long recession that produced no more than 10% unemployment.

The global economic system was lucky that Bernanke and Paulson were able to douse the crisis despite initial Congressional opposition. Clearly, relying on emergency revival techniques is not a sound approach to financial regulation. Financial crises are dangerous, and they remain equally dangerous despite the passage of additional regulation. Rather than prevent future bubbles or crises, the regulatory reaction actually reduced the Fed’s discretionary powers to resuscitate the economy. Coming back to the regulation of securities markets, the question becomes: what can the design of securities law do to prevent euphorias (and thus panics)? Economists have proposed various other measures, from...
contingent capital for banks (that would convert debt to equity during a crisis to ensure adequate capitalization) to the anachronistic notion of returning to the gold standard (which is pro-cyclical and hinders growth). Those, however, are beyond the scope of this work. To approach the question of how securities regulation can alleviate euphorias and panics, let us first assess the statutes, the SEC rules, and the courts’ interpretation.

VII. THE EFFECTIVE ANTI-EUPHORIA COMPONENTS

This section addresses what performed well in the securities law legal system. The securities statutes, the rules thereunder, and the courts’ securities law jurisprudence do not bear responsibility for the euphoria that led to the Great Recession.

A. Statutory

The principal effects of the securities laws are the structure and delay that they impose on the public issuance of securities and the voluminous disclosure they require in both public and private sales, i.e., offerings. Whatever other beneficial consequences this structure and delay have, they may also have a minor anti-euphoria


77. Some have argued in favor for a return to the gold standard with the argument that the more fixed supply of gold compared to fiat currencies would tend to reduce the intensity of euphorias and the economic expansion they cause, see, e.g., David Boaz, Time to Think about the Gold Standard?, Cato at Liberty, March 12, 2009, available at http://www.cato.org/blog/time-think-about-gold-standard (visited Aug 10, 2013). The gold standard, however, aggravates economic cycles. During the euphoria, people tend to accept others’ obligations and do not insist on specie payment, enabling inflation that can easily be greater than well regulated fiat money. During the contractions, not only do most actors insist on specie payment but the government does not have the leeway to foster economic growth. Accordingly, theory and evidence oppose a return to the gold standard, see, e.g., Paul Krugman, The Gold Bug Variations, Slate Nov. 23 1996, available at http://www.slate.com/articles/business/the_dismal_science/1996/11/the_gold_bug_variations.html (visited Aug. 10, 2013). For example, the six-year period from 1837 to 1843 saw deflation of -33%. The five-year period from 1843 to 1847 saw inflation of 11%. See Robert C. Sahr, Inflation Conversion Factors from Year 1774 to estimated 2018 at 2 (2008) (reporting the deflator of the Bureau of Labor Statistics in 1982-82 dollars going from 0.096 in 1837 to 0.074 in 1843, a 33% drop and going from .074 in 1843 to .082 in 1847, an 11% increase), http://oregonstate.edu/cla/polisci/faculty-research/sahr/ inf_c17742007.pdf (visited Nov. 7, 2012).
aspect. The process and the delay do not allow opportunistic rushing to market in reaction to short term stimuli. The disclosure that securities laws mandate, however, has a more salient effect—although neither their sole nor necessarily central one—in averting euphorias: the extensive disclosure of risk factors, namely everything that can turn to the disadvantage of the issuer and the holder of the security. Granted, the exact quantification of the risk factors’ sobering effect is elusive, and some may dismiss the disclosure of risk factors as legal niceties that buyers in practice ignore. As the euphoria builds up, the attention to cautionary statements tends to shrink. However, even if exuberant buyers ignore the disclosed risk factors, the potential liability\(^78\) probably continues to somewhat deter excessively optimistic statements.

B. SEC Rules

Two groups of SEC rules have some anti-euphoria effect, discussed in the following paragraphs. Then, the focus shifts to margin borrowing. A simple improvement to the margin rules could strengthen their anti-euphoria effect.

The SEC rules primarily follow the anti-euphoria pattern imposed by the registration process by carrying it over to private offerings. Private offerings are exempt from SEC registration, but the rules that allow private offerings condition them on a disclosure equivalent to that of the registration statement. The result is not only the disclosure of the accounting statements and business description of the issuer, but also issuers are led to include (in their private placement memoranda) cautionary language akin to that required in the registration statement. Thus, the private placement rules replicate the regulation process’s deterrence of excessively optimistic statements.

A different set of rules also deters overly optimistic statements. Nine of the general rules under the ’33 Act contain various safe harbors, rules that preclude liability if the issuer complies with their requirements\(^79\). Brokerage houses discuss securities trading. This

\(^78\). The regime that the securities laws establish imposes liability on issuers for misstatements or omissions and an obligation to disclose. Thus, whereas sellers of real goods may stay silent, sellers of financial goods must disclose. The result is that issuers disclose the risk factors that can adversely influence the future performance of the securities being issued.

