# Investing successfully in stock market? Index fund investing strategy analysis

**PhD (C.) Flamur Bunjaku**
*"Goce Delcev" University – Stip, North Macedonia*

## Abstract

This paper aimed to examine the best investing strategies in stock market. We claim that Index Fund Investing is the best investing strategy in stock market. Most of the empirical evidence used in this paper leads us to the conclusion that it is almost impossible for an investor to outperform the overall market by investing in a single company or by market timing selection. We believe that this paper has two-folded contribution. It contributes to the academic literature, as well as towards providing basic knowledge of investing in stock market, which we believe would minimize risk of loss. Investing in stock market is a challenging action. Many investors lose money in stock market. The reason for that is lack of understanding of market cycles, emotional decision making, following a speculative gambling investing strategy, and alike. In this paper we have provided what we claim is the best strategy of investing in stock market. Using empirical facts and analysis we have attempted to provide the best strategy of investing in stock market, by which an investor can mitigate risk and guarantee success. We claim that investing in mutual funds index such is S&P 500 and other similar indexes is the best way for long term success in stock market. S&P 500 is a stock market index that measures the performance of the 500 companies listed in US Stock Market. The involvement of these companies depends on their success. If they do not perform well, they are removed from the index. The latter strategy makes S&P index more secure compare to individual companies.

**Keywords:** Investment, stock market, fund, analysis.

## Introduction

Stock market is a type market which goal is to provide services of issuing, buying and selling stocks on a stock exchange or over the counter. Stocks, also known as equities, represent a fraction of company ownership. In stock market investors usually buy shares. The difference between stock and shares lies in the fact that a stock refers to the capital raised by the issuing company, whereas shares refer to a single unit of stock. For example if you own 1000 USD stock of a company and the price of a share is 50 USD, it means that you own 20 shares in that company. The main goal of stock market is to raise money. In order to raise money companies which are owned by few individuals offer ownership of the company by issuing shares through an Initial Public Offering known as IPO. So, potential investors would by the shares of that company. The company itself would raise money, which is usually used for further investing activities, and on the other side the buyers of the shares would take the benefits of the company in proportion of the shares they possess. The main stock markets in the world are the New York Stock Exchange (NYSE), the London Stock Exchange (LSE) and the Tokyo Stock Exchange (TSE), and alike.

There are many cases of investors who have lost most of their savings within a short time period. However, there are also many of those who have gained by investing in stock market. Therefore, it is very important to use an adequate investing strategy in order to be successful in this endeavor. We believe that investing in stock market indexes, rather than investing in single companies, is the best stock market investing strategy. As suggested by (Gaivoronski et al., 2005; Colwell et al., 2007; Montfort et al., 2008) construction of index funds in stock market investing is based on a single objective: to minimize risk and to maximize the rate of return. In addition, index stock market investing provides the safest long term investing platform. It takes the overall market as an investing benchmark, instead of focusing in a single company, industry, or other group of companies. But, what is an index fund? An index fund is a type of mutual fund with a portfolio constructed to match or track the components of a financial market index, such as the Standard & Poor's 500 Index (S&P 500). An index mutual fund provides broad market exposure, low operating expenses and low portfolio turnover. One of the most prominent stock market investor of all time Warren Buffett recommends index funds as a haven for long term investing. The idea of index stock market investing is that rather than picking out individual stocks for investment, it makes more sense for the average investor to buy all of the S&P 500 companies at the low cost an index fund offers. Or to put it simply: If you want to invest in soccer industry, it is much safer to invest in a soccer league, rather than in a soccer team. The Premiership League for instance will be there for a long time, so if you invest in the league as a whole you will get e return based on the performance of the league, and there is no risk that the Premiership League will be relegated or vanished. On the other hand, if you invest in a particular team within Premiership League, the risk is much higher: you either will get a high rate of return or you can lose everything. It is not guarantied that a particular team will perform well continuously. It is more likely that the league in general will perform well year after year. The relegated teams will be replaced by second league promoted teams. Unlike index fund investing, investing in a single company is accompanied by uncertainty, bigger risk and volatility. On the other hand index funds are characterized by less volatility and risk. In general, index funds have lower expenses and fees than actively managed funds, follow a passive investment strategy and seek to match the risk and return of the market on the theory that in a long-term the market will outperform any single investment. An index fund is a portfolio of stocks or bonds designed to imitate and track the composition and performance of a financial market index. It is worth mentioning that the number of investors who loose money in stock market is much higher compare to those who gain. The proportions of those who loose money outnumber those who gain by more than 80%. Therefore, it is very important for an investor to choose the adequate investing strategy. We believe that this paper will be a humble contribution towards findings the ways of minimizing losses and achieving financial gains in stock market. The rest of the paper is organized as follows. In the next section literature review and some theoretical aspects of the types of stocks is provided. The third section provides some data and analysis of stock market crashes. Mathematical calculation of S&P 500 index for a period of 40 years is provided in the fourth section. Examples of some individual corporations that have experienced plunge of the stock market price are provided in the fifth section. In the last sixth section conclusions are drawn.

