# Black Monday: The Stock Market Crash of 1987

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## ABSTRAKT

Tato bakalářská práce se zabývá pádem burzy v roce 1987, který celosvětově paralyzoval trhy. Pondělí 19. října je od té doby ve finanční sféře obecně známé jako Černé pondělí. Temný název reprezentuje denní strmé propady S&P 500 nebo DJIA, což vedlo k velkým peněžním ztrátám a panickému prodávání investory. Rychlé tempo a závažnost této události odhalily klíčovou slabinu akciového tržního systému, který nebyl schopen zpracovat tak velké množství transakcí tak rychle. Obchodování přes počítač a pojišťování portfolií také značně přispěly k situaci. Tato práce zkoumá, co předcházelo, ale také co následovalo po pádu akciového trhu a při tom identifikuje jeho klíčové příčiny a následky. Práce také dokumentuje kroky, které byly podniknuty k tomu, aby se podobná událost znovu neopakovala.

**Klíčová slova:** krach, Černé pondělí, burza, propad, akciový trh, 1987, investoři

## ABSTRACT

This bachelor thesis deals with the stock market crash of 1987 which paralyzed markets worldwide. Monday the 19th of October has since been widely known as Black Monday in the financial sphere. The dark name represents the day's steep declines in the S&P 500 and DJIA, which led to huge monetary losses and panic-stricken selling by investors. The fast pace and magnanimity of this event revealed a key weakness in the stock market system which was incapable of processing such a large number of transactions so quickly. Computer trading, and portfolio insurance extensively contributed to the situation as well. This thesis explores what preceded but also what followed after the stock market crash, and in doing so, identifies its key causes and consequences. It also documents the steps taken to prevent such an event from happening again.

**Keywords:** crash, Black Monday, stock exchange, decline, stock market, 1987, investors

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## CONTENTS

# INTRODUCTION

The stock market is considered to be a risky, volatile, and insecure environment. Although investors seem to be well aware of these qualities, they are oftentimes willing to put at stake all they have, including money, their business, and its future. However, in case of crashes, they may lose everything including their position in the stock market.

Before the crash, in the 1980s, portfolio insurance was on the rise and much favoured by investors. It provided them with some kind of certainty, less risk and they purchased more fearlessly. On top of that, since the technology was more developed, buy and sell orders were quick and smooth. During 1987, the stock prices were increasing, which made some traders wonder about the overvaluation of the market. Although the situation in the US economy seemed to be quite alright, some experts were concerned about the trade or budget deficit and foreign traders appeared to be worried about the dollar value.

The stock market crash of 1987 came as a surprise for everyone operating in the market. Investors were paralyzed and shocked because of the steep decline of the indexes such as the Standard and Poor's 500 (S&P 500) index or Dow Jones Industrial Average (DJIA). Wall Street was experiencing tough times as portfolio insurers panicked and started to sell. Falling prices brought enormous losses and brokers on the New York Stock Exchange (NYSE) or Chicago Mercantile Exchange (CME) were busy and not able to manage the huge amount of sell orders. Phone lines were unavailable, and trading operated by computers failed including the Designated-Order-Turnaround (DOT) system used on the NYSE. The technology was not designed for such an extreme situation, therefore, the huge drop on Black Monday resulted in long halts and ultimately in the closing of the market.

The stock market crash was not only experienced in the United States but was felt worldwide. As the markets were interconnected and many investors were also foreign traders, the crash influenced other cities such as Hong Kong, Tokyo, or London. In America, the government reacted immediately as it was necessary to provide the investors with money, therefore, the Federal Reserve decided to negotiate with banks so as to help them keep their position in the market. The Working Group established by President Ronald Reagan included the most important institutions whose goal was to detect and improve the flaws of the market. This bachelor thesis will document the causes of the crash as well as its aftermath. It will analyse the steps that were taken to mitigate the consequences, end the crash, and prevent it from happening again.

# 1 THE STOCK MARKET CRASH OF 1987

The stock market crash of 1987 was far more serious than ordinary people might know – the whole financial structure of the United States was near collapse. The spectators who gathered in front of the NYSE on October 19th to watch the declines on the electronic ticker tape most likely did so out of curiosity.[1] They barely had an idea of what was leading the global financial system towards the brink of disaster.

Apart from a few major indicators, namely an international trade balance and the national deficit, the American economy seemed generally healthy. Moreover, American inflation and unemployment were low, factors which had helped to push stocks steadily higher, to the point that some pundits had been talking about the possibility of a correction in the market due to stocks being overvalued.[2] However, this was no mere correction. Instead, it was a crash driven largely by a distressed market mechanism.

## 1.1 Black Monday

On Black Monday, October 19th, the major indexes lost their value. The S&P 500 index declined 22.6 per cent, the National Association of Securities Dealers Automated Quotations (NASDAQ) around 11 per cent, and the DJIA 36 per cent, all of which resulted in hundreds of millions of dollars being wiped off the books.[3] Furthermore, while many stocks in DJIA did not open on time, the futures market opened as usual but had to face enormous sell orders.[4] Mutual and pension funds lost 400 million dollars in value, in turn greatly reducing the portfolio values of ordinary investors, some of whom had put all of their money or savings into such funds, as they had generally been considered safer investments.[5] Of course, most investors were well aware that the market posed risks and could be volatile, but nothing in their experience had prepared them for this sudden and dramatic decline.

On the other hand, some theories suggest that the market was anticipated to fall. Its 42 per cent growth which was registered during 1987 turned into a 22 per cent drop.[6] When

[1] Mark Fadiman, *Rebuilding Wall Street: "After the Crash of '87, Fifty Insiders Talk about Putting Wall Street Together Again.*" (Englewood Cliffs: Prentice Hall, 1992), xvii.
[2] Avner Arbel and Albert E. Kaff, *Crash: Ten Days in October…Will It Strike Again?* (Chicago: Longman Financial Services, 1989), ix.
[3] Ruben J. Dunn and John Morris, *The Crash Put Simply: October 1987* (New York: Praeger, 1988), 4.
[4] Mark A. Carlson, "A Brief History of the 1987 Stock Market Crash with a Discussion of the Federal Reserve Response," *SSRN Electronic Journal*, no. 13 (2006): 11.
[5] Ryan McKeon and Jeffry Netter, "What Caused the 1987 Stock Market Crash and Lessons for the 2008 Crash," *Review of Accounting & Finance* 8, no. 2 (2009): 124.
[6] David S. Bates, "The Crash of '87: Was It Expected? The Evidence from Options Markets," *Journal of Finance* 46, no. 3 (1991): 1009.

asking a few investors about their view on the crash, some of them claimed they were expecting it as they perceived the market as overpriced.[7] However, these views might be biased due to all facts available after the crash and investors' answers would probably differ if asked before the crash.

To conclude, the crash came as a surprise for everyone except for some suspicious professionals. A certain part was played by the breakdown of the junk bond market, penny stock deception and devaluation of the limited partnership.[8] The decline was not the only reason harming the wallet and trust of the nation.

### 1.1.1 Delays and Halts

The capacity of the market was highly tensed during Black Monday. Almost 100 million shares were transacted at the beginning of the day while being accompanied by extensive order disbalance. The market was dealing with 195 delays and even 54-minute halts of S&P 500 stocks. The day after, on October 20th, the numbers went higher recording 280 delays that closed trading for 78 minutes.[9] As a result, many trades and operations were unrealized.