\(^79\). Numbered from rule 134 to rule 136; although this seems to indicate three rules, the sequence includes rules numbered with appended letters.
conflicts with the restrictions that the registration process (§ 5) of the ’33 Act places on the dissemination of information. This set of nine rules addresses this conflict. Brokerage houses (a) may advise their clients what stocks to buy, (b) they may issue newsletters discussing various trends, industries, or specific equity, debt, or convertible securities, and (c) they enable their clients to trade securities. According to § 5, however, these actions are potential violations of its prohibitions against offers, prospectuses, and sales. These nine rules preserve the intent of § 5 by reducing the communications of brokers in ways that tend to curb puffery. For example, rule 139 allows brokerage houses that are involved in issuances to continue covering the issuer in the brokerage house’s newsletters that report about the issuer’s industry provided they give no emphasis on the issuer.80 Without this rule, the newsletters could be construed as offers and as prospectuses and would violate § 5.

C. Anti-Euphoria Margin Borrowing Proposal

The margin lending rules receive little attention in the legal literature.81 Financial literature, however, recognizes and studies the capacity of margin borrowing to influence manias and panics.82

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80. 17 C.F.R. § 230.139(2) (“(iii) The research report includes similar information with respect to a substantial number of issuers in the issuer's industry …; (iv) The analysis regarding the issuer or its securities is given no materially greater space or prominence ….”).


Section 7 of the ’34 Act gives the Federal Reserve the authority to set margin requirements below a maximum. Section 7 sets two fractions of a security’s value as the maximum borrowing that a client who owns a security may obtain. The owner of the security can borrow the greater of (a) 55% of its current price or (b) 100% of the lowest price in the last 36 months but no more than 75% of current price. The Fed has set margin borrowing to 50% of price since 1974.83

The effect of a euphoria or crash on the maximum borrowing that § 7 allows appears more vividly by considering that the current market price is the result of the most pronounced price change in the last three years. Section 7 compares past price to current price, but the usual measure of changes in price compares the current price to past prices. Therefore, restate the 75% and the 55% thresholds of § 7 into the price increases that produce the current price from those. An increase by a third (or, rounded, 33%) arises from a past price that is 75% of current price. A rise of 82% arises from a past price that is 55% of current price.84

The three pertinent changes of prices are (a) any declines or increases less than 33%; (b) increases between 33% and 82%; and (c) increases greater than 82%. If stock prices have been falling or have increased less than 33%, then the lowest price of the last 36 months will likely be greater than 75% of the current price. Therefore, the margin loan can be 75% of current price. If prices have increased more than 33% over this time (but not more than 82%), then the lowest price in the last 36 months will be lower than 75% of the current price, and that lowest price becomes the ceiling for borrowing. If, however, prices have increased more than 82% over the last three years, then the highest amount to borrow becomes that of the first choice that § 7 offers, 55% of current price regardless of the speed of the price rise.

84. To clarify, consider a current price of $10. A past price at 75% of the current price would be $7.50. It will take $2.50, or approximately 33% of $7.50, to rise to the current price of $10. Likewise, the past price at 55% of the current price is $5.50. It will take $4.50, or approximately 82% of $5.50, to reach the current price of $10.
By allowing relatively more borrowing in a weak market, § 7 does have a mild anti-panic element in crises, because it tends to allow borrowing 75% in a falling market, although the evidence does not find borrowing to have any effect.\(^{85}\) However, § 7 does not have an anti-euphoria feature. An enormous price rise of 82% or more is necessary to make the 55% lower limit pertinent. If price has rallied even more, the limit on borrowing does not drop.

An additional drawback appears: § 7 inhibits rebounds. After prices drop in a market panic, rebounds tend to be steeper than their build-up during euphorias. The rapid rebound may trigger the more restrictive limitations of § 7, even 55% perhaps, that might delay the rebound (rather than the more lenient 75%).\(^{86}\)

A rule more likely to resist the cycle of manias and panics would vary the amount customers can borrow depending on a proper metric estimating market over- or under-valuation. The proper metrics of price are the beta and the expected future return, but these are not immediately visible, especially expected return. An immediate and unambiguous metric is necessary for investors to know the margin borrowing fraction that will apply. Not only must the metric be immediately visible but the rule should produce a single outcome for all stocks rather than one that varies by stock. Thus the rule should depend on a market-wide metric.