## Literature review

Back in the early 1600s, a Dutch shipping company sold shares of itself to raise the capital it needed to expand the business operations. Other companies began offering portions of them for sale, and creative entrepreneurs began trading commodities, stocks, and other financial instruments in private markets. A stock exchange opened in Amsterdam in 1611 in response to the increase in the trading of commodities and financial securities. Over the next few centuries, other markets opened throughout Europe (Tycho Press, 2013, chapter 2) According to Dempsey (2016) the stock market has traditionally rewarded long-term investment. But the markets are "risky" in that they are prone to quite large-scale fluctuations as the economy moves through cycles of prosperity and decline, optimism and pessimism in addition to being prone to self-induced gyrations as market sentiment swings between greed and fear (p. 5). According to a no-author article published in Essential Finance (2003) index tracking is the process of comparing the performance of an investment portfolio with the performance of a relevant stock market index. If an actively managed investment fund outperforms the index, it can be said to have earned its fee. Otherwise its investors would have been better off investing passively in the constituent parts of the index. This can be done by investing in a tracker fund, which tracks the index. These funds are cheaper because there is no need for a manager to make investment decisions and they are simpler to administer. The index being tracked is said to be a benchmark.

Historically, a common phenomenon of the stock market is volatility. Volatility is often described as the "rate and magnitude of changes in prices" and in financial terms as "risk" (Narwal et al., 2018). Therefore, claim the latter authors, an insight into the volatility of the stock markets can be a useful tool for estimating the cost of capital and for evaluating asset allocation decisions.

Chambet and Gibson (2008) suggest that increasing trade openness among the countries can significantly improve the stock markets' co-dependence. Their findings also show that financial markets are highly co integrated among the countries that have the same foreign trade structure. However, Gupta and Guidi (2012) show no evidence of long-run relationship among the stock markets of major trading partners.

In order to forecast future prices of stocks there are two approaches to follow: fundamental and technical analysis. According to Muhammad et al. (2017) fundamental analysis is that kind of analysis that uses variables related to intrinsic values of the stock to estimate price, whereas, technical analysis utilizes historical data on prices, or other information, in order to obtain valuable signals about future prices.

Nevertheless, the predictability of stock return and the efficiency of financial market are still being debated up to now. Owing to over-reaction or under-reaction phenomena in the capital market, the efficiency market hypothesis is frequently not supported. Accordingly, investors might obtain certain excess return by using particular momentum strategy for market inefficiency (Ching-Ping Wang , Hung-Hsi Huang, and Wei-Li Lin, p. 1651).

According to Bono, Pedro and Eid (2015) in order to perform better than general market or benchmark return, the managers of actively traded funds need to change regularly the portfolio composition by buying and selling stocks and other securities, based to a defined strategy. In addition, the latter authors claim that the turnover results of funds are impacted by various factors and the returns on investments can vary accordingly. The factors claim the latter authors can be, among others, the background of portfolio manager and the investment policy of the fund, corporate strategy, profit history, structure and perceived skills of the executives of the companies issuing stocks, and alike.

A mutual fund is a type of financial vehicle made up of a pool of money collected from many investors to invest in securities such as stocks, bonds, money market instruments, and other assets. According to an academic publication of Tycho Press (2013) stock and bond mutual funds come in two flavors:

**Passively managed funds** - Often called index funds, passively managed funds attempt to match the performance of an index. Indexes—such as the well-known S&P 500 Index of large-company stocks—are baskets of securities constructed to approximate the investment returns of a slice of the financial markets. Most indexes don't change their component stocks often.

