Introduction

History may not repeat itself, but it rhymes.[1]

—Attributed to Mark Twain

Why do market crashes and banking panics happen?* Conventional wisdom on this question has gathered, like iron filings, at two intellectual poles. At one extreme, we find explanations that are highly detailed and idiosyncratic to a particular event—often comprised of a hodge-podge of period-specific causes.†

* We use "crash" to suggest a sharp decline in stock prices; "panic" refers to a run on a bank that is inconsistent with economic reality, the ability of a bank to meet withdrawals. These terms are imprecise, though experts then and now use these terms to describe the events of 1907. Their usage among experts varies considerably, as shown in Appendix B.

† In his book, *Fifty Years in Wall Street,* originally published in 1908, the Wall Street observer Henry Clews cited nine causes for the panic of 1907, all specific to that year (p. 799): "The real causes of all the trouble can be summed up as follows: (1) the high finance manipulation in advancing stocks to a 3.5 to 4 percent basis, while the money was loaning at 6 percent and above, on six and twelve months, time on the best of collaterals; (2) capital all over the nation having gone largely into real estate and other fixed forms, thereby losing its liquid quality; (3) the making of injudicious loans by the Knickerbocker Trust Co., hence suspension; (4) the unloading by certain big operators of $800,000,000 of securities, following which were the immense sales of new securities by the railroads; (5) the California earthquake, with losses amounting to $350,000,000; (6) the investigation of the life insurance companies; (7) the Metropolitan Street Railroad investigation; (8) the absurd fine by

At the other extreme are conclusions that might be broadly described as "one big idea": a sole cause large enough to cover a multitude of sins. A favorite big idea among some economists, for example, is that financial crises follow a lack of liquidity in the financial system.* Another popular big-idea explanation is simple greed or venality.†

Unfortunately, the one big idea often ignores the considerable richness of detail that the recounting of a single crisis can reveal, and thus produces simplistic conclusions and inappropriate recommendations for decision makers. One wants more, an explanation that is neither too much nor too little; neither too idiosyncratic nor too simplistic. Therefore, by drawing on a detailed history of the crash and panic of 1907 and on an extensive body of research about financial crises, we offer an alternative view that is as applicable to the past as to the future.

From 1814 to 1914, the United States saw 13 banking panics—of these, the panic of 1907 was among the worst.[2] The panic had coincided with a series of major market downturns, culminating in a 37 percent decline in the value of all listed stocks. Triggered by the literal and figurative shock of a massive earthquake and a rash of fires that destroyed the city of San Francisco in 1906, the financial crisis of 1907 had global implications, and it called forth the leadership of a small group of powerful financiers. Though the duration of the crisis was relatively brief, the repercussions proved far-reaching, resulting in the formal establishment of a powerful central bank in the United States through the Federal Reserve System.

To understand fully the crash and panic of 1907, one must consider its context. A Republican moralist was in the White House. War was fresh in mind. Immigration was fueling dramatic changes in society. New technologies were changing people's everyday lives. Business consolidators and their Wall Street advisers were creating large, new combinations through mergers and acquisitions, while the government was investigating and prosecuting prominent executives—led by an aggressive young

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Judge Landis of $29,400,000 against a corporation with a capital of $1,000,000; (9) the Interstate Commerce Commission's examination into the Chicago & Alton deal and the results thereof." Other contemporary writers offered similar explanations.

* For example, the economist Milton Friedman and the monetarists have blamed the government's failure to manage well the money supply as a leading contributor to such events.

† Writing about the stock market bubble and collapse of 1997 to 2001, Roger Lowenstein (2004, pp. 218–219) boiled the explanation down to the distortion of the credo of shareholder value.

prosecutor from New York. The public's attitude toward business leaders, fueled by a muckraking press, was largely negative. The government itself was becoming increasingly interventionist in society and, in some ways, more intrusive in individual life. Much of this was stimulated by a postwar economic expansion that, with brief interruptions, had lasted about 50 years. Bring, then, a sense of irony informed by the present to an understanding of 1907.