In addition, there is a difference between a market halt and a closing of the market. The goal of the halt is basically to change the price. It serves as a pause that enables the price to be determined without closing the market. On the other hand, when the market is closed, there is no activity and investors have to wait for reopening.[10] Due to the crash, markets experienced both halts and closings.

In the middle of the day, brokers on the NYSE were incredibly busy, which resulted in boycotting constantly incoming sell orders. It became impossible to make a phone call. Investment funds moved from the stock market to the futures market, which disrupted portfolio insurers selling in the stock market and purchasing in the futures market. The Securities and Exchange Commission (SEC) tried to calm down the investors and brokers and offered an opportunity of borrowing money to proceed in their business in order to carry out the refused sales orders. However, the Chairmen of the NYSE and the SEC were constantly arguing about the market's shutting down. As a result, index options trading was

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[7] Bates, "The Crash of '87: Was It Expected?" 1010.
[8] Fadiman, *Rebuilding Wall Street*, xx.
[9] Robert J. MacKay and William J. Brodsky, *After the Crash: Linkages Between Stocks & Futures* (Washington, D.C.: AEI Press, 1988), 1.
[10] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 43.

cancelled first by the Chicago Board Options Exchange (CBOE) followed by the CME.[11] On that account, it was evident that brokers on the NYSE appreciated the closing.

### 1.1.2 Unexpected Discounts

Not even traders were sure about trades' prices on Black Monday. The situation between the stock index futures markets and the stock market was tense mainly because S&P 500 futures contracts announced a surprisingly large discount. The 7 per cent discount lasted the whole day.[12] On top of that, the main users of stock index futures were institutional investors and life insurance companies, mutual or pension funds were leading the front share of the equity market in the USA. Unexpected discounts seemed to have started the crash on the futures market in Chicago and then moved to New York crashing the cash market. However, in New York, the decline was not visible at first because most of the stocks remained closed while they were supposed to be open. Therefore, it was only a matter of a point of view as the crash smashed both markets at the same time.

### 1.1.3 The Designated-Order Turnaround System

The crash also smashed the DOT system on which investors relied on the NYSE. This system was an automatic, quick, and cheap way of proceeding with large orders. It was a way of facilitating trading. However, under the pressure of a massive number of orders, it became unreliable and unable to state the price. Arbitrage was restricted by the NYSE because the DOT system could not be utilized by the companies and the occurrence of discounts remained.[13] Their extent and relevance scared people off buying, which could cause a split of the stock and futures market and contributed to their downfall. In the US, securities are managed by the SEC which on Black Monday realized that sell orders were not manageable anymore as many requests to sell stocks were already waiting in the system even before the market was open. As a result of lacking purchases, a disbalance occurred.[14] Therefore, some brokers tried to delay the trades deliberately.

On top of that, another issue connected to the huge selling was created by companies which chose specialists instead of the NYSE's DOT system.[15] The problem with specialists was related to the shortage of their capital and abilities. The DOT system was designated

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[11] Jan Toporowski, *The Economics of Financial Markets and the 1987 Crash* (Aldershot: E. Elgar, 1993), 123–125.
[12] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 2.
[13] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 5–18.
[14] Toporowski, *The Economics of Financial Markets and the 1987 Crash*, 122.
[15] Barrie A. Wigmore, "Revisiting the October 1987 Crash," *Financial Analysts Journal* 54, no. 1 (1998): 39.

mainly for small orders but soon it became tempting for investors dealing with large ones. Therefore, due to the huge number of operations, the collapse of this system was inevitable. On Black Monday, the DOT system failed because it was not capable of carrying out 28 per cent of orders. Furthermore, there were limit orders not executed by the system and time limits which run out.[16] In the end, computers, their memory, and software gave up.

## 1.2 Types of Investors

Investors who were buying and selling during the crash can be divided into three main groups. The first group was obeying reacting strategies, which included mutual funds or portfolio insurers. The second group contained aggressive trading institutions including hedge, pension and endowments funds and investment banking firms. These organizations were well aware of the scheme followed by portfolio insurers and took an advantage of enormous selling done by the first group of investors. Therefore, their aim was to sell and then buy again for a lower price. The third group were traders who wanted to make their best from the price differences between the futures and the stock market.[17] Portfolio insurers started to sell a huge number of futures even three days before the crash, which resulted in selling stocks worth almost 2 billion dollars and futures contracts worth 4 billion dollars on October 19th. It was nearly 40 per cent of public volume. On Monday, even some mutual funds gave up stocks worth a billion dollars.[18] Neither the markets nor their automated systems were able to work. Communication lines were overwhelmed.

Moreover, there was a group of investors who followed their views and thoughts when making trading decisions. They perceived them as valid, however, they were rather biased. Not every piece of information available was of good quality or from a credible source. It was hard to estimate the trading according to behaviour of others as it was done in anonymity.[19] To summarize, some traders simply possessed better and some worse knowledge. In case of trading, common sense was not enough.

### 1.2.1 Insiders

Immediately after the decline, traders called insiders used the opportunity and bought the shares of their companies in large quantities. As they had the information about companies'

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[16] Wigmore, "Revisiting the October 1987 Crash," 40.
[17] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 11.
[18] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 12.
[19] Glenn G. Baigent, and Vincent G. Massaro, "Derivatives and the 1987 Market Crash," *Management Research News* 28, no. 1 (2005): 101–102.

movements and direction, it was easier for them to act accordingly.[20] Thousands of workers or executives of the companies operating on the NYSE, American Stock Exchange (AMEX) or Over-the-Counter (OTC) were buying shares. During the crash, they were buyers and sellers but only a small part of the insiders decided to sell. Immediately after October 19th, their purchases highly exceeded selling as they bought over 30 thousand stocks.[21] When compared with the beginning of 1987, it was a complete turnover. They took the advantage of the drop in prices as the firms with large stock price declines were targeted the most. Research also proved that shares bought by insiders recovered more smoothly.[22] Instead of selling like everyone else, they mitigated the market's fall.

Furthermore, it seemed that even during the insecure times insiders managed to identify the risk, undervaluation, or overvaluation of their companies' stocks. Insiders' purchases could be considered as a smart move as they bought stocks at very low prices and afterwards, when the situation calmed down, they sold them for much more.[23] It is probable that the mispricing of stocks was the reason why insiders had the motivation to trade.

However, certain restrictions existed concerning the trading of insiders when companies announced the repurchased programs. It meant they should not trade until the public announcement although they could have the inside information in advance. Nevertheless, the announcement could raise the prices of stocks which then became uninteresting for the insiders. When comparing companies which had repurchase announcements and which had not, it was found that a higher number of purchasing insiders occurred in non-announcing companies.[24] In announcing companies, their interest simply decreased.

It is also arguable whether the insiders suspected the crash to come. However, it seems that the crash was probably not foreseen by the insiders according to their low activity in the course of 1987 until October. The huge buying took place mainly in October and continued in November and December.[25] In large firms, it was typical for insiders to get stock options, so they only bought more. On top of that, in case of selling, insiders had to follow the Securities and Exchange Act which said that the income gained from the stock selling within

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[20] Nejat H. Seyhun, "Overreaction or Fundamentals: Some Lessons from Insiders' Response to the Market Crash of 1987," *Journal of Finance* 45, no. 5 (1990): 1366.
[21] Seyhun, "Overreaction or Fundamentals," 1371.
[22] Seyhun, "Overreaction or Fundamentals," 1387.
[23] Jeffry M. Netter, and Mark L. Mitchell, "Stock-Repurchase Announcements and Insider Transactions after the October 1987 Stock Market Crash," *Financial Management* 18, no. 3 (1989): 85.
[24] Netter, and Mitchell, "Stock-Repurchase Announcements and Insider Transactions," 95.
[25] Seyhun, "Overreaction or Fundamentals," 1380.

the last six months had to go back to the company.[26] Therefore, it can be assumed they supported their companies.

