

How Do Investors React To Market Bubbles And Crashes, And What Are The Underlying Behavioral Explanations For Such Reactions?

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I. Introduction

Picture a playground where friends are joyfully bouncing around, playing with a balloon. Suddenly, one person has a wild idea to make the balloon gigantic. Eager to join the fun, the other friends start adding their own breaths to the balloon, until it becomes enormous, stretched far beyond its intended size and nearly bursting. The balloon eventually pops, leaving them all feeling disheartened. This scene serves as an analogy for economic bubbles and their subsequent crashes.

An economic bubble occurs when the price of an asset shoots up to levels, far beyond its true value. This happens because of overly enthusiastic market behavior. Bubbles are usually followed by a sharp drop, or crash, as the inflated prices fall back to reality. The knowledge of bubble formation, growth and then burst is crucial for economists, investors and certain policymakers.

Market bubbles and crashes have been recurring events throughout economic history, from the Dutch Tulip Mania in the 17th century to the Dot-Com bubble and the Global Financial Crisis in 2008. Each event underscores the profound impact of investor psychology and collective behavior on financial markets. When market conditions are favorable, investors often become overly optimistic, driven by the fear of missing out (FOMO) and speculative fervor. Conversely, during market downturns, panic selling and herd behavior can exacerbate the severity of crashes.

This research paper explores the intricacies of investor behavior during market bubbles and crashes, delving into the psychological biases and behavioral traps that drive such reactions. By examining historical case studies and theoretical frameworks, the paper aims to elucidate the underlying behavioral explanations for these market phenomena. Understanding these patterns is vital for developing strategies to mitigate the adverse effects of bubbles and crashes, thereby fostering more stable and resilient financial markets.

Nature of Economic bubbles and crashes

Economic bubbles and crashes represent the volatility and unpredictability inherent in financial markets. To fully grasp these events, it is essential to understand their defining characteristics and the typical life cycle they follow.

According to the definition provided by Kenton (2023), “A bubble is an economic cycle that is characterized by the rapid escalation of market value, particularly in the price of assets. This fast inflation is followed by a quick decrease in value, or a contraction, that is sometimes referred to as a crash or a bubble burst.”

Key Characteristics and Stages of a Bubble



Image source: The Motley Fool

The life cycle of an economic bubble typically unfolds in several stages:

Displacement: The bubble begins with a displacement, which is a new event or innovation that catches the attention of investors. This could be a technological breakthrough, deregulation, or a significant shift in economic policy. For instance, the advent of the internet in the late 1990s led to the dot-com bubble.

Boom: During the boom phase, prices start to rise as more investors enter the market, driven by optimism and the allure of high returns. This stage is marked by increasing speculation and media hype, which attract even more investors.

Euphoria: In the euphoria phase, asset prices skyrocket, and a speculative frenzy takes hold. Investors throw caution to the wind, buying assets at inflated prices with the belief that they can sell them at even higher prices. This phase is characterized by widespread overvaluation and irrational exuberance.

Peak: The peak of the bubble is reached when prices hit their highest point. At this stage, some savvy investors begin to realize that the prices are unsustainable and start selling off their assets. However, the majority of investors remain caught up in the euphoria.

Bust/Collapse: The bust phase begins when a critical mass of investors starts selling off their assets, leading to a rapid decline in prices. Panic sets in as investors scramble to exit the market, causing a sharp contraction in asset values. This phase often leads to a market crash and significant financial losses for those who bought in at the peak.

Trough: The trough is the final stage, where prices stabilize at a lower level, reflecting the true intrinsic value of the assets. The market may remain depressed for a period as confidence slowly rebuilds.

Economic bubbles form due to a combination of speculative trading, where investors buy assets based on anticipated resale value rather than fundamental worth, and excessive liquidity, where easy credit and low-interest rates encourage borrowing for investment. Behavioral biases, such as overconfidence, herd behavior, and FOMO, further drive irrational investment decisions, while innovation and technological changes can create hype and unrealistic profit expectations.