Immediately-visible market-wide metrics of price level do exist. Although they do not have the accuracy of beta or expected returns, this is of little consequence because a mere improvement of § 7 could have a large effect given the deficiency of the current rule. The Fed could use one of these proper metrics and reduce or increase the availability of margin borrowing as the metric points toward overvaluation or undervaluation. Having the margin loan fraction change depending on a sound metric could encourage borrowing and investing at times of low valuations and restrict borrowing and investing at times of high valuations. Moreover, such a margin policy could also tend to depress exuberantly high prices by reducing the available capital and raise low prices by increasing the available capital.

\(^{85}\) Marginable stocks did not fall more than stocks that were not eligible for margin borrowing. Seguin, Paul J. and Gregg A. Jarrell “The Irrelevance of Margin: Evidence from the Crash of ’87.” Journal of Finance, vol. 48, no. 4 (September 1993), pp. 1457–73.

\(^{86}\) Thus, improvements to § 7, as that discussed in note 89 below, should also address this issue, perhaps by exempting rises that follow drops when prices are likely low.
For example, the price-to-earnings ratio based on the ratio of the S&P500 index to the average of its earnings of the last 10 years, the 10-year trailing-average earnings (“P/E10,” to which Professor Shiller brings attention) could be an appropriate metric.87 Figure 3 shows the evolution of P/E10 from 1880 to 2010.88 Its long run average is close to 16.5 with a standard deviation of about 6.5. Values above 23.5 and below 9.5 are quite rare whereas values above 19.5 and below 13.5 are merely unusual. Using these hurdles for the purpose of this example can improve margin borrowing without amending § 7. In the context of the current § 7 of the ’34 Act, the maximum amount of a margin loan in a price trough is 75%. Thus, this should be the available amount at the band of P/E10 that indicates the greatest undervaluation, namely when P/E10 takes values below 9.5. Setting that as the fraction of value available for margin lending when P/E10 is under 9.5 and reducing the margin fraction by 15% as P/E10 crosses each boundary would give the margin fractions of 75% for P/E10 up to 9.5, 60% for P/E10 up to 13.5, 45% for P/E10 up to 19.5, 30% for P/E10 up to 23.5, and 15% for P/E10 values above that.89

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89. The zones in which borrowing is 75% and 60% of current price also depend on § 7 allowing them. Section 7 allows such borrowing as long as prices have not increased more than 33% (in the case of the 60% limit, the past price must be used and the rally needs to pass 67%). However, because § 7 turns on the behavior of each stock, specific stocks may produce different limits. An obvious improvement of § 7 would be to have its limits depend on the behavior of broader indices (industry or market) and apply to all stocks in that industry or the entire market.
Figure 3: P/E10 and possible boundaries for margin lending. The boundaries illustrated are 9.5, 13.5, 19.5, and 23.5. The average P/E10 is about 16.5 (approx. st. dev. 6.5) and the boundaries are in increments of 3 above and below that.

From figure 3 we can see when this example rule would have produced the narrowest borrowing (15%) and the most ample (75%). The rule would have reduced borrowing to 15%, for example, before the 1929 market crash that was followed by the Great Depression but it would have increased borrowing to 75% at the depths of the depression. Such a rule would also have reduced borrowing to 15% before the tech bubble of the late nineties and before the Great Recession.

 Granted, P/E10 is not above criticism, and the rule of this example is not an optimal rule about the amount of borrowing. The drawback is that in the case of a revolutionary technology that increases productivity gradually over a long time, P/E10 could rationally stay very high (as it has since the onset of internet businesses in the mid nineties which could be such a technology), producing potentially erroneously restricted credit. If a better yardstick than P/E10 or better defined thresholds and adjustments to borrowing appear, then those should apply.

The rule of this simple example would be a significant improvement compared to the current regime of fixed 50% borrowing. The current rule in combination with investor psychology is, by comparison, pro-cyclical, aggravating extremes. The current rule does nothing to restrict borrowing during euphorias while the proposed rule would. Neither the current rule nor the proposal
induce borrowing during slumps, but the proposal does send a signal suggesting a slump. In fact, it is better than a mere signal; the rule also gives more borrowing power to investors who take that signal into account.

D. Court Interpretation

The courts, in their interpretation of securities laws, have maintained its anti-euphoria aspect. The major interpretive function of the courts is the shaping of the law of securities fraud. The securities acts and the rules that the SEC and the CFTC have promulgated consistently but vaguely prohibit fraud. The courts, with relatively frequent interjections of guidance from the US Supreme Court, have given substance to this vague prohibition. In principle, the courts have borrowed the basic concepts from common law deceit to create a cause of action against fraud. The adaptation is mindful of the differences between the financial markets of securities fraud and the real markets of deceit.

One of the principal deviations of securities fraud from common law deceit regards reliance. In deceit, reliance acts as a test of causation. Recipients of misrepresentations only have a claim if the misrepresentation was the cause of their actions; they have no claim for results of their independent decisions. The recipients of a misrepresentation need to show that the misrepresentation induced their actions under a reasonable person standard.