## 1.3 Problems within Markets

There were many problems between individual markets, one of them being the bounding of clearing and credit mechanisms. It caused an enormous stream of funds and banking systems had hard times when dealing with them. The task force only wanted the margins between stock and futures markets to be in concord. However, the precise number of clearinghouses allowed was not stated.

### 1.3.1 Information Availability

During the crash, a problem with reaching the right information occurred. While the data from the futures market was obtainable, the data concerning trading on the stock market was not. The market should be able to give investors the information they need for buying and selling. After the crash, concerns appeared questioning the quality of the market-making system and its ability to process portfolio trades and other transactions.[27] As a result, experts suggested that the market mechanism may be outdated.

Moreover, the lack of information regarding the prices and the situation of the market can be considered as the additional implication of the crash. Due to some stocks not being open, the information available was often inaccurate and the fear of the market's closure made the conditions even worse.[28] Therefore, investors behave as the whole crowd did.

### 1.3.2 Connection between the Stock Market and the Futures Market

It is essential for the futures market to cooperate with the stock market. Without cooperation, futures are not able to fulfil their principle of determining the price and covering the risk of the stock market. It was found that on Black Monday, the connection between these two markets in the United States was broken. Both markets could be blamed because the stock market was responsible for the collapse and the futures market for making the collapse even worse.[29] It can be assumed that both markets reacted together to their declines in prices and the arbitrage connection broke.

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[26] Seyhun, "Overreaction or Fundamentals," 1366–1376.
[27] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 34.
[28] Carlson, "A Brief History of the 1987 Stock Market Crash," 17.
[29] Antonios Antoniou, and Ian Garrett, "To What Extent Did Stock Index Futures Contribute to the October 1987 Stock Market Crash?" *Economic Journal* 103, no. 421 (1993): 1444–1445.

However, experts claimed that the problem was in the lack of liquidity in the stock market and therefore, the arbitrage transactions could not be executed. As a result of not being able to sell in the stock market, investors moved to the futures market. That might be the reason for the decreased selling on Tuesday, October 20th on the stock market in comparison with Black Monday. In addition, on Tuesday, futures were still traded using discounts and sellers were either not sure if offered prices are real or they did not know if it is possible to make transactions right away on the stock market concerning the offered prices.[30] Notwithstanding, the uncertainty did not stop them from continuous selling.

### 1.3.3 Nonsynchronous Trading

During the crash, the markets were suffering from nonsynchronous trading. More precisely, it was connected to the S&P 500 index, which is a sum of actual stock prices weighted according to their value. Due to nonsynchronous trading, the index had the tendency to be less unstable than the total stock value. Between October 19th to 23rd, a huge future basis was indicating the difference between the cash and the futures price. It seems it was caused partly by nonsynchronous trading, however, the separation of the cash market and the S&P 500 index futures market could inflict it as well. The separation perhaps happened when it was no longer possible to make sell orders in the cash market. In addition, at that time the arbitrage transactions were unattainable, and the CME stopped the trading of futures contracts.[31] Specialists claimed that during the short period which was observed the futures market was leading the cash market. Nevertheless, the cash market appeared to perform less effectively than the futures market and the need for a better trading mechanism occurred.[32] Otherwise, it is probable that the crash would not be as huge as it was.

## 1.4 Crashes of the Past

Black Monday was neither the first nor the last crash of the stock market. There were steep market declines in 1837, 1873 or 1893. Moreover, most Americans were somewhat familiar with the great crash of 1929, during which stock prices fell as much as 89 per cent, leading

[30] Antoniou, and Garrett, "To What Extent Did Stock Index Futures Contribute to the October 1987," 1458–1459.
[31] Lawrence Harris, "The October 1987 S&P 500 Stock-Futures Basis," *Journal of Finance* 44, no. 1 (1989): 77–78.
[32] Harris, "The October 1987 S&P 500 Stock-Futures Basis," 94.

to an economic depression that lasted over a decade.[33] More recently, there had been a "flash crash" in 1962. In May 1962, the DJIA declined almost 6 per cent while shares of a smaller extent such as Brunswick Corp. experienced even a larger drop. However, what made the crash extreme as well as interesting was the fact that the drop happened within a few minutes.[34] Therefore, its earned name is more than accurate. Investors were gathering in large rooms in brokerage companies and observed the prices with worry.[35] This crash left them speechless while forcing some of the stockbrokers to leave the market.

However, when comparing the crash in 1989 and 1929, the reaction of institutional investors was different. While in 1929 the investors were depressed and immediately quit the purchasing, in 1989 they stopped only for a moment and then started again. Even though the investors had paper losses, they recognized the effect of selling and changed their strategy.[36] Nevertheless, in 1987 the crash was driven by three new factors: portfolio insurance, computer trading and futures index contracts.

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[33] Robert J. Barro, Eugene F. Fama, Daniel R. Fischel, Allan H. Meltzer, Richard Roll and Lester G. Telser, *Black Monday and the Future of Financial Markets* (Chicago: Mid America Institute for Public Policy Research, 1989), 9.

[34] Jason Zweig, "Back to the Future: Lessons from the Forgotten 'Flash Crash' of 1962," *Wall Street Journal* (2010): 1.

[35] Zweig, "Back to the Future," 2.

[36] Toporowski, *The Economics of Financial Markets and the 1987 Crash*, 146.

# 2 DECLINE

Surprising events regarding the crash of 1987 made many people wonder what the causes were and who might be responsible for them so as to teach someone a lesson. It was an effort to place blame and anger on a potential victim.[37] A heated discussion was held over the institutional form which was considered to be somehow linked to the crash.[38] On the other hand, it cannot be considered as a credible cause otherwise the market would have broken down much earlier.

## 2.1 Before the Decline

A few years before the crash, the equity market was doing well thanks to the stream of new investors such as pension funds. The demand for stocks rose, which stimulated the growth in prices. The purchase of equities was also encouraged by the advantageous tax thanks to which companies could subtract the interest expenses related to the debt. However, it lasted only until the introduction of the tax bill in October 1987.[39] On the other hand, due to the increase in interest rates, problems with the trade deficit and the fall of the state currency's value, the macroeconomic perspective suddenly became a bit questionable.

### 2.1.1 Situation in the 1980s

The 1980s were profitable years mainly thanks to the growth of the options and futures market. Popularity was gained by junk bonds, limited partnerships, and penny stocks. Junk bonds were quite risky but their prices were the most obtainable ones whereas prices of penny stocks were tough to gain for common customers who decided to put their money into them. They all played a role in the financial environment slowly approaching the crash and huge losses of investors, which forced them to leave the market.[40] In addition, there was an expansion of computerized systems which gave professionals the option to make quick decisions about their investments.

The increase of portfolio insurance and its purpose was quite close to the purchase of a put option as their goals were to protect the earnings and decrease the risk. During these times, portfolio insurers favoured trading rather on the futures market than on the cash market as it was a less expensive option. However, many institutional providers of portfolios

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[37] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 9.
[38] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 35.
[39] Carlson, "A Brief History of the 1987 Stock Market Crash," 3.
[40] Fadiman, *Rebuilding Wall Street*, xix.

were incompetent to trade shares of their clients.[41] As a result of portfolio strategy, a threat of selling shares and futures at once occurred and was discussed by many spectators.