This paper will delve into specific case studies and behavioral explanations to provide a deeper insight into how and why investors react the way they do during these tumultuous periods.

Investor Reactions to Bubbles and Crashes

Investors often display intense emotions and cognitive biases during market bubbles and crashes, which can lead to actions that worsen market volatility. This section will examine the usual responses of investors during these periods and the psychological influences behind these responses.

Behavioral Patterns During Market Bubbles

During market bubbles, investor behavior is often characterized by irrational exuberance and speculative trading. Key behavioral patterns during such times include:

Excitement and Speculative Buying: Investors tend to become overly optimistic about future returns, believing that the current upward trend will continue indefinitely. This overconfidence leads to increased risk-taking and speculative investments in overvalued assets. Motivated by the prospect of quick profits, investors buy assets not based on their fundamental value, but with the intention of selling them at higher prices. This speculative behavior fuels the bubble, pushing prices further beyond intrinsic values.

Fear of Missing Out: As prices rise, more investors are drawn into the market, fearing that they will miss out on potential gains. This herd behavior creates a positive feedback loop, where rising prices attract more buyers, further inflating the bubble. Investors often chase past performance, buying into assets that have already seen significant price increases. This can lead to buying at peak prices, increasing the risk of substantial losses when the bubble bursts.

Behavioral Patterns During Market Crashes

When a bubble bursts, investor behavior shifts dramatically, often driven by fear and panic. Key behavioral patterns during market crashes include:

Panic Selling and Herd Behavior : As prices begin to fall, investors rush to sell their assets to avoid further losses. This panic selling can cause a rapid and severe decline in market prices, exacerbating the crash. Just as herd behavior can drive bubbles, it can also drive crashes. Investors follow the crowd in selling off assets, amplifying the downward momentum and creating a self-fulfilling prophecy of declining prices.

Loss Aversion and Regret Aversion : The psychological pain of losses is often more intense than the pleasure of gains. During a market crash, loss aversion leads investors to sell assets at a loss to avoid the possibility of further declines, even when it might be better to hold or buy. Investors fear making decisions that they might later regret, leading to indecision or conservative choices that can lock in losses or miss out on recovery opportunities.

Psychological Factors Influencing Investor Behavior

To grasp the intricacies of investor behavior, it's essential to examine the phenomenon of underinvesting and the psychological factors that drive it. This section delves into investors' underinvesting behavior, shedding light on how psychological biases influence their reactions during market bubbles and crashes. Understanding these patterns is vital for comprehending broader market dynamics and investor decision-making processes.

Trap one: Underinvesting

Underinvesting, driven by loss aversion, significantly affects investor behavior. Loss aversion is the tendency to avoid losses rather than seek equivalent gains, often resulting in inertia and difficulty changing suboptimal behaviors. Status quo bias, a preference for maintaining the current state, further hampers efforts to increase savings or investments.

In the market, this behavior appears in various forms. Many people delay retirement savings despite knowing their importance. Similarly, companies underinvest in R&D due to challenges in protecting new knowledge, the uncertainty of innovation, and a preference for short-term, predictable projects.

Several solutions have been suggested to combat these issues. Programs like "Save More Tomorrow" automatically increase future contributions, helping individuals overcome inertia and status quo bias. For companies, committing to pre-defined R&D budgets or innovation initiatives can protect long-term investments from short-term pressures.

Trap Two: Choosing by Not Choosing

When faced with an overwhelming number of choices, people often experience what's known as choice overload. This leads to two primary behaviors. First, individuals tend to opt for the default choice, even if it's not the most advantageous, as it's the path of least resistance. Second, some may struggle to make any decision at all, experiencing decision paralysis due to the multitude of options. This is evident in scenarios where fewer people participate in company pension plans when presented with a wide array of investment choices. Behavioral solutions, like designing appropriate default options, can effectively mitigate these issues. Making a particular choice the default significantly increases the likelihood of its selection, positively influencing behavior.