Securities fraud accepts a rebuttable presumption of reliance. The fraud-on-the-market presumption of reliance presumes the reliance of those who traded securities at prices influenced by misrepresentations.90

The presumption of reliance enables class actions. Without the presumption, a large fraction of the traders would not be able to show any reliance, because their trades were not motivated by information but by decisions to save or consume. Traders who do act on information may be able to show that they relied on the false statements directly, and some traders may be able to show indirect, perhaps, reliance. However, since each claimant would have to

show reliance, individual questions could well predominate over the
commom ones, defeating class action certification. The presumption
of reliance ensures that a class action is possible and increases the
number of claimants. Furthermore, without the class action, most
plaintiffs would not consider individual litigation to be justified.
Thus, facilitating class actions and increasing the claimants results
in more frequent prosecution and greater damages claims.

In other words, the fraud-on-the-market presumption of reliance
increases the probability and the magnitude of securities fraud
liability. As a result, the deterrence of securities fraud is much more
intense than the deterrence of common law deceit.

The intensity of deterrence is an ally in the prevention of
bubbles. Consider the two recent bubbles, that of the internet
revolution in the late nineties and the mortgage backed security
bubble. Neither has produced significant reports of egregiously
optimistic statements by corporations benefitting from the bubbles.
Rather, when visible statements against the formation of bubble
appeared, as Greenspan’s “irrational exuberance”91 or Warren
Buffett’s calling derivatives to “financial weapons of mass
destruction,”92 the only attacks came by the press rather than
corporate America. Perhaps the intense deterrence of securities
fraud performed appropriately or even admirably.

While up to the early eighties, the jurisprudence of securities
fraud tended to expand liability, thereafter, interpretation tends to
restrict it. Thus, we see a narrowing of insider trading liability with
Chiarella,93 a limit of the obligation to update past statements with
Polaroid,94 a somewhat narrow statement of the state of mind
requirement in Ernst & Ernst,95 a strict approach to implied private

91. Alan Greenspan, Chairman, Fed. Reserve, Remarks at the Annual Dinner and Francis
Boyer Lecture of the American Enterprise Institute for Public Policy Research: The Challenge
of Central Banking in a Democratic Society (Dec. 5, 1996) available at
http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm (visited August 8,
2013).

92. Letter from Warren E. Buffett, Chairman of the Board, Berkshire Hathaway Inc., to
Shareholders of Berkshire Hathaway Inc. 15 (Feb. 21, 2003), available at


rights of action in several cases,96 and the elimination of liability for aiding and abetting in *Central Bank of Denver*.97

Leaving aside aiding and abetting for closer scrutiny, these interpretations had no relation to the euphoria leading to the 2008 crash. Insider trading was not a contributing factor. The lack of an obligation to update was similarly not involved. Moreover, Congress had created a safe harbor clarifying and expanding the lack of an obligation to update even forward looking statements.98 Nor was the euphoria noticeably stoked by misrepresentations that could have been deterred by a more expansive interpretation of the state of mind or of private rights of action beyond securities fraud.

Aiding and abetting liability appears to have had the capacity for some deterrence of the creation of the bubble. The appearance stems from the success that intermediaries had in selling mortgage backed securities. The borrowers ended up often unable to repay and the lenders were hammered by the drop of the value of the collateral. Yet, the intermediaries who created these instruments had some profits, albeit temporary. The intermediaries may well have been more reluctant to issue them if they were subject to aiding and abetting liability.

Even this concern, however, does not withstand scrutiny as a major contributing factor to the euphoria. Even with aiding and abetting liability, securities fraud liability would not be easy to impose on intermediaries. Litigation has revealed that the disclosures at the issuance of these securities did include cautionary language about their sensitivity to concurrent drops of real estate prices in many metropolitan areas.99 Thus, liability for misrepresentation could not arise. Liability for aiding and abetting is, consequently, also very difficult to imagine. The buyers of mortgage-backed securities knew the danger of a real estate drop (hardly something worth disclosing) and accepted that risk. In sum, the survey of the interpretation of securities fraud jurisprudence

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99. Indeed, even the toxic securities that led to the crash had adequate disclosure, see Steven M. Davidoff, Reading the Fine Print in Abacus and Other Soured Deals, N.Y. Times Dealbk% (Nov 2, 2012) available at http://dealbook.nytimes.com/2012/11/02/reading-the-fine-print-in-abacus-and-other-soured-deals/ (last visited Nov. 16, 2012).
does not reveal glaring mistakes that aggravate euphorias or bubbles. The extension of the scope of liability through the fraud-on-the-market presumption of reliance probably has an anti-euphoric role, complementing the expansive disclosure that the SEC has established. The only potentially questionable interpretation appears to be that limiting aiding and abetting liability. Nevertheless, the 2008 crisis did not reveal it to have major importance.

