

## Stock market crash

[Black Monday \(1987\)](#) on the [Dow Jones Industrial Average](#)

A **stock market crash** is a sudden dramatic decline of [stock](#) prices across a significant cross-section of a stock market. Crashes are driven by panic as much as by underlying economic factors. They often follow [speculative stock market bubbles](#).

Stock market crashes are [social phenomena](#) where external economic events combine with [crowd behaviour](#) and psychology in a [positive feedback](#) loop where selling by some market participants drives more market participants to sell. Generally speaking, crashes usually occur under the following conditions: a prolonged period of rising stock prices and excessive economic [optimism](#), a market where [P/E](#) ratios exceed long-term averages, and extensive use of [margin](#) debt and leverage by market participants.

There is no numerically-specific definition of a crash but the term commonly applies to steep double-digit percentage losses in a [stock market index](#) over a period of several days. Crashes are often distinguished from [bear markets](#) by panic selling and abrupt, dramatic price declines. Bear markets are periods of declining stock market prices that are measured in months or years. While crashes are often associated with bear markets, they do not necessarily go hand in hand. The crash of 1987 for example did not lead to a bear market. Likewise, the Japanese [Nikkei](#) bear market of the 1990s occurred over several years without any notable crashes.

### Wall Street Crash of 1929

*Main article:* [Wall Street Crash of 1929](#)

The most famous crash, the [Wall Street Crash of 1929](#), happened on [October 29, 1929](#). The economy had been growing robustly for most of the so-called [Roaring Twenties](#). It was a technological golden age as innovations such as radio, automobiles, aviation, telephone and the [power grid](#) were deployed and adopted. Companies who had pioneered these advances like [Radio Corporation of America](#) (RCA), and [General Motors](#) saw their stocks soar. Financial corporations also did well as [Wall Street](#) bankers floated [mutual fund](#) companies (then known as [investment trusts](#)) like the [Goldman Sachs](#) Trading Corporation. Investors were infatuated with the returns available in the stock market especially with the use of [leverage](#) through margin debt. On [August 24, 1921](#), the [Dow Jones Industrial Average](#) stood at a value of 63.9. By [September 3, 1929](#), it had risen more than sixfold, touching 381.2. It would not regain this level for another twenty five years. Even during the summer of that year it was clear that the economy was contracting and the stock market soon went through a series of unsettling price declines in early October. These declines fed investor anxiety and events soon came to a head. [October 24](#) (known as [Black Thursday](#)) was the first in a number of increasingly shocking market drops. This was followed swiftly by [Black Monday](#) on [October 28](#) and [Black Tuesday](#) on [October 29](#).

On Black Monday, the Dow Jones Industrial Average fell 38 points to 260, a drop of 12.8%. The deluge of selling overwhelmed the [ticker tape](#) system that normally gave investors the current prices of their shares. [Telephone lines](#) and telegraphs were clogged and were unable to cope. This information vacuum only led to more fear and panic. The technology of the New Era, much celebrated by investors previously, now served to deepen their suffering.

Black Tuesday was a day of chaos. Forced to liquidate their stocks because of [margin calls](#), overextended investors flooded the exchange with sell orders. The glamour stocks of the age saw their values plummet. Radio Corporation plunged from \$40.25 to \$26 in the first two hours of trading (down \$75 from its historic peak). The Goldman Sachs Trading Corporation opened at 60 and closed at 35. The First National Bank of New York declined from \$5200 to \$1600.<sup>[1]</sup> Across the two days, the Dow Jones Industrial Average fell 23%.

By the end of the week of [November 11](#), the index stood at 228, a cumulative drop of 40 percent from the September high. The markets rallied in succeeding months but it would be a false recovery that led unsuspecting investors into the worst [economic crisis](#) of modern times.