On top of that, the risk factor of stocks was increasing over time. On Black Monday it escalated to 46 per cent and the week afterwards it was even 88 per cent. The market seemed to suffer from overvaluation, which was a fact many investors were highlighting. It was visible in the S&P 500 index which gained 27 per cent in September 1987. Its part in that was played by foreign investors and mutual funds which were buying the stocks.[42] Their activity increased in contrast to state retirement funds which kept their steady pace. However, right after the crash, foreigners became sellers as they were concerned about the position of the US dollar.[43] Simply put, they did not want to lose more money than they already had.

### 2.1.2 One Week before the Crash

The market started to experience continuous decline perhaps one week before the crash and nervosity occurred between investors and institutions such as pension funds. Investors moved from the stock market to the futures market in order to sell futures contracts. It was their kind of protection against declining shares.

However, the selling of futures contracts created incompatibility between the value of the stocks on the NYSE and the value of the stock index on the futures market. Arbitragers reacted immediately by selling stocks and purchasing futures which could transfer the oppression from the decline mainly on the NYSE. On Friday, October 16th, the S&P 500 index fell 9 per cent.[44] Investors including portfolio insurers and mutual funds started to get signals to realize sell orders of stocks or futures contracts right away.

## 2.2 Market's Volatility

The market seems to be fighting the volatility of stock prices repeatedly. In 1929, on October 28th, there was a 12.3 per cent decline. On the other hand, in 1933 on March 15th, the stock prices increased 16.6 per cent.[45] Therefore, a logical succession can be seen as every growth is followed by a decline. In addition, stock volatility is connected to the volatility of the

[41] Carlson, "A Brief History of the 1987 Stock Market Crash," 4.
[42] Wigmore, "Revisiting the October 1987 Crash," 36.
[43] Wigmore, "Revisiting the October 1987 Crash," 41.
[44] Carlson, "A Brief History of the 1987 Stock Market Crash," 7.
[45] William G. Schwert, "Stock Volatility and the Crash of '87," *Review of Financial Studies* 3, no. 1 (1990): 79.

whole macroeconomy or the banking industry.[46] Although volatility is quite typical for financial markets, extreme declines are not welcomed by investors.

In October 1987 there were problems with volatility due to the steep decline of stock prices.[47] Volatility was visibly higher on the stock and the futures market than on the options market. It was reaching high points, not falling until November 1987 to about 30 per cent. From the long-term point of view, it was around 20 per cent every year before the crash. Fortunately, at the end of 1987, volatility levels started to return to normal.[48] Until then, they were fluctuating as a result of the crash.

## 2.3 Situation in other Countries

The crash was not limited only to the markets in the US, it was affecting countries worldwide. There was a different situation in the stock markets among various countries over 1987, however, the direction of all of them was negative.

For many experts, the place of origin of the crash is still arguable. While some are claiming that the crash originated in the US, others suggest the exact opposite. They perceive the beginning of the crash in the Asian countries except for Japan as the decline of the equity market was afterwards spotted in America, Europe and at last in Japan.[49] Nevertheless, it is possible that the crash began more or less at once worldwide.

### 2.3.1 The Crash in Numbers

In Britain, stock prices declined 22.1 per cent. For Singapore, it was 41.6 per cent, which was more than enough in comparison with the US and its 21.6 per cent fall.[50] The US market was lucky to have the fifth-lowest decline, however when it was converted to the common currency the US ended up in the eleventh place because the dollar fell contrary to most front currencies.[51] One of the most significant declines was experienced by Hong Kong. Its drop was 45.8 per cent and as a result, Hong Kong's market and its operations had to be stopped for a week.[52] Stocks in Mexico City registered a 75 per cent decline in total during October.[53]

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[46] Schwert, "Stock Volatility and the Crash of '87," 82.
[47] Schwert, "Stock Volatility and the Crash of '87," 93.
[48] James L. Grant, "Stock Return Volatility during the Crash of 1987," *Journal of Portfolio Management* 16, no. 2 (1990): 69.
[49] Anastasios G. Malliaris, and Jorge L. Urrutia, "The International Crash of October 1987: Causality Tests," *Journal of Financial and Quantitative Analysis* 27, no. 3 (1992): 362.
[50] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 2.
[51] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 5.
[52] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 4.
[53] Jack Barnes, Mary-Alice Waters, and Leon Trotsky, *What the 1987 Stock Market Crash Foretold* (New York: Pathfinder, 1991), 102.

Prices were hit also in Australia but without the necessity of stopping the trading. The same situation was in France and Germany whose downfalls were 14.5 per cent. The best situation and the lowest decline of 11.4 per cent were registered in Austria.[54] It appears the main reasons which made European countries avoid halts were regulations and better management of their markets.

### 2.3.2 Worldwide Repercussions

Because of spreading news concerning falling prices, brokers all around the world reacted accordingly. London responded by using a portfolio strategy in the case of insurance and pension funds. These funds got rid of the foreign stocks and purchased them again in London.[55] It is questionable whether it was a real strategy or just a quick reaction.

A different approach to the decline was used in the case of the UK and the US futures market mainly because of the variety of operating rules. In London, the trading of securities was managed better, and their offer was adapted in accordance with the actual transactions.[56] Furthermore, it is possible that Japanese institutions mitigated the effects of the crash on the UK and the US markets because of their investments in UK stocks. However, Japan could not transform the profits from the foreign trades into their currency because it would cause large inflation.[57] It was essential for them not to hurt the economy.

At the time of the crash, the United States had troubles concerning their macroeconomy. It suffered from the budget deficit as well as the trade deficit and there was a fear of possible upcoming restrictions.[58] With regard to those restrictions, comparing Tokyo which was strongly supervised and Hong Kong with its trading freedom, the market fell anyway in both places.[59] According to the data available, it appears that Hong Kong had a leading position in Asia including Tokyo and Singapore markets. Concerning the crash, Tokyo might be perceived as passive while its market was considered to be the only market which was behind New York's market.[60] During the crash, New York, London, and Hong Kong demonstrated a mutual response.

Moreover, it can be assumed that the crash in the US had an impact on Canada. The majority of their investments were implemented by the American companies, therefore, the

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[54] Toporowski, *The Economics of Financial Markets and the 1987 Crash*, 132.
[55] Toporowski, *The Economics of Financial Markets and the 1987 Crash*, 127.
[56] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 3.
[57] Toporowski, *The Economics of Financial Markets and the 1987 Crash*, 129.
[58] Mihir Bose, *A Crash! New Money Crisis* (New York: Gloucester Press, 1988), 6
[59] Bose, *A Crash! New Money Crisis*, 28.
[60] Malliaris, and Urrutia, "The International Crash of October 1987," 362.

transactions were preferred to be executed rather in the US stock market than in the Canadian market. With regard to the collaboration of these two markets, it was found that the US stock market had a greater ability to predict.[61] As a result, a certain relationship between the Canadian and the US stock market existed as well.

### 2.3.3 Time Zones Contrast

To highlight the time differences, trading operations concerning European market indexes afflicted US markets on the same day while Australian, as well as Asian markets, were influenced the day after. However, operations done in New York were displayed in the European, Asian, and Australian markets one day later. On top of that, what happened in the Asian and Australian markets hit Europe and America on the very same day.[62] Due to various time zones, it seems to be less probable that the crash affected the whole world at once.