In sum, the securities statutes, the rules thereunder, and the courts’ securities law jurisprudence do not bear responsibility for the euphoria that led to the Great Recession. The legislative and political establishments, however, do not fare nearly as well, as the next paragraphs show.

VIII. THE TRUE CULPRIT AND PROPOSED COUNTERMEASURES

This overview of securities regulation did not reveal significant imperfections that may have contributed to the euphoria leading to the financial crisis. The margin borrowing rules have room for improvement but they do not bear the blame. The main non-regulatory causes of the crash, the governmental support of home mortgage lending and the fever to issue mortgage backed securities, were not direct results of any single regulatory failure. It is still unclear what measures may have reduced the bubble. The FCIC Report and commentators have pointed to the reliance of bank regulation on rating agencies and their regulation;100 to the end of the separation of investment banks from commercial banks with the Gramm-Leach-Bliley Act;101 to the insufficient protection of mortgage borrowers;102 to the blocking of the FDIC’s attempt to regulate credit default swaps and the insulation of credit default swaps from the regulatory authority of the SEC, the CFTC, and state insurance commissioners;103 and to the relaxation of the lending standards led by political pressure of Fannie Mae and Freddie Mac.104 Yet, each one of these alleged errors could neither

100. See note 56, above.
101. FCIC Report 55; see also, e.g., Michael Simkovic, Competition and Crisis in Mortgage Securitization, 88 Ind. L.J. 213, 256 (2013).
103. See note 61 above.
104. See note 59 above.
cause the euphoria nor would its repair have prevented it. Even the separation of investment banks from commercial banks can be exonerated by pointing out, first, that the several financial crises that occurred during their separation\textsuperscript{105} show that the separation did not eliminate crises and, second, that the crash of the dot com crisis occurred after the end of the separation without creating a significant depression danger.\textsuperscript{106}

While each piece of regulatory relaxation may neither have caused nor could its reversal have averted the crisis, their aggregation reveals two problems. First, the absence of a financial crisis with a strong potential to influence the real sector since the Great Depression led to the gradual relaxation of regulatory safeguards that slightly increased the probability of a financial crisis. Second, the successful efforts of financial entrepreneurs to circumvent regulation lend a futility to legislative solutions. Again, the 2008 crisis illustrates this.

The 2008 crisis underlines what the Great Depression had already taught: that the path by which a financial crisis infects the real sector is through the financial institutions that provide short-term lending to businesses. Before the Great Depression and until the seventies those were the banks. In the 2008 crisis, they were the money market funds. The regulation of commercial banks and the FDIC guarantee of their deposits function to prevent bank runs from crippling them. Money market funds do not have similar safeguards

\textsuperscript{105} The NBER lists 13 recessions after the Great Depression. The Great Recession reduced production (GDP) by 5.1%. Greater or comparable reductions came from the recessions of 1937-38 (-18.2%), 1945 (-12.7%), 1953 (-2.6%), 1958 (-3.7%), 1973-75 (-3.2%), 1981-82 (-2.7%). Although associated with smaller recessions, one should also consider important financial crises the savings and loan crisis of the early nineties (GDP reduction of 1.4%) and the crash of the tech bubble in the early 2000s (-0.3%). US Business Cycle Expansions and Contractions, National Bureau of Economic Research, http://www.nber.org/cycles/cyclesmain.html.

\textsuperscript{106} The collapse of tech stock bubble or dot com bubble is illustrative of the key role of lending institutions for the contagion into the real sector. The contagion at the collapse of the mortgage-backed-securities bubble occurred when a run occurred on the money market funds which had taken a central role for business lending. The collapse of the tech bubble neither produced a run on any financial institution nor otherwise constrained lending to businesses. The lesson from the juxtaposition of the two crises is that money-market funds made Glass-Howell’s separation of banking less important but that measures to prevent runs on money-market funds and to prevent them from having investments that are exposed to financial crises should be at the center of our regulatory attention but that has not happened. See N. GREGORY MANKIW, MACROECONOMICS AND THE FINANCIAL SYSTEM p. 549 fig 19-2 (2011) (noting depositors withdrew $210 billion from money market funds in mid-September 2008 after the Lehman bankruptcy).
and experienced a run which led to the credit freeze of September 2008. Despite that several banks were still solvent, businesses could still not borrow because banks were no longer equipped to so lend; short term borrowing had moved away from banks and was done by money market funds, mostly though the commercial paper market.