**Actively managed funds** - Unlike passively managed funds, actively managed funds buy and sell securities in an effort to exceed the return of their benchmark—usually an index or group of indexes.

In the recent decades, following the globalization development and the exponential growth of the communication technology, especially internet, stock market has experienced a huge liberalization trends. In this respect Naghavi and Lau (2016) claim that in a short term, liberalization trends may have some deteriorating effects in stock market. However, in a log run liberalization trends produce positive effects for stock markets. This happens because stock market adjusts itself when facing short run changes, which usually are accompanied by uncertainty. In addition, Naghavi and Lau (2016, p. 373) claim that the short-term results on the effects of financial market openness imply the likelihood of a deteriorating impact on stock market efficiency immediately after announcing openness. Thus, the risks and costs associated with liberalization are likely to impede stock market efficiency in the short term and more time should thus be allowed for the benefits to emerge. Moreover, the latter authors claim that the temporary shocks do not allow sufficient time for the stock market to adjust to the new regulations; however, in the long term, this adjustment is possible, prompting the institutions to produce more disclosures and adhere more stringently to the international norms of corporate governance (p. 373).

In a historical perspective the stock market has been efficient in most of the times, with exception of some periods of recession such as recession such as great depresion of 1929, latest recession of 2009, and alike. There were also some crises related to major forces such as wars and alike. However, in most of the times stock market, especially in US has been efficient. According to Ito, Noda and Wada (2016, p. 633) US stock market changes slowly over time: The latter authors claim that the degree of market efficiency is found to be in favor of efficient markets for the vast majority of our sample period. This is in line with our impulse response analysis, which shows that any shock to stock return quickly disappears most of the time, indicating that the market is generally efficient over the time. In addition, according to Zhu et al. (2109) stock markets become more efficient after global financial crises. However, in a research of the investors time period investing preference, conducted for the Latin American countries, there was not find clear evidence that investors prefer to invest in post financial crisis time period. We argue that the latter findings may be correct for the mutual funds, which volatility is lower than volatility of individual companies. Furthermore, investors investing in mutual fund indexes focus on long term investment, which investment in most of the cases is positive in a long term. Based on their capital return stocks can be divided as follows:

**Growth Stocks**

Growth stocks are related to those companies that have substantial potential for growth in the foreseeable future. In the past recent years companies from the technology sector were characterized as the most important growth stocks companies. Most growth stocks tend to be newer companies with innovative products that are expected to make a big impact on the market in the future, but there are exceptions. Some growth companies are simply very well-run entities with good business models that have capitalized on the demand for their products. Another feature of growth stocks is that these stocks represent units of the shares you buy for capital growth, rather than dividends.

**Value stocks**

Value stocks are related to some companies, which in a particular time period due to some external factors are undervalued. A value stock trades at a price below where it appears it should be based on its financial status and technical trading indicators. Usually, the price of the shares of value stock companies drops due to some factors which are not related to the main financial fundamentals of the company.

**Dividend yield stocks**

Yield stocks, ideally, are those that perform well in bull markets while providing partial downside protection for investors in bear markets. They are the stocks of choice for the income-seeking investor.

The stock yield is calculated by dividing the yearly dividends paid by the company to the company's share price. For example, if a company is expected to pay out $0.50 in dividends over the next year and is currently trading at $20, the dividend yield is 2.5%.

Based on the decision making rights in company, stocks (shares) can be divided in:

**Common stocks**

Common stock is a type of security that represents ownership of equity in a company. Holders of common stock own the rights to claim a share in the company's profits and exercise control over it by participating in the elections of the board of directors as well as in the voting regarding important corporate policies.

Common stock owners can profit from the capital appreciation of the securities. On average, the shares offer a higher return relative to preferred stock or bonds. However, the higher returns come with the higher risks associated with such securities.

**Preferred stocks**

Unlike common stockholders, preferred stockholders have limited rights which usually does not include voting. Preferred stock combines features of debt, in that it pays fixed dividends, and equity, in that it has the potential to appreciate in price. This appeals to investors seeking stability in potential future cash flows. Preferred shareholders have priority over common stockholders when it comes to dividends, which generally yield more than common stock and can be paid monthly or quarterly.