## 2.4 Effect on Prices

The crash meant quite a visible change in prices. Prices predicting kind times were transformed to prices that could be seen as usual. This was observed in the S&P 500 dividend/price ratio which used to be 3.8 per cent in previous years and right before the crash in September 1987 it fell to 2.7, however before long the ratio increased again to 3.71 per cent.[63] Nevertheless, the market managed to move with surprising speed and adapted itself to the new equilibrium while coping with the extremely active trading. Considering the fact that the deflection was not as tragic as one could expect, it is hard to say whether the decrease was an exaggerated reaction.

Specific consideration was aimed at a fairly wide difference between the market price of S&P 500 futures and the spot price of securities in the S&P 500 index which appeared due to Black Monday. It proposes that buying and selling of futures which were traded on the CME and the spots traded on the NYSE were unable to maintain the scope among the two markets in the typical one per cent trading range. On the CME, each loss was compensated by the gain but on the NYSE, it was not that case.[64] Investors suffered from huge losses in the market value.

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[61] Robert J. Barro, "The Stock Market and Investment," *Review of Financial Studies* 3, no. 1 (1990): 129–131.
[62] Malliaris, and Urrutia, "The International Crash of October 1987," 357.
[63] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 6.
[64] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 2–7.

### 2.4.1 Prices and Liquidity

Prices of stocks are connected with their liquidity. If assets do not have the desired level of liquidity, then the prices tend to fall. It can be assumed that the financial markets were not as liquid as they were considered to be, which could contribute to the downfall.

In return for the illiquidity, when buying, investors wanted stock prices to show bigger discounts. Problems with the transformation of cash into assets continued even after the crash, even though the prices calmed down. It revealed rather the flaws of the markets than the flaws of the whole economy. Because of quick selling, investors had to be reconciled with increasing discounts they were giving and therefore with losing their money. Illiquidity carried with itself also many expenditures such as fees, brokerage commissions or costs related to delays and searches. Due to the fact that orders could not be realized, and everything was delayed, the market liquidity was even worse. As a result, the pressure was lying on the traders who had the access to the trading houses. However, even with this access, they were not able to ensure the required liquidity as they did not have enough capital.

Furthermore, liquidity issues were not just a matter of the USA. The UK and the Tokyo market had to deal with it mainly on October 20th. New rules concerning bigger margin requirements, taxes from stock sales or circuit breakers contributed to the decrease in liquidity.[65] To conclude, measures taken after the crash did not really help in this matter.

### 2.4.2 Margin Calls

Margin calls could be considered as a cause which contributed to the decrease of the market's liquidity and probably to the decline mainly in the futures market. Investors were demanded to pay a margin when entering a futures contract and margin requirements also included posting the cash or Treasury securities. Margin calls were realized when further margin needed to be paid within one hour in the course of the day. When done at the end of the day, an additional margin had to be paid before the new trading day started.

As a result of the enormous price motion on Black Monday, companies which were in the CME clearing house experienced plenty of margin calls. As margin calls were over lending limits, banks worried to borrow even though many members of CME were companies with connections to large banks in New York. In addition, due to the promise of the FED to help the situation, banks widen the required credit on which many dealers and brokers counted. Nevertheless, some delays occurred concerning transactions between the

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[65] Yakov Amihud, Haim Mendelson, and Robert A. Wood, "Liquidity and the 1987 Stock Market Crash," *Journal of Portfolio Management* 16, no. 3 (1990): 65–69.

banks in New York and Chicago. Individual investors who lacked professionality failed in meeting margin calls, which meant many liquidations on the options market.[66] This appears to contribute to the panic-stricken selling in the markets as well.

[66] Carlson, "A Brief History of the 1987 Stock Market Crash," 12–15.

# 3 CAUSES OF THE DECLINE

Investors sold their stocks thoughtlessly on Black Monday. They were fostered by the decline itself but also by the organizations and investors who were following portfolio insurance strategies.[67] Simply put, one selling encouraged another selling.

The whole decline lasted for four days, and it was not influenced just by one cause. Its role played the growth of interest rates, doubts, and shift in faith in future earnings that could be expected.[68] Some people struggled with reaching their brokers and experts were not capable of determining the prices of certain securities for many hours in the course of the trading day. Announcing transaction prices and transactions itself to buyers and sellers was happening late.

## 3.1 Computer Trading

Thanks to technology and computer development, the financial scene was able to move forward and lift trading and investment to another level. While some experts do not consider computer trading as a clear cause, some are convinced that it was a major reason which caused a fall of markets. Furthermore, it was connected to a sharp rise during the years 1984– 1987.[69] It might be seen as one of the powerful tools with the trading strategies used on the futures markets. Investors were seeking mainly for lucrative markets, and they did not insist on their capability.

### 3.1.1 How It Worked

Program trading was based on the utilization of a computer or a telephone that enabled investors to trade stocks while using the press button. After that, a purchase or sale was realized. However, it seemed to perform well only when the prices were rising. In case of the extreme decline, the computers with their settings caused enormous losses.[70] As it was found out, the technology which investors relied on was not as powerful and safe as they believed.

### 3.1.2 Index Arbitrage

Index arbitrage was a computer trading strategy. Its purpose was to gain money thanks to the use of differences between the stocks' value in the index and the value of the futures

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[67] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 3.
[68] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 1.
[69] Fadiman, *Rebuilding Wall Street*, xiv.
[70] Bose, *A Crash! New Money Crisis*, 8.

contract. In case of the lower value of stocks, arbitragers were selling the futures contracts and purchasing the shares in the cash market. However, in the case of the crash, their intentions did not pay off as usual. Arbitragers were unpleasantly surprised when the stocks eventually opened. As the prices were declining, they found out they got rid of the stocks significantly below their expectations. On that account, they started to purchase on the futures market to fix the situation.[71] Nonetheless, as mentioned, due to limitations on the NYSE concerning the DOT system, index arbitragers were after some time restricted to continue in their activities anyway.

### 3.1.3 Situation on the Stock Exchanges

In October 1987, due to programs, computers produced plenty of sell orders. However, the experts on the NYSE were able in most cases to maintain the trading of the majority of stocks. In the meantime, the situation on NASDAQ was a bit worse although this market was seen as more effective. Huge numbers of traders were calling OTC trading desks in many brokerages companies but did not get an answer. Phone lines were announcing that they are busy, which was in some cases done deliberately in order to prevent them from another ringing.[72] Therefore, investors were forced to wait.

Nevertheless, no direct connection was found between the decline and computer trading as the situation remained almost the same in the countries where it was predominant as well in countries where it was not. Neither the automated offers, taxes from transactions nor the margin's requirements had any obvious effect on the size of the crash. In fact, computer trading with its portfolio insurance and index arbitrage might make the decline in the market milder.[73] Despite the various views on this matter, after the crash, program trading was under wide criticism. As mentioned, there were experts claiming that program trading was rather needed, and its restriction could damage the link between individual markets.[74] However, its improvement was inevitable, therefore, the NYSE came with certain restraints.

## 3.2 Legislation

The decline could have been supported by the tax bill presented on October 13th by the US House Ways and Means Committee. It was supposed to limit takeovers, benefits from taxes, and interest deduction on debts used for gaining over 20 per cent from chosen stocks or

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[71] Carlson, "A Brief History of the 1987 Stock Market Crash," 5–11.
[72] Fadiman, *Rebuilding Wall Street*, xv.
[73] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 5.
[74] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 42.

assets.[75] Specialists claim it could be perceived as the main thing which unfavourably affected the stock prices.[76] It was quite visible that the market answered negatively to this legislation at first, mainly due to the decline but after the Congress gave in, investors calmed down and the market's reaction reversed.[77] Nevertheless, the topic of legislation started a heated discussion concerning the prevention of another crash.