The SEC has tried and failed to regulate money market funds. Arguably, other regulators, especially the Financial Stability Oversight Council, may yet induce the regulation of money market funds. Regulating money market funds does not solve the larger problem, however. Depositors moved to mutual funds from banks because the safety and the regulatory expenses of banks made them uncompetitive. Money market funds were able to take a little more risk and have smaller expenses so as to offer a slightly higher interest rate to depositors. Regulating money market funds will only offer a short-term solution. In the long term, nothing prevents a repeat: the development of yet another alternative vehicle for savings that would again offer slightly greater returns at slightly greater risk. Neither banks nor regulated money market funds would be able to compete with the new alternative. Depositors would gradually move. The financial power of the new alternative would attract real sector businesses to borrow from it instead of borrowing from banks or money market funds. Eventually, the cycle would close, with the new alternative being in a position to transmit a financial crisis to the real sector.

In sum, the defects of regulation leading into the 2008 financial crisis were numerous but small. The human errors, however, were legion. Disquietingly, one of the main weaknesses of the regulatory regime is its flexibility, not so much of the courts but mostly the flexibility of legislators and to a lesser extent that of regulators. Establishing any legal regime at the aftermath of a crisis is pointless if it will be dismantled or circumvented when the euphoria takes hold.

The observation on the importance of legislative drift raises three issues that the following subparts engage. First, since crises continue to produce legislative reactions, an assessment of the recent ones is warranted. Second, an assessment is necessary of the means to reduce legislative discretion and avoid the legislative

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107. Id.
weakening during euphorias. This bifurcates into two explorations: one of the effectiveness of constitutional protection, and one of the plausibility of redirecting financial legislative authority.

A. Unproductive Legislative Reactions

The futility of using law to avert euphorias understates the true problem. Not only is the legislature willing to weaken protections at the time of euphorias but the legislature also reacts to crises with poorly guided laws. This is especially apparent in regulatory responses to the last few financial crises. The Great Recession brought the Dodd-Frank Act of 2010 and the collapse of the dot com bubble that took down Enron and Worldcom brought the Sarbanes-Oxley Act of 2002. Any support that they have received from the academy or practice has been scattered. Instead, strong has been their condemnation.108 Sarbanes-Oxley has been cogently accused of increasing the personal risk to being a senior executive and reducing the ability of young companies to make initial public offerings.109 Dodd-Frank is mocked for being longer than the scriptures and pointless. Consider the change to the emergency powers of the Federal Reserve that Dodd-Frank brought. In the 2008 crisis, the Fed was able to use its emergency powers to effectively guarantee the entire financial system and forcibly overcapitalize banks.110 Instead of thanking the Fed for averting another Great Depression that could have produced over 25% unemployment,111 the legislature sought to control its apparently excessive power to “bail out” banks. The result is a prohibition against the Fed providing emergency financing to any institution that has not been declared systemically important by a new body, the Financial Stability Oversight Council.112 The new regime is either catastrophic or, at best, pointless.

The new regime is catastrophic if it operates according to its superficial reading because it would prevent the actions that saved the economy from chaos in 2008. At calm times, very few

109. Id.
110. See note 72.
112. Dodd-Frank Act § 111 (“Financial Stability Oversight Council established”)
institutions have the capacity to topple the financial system by failing. Thus, only those very few institutions are systemically important. From this perspective, very few of the big institutions that the Fed backed during the crisis could receive support—the rest would not have been declared systemically important. In a replay of 2008 under this regime, the Fed would have been able to do much less than it did. The credit freeze that followed the failure of Lehman may not have thawed and a major depression may not have been averted.

The optimistic replay of the 2008 crisis under the Dodd-Frank regime would consider that the Financial Stability Oversight Council would be actively involved and recognize that, as panic grips the markets, more institutions become systemically important. Under the most optimistic version of this replay, the FSOC would have declared as systemically important all the institutions that the Fed actually helped in the 2008 crisis—including all banks, all money market funds, and all businesses that borrow at the commercial paper market. Then, the FSOC would have had no effect. A difference exists, however. Instead of a single collective body having the capacity to save the economy in a crisis (which used to be the Fed), Dodd-Frank produces two collective bodies that both need to act with wisdom and foresight to contain a crisis. The danger that their opinions would diverge in a true crisis may be small, in part because some overlap of the FSOC membership with the [offices of the] protagonists who saved the economy in 2008 exists, and in part for the same reason that would have persuaded a single collective body, like the Fed alone, to agree to act: a truly severe crisis may be necessary and sufficient to align political opponents. However, the danger of disagreement exists and we have no reason to believe that would help the economy exit a crisis.