**Stock market crashes**

Throughout the history stock market has faced different crises, which have resulted in stock market plunge. Some of the most severe stock market plunges have occurred following below elaborated crises

***Great depression***

There is no doubt that Great depression starting is one of the most severe economic crisis in history of the world. The effects of the Great Depression in the US Stock market were devastating causing massive drop and a sell of shares. Prices on the New York Stock Exchange, which had been enthusiastically inflated by optimistic speculators, collapsed in October, and the ensuing Wall Street Crash gave the general public a first sign that a serious economic readjustment was taking place (Fearon, 2007). The effects of Great Depression in global economy were devastating. The United States of America and Europe were hit severely, whereas effects in Japan were moderate. The reason of such contagious effects are to be seek to the gold standard, which linked almost all countries in the world through fixed exchange rate currency system. Industry was the sector affected the most. International trade dropped by 50% causing huge levels of unemployment. In addition, Fearon (2007) stated savage deflation, a characteristic of this economic crisis, had a paralyzing effect on businesses that no longer saw the advantages of investment, and on consumers who reduced their purchases to a minimum (p. 2). Great depression, known as one of the most devastating financial and economic failure lasted until 1939.

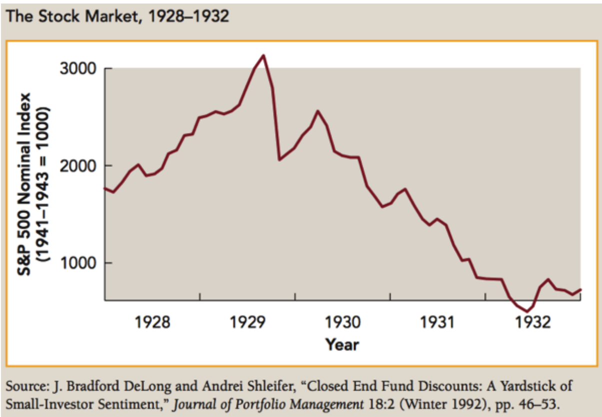


**Figure 1 Stock Market Crash - Great Depression**

*Dotcom crisis*

Dotcom crisis has occurred from In between 1995 to 2000 due to the rapid raise in the equity valuations in the US, fueled by investments in internet based companies a financial crisis occurred. That financial crisis is known as Dotcom crisis. Dotcom crisis occurred due to a heavy trading of the internet companies in NASDAQ index. Those internet companies didn't have an intrinsic value. However, since there was e huge demand for them, although not possessing any intrinsic values, the shares of those companies exponentially, creating a bubble, which burst in a time period of 2000. Although there were a signs of a bubble many investors didn't stop buying overpriced assets. Mcaleer, Suen and Wong (2016) explain this by the fact that even though investors may be fooled into buying an overpriced asset, they believe that the market is populated by greater fools who are willing to buy at an even higher price, the so-called "greater fool" theory. Mokhtar (2006) suggest that such speculators know that stock prices have exceeded their fundamental value, but continue to trade while thinking that the bubble will continue (cited in Mcaleer , Suen and Wong, 2016).