Investors were arguing about current rules which might support the collapse even though there is practically no proof for such a point of view.[78] Crashes are typical for all markets, thus, the legislation could be hardly blamed for everything. However, a simple explanation might be provided by the macro-economic factors namely interest rates which greatly increased during 6 months before the crash as a result of the Federal Reserve System's (FRS) attempt to mitigate inflation.[79] That could be considered as a justification for the drop in stock prices as well.

In addition, during March and September 1987, the rate of long-term government bonds increased from circa 7.6 per cent to 9.6 per cent or so. It is noteworthy that this growth was not affecting the prices of stocks.[80] For the market, this could be recognition that the growth of dividends and earnings was not adequate.[81] The compensation for the rise in interest rates was considered to be necessary.

## 3.3 Portfolio Insurance

The trading technique of portfolio insurance might be a factor which stressed the crash because the stocks were demanded to be sold when their prices collapsed.[82] It was a protection strategy which was underestimated and had an impact on the valuation of traders' securities.[83] The CME registered sales worth 4 billion dollars by portfolio insurers on Black Monday. On the NYSE it was 1.7 billion dollars.[84] Everybody just wanted to sell as quickly as possible because most of the people owned shares of small or medium companies which are more sensitive to changes in the market.

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[75] McKeon, and Netter, "What Caused the 1987 Stock Market Crash," 126.
[76] Hans R. Stoll, *Stock Market Policy since the 1987 Crash* (Boston: Kluwer Academic, 1998), 1.
[77] McKeon, and Netter, "What Caused the 1987 Stock Market Crash," 126.
[78] Barro, Fama, Fischel, Meltzer, Roll and Telser, *Black Monday and the Future of Financial Markets*, 6.
[79] Wigmore, "Revisiting the October 1987 Crash," 38.
[80] Stoll, *Stock Market Policy since the 1987 Crash*, 1.
[81] Stoll, *Stock Market Policy since the 1987 Crash*, 2.
[82] Stoll, *Stock Market Policy since the 1987 Crash*, 1.
[83] McKeon, and Netter, "What Caused the 1987 Stock Market Crash," 126.
[84] Wigmore, "Revisiting the October 1987 Crash," 39.

### 3.3.1 Use of Portfolio Strategy

Portfolio insurance was a strategy adopted by price-sensitive investors. They followed the rule of keeping one half of their money in equities and the other half in fixed income.[85] Thanks to portfolio insurance, investors felt safer and enlarge their amounts of equities. Not all traders used portfolios but among the large ones, it was more than a half.[86] It is noteworthy that not all of the portfolio insurers behaved according to their portfolio insurance plan at the time of the crash.

Concerning this strategy, the government could only influence the trading costs and made people adopt a different approach. It could not stop investors from selling when the decline occurred. However, there were measures within the government's competence that could either accelerate or decelerate the market.[87] Besides that, this strategy seemed to be out of the government's control.

In the 1980s, portfolio insurance strategy was used in a way depending on the declining or rising market. If the market was rising, investors could sell their portfolio above its actual value and make a profit. On the other hand, when the market was declining, they would sell the portfolio and then get it again for a better price.[88] It was efficient, but not used by many investors. Furthermore, portfolio insurance was used by derivative securities. The year 1987 brought a huge growth of funds under portfolio as they could generate higher profits without facing a higher risk. Stocks were considered to be very risky, however, the demand was still rising as the funds were insured against deprivation.

### 3.3.2 Arguable Influence

It is possible that without portfolio insurance the drop in prices would not be so dramatic. Many investors reacted according to portfolio insurers to whom a significant part of transactions on the futures market can be assigned. Only the main market performers seemed to suspect the relevance and the effect of portfolios.

However, some critics suggested that portfolio insurance could not be the main factor of the decline mainly because it was not used worldwide. They pointed to a similar drop in prices in countries where portfolio was not used. On the other hand, there is a certain connection between countries and their stock markets. Therefore, using portfolio insurance

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[85] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 19.
[86] Baigent, and Massaro, "Derivatives and the 1987 Market Crash," 99.
[87] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 23–24.
[88] Toporowski, *The Economics of Financial Markets and the 1987 Crash*, 121.

in the US market could certainly have an impact on the other markets and their operations. Considering the position and significance, the US markets were on the top. Moreover, constant price changes are typical of all stock markets, therefore, it cannot be said that portfolio insurance is the only cause responsible for the decline. In addition, it was accessible to investors in previous years preceding the crash and everything seemed to work well. The only difference was the portfolio's rapid growth in 1987 and the increasing number of funds covered by the portfolio.[89] However, it is possible that the fear of upcoming selling by portfolio insurers caused more panic-stricken selling by people and mainly by big companies than the real portfolio insurance.

Nevertheless, while the SEC claimed the portfolio insurers are the ones to blame, the report of the CME suggested the exact opposite. The most affected market seemed to be the futures market. On the other hand, it is probable that discounts which developed on the futures market were the responsibility of portfolio insurers. Due to other investors selling, the discounts transferred to the cash market as well.[90] Notwithstanding, portfolio insurers could be hardly blamed for all the selling during the crash as there were many other investors doing the same thing.

[89] Baigent, and Massaro, "Derivatives and the 1987 Market Crash," 95–100.
[90] Carlson, "A Brief History of the 1987 Stock Market Crash," 16.

# 4 AFTER THE CRASH

The collapse of the stock market in 1987 is claimed to be the most explored occurrence in the financial past. Many volumes and reports were published on this topic including the volume released by the SEC, or the government's report made by the Commodity Futures Trading Commission (CFTC) and the Office of Technology Assessment. These publications were printed right after the crash in January and February 1988.[91] It was important to study the crash thoroughly and think of suggestions for improvements and changes in the market. However, some experts claim that the volatility experienced by Wall Street was suggesting that neither the regulations of bonds and stocks nor the restrictions of computer trading could completely save the market. In most cases, the crashes seem to approach invisibly and slowly.

## 4.1 Consequences of the Crash

After the crash, the biggest securities companies ended up with enormous losses. Therefore, they decided to borrow money to be able to purchase again so as to avert the decline in share prices. This attempt failed leaving banks and major houses of Wall Street indebted.[92] Many loans and savings institutions had to be closed due to insolvency. Furthermore, some companies tried to use accounting tactics in order to help the biggest shareholders and bondholders who were losing great amounts of dollars or money capital because of institutions' breakdown.[93] Their intention was to cover up the losses and bad-looking numbers.

On top of that, companies had problems with liquidity. Simply put, they were not able to abide their obligations and they struggled with the devaluation of shares.[94] The companies' answer to the crash was the increase of margins by 100 per cent. As a result, selling prices were much lower than buying prices.[95] It took some time before the margins went back to normal. Moreover, on Tuesday, the trading of some stocks still remained closed because of persistent trade imbalances. Therefore, speculations occurred about the CME insolvency problems as the CME clearing house members did not get their margin payments

[91] Stoll, *Stock Market Policy since the 1987 Crash*, 2.
[92] Barnes, Waters and Trotsky, *What the 1987 Stock Market Crash Foretold*, 102–105
[93] Barnes, Waters and Trotsky, *What the 1987 Stock Market Crash Foretold*, 128.
[94] Toporowski, *The Economics of Financial Markets and the 1987 Crash*, 135.
[95] Toporowski, *The Economics of Financial Markets and the 1987 Crash*, 139.

so as to balance the losses from the previous day.[96] Even though this theory was not proven, it discouraged many traders from operating on the CME.