The verdict on the FSOC will have to await a true crisis rather than a hypothetical reenactment. Its present evaluation can only speculate along the lines of political economy. The critical issues are if and when aggressive resuscitation of the economy will occur. Four possibilities exist. The possibility that the FSOC never decides to allow aggressive resuscitation of the economy by the Fed is the pessimistic alternative. Else, if the FSOC were to swing in favor of aggressive resuscitation of the economy at the same time that the

113. See note 72.
Fed would have swung, then the addition of the FSOC in the decision sequence is pointless. If the FSOC swung in favor of aggressive resuscitation before the Fed, that would have no effect. Because Fed action is necessary for resuscitation, the Fed will only take aggressive action when it swings in favor of aggressive action. Finally, if the FSOC swings in favor of aggressive resuscitation later than the Fed does, then the Dodd-Frank Act will have merely delayed resuscitation.

Consider the principal positions that have appeared in the press about the Fed’s reaction to the crisis. Some factions claim that bailing out financial institutions that were complicit in causing the crisis was wrong. Presumably those factions would favor the pessimistic scenario of the FSOC never allowing aggressive action, which would lead to a disastrous repeat of the Great Depression. Most other factions seem to agree that the Fed acted too late.\textsuperscript{114} For them, the Dodd-Frank dynamic of never accelerating action but possibly delaying or negating it is a step in the wrong direction. The cynical way to restate this is that the politicians with Dodd-Frank punish the Fed and the economy for a financial crisis for which the politicians are the most culpable party.

Juxtapose to the Dodd-Frank Act’s evaluation the passage of the JOBS Act at its heels.\textsuperscript{115} Rather than strengthen securities regulation to protect investors, the JOBS Act weakens it. The JOBS Act exempts from the ’33 Act’s registration requirements and the securities laws’ tight control of advertisement, offerings by corporations with sales up to $1 billion provided the sales are to accredited investors\textsuperscript{116} While in other respects the JOBS Act correctly seeks to alleviate the burden of Sarbanes-Oxley on small


\textsuperscript{116}. The JOBS Act expands the private offering exemption unambiguously by giving statutory authority to the exemption for small offerings (by adding to § 4 of the ’33 Act “Offers and sales exempt under [rule 506 on small offerings] shall not be deemed public offerings … as a result of general advertising or general solicitation”) as long as the issuer takes reasonable steps to ensure that purchasers are accredited investors. While a superficial reading of rule 506 would indicate that the maximum number of offerees is 35, rule 501(e)(1)(iv) excludes accredited investors from that count.
business, the effect of the advertisement exemption is that if Bernie Madoff ran an operating company, like WorldCom, he could advertise to accredited investors and sell an unlimited amount of equity securities to not more than 1,999 of them without having to ever be audited.\footnote{The JOBS Act also increases to 2,000 the number of shareholders that triggers an obligation to comply with the securities laws’ reporting requirements; the JOBS Act also increases the assets required to $10 million from $1 million. The JOBS Act achieves this by amending § 12(g)(1)(A) of the ’34 Act.}

In hindsight, politicians bear the lion’s share of the blame for the crisis, for the legal lenience that could have reduced its risk, and for further aggravating the regulatory system in its wake. The chief lesson of the 2008 financial crisis aught to be that politicians should not tamper with finance.

The obvious avenue for a movement in the direction of restricting political meddling with finance is to elevate the authority necessary for changing financial regulation. Two avenues present different prospects.

\textbf{B. Futility of Constitutional Protection}

Addressing the issue that politicians should not tamper with finance requires a constitutional rearrangement. The more obvious change would be to enshrine financial regulation in the constitutional text and require the process of a constitutional amendment to change financial regulation, explored here. The next section will explore the more radical alternative of reallocating legislative authority over finance.

Gramm-Leach-Bliley act in 1999,\textsuperscript{119} and Congress would not have been able to remove from the CFTC the authority to regulate credit default swaps in 2000.\textsuperscript{120} Thus, constitutional authority of financial regulation could have had a positive effect.

However, two drawbacks appear. First, merely giving constitutional authority to existing financial regulation would not prevent further legislative interference in finance. It would not have prevented Sarbanes-Oxley and it would not have prevented the promotion of home borrowing. Since the promotion of home borrowing was the principal culprit for the euphoria, it is doubtful that the crisis would have been averted. Thus, following the hypothetical of constitutional authority, it would not have prevented Dodd-Frank either. Moreover, congress would still need to act in the depth of the crisis by approving TARP, which congress almost failed to do. The first drawback of constitutional authority is that it does not prevent further legislative errors.

The second drawback of constitutional authority is that it may well be repealed. In the context of the 2008 crisis, the timeframe of the relaxation of regulation spanned from the early seventies, when money market funds took hold, to the 2002-04 encouragement toward Fannie Mae lending. Given this thirty year timespan and persistent relaxation of rules, even constitutional protection could have been repealed. Various rules have been given constitutional authority only to be later denuded of it, the chief example being prohibition and its repeal.