Trap three Focusing on the trees and ignoring the forest

Many investors tend to concentrate on individual stocks rather than the overall performance of their portfolio, often as a result of mental accounting. They assess each investment based on its initial purchase price. This narrow focus is influenced by behavioral biases such as loss aversion, which can make losses feel more significant than gains, leading to holding onto losing stocks for too long. The endowment effect also plays a role, causing owned stocks to be overvalued, and investors tend to rely on initial purchase prices as reference points rather than considering future potential.

These biases can lead to realizing gains too quickly, holding onto losing stocks, and making emotional decisions. To avoid these traps, investors should take a portfolio perspective, establishing risk measures and return expectations at the portfolio level. Research indicates that high-level asset allocation decisions are crucial to investment performance.

Trap four Sticking with the familiar

Investors often exhibit familiarity bias, sticking to what they know best, which can impact their financial decisions. For example, many invest heavily in their employer's company, risking both job and savings

if the company fails. Additionally, investors tend to favor domestic stocks, like in 2005 when U.S. investors had 87% of their money in domestic stocks, missing out on global diversification benefits.

This bias can cause issues, such as buying lots of stocks during market highs and holding onto them during crashes out of fear. Familiarity feels comfortable, like an old favorite sweater, making new opportunities seem scarier.

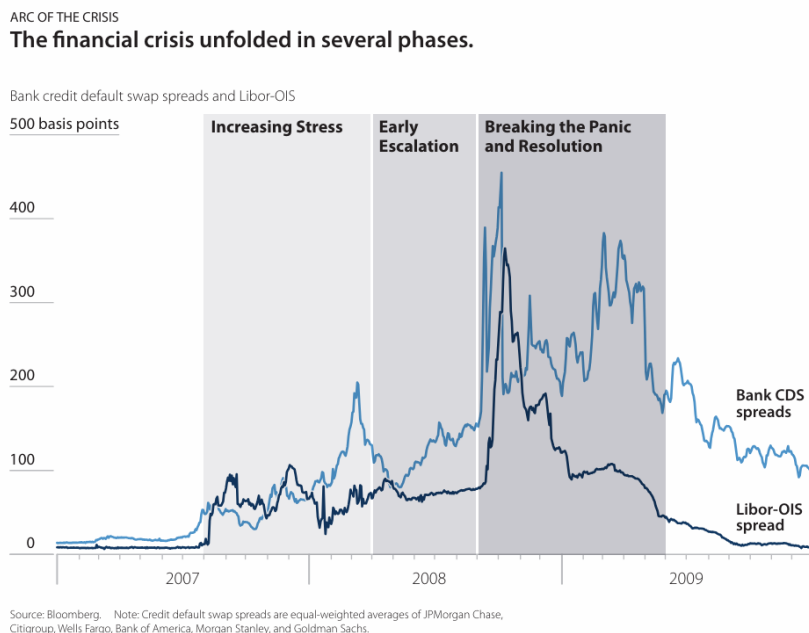
To counter this, investors should diversify their investments to lower risk and seek advice from financial experts. Trying new investment strategies can also be beneficial. Recognizing and overcoming these habits can lead to smarter financial decisions and more stable returns.

Case Studies of Market Bubbles and Crashes

Understanding market bubbles and crashes requires examining historical examples that highlight the dynamics and impacts of these phenomena. This section explores three significant case studies: the Dot-Com Bubble of the late 1990s, the U.S. Stock Market Boom of the 1990s, and the Global Financial Crisis of 2008.

(I). Global Financial Crisis of 2008

The Global Financial Crisis of 2008 is one of the most significant economic events of the 21st century, originating in the U.S. housing market and spreading throughout the global financial system. It began in 2006 when housing prices peaked and then declined, leading to a surge in mortgage defaults, particularly among those with adjustable-rate mortgages. This triggered a collapse in the value of mortgage-backed securities (MBS) and collateralized debt obligations (CDOs), causing significant losses for financial institutions. As asset values fell, banks and investors struggled to meet short-term liabilities, resulting in a liquidity crisis. Major institutions like Lehman Brothers went bankrupt, while others, such as Merrill Lynch, were forced to merge or required government bailouts. The crisis's impact was global, as interconnected financial markets spread the turmoil to foreign banks and investors heavily invested in U.S. housing-related securities.