### 4.1.1 Initial Public Offerings

The crash caused a decrease in Initial Public Offerings (IPO). Before the crash, there were around 700 IPO, which indicated a strong market. However, 1987 made the IPO fall and influenced their amount as there were only around 300 IPO in 1990.[97] On that account, there used to be a higher tolerance for companies with the debt before Black Monday. This changed afterwards when the market did not want to take an IPO from an indebted company. Therefore, the number of IPO which had venture capital backing decreased and it is probable that the market preferred IPO from bigger companies as there was a small increase in cash than in the numbers of IPO.[98] The drop in IPO was around 20 per cent, which was related mainly to the smaller companies.[99] It took some time before the situation concerning this matter improved.

### 4.1.2 Moneyless Investors

On Tuesday, October 20th, many companies and traders were in need to get a loan from a bank. Banks were prepared to lend money even though the situation was terrible. Otherwise, many traders would have been lost. However, with regard to the situation, banks demanded higher margins which were unacceptable for the traders. Simply put, they could not afford it. Help came in the form of a dedicated White House and the FRS which provided the market with money. They arranged the lending limits to be adjusted and started to cooperate with banks in New York. The goal was to persuade them to reduce the requirements so as investors could have a chance to survive. The negotiation was a success for the FRS. As a result, the debt of brokers climbed up to 12 billion dollars.[100] Nevertheless, it was an important part of the recovery process.

### 4.1.3 Stock Repurchase Programs

Immediately after the crash, many companies started to declare open-market stock repurchase programs. The steep decline in stock prices caused many firms such as publicly

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[96] Carlson, "A Brief History of the 1987 Stock Market Crash," 10.
[97] James Ang and Carol Boyer, "Has the 1987 Crash Changed the Psyche of the Stock Market? The Evidence from Initial Public Offerings," *Review of Accounting & Finance* 8, no. 2 (2009): 140.
[98] Ang, and Boyer, "Has the 1987 Crash Changed the Psyche of the Stock Market?" 141–145.
[99] Ang, and Boyer, "Has the 1987 Crash Changed the Psyche of the Stock Market?" 146.
[100] Wigmore, "Revisiting the October 1987 Crash," 43.

traded companies to make quick decisions. In some cases, the repurchase procedure could continue for many years and might signify an undervaluation of the company's stocks. However, at the time of the crash, its purpose was mainly to encourage the stock prices when the market was going down.[101] Therefore, it was an attempt to get rid of investors' doubts and improve the value of the stocks' prices.

Furthermore, thanks to the repurchase announcements the values of OTC portfolios were rising. The situation appeared to be similar for the portfolios of the NYSE and the AMEX. The market's answer to announcements after the crash was quite positive. Companies managed to reverse the bad conditions concerning stock prices and the positive impact of repurchasing seemed to last even 40 days. Prices were rising again, and the repurchased programs appeared to be the right choice. Experts claimed that companies which decided to announce repurchase programs were really helpful in stopping the decline. Otherwise, it is possible that the market would continue to crash.

On the other hand, when announcing the repurchase activity, the companies were not obligated to publish if they actually bought their stocks. They did not have to state how they did it or when they did it. Therefore, it appears to be a bit questionable whether the firms actually repurchased the stocks or if it was only a company's promise to stop the falling stock prices. It is possible that some firms did not follow the repurchase programs, however, it did not turn out to have visibly negative results.[102] To conclude, repurchase programs could be used as a tactic to raise the prices of stocks.

## 4.2 Improvements after the Crash

After the crash, the financial system needed visible improvements, especially in the case of its safety and functioning. Big and unexpected mistakes may seldom happen on the market and after that, the crashes are rather unstoppable. The main goal was to adapt the system to be able to overcome changes in prices without additional problems and stress. The plan was to steer clear of the risk concerning the mistakes of the financial system. Specialists believe that changes and regulations that were done in fields like automation, market structure, risk controls or clearing and settlement should be more immune than in 1987. At least in developed countries, the financial markets are perceived to be much more stable.[103]

[101] Netter, and Mitchell, "Stock-Repurchase Announcements and Insider Transactions," 84–86.
[102] Netter, and Mitchell, "Stock-Repurchase Announcements and Insider Transactions," 91–92.
[103] Stoll, *Stock Market Policy since the 1987 Crash*, 3–4.

Although the improvements were apparent, nowadays it can be said they were neither perfect nor sufficient.

### 4.2.1 The Working Group

The Working Group was established by President Ronald Reagan in order to deal with the consequences and impacts. Its purpose seemed to be going through the crash of 1987 over again, discussing the main causes, and coming up with required improvements. The Group was expected to consider every possible way which will be able to ensure the market's smooth functioning.

The Working Group consisted of leaders of four main institutions such as FRB, SEC, CFTC, and the Treasury. After some time, as a result of their investigation, they came to a few outcomes. Namely clearing, credit and settlement systems were proposed to be upgraded. Furthermore, the operational capacity of markets was planned to be improved so as to make the quality of performance better. They agreed on checking and enhancing the adequacy of the capital in accordance with its necessity. However, they were not united in claiming that actual minimal margins of stocks, options and stock index futures were appropriate. It was the SEC which did not confirm this evaluation.[104] As a result, further discussion was needed in order to reach a consensus.

### 4.2.2 Circuit Breakers

Circuit breakers were arranged well neither on the NYSE nor on the CME. They were perceived as too tight.[105] Therefore, a discussion was held concerning their revision as it was essential to extend their limits. They were expected to mitigate the market's excessive reactions and face problems only exceptionally.[106] Naturally, causing frequent and unnecessary halts and closings of the market was not their purpose.

Actually, their function was to shut down the market in case of an unusual drop in prices while doing so according to a certain plan rather than impulsively. As the revision was an idea of the Presidential Task Force of Market Mechanism, the NYSE reacted to this proposal immediately and set up their circuit breakers accordingly. At the beginning of 1988, the NYSE modified them precisely to stop trading on the market for one hour if the decline was 10 per cent and for 2 hours if it was 20 per cent. The rules that were in accordance with the

[104] Stoll, *Stock Market Policy since the 1987 Crash*, 2.
[105] MacKay and Brodsky, *After the Crash: Linkages Between Stocks & Futures*, 15.
[106] Stoll, *Stock Market Policy since the 1987 Crash*, 2.

manners of the DJIA influenced besides the NYSE even other stock exchanges such as the NASDAQ or the AMEX.[107] Concerning the circuit breakers and the pausing of the market, they chose similar settings.

However, later on, circuit breakers were criticized because of the decline in October 1997 when the DJIA reached 550 points and the market was shut down for the rest of the day.[108] Despite varied evidence on whether the circuit breakers were efficient or not, the concentration was aimed at the point at which they should be turned on.

Moreover, each closing of the market means extra costs and lost opportunities, which must be taken into consideration when dealing with the frequency of shutdowns and their acceptability. As a consequence, the NYSE was at the end of 1996 asked by the SEC to broaden its circuit breakers so as to preclude the closing of the market that was caused by standard market fluctuations.[109] The NYSE accepted this request and cut down the length of pauses.