Stock market crashes and banking panics had surfaced periodically in the United States and elsewhere throughout the nineteenth century. Market crashes often sprang from occasional bubbles in asset prices: extreme speculations in land and new securities would "correct" when investors' expectations failed to be realized.[3] Banking panics were often the consequence of these corrections as adjustments in asset valuations sent shock waves through the young country's financial system. The nation's banks, realizing that the value of pledged collateral had impaired the creditworthiness of their loans, would call in their credits. Borrowers, unable to repay their debts, would default and declare bankruptcy. Consequently, nervous bank depositors would fear for the survival of the bank and rush to withdraw their funds. If one institution failed in the process, then a panic would spread—a classic "run on the banks."* Unlike France, Germany, and Britain, the United States lacked a central banking authority that could supply extra liquidity in such times of credit anorexia.

By 1907, economic growth in America had lifted business expectations; a cataclysmic disaster in California would shatter them. How the effects of an external shock to the economy would wend their way into violent price changes a year later tells a story of how complex systems process information. The markets for stocks, debt, currency, gold, copper, and other commodities form such a complex system—they are interrelated in the sense that fundamental changes in one can affect prices in the others. Common factors such as inflation, real economic

* For example, the panic of 1857 was triggered by the failure of the Ohio Life Insurance & Trust Company. The failure of the Missouri, Kansas, and Texas Railroad to make timely payments to New York Warehouse & Security Company and the collapse of financial houses Keyon, Cox and Co., and Jay Cooke & Co. sparked the panic of 1873. The panic of 1884 was initiated by the failure of Grant and Ward, a financial house in which President Ulysses Grant was an investor. In 1893, the panic was spawned by the failures of the Philadelphia and Reading Railroad, National Cordage Co., and Lake Erie and Western Railroad and by investor concerns about asset values in the silver mining industry.

growth, liquidity, and external shocks can affect them all. How we make meaning of crashes and panics, then, is fundamentally a question of information: its content, how it is gathered, and how the complex system of the markets distills it into security prices.*

Over the years the occurrence of large and systemic financial crises has been the focus of considerable research—both directly and through varied intellectual streams: macroeconomics, game theory, group psychology, financial economics, complexity theory, the economics of information, and management theory. The following detailed account of the events of 1907 draws upon this rich literature to suggest that financial crises result from a convergence of forces, a "perfect storm"[4] at work in the financial markets. Throughout the dramatic story of the panic of 1907, we explore this metaphor as we highlight seven elements of the market's perfect storm:

1. **System-like architecture.** Complexity makes it difficult to know what is going on and establishes linkages that enable contagion of the crisis to spread.
2. **Buoyant growth.** Economic expansion creates rising demands for capital and liquidity and the excessive mistakes that eventually must be corrected.
3. **Inadequate safety buffers.** In the late stages of an economic expansion, borrowers and creditors overreach in their use of debt, lowering the margin of safety in the financial system.
4. **Adverse leadership.** Prominent people in the public and private spheres implement policies that raise uncertainty, which impairs confidence and elevates risk.
5. **Real economic shock.** Unexpected events hit the economy and financial system, causing a sudden reversal in the outlook of investors and depositors.

* The efficiency with which the financial markets incorporate news and events into prices quickly and without bias was then, in 1907, and remains to this day, a bone of contention among business practitioners and academicians. There is the general sense that markets today are more efficient than they were a century ago. Those who would argue that markets are not very efficient point to the periodic occurrence of bubbles and crashes, when violent swings in security prices appear to be unrelated to fundamental changes in economic conditions. Those who find the market relatively efficient strive to link price fluctuations to changes in underlying conditions.

6. **Undue fear, greed, and other behavioral aberrations.** Beyond a change in the rational economic outlook is a shift from optimism to pessimism that creates a self-reinforcing downward spiral. The more bad news, the more behavior that generates bad news.
7. **Failure of collective action.** The best-intended responses by people on the scene prove inadequate to the challenge of the crisis.

This pluralistic approach affords a framework through which the alert observer can make sense of unfolding events; we invite reflection on their application to the crisis of 1907, and we return to them at length in the final chapter.

Interpreting and even anticipating future financial crises requires insights into the forces suggested here—not merely individually, but also collectively—how they *interact* to produce a crisis. This approach may lead us, perhaps, to a more complicated explanation of financial crises than pundits and politicians want to hear, yet the metaphor of the perfect storm reveals a possible outlook for decision makers—one that suggests that the way to forestall a financial crisis is to anticipate the storm's volatile elements and, perhaps, even to fight their potential convergence.