Formation of the Bubble

The Global Financial Crisis was primarily triggered by excessive risk-taking in the housing market, fueled by the misuse of financial derivatives and lax regulatory policies.

Excessive Risk-Taking and Favorable Economic Conditions : During the early 2000s, the U.S. housing market saw a significant boom, enticing investors with the promise of high returns and low risk due to the perceived security of mortgages. This surge in investor interest led to a rise in mortgage lending, often with relaxed underwriting standards. Subprime mortgages became prevalent, extending loans to borrowers with poor credit and minimal income verification, further driving up housing demand and prices.

Financial Derivatives and Mortgage-Backed Securities : Financial derivatives, particularly mortgage-backed securities (MBS), played a central role in the 2008 financial crisis. Mortgage loans were pooled into

MBS and sold to investors, often with inflated credit ratings despite underlying risks. Investment banks further complicated the market with collateralized debt obligations (CDOs), which bundled MBS into complex instruments with varying risk levels. Meanwhile, insurance companies sold credit default swaps (CDSs) to investors, ostensibly insuring against MBS default, but often without adequate capital reserves. These practices contributed to the crisis by spreading risk throughout the financial system and obscuring the true extent of exposure to subprime mortgages.

Regulatory Failures : Oversight of subprime lending and mortgage-backed securities (MBS) was lax, allowing for the widespread issuance of risky loans without adequate monitoring. Credit rating agencies contributed to the problem by assigning high ratings to MBS and collateralized debt obligations (CDOs) despite mounting risks, misleading investors about the true safety of these investments.

Euphoria and Peak: During the peak of the housing boom, property prices soared, and homeownership rates increased. Financial institutions, driven by short-term profits, continued to engage in risky lending and investment practices. The widespread belief in the stability of the housing market led to complacency and a lack of scrutiny over the underlying risks

Bust and Aftermath: The bubble burst in 2006 when house prices began to fall, leading to a rise in mortgage defaults. The value of MBS and CDOs plummeted, causing significant financial strain on banks and investors. The crisis culminated in 2008 with the collapse of major financial institutions like Lehman Brothers, triggering a global credit crunch and severe market instability. The resulting recession affected economies worldwide, leading to job losses, bankruptcies, and a prolonged economic recovery.

Behavioral Patterns of Investors During the Crisis

Behavioral Patterns During the Bubble

Investors engaged in speculative buying, driven by the belief that housing prices would continue to rise. The expectation of high returns with perceived low risk led to widespread investment in MBS and CDOs. As more investors entered the market, the fear of missing out (FOMO) drove further investments. This herd behavior created a feedback loop, inflating the housing bubble even more.

Behavioral Patterns During the Crash

As housing prices fell and mortgage defaults increased, investors began to panic. The rush to sell off MBS and CDOs led to a sharp decline in their prices, exacerbating the financial crisis. Investors, facing significant losses, were driven by loss aversion, choosing to sell their investments at a loss to avoid further declines. This behavior contributed to the downward spiral in asset prices.