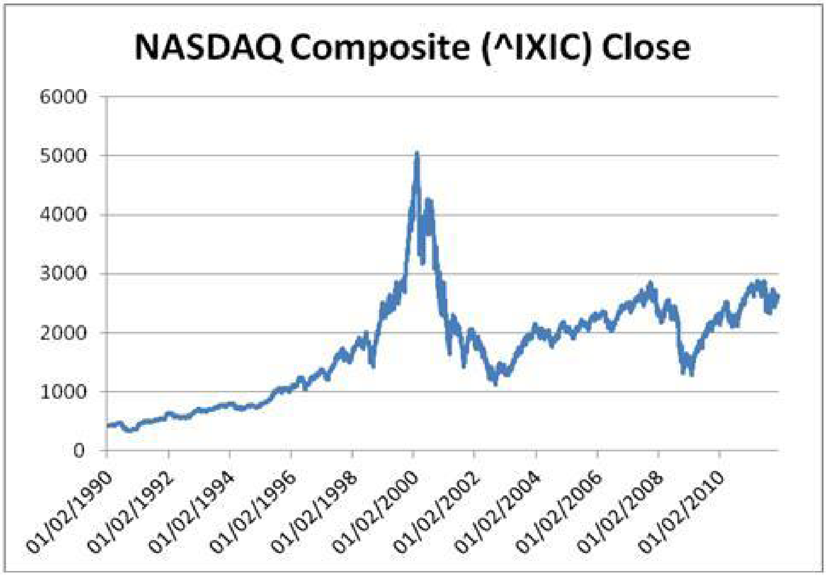


**Figure 2 Stock Market Crash - Dotcom Crisis**

*Financial crisis of 2008*

After the great depression, financial crisis of the year 2008 was one of the most severe economic crises in the history of the world. The roots of the financial crisis of the year 2008 may be found in the deregulation framework of financial industry. Apart deregulation, Wilkins and Campos (2011) identified causes of the financial crisis, as follows: Imprudent Mortgage Lending, housing bubbles, global imbalances, securitization, lack of transparency and accountability in mortgage finance, mark-to-market accounting, shadow Banking System, off-balance sheet finance, government-mandated subprime lending, failure of risk management systems, bad computer models, excessive leverage, and alike.

The Banks were allowed and engaged heavily in hedge fund trading with derivatives. Banks demanded more mortgages to support and protect their sales. Since the offer for real estate outpaced the demand, the prices of houses and other real – estate assets started to fall. Ordinary people invested heavily in real estate by borrowing in the banks. However, since those investments were kind of a bubble, in one moment the investors couldn't sell their houses, neither borrow any more in banks in order to pay their monthly payments. Banks stopped lending to each other. That initially led to mortgagee crisis, spreading into all the cells of financial system and causing financial crisis, which lead to global recession. Joseph Stiglitz (2010) contends that the Global Financial Crisis has clearly indicated that America's financial markets had failed to perform their essential societal functions of managing risk, allocating capital and mobilizing saving while keeping transaction cost slow (cited in Barnett. 2015, p. 11).

In order to tackle the financial crisis several measures were taken. Especially, bailouts appeared to be an important instrument in revitalizing the economy. Following the crisis US government offered the largest bailouts in history in order to prevent the bankruptcies of some companies, which may cause collateral damage and severe adverse effects in the economy. The latter is considered as a main instrument in combating the financial crisis of the year 2008, which lead to global recession.


**Figure 3 Stock Market Crash - Financial Crisis 2008-2009**
**Mathematical calculation of S&P 500 rate of return.**

Using the formula of arithmetic mean we are going to determine the average of the most popular stock index of the world S&P 500 for a period of 40 years.

$\mu = \sum X/N = X_1 + X_2 + \ldots\ldots + X_N/N$

μ - Mean sign (mi)
N – Number of units in the group
X – Any particular value
∑ - Sigma
∑X – The amount of all figures of X

S&P 500 total earnigs by year, 40 years period.

| Year | Total Return |
|---|---|
| 2018 | -4.38 |
| 2017 | 21.83 |
| 2016 | 11.96 |
| 2015 | 1.38 |
| 2014 | 13.69 |
| 2013 | 32.39 |
| 2012 | 16.00 |
| 2011 | 2.11 |
| 2010 | 15.06 |
| 2009 | 26.46 |
| 2008 | -37.00 |
| 2007 | 5.49 |
| 2006 | 15.79 |
| 2005 | 4.91 |
| 2004 | 10.88 |
| 2003 | 28.68 |
| 2002 | -22.10 |
| 2001 | -11.89 |
| 2000 | -9.10 |
| 1999 | 21.04 |
| 1998 | 28.58 |
| 1997 | 33.36 |
| 1996 | 22.96 |
| 1995 | 37.58 |
| 1994 | 1.32 |
| 1993 | 10.08 |
| 1992 | 7.62 |
| 1991 | 30.47 |
| 1990 | -3.10 |
| 1989 | 31.69 |
| 1988 | 16.61 |
| 1987 | 5.25 |
| 1986 | 18.67 |
| 1985 | 31.73 |
| 1984 | 6.27 |
| 1983 | 22.56 |
| 1982 | 21.55 |
| 1981 | -4.91 |
| 1980 | 32.42 |
| 1979 | 18.44 |

If the X is the rate of return for each year, the N number of the years in question and ∑X – The amount of all figures of X (returns by year), using the above figures we are able to calculate the average return of the S%P 500 index in a time period of 40 year.
$\mu = \sum X/N = 512.35/40 = 12{,}08$