### 4.2.3 Market's Capacity

The capacity of the market was another issue observed after the crash. This matter was connected mainly to the NASDAQ due to the criticism aimed mainly at their market makers who did not manage to answer the phone calls while technology locked the trading systems. It was clear that the enormous number of calls was unmanageable, however, it is known that some of the brokers did not answer the phone on purpose. On the other hand, specialists who tested the NASDAQ afterwards in 1991 confirmed that the situation was really improved in comparison to 1987. Obviously, after the crash, the NASDAQ mainly focused on the changes and elevation of its market to prevent it from failing again.

### 4.2.4 Mutual Funds

Further noticeable change in the financial zone was an extension of mutual funds even though some critics considered their investors as uncultivated. They proposed that the influx and the outflux of funds were the causes of inconstancy, which was affecting stock prices. Later on, this statement was proven to be wrong, and experts agreed they did not influence the value of stocks.[110] Mutual funds, as well as pension funds, came from the private sector

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[107] Stoll, *Stock Market Policy since the 1987 Crash*, 5.
[108] Stoll, *Stock Market Policy since the 1987 Crash*, 3.
[109] Stoll, *Stock Market Policy since the 1987 Crash*, 5–6.
[110] Stoll, *Stock Market Policy since the 1987 Crash*, 3.

and their prices were under strict control.[111] Therefore, it was not possible for a client to get a better price of a concrete mutual fund somewhere and a worse price elsewhere.

## 4.3 Government's Regulations and Their Influence

After the crash, the intervention of FRS played an important role. Due to the steps taken under their control, rates of federal funds decreased, which ensured required liquidity and funding. Banks were encouraged to cooperate and keep in mind the whole financial system on which they are dependent. Thereafter, these changes were followed by the lowering of short-term interest rates which decreased the costs paid by borrowers.

Moreover, the FRS acted in the sphere of government securities and decided to release certain regulations concerning its securities and their lending from its portfolio. As a result, the limitations and conditions for loans were deferred. Another precaution from its side was the supervision of the financial system including banks. Later on, it proved to be wise to keep the connection with the heads of institutions like the SEC, the NYSE, the Treasury Department, and the National Association of Securities Dealers (NASD). The FRS was also willing to broaden the opening hours of the Fedwire if needed. The improvement of the market's situation and the encouragement of liquidity played a part in the market's ability to function again.[112] Therefore, the effort of the FRS seemed to have a positive impact.

On top of that, the crash also re-established the discussion about the success of initial market requirements that were regulated by the government. Stock margins have been controlled by the FRB since 1934 when the Securities Exchange Act was validated. In 1992, their range of regulation expanded even on margins of futures contracts thanks to Congress.[113] Nevertheless, it was found that the instability of the stock market was not influenced by the margin regulations.

## 4.4 Impact of Improvements

As expected, the markets tried to learn from their mistakes in order to never experience the crash again. However, from the long-term point of view, concerning the data available, it appears to be somehow infeasible. As there already were certain crashes before 1987, it would be foolish to think that the 1987 crash was the last one, although the markets and government strived for the best. Back then, the established improvements and regulations

[111] Fadiman, *Rebuilding Wall Street*, xxv.
[112] Carlson, "A Brief History of the 1987 Stock Market Crash," 17–21.
[113] Stoll, *Stock Market Policy since the 1987 Crash*, 3.

which should mitigate the situation might be perceived as sufficient as they really seemed to fulfil their purpose at first. However, nothing lasts forever, therefore neither the situation in the markets nor in the economy lasted bright.

Concerning the financial crisis in 2008 which already started a few years earlier and escalated in 2008 causing another stock market crash, the evidence is clear. In early 2008, the DJIA fell and continued to do so until the final crash in October. The extent of the decline was again huge as the DJIA crashed about 3000 points. It seemed to be tough times for the US as there was a crisis concerning the mortgages and the presidential election took place at the same time.[114] Investors nervously observed the news concerning the market and traded extensively.

In addition, the occurrence of mortgage-backed securities purchased by many investors such as hedge funds, pension funds or big banks made them lose their money. At first, their goal was to earn a lot as the return rate of these securities was high. They seemed to have enough means to invest, however, they probably were not aware of the huge risk.[115] As a result, investors felt insecure due to the problematic situation and the markets were influenced by that tension.

In response to the connection between the economy and the stock market, it cannot be certainly defined that the stock market crash happened due to the bad economic situation of the country. It can only be assumed that the decline of stock prices is likely to occur when economic circumstances are unstable.[116] As a result, it is questionable, whether these events and their extent are predictable. To conclude, it appears that the stock market is prone to fall due to many reasons, one of them being economic and financial conditions.

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[114] Péter Hudomiet, Gábor Kézdi, and Robert J. Willis, "Stock Market Crash and Expectations of American Households," *Journal of Applied Econometrics* 26, no. 3 (2011): 394.

[115] Michael Comiskey, and Pawan Madhogarhia, "Unraveling the Financial Crisis of 2008," *PS: Political Science and Politics* 42, no. 2 (2009): 271.

[116] Barro, "The Stock Market and Investment," 124.

# CONCLUSION

The stock market crash of 1987 was a remarkable event of a great size which caused a stir in the financial sectors all over the world including the main exchanges in New York, Hong Kong, Tokyo, or London. For the United States, it was another shocking experience which left Wall Street in complete paralysis. The drop in prices came as a surprise, which meant the end of investing for many market members, mainly the smaller ones who were not able to cope with the huge decline and extreme losses.

Investors seemed to be unprepared for such an extent to happen since the 1980s were years of growth. Despite some experts' concerns about the overvaluation of the market or the trade and budget deficit of the US economy, the crash could be hardly foreseen by the traders. Stock prices were rising, as well as the strategy of portfolio insurance, which is considered to be one of the main causes of the crash. Although some specialists claim that portfolio insurers were not responsible for the crash, they were responsible for many sell orders and contributed to the decline.

The invention of computer trading was supposed to make the operations easier and their execution quicker, however, due to greedy people it turned out to cause an avalanche of problems which was not anticipated. As a result, many orders remained unrealized, leaving investors in doubt about the prices of their transactions. Phone lines were either unavailable or deliberately not picked up by brokers who were exhausted from the situation.

It took enormous effort and time to fix the situation on the market as the crash also brought liquidity problems. Thanks to the immediate reaction of the US government and the Federal Reserve, the market's position for many investors was saved. The negotiation with banks concerning the interest rates and lending of money appeared to be a step forward.

A newly created Working Group was aimed mainly at the market's capacity and at the improvement of circuit breakers as their settings were perceived as inconvenient. Despite a considerable determination to improve the market and its conditions to prevent the occurrence of another crash, the attempt of the Working Group failed which could be seen in 2008 when the stock market crashed again, due to slightly different reasons. As a result, it can be assumed that not everything lies in hands of institutions as the stock market is a volatile environment which is prone to react to many economical and financial issues and therefore, tends to cause unforeseeable events.

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# LIST OF ABBREVIATIONS

| | |
|---|---|
| NYSE | New York Stock Exchange |
| CME | Chicago Mercantile Exchange |
| SEC | Securities and Exchange Commission |
| CFTC | Commodity Futures Trading Commission |
| FRB | Federal Reserve Board |
| FRS | Federal Reserve System |
| NASD | National Association of Securities Dealers |
| NASDAQ | National Association of Securities Dealers Automated Quotations |
| DJIA | Dow-Jones Industrial Average |
| S&P 500 | Standard and Poor's 500 Index |
| DOT | Designated-Order Turnaround |
| IPO | Initial Public Offerings |
| AMEX | American Stock Exchange |
| OTC | Over The Counter |
| CBOE | Chicago Board Options Exchange |