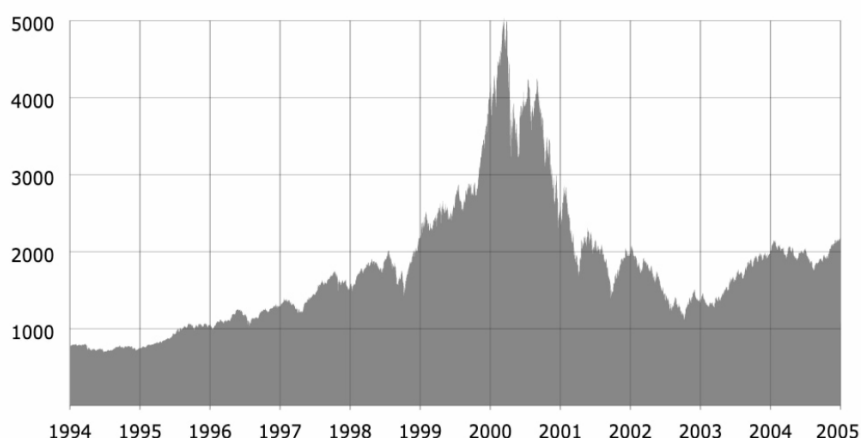
Explanations for Investor Reactions

Investor reactions during the financial crisis can be explained by several psychological factors. Loss aversion led investors to hold onto their investments for too long, fearing further losses, while herd behavior and the fear of missing out amplified both the housing bubble and the subsequent panic selling. Emotional decision-making drove investors to react to market trends rather than fundamentals, with overconfidence leading to increased speculative risk-taking and a disregard for warning signs of an impending market correction.

These case studies illustrate the recurring patterns and profound impacts of market bubbles and crashes. By examining these historical events, we can gain valuable insights into the behavioral and economic forces that drive such phenomena, laying the groundwork for understanding investor reactions.

(II). Dot-Com Bubble (Late 1990s)

The late 1990s witnessed a rapid rise in internet-based companies, leading to a speculative frenzy known as the Dot-Com Bubble. Investors were captivated by the potential of the internet, pouring money into companies with little or no profitability. The Dot-Com Bubble reached its peak in March 2000, when stock prices of internet-related companies soared to unprecedented levels. However, the euphoria was short-lived, as the bubble burst, leading to a sharp correction in stock prices. Many dot-com companies, which had been trading at inflated valuations, saw their share prices plummet, erasing billions of dollars in market value. The crisis exposed the overvaluation of internet stocks and the speculative excess that had gripped the market. It eviscerated more than \$5 trillion in market value between March 2000 and October 2002. From a March 10, 2000, high of 5,048.62, the index tumbled to 1,139.90 on Oct. 4, 2002, for a whopping 76.81% drop.



The dot-com bubble timeline: the NASDAQ Composite index during the dot-com bubble and its eventual collapse. Source: Wikipedia.com

Formation of the Bubble: The Dot-Com Bubble of the late 1990s was fueled by a confluence of factors. The widespread adoption of the internet sparked a frenzy of investment in technology companies, particularly those involved in the burgeoning dot-com sector. Investors were captivated by the promise of revolutionary technologies and the potential for astronomical returns. Easy access to capital, facilitated by low interest rates and speculative fervor, further propelled the rapid expansion of internet startups. Additionally, regulatory changes, such as the Telecommunications Act of 1996, fueled competition and innovation in the telecommunications industry, driving up stock prices.

Euphoria and Peak: By the late 1990s, the market was in a state of euphoria. Initial public offerings (IPOs) of internet companies often saw prices double or triple on the first day of trading. Media hype and speculative fervor further fueled the bubble.

Bust and Aftermath: The dotcom bubble burst when capital began to dry up. In 2000, the bubble burst when it became clear that many dot-com companies could not deliver on their promises. The collapse of the dot-com bubble resulted in widespread bankruptcies, job losses, and a severe market downturn.

Investor Behavior: During the Dot-Com Bubble, investors exhibited a speculative mindset characterized by a willingness to invest in companies with little or no earnings but significant potential for future growth. Many investors were drawn to internet startups based solely on the allure of their business models, without conducting thorough due diligence. Day trading became increasingly popular, with individuals seeking quick profits through frequent buying and selling of dot-com stocks. Initial public offerings (IPOs) of internet companies attracted widespread attention and investment, reflecting investors' eagerness to capitalize on the dot-com craze.

During market bubbles, investors often exhibit irrational exuberance, driven by the fear of missing out on potential gains. This led to a herd mentality, where investors follow the crowd without conducting thorough due diligence. As prices continued to rise, investors became increasingly overconfident and disregarded warning signs of an impending crash. However, when the bubble inevitably burst, fear took hold, prompting panic selling and exacerbating the decline in prices.