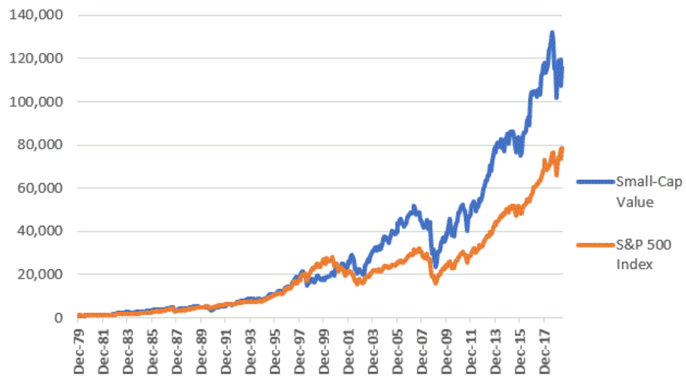


**Figure 4 S & P 500 Index Performance 1979 - 2019**

**Examples of individual Corporations that experienced plunge of the stock market price**

Whilst S&P 500 index fund has experienced a continuous growth there are examples of some big individual corporations that have failed in and their stock prices have plunged. That happened exclusively because those companies failed to innovate and to follow the latest developments in the technology. Below are some examples of those companies.

1. Nokia - Nokia, a company founded in Finland was the first to create a cellular network in the world. In the late 1990s and early 2000s, Nokia was the global leader in mobile phones. With the arrival of the Internet, other mobile companies started understanding how data, not voice, was the future of communication. Nokia didn't grasp the concept of software and kept focusing on hardware because the management feared to alienate current users if they changed too much. (Cited in Valuer, 2018). As a result Nokia's stock crashed and plunged, as we can see in the chart below.


**Figure 5 Nokia's Historical Stock Price**

2. Xerox - Another one of those big business examples of failure is Xerox. Xerox was actually first to invent the PC and their product was way ahead of its time. Unfortunately, the management thought going digital would be too expensive and they never bothered to exploit the opportunities they had.The CEO David Kearns was convinced that the future of Xerox was in copy machines. The digital communication products invented weren't seen as something that could replace black marks on white paper. Xerox failed to understand that you can't keep perpetually making money on the same technology. Sometimes technology fails too( Cited in Valuer, 2018). As a result Xerox's stock crashed and plunged, as we can see in the chart below.


**Figure 6 Xerox Historical Stock Price**

3. Blockbuster - Why did blockbuster fail? The video-rental company was at its peak in 2004. They survived the change from VHS to DVD but failed to innovate into a market that allowed for delivery (much less streaming).While Netflix was shipping out DVD's to their consumer's homes, Blockbuster figured their physical stores were enough to please their customers. Because they had been the leader of the movie rental market for years, management didn't see why they should change their strategy. Back in 2000, the founder of Netflix Reed Hastings proposed a partnership to the former CEO of Blockbuster John Antioco. Netflix wanted Blockbuster to advertise their brand in the stores while Netflix would run Blockbuster online. The idea got turned down by Antioco because he thought it was ridiculous and that Netflix's business model was "niche business." Little did he know that Hasting's idea would have saved Blockbuster. In 2010 Blockbuster filed for bankruptcy and Netflix is now a $28 billion

dollar company (Cited in Valuer, 2018). As a result Blockbusters's stock crashed and plunged, as we can see in the chart below.


Figure 7 Blockbuster Historical Stock Price Chart

## Conclusions

Based on empirical evidence, literature review and other sources and instruments used in this research, we can conclude that it is impossible for an investor to outperform the overall market by investing in a single company or by market timing selection. The main reason for that is the fact that the economy and especially technology of the world is evolving with an enormous speed. Therefore, most of the companies fail to follow those changes and undertake necessary actions to survive in this globalized and dynamic market environment. As technology develops and improves, many companies of that sort of industry are not able to adapt. So they fail. As a result their share prices plunge. We also can conclude that index investing strategy guaranties long term success in stock market. Index investing funds have e very important feature that protects them from failing. That is their operation model based on replacing the companies that do not perform well. So, if we have an industry that is booming the Index is going to pull those companies within its list. On the same time, Index fund is going to remove the companies that do not perform well from its list. This feature is the most important feature of an Index stock market fund that guarantees success in a long term investment in stock market.

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