Constitutional authority, thus, would not eliminate further legislative interference and therefore may have been insufficient to avert the crisis and other legislative mistakes. Moreover, even if we were to consider constitutional protection the needed panacea, the slow buildup of the euphoria shows that the euphoria could produce the constitutional countermeasure of a repealing amendment. For effective protection against euphorias and legislative mismanagement of finance a more dramatic change is necessary—however unlikely at this stage.

\textsuperscript{120} See note 61.
C. Exploring Redirecting Financial Legislative Authority

The above assessment of the legislative reaction as procyclical and wasteful and the pointlessness of constitutional protection seems bleak. The current constitutional structure does not and will not produce safety against euphorias and crises. The satisfactory performance of the courts and the federal reserve, however, suggest that branches with more independence may react better. Thus, the long-term desirable change is toward a constitutional reallocation of legislative authority over finance away from congress and toward a body with financial expertise and true independence.

The remote ideal, essentially, is the creation of a new branch of government, a branch that would have exclusive authority over financial regulation and would not be subject to the short term interests of legislatures that are elected with the current frequency—the two year term of representatives. If the new branch were to be elected directly, its members’ terms should well exceed those of senators. If it were to have appointed members, again their terms should be very long making it effectively a cross between the federal reserve and the federal courts. The federal reserve has the expertise and some independence but its independence is limited and it has no constitutionally exclusive authority. The federal courts have complete independence, which is more than what is necessary. Although the courts do not have the financial expertise, their performance has been adequate and far superior to that of the legislature.

121. This proposal is very different than the various proposals for balanced-budget amendments (“BBA”). Under most such proposals, neither the Federal Reserve nor Congress would have been able to take the forceful measures to stem the panic that they took, see supra note 72 and accompanying text. The objective is to preserve the ability for fiscally expansionist policies for ending and exiting from crises but to prevent the lenience that leads to euphorias and the unwise reaction to crises. By contrast, most BBA proposals would bring a procyclical result, since the ample tax receipts of boom years would enable more government spending and the reduced tax receipts of recessions would restrict spending, further aggravating them. A recent call for a BBA is R. Glenn Hubbard & Tim Kane, Republicans and Democrats Both Miscalculated, NYT Times Aug 11, 2013 available online at http://www.nytimes.com/2013/08/12/opinion/republicans-and-democrats-both-miscalculated.html?partner=rssnyt&emc=rss, visited Aug. 14, 2013 (trying to overcome this procyclical tendency by averaging the tax receipts of the last five years, which would not have allowed TARP nor the other measures). See also Shane Nichols, A Balanced Budget Amendment Fit for the Constitution: The Elimination of Partisanship and Substantive Provisions, 46 J. Marshall L. Rev. 583, 584 & n. 6-7 (2013) (with citations to the political history of balanced budget amendments and academic commentary).
Unattainable as this change may appear, similar major constitutional changes have occurred in the financial (and the non-financial, of course) area. Consider from the perspective of the early 19th century the problem that gold coinage is pro-cyclical, tending to aggravate economic swings. A strict constitutional interpretation would not authorize the printing of paper currency nor the elimination of its convertibility to gold. A proposal to switch to a paper currency without the possibility of conversion to gold would have seemed absurd but it is now the norm. The removal of financial authority from the legislature has the same nature of seeming unattainable but, being sensible, may similarly materialize almost unexpectedly.

IX. CONCLUSION: LAW IN THE SOMBER UNAVOIDABILITY OF EUPHORIAS

Financial markets are a great gift to productivity. This gift, however, comes with the danger of euphorias that lead to bubbles and financial crises which can have devastating consequences. Technological innovations that are absorbed gradually and leave unpredictable the end of their boost to productivity create a predisposition toward a bubble. The 2008 crisis could be an example of such a rational bubble. The financial crisis that could have crippled the economic system if it spilled forcefully into the real sector, abated. In 2008, the world financial system had the good luck that radically aggressive measures averted the transmission of the financial crisis to the real sector. As large and terrifying as the crisis was, it revealed no major gap in financial regulation. To the extent any culprits appear, they are a series of small regulatory changes, a gradual relaxation of regulation that is part of the cycle of optimism that forms the euphoria. The only potential


123. Other research draws attention to the cycle of under regulation before crises and over regulation after them. The point made here is distinguishable in showing that the under regulation that accompanies a slow-building euphoria can negate most anti-euphoria features of securities law. The research on the cycle of under and over regulation proposes delayed implementation of relaxations and tightenings of the law but when the issue is a slow building euphoria, then any delay may not be sufficient. See, e.g., the critical accounts of Larry E. Ribstein, Bubble Laws, 40 Hous. L. Rev. 77 (2003); and Roberta Romano, The Sarbanes-Oxley Act and the Making of Quack Corporate Governance, 114 Yale L.J. 1521 (2005).
resolution of the danger of legislative drift is to move financial legislative authority to a legislative body that is better insulated from political pressure.