Although it is popularly believed that the Crash inflicted heavy financial loss on investors during this period, the [Great Depression](#) which followed was far more terrible. While the Crash dealt a severe blow to many a stockholder's portfolio, the Great Depression brought obliteration and bankruptcy. Before it was over, the Dow Jones Industrial Average would lose 89% of its value before finally bottoming out in July 1932.

## The Crash of 1987

Main article: [Black Monday \(1987\)](#)

The mid-1980s were a time of strong economic optimism. From August 1982 to its peak in August 1987, the Dow Jones Industrial Average (DJIA) grew from 776 to 2722. The rise in market indices for the 19 largest markets in the world averaged 296 percent during this period. The average number of shares traded on the NYSE had risen from 65 million shares to 181 million shares.<sup>[2]</sup>

*The crash on [October 19, 1987](#), a date that is also known as [Black Monday](#), was the climactic culmination of a market decline that had begun five days before on October 14th. The DJIA fell 3.81 percent on October 14, followed by another 4.60 percent drop on Friday October 15th. But this was nothing compared to what lay ahead when markets opened on the subsequent Monday. On Black Monday, the Dow Jones Industrials Average plummeted 508 points, losing 22.6% of its value in one day. The [S&P 500](#) dropped 20.4%, falling from 282.7 to 225.06. The [NASDAQ](#) orders, many stocks on the NYSE faced trading halts and delays. Of the 2,257 NYSE-listed stocks, there were 195 trading delays and halts during the day.<sup>[3]</sup> The NASDAQ market fared much worse. Because of its reliance on a "market making" system that allowed [market makers](#) to withdraw from trading, liquidity in NASDAQ stocks dried up. Trading in many stocks encountered a pathological condition where the [ask price](#) for a stock exceeded the [bid price](#). These "locked" conditions severely curtailed trading. On October 19th, trading in [Microsoft](#) shares on the NASDAQ lasted a total of 54 minutes.*

The Crash was the greatest single-day loss that Wall Street had ever suffered in continuous trading up to that point. Between the start of trading on October 14th to the close on October 19, the DJIA lost 760 points, a decline of over 31 percent.

The 1987 Crash was a worldwide phenomenon. The [FTSE 100 Index](#) lost 10.8% on that Monday and a further 12.2% the following day. In the month of October, all major world markets declined substantially. The least affected was Austria (a fall of 11.4%) while the most affected was [Hong Kong](#) with a drop of 45.8%. Out of 23 major industrial countries, 19 had a decline greater than 20%.<sup>[4]</sup>

Despite fears of a repeat of the 1930s Depression, the market rallied immediately after the crash, posting a record one-day gain of 102.27 the very next day and 186.64 points on Thursday October

22. It took only two years for the Dow to recover completely; by September of 1989, the market had regained all of the value it had lost in the 1987 crash.

No definitive conclusions have been reached on the reasons behind the 1987 Crash. Stocks had been in a multi-year bull run and market [P/E ratios](#) in the U.S. were above the post-war average. The S&P 500 was trading at 23 times earnings, a postwar high and well above the average of 14.5 times earnings.<sup>[5]</sup> [Herd behavior](#) and psychological [feedback loops](#) play a critical part in all stock market crashes but analysts have also tried to look for external triggering events. Aside from the general worries of stock market overvaluation, blame for the collapse has been apportioned to such factors as [program trading](#), [portfolio insurance](#) and [derivatives](#), and prior news of worsening [economic indicators](#) (i.e. a large U.S. merchandise [trade deficit](#) and a falling [U.S. dollar](#) which seemed to imply future interest rate hikes).<sup>[6]</sup>

One of the consequences of the 1987 Crash was \*the introduction of the circuit breaker or [trading curb](#) on the NYSE. Based upon the idea that a cooling off period would help dissipate investor panic, these mandatory market shutdowns are triggered whenever a large pre-defined market decline occurs during the [trading day](#).

### Mathematical theory of stock market crashes

The mathematical characterisation of stock market movements has been a subject of intense interest. The conventional assumption that stock markets behave according to a random [Gaussian](#) or [normal distribution](#) is incorrect. Large movements in prices (i.e. crashes) are much more common than would be predicted in a normal distribution. Research at the [Massachusetts Institute of Technology](#) shows that there is evidence that the frequency of stock market crashes follow an inverse cubic [power law](#).<sup>[1]</sup> This and other studies suggest that stock market crashes are a sign of [self-organized criticality](#) in financial markets. In 1963, [Benoît Mandelbrot](#) proposed<sup>[7]</sup> that instead of following a strict [random walk](#), stock price variations executed a [Lévy flight](#). A Lévy flight is a random walk which is occasionally disrupted by large movements. In 1995, Rosario Mantegna and Gene Stanley<sup>[8]</sup> analyzed a million records of the S&P 500 market index, calculating the returns over a five year period. Their conclusion was that stock market returns are more volatile than a Gaussian distribution but less volatile than a Lévy flight.

Researchers continue to study this theory, particularly using [computer simulation](#) of crowd behaviour, and the applicability of models to reproduce crash-like phenomena.

### External links

- [Every Generation has its Crash](#)
- [Log-periodic power law bubbles in Latin-American and Asian markets and correlated anti-bubbles in Western stock markets: An empirical study.](#) Anders, Sornette. *International Journal of Theoretical and Applied Finance* 4(6), 853-920(2001).
- [A theory of power-law distributions in financial market fluctuations.](#) Gabaix, Gopikrishnan, Pierou, Stanley. *Nature*, vol 423. 15 May 2003.
- [The Crash of 1987](#) A definitive bibliography of articles, books and websites.

### [\[edit\]](#) References

1. [^](#) *Devil take the Hindmost*, Edward Chancellor. [ISBN 0-374-13858-3](#). New York:1999. p216.

2. [^ http://archive.gao.gov/d30t5/134907.pdf](http://archive.gao.gov/d30t5/134907.pdf): *Preliminary Observations on the October 1987 Crash*, [United States General Accounting Office](#) (GAO). January 1988. GAO/GGD-88-38. p.14, p.36
3. [^ U.S. GAO op. cit. p.55](#)
4. [^ http://arxiv.org/PS\\_cache/cond-mat/pdf/0301/0301543.pdf](http://arxiv.org/PS_cache/cond-mat/pdf/0301/0301543.pdf): *Critical Market Crashes* D. Sornette. p.6
5. [^ U.S. GAO op. cit. p.37](#)
6. [^ http://hnn.us/articles/895.html](http://hnn.us/articles/895.html) - *What caused the Stock Market Crash of 1987?*
7. [^ Mandelbrot, B. \(1963\)](#) "The variation of certain speculative prices" *Journal of Business*, XXXVI, 392-417
8. [^ Mantegna, R.N., and Stanley, E. 1995.](#) Scaling behaviour in the dynamics of an economic index. *Nature* 376(July 6):46.

## Further reading

- [Galbraith, John K.](#) *The Great Crash*. Mariner Books, New York. [ISBN 0-395-85999-9](#).
- [Kindleberger, Charles P.](#) 2000, *Manias, Panics, and Crashes: A History of Financial Crises*. Wiley & Sons, New York, NY. [ISBN 0-471-38945-5](#).
- [Shiller, Robert J.](#) 2001, *Irrational Exuberance*. Broadway, New York, NY. [ISBN 0-7679-0718-3](#).
- [Didier Sornette](#) *Why Stock Markets Crash*. Princeton University Press. [ISBN 0691-09630-9](#)

## See also

- [List of stock market crashes](#)
- [Behavioral finance](#)
- [Business cycle](#)
- [Crash Proof](#)
- [Economic bubble](#)
- [Economic collapse](#)
- [Equity investment](#)
- [Financial markets](#)
- [Stock market](#)
- [Stock market boom](#)
- [Market trends](#)
- [The Great Depression](#)
- [Economic history](#)
- [spectroscopic analysis](#)