Explanations for Investor Reactions: Investors' behavior during the Dot-Com Bubble can be attributed to various psychological biases. The fear of missing out led investors to overestimate the potential for profits and underestimate the risks involved in investing in internet startups. This cognitive bias, combined with herd behavior and the availability heuristic (placing undue weight on recent information), fueled the speculative frenzy characteristic of the dot-com era. Additionally, the gambler's fallacy (believing that past trends will continue indefinitely) contributed to investors' reluctance to acknowledge the unsustainable nature of the dot-com boom. These behavioral patterns underscore the importance of emotional awareness and disciplined decision-making in navigating volatile markets.

(III). U.S. Stock Market Boom of the 1990s

The U.S. stock market experienced a dramatic rise between 1990 and 2000, with stock prices nearly quintupling in value. This period of unprecedented growth was fueled by various factors, including foreign investment and technological advancements. The U.S. Stock Market Boom of the 1990s reached its peak in March 2000, when stock prices soared to unprecedented levels. However, the euphoria was short-lived, as the dot-com bubble burst, leading to a sharp correction in stock prices. Many internet-related companies, which had

been trading at inflated valuations, saw their share prices plummet, wiping out billions of dollars in market value. The crisis exposed the fragility of the market and the dangers of speculative excess.

Formation of the Bubble: The U.S. Stock Market Boom of the 1990s was propelled by several significant factors. Firstly, a period of robust economic expansion created an environment conducive to investment, fostering optimism among investors. Additionally, the end of the Cold War brought about global stability and increased international trade, further boosting confidence in the markets. Technological innovation, particularly the rise of the internet, played a pivotal role in driving up stock prices, as investors eagerly sought opportunities in the burgeoning tech sector.

Euphoria and Peak: As the decade progressed, stock prices accelerated, driven by strong corporate earnings and increasing investment in tech stocks. By the late 1990s, the market had reached its peak, characterized by extreme valuations and a pervasive belief that the good times would never end.

Bust and Aftermath: The bubble burst in early 2000, leading to a significant market crash. By 2003, stock prices had fallen by 30% both in the U.S. and internationally, and the overall market value dropped by a quarter. The crash reversed the trend of foreign investment, leading to substantial losses for both U.S. and foreign investors.

Investor Behavior: Investors exhibited a strong appetite for risk during the stock market boom of the 1990s. Many were drawn to the allure of high-flying tech stocks, which promised exponential returns fueled by the internet revolution. Day trading became increasingly popular, with individuals seeking quick profits through frequent buying and selling of stocks. Initial public offerings (IPOs) of tech startups attracted widespread attention and investment, reflecting investors' eagerness to capitalize on the booming market.

Behavioral Explanations for Investor Reactions: Investors' behavior during market bubbles and crashes can be attributed to various psychological biases. During bubbles, the fear of missing out leads investors to overestimate the potential for profits and underestimate the risks involved. This cognitive bias, combined with herd behavior, fuels the speculative frenzy characteristic of bubbles. Conversely, during crashes, the fear of loss becomes dominant, triggering a flight to safety as investors rush to liquidate their positions. These behavioral patterns underscore the importance of emotional awareness and disciplined decision-making in navigating volatile markets. Telecommunications Act of 1996, fueled competition and innovation in the telecommunications industry, driving up stock prices.

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II. Conclusion:

Financial markets are known for their ups and downs, which can be dramatic and sudden. This paper has explored how these highs and lows, known as market bubbles and crashes, happen and how investors react to them. By looking at past events like the Dot-Com Bubble of the late 1990s, the U.S. Stock Market Boom of

the 1990s, and the Global Financial Crisis of 2008, we can see how emotions and psychology play a big role in driving these market swings.

During market bubbles, investors often get overly excited and buy assets at inflated prices, driven by the fear of missing out. When the bubble bursts, fear takes over, leading to panic selling and a sharp drop in prices. This behavior shows the strong influence of psychological biases like loss aversion and herd behavior.

Understanding these behaviors can help investors make better decisions. Instead of getting caught up in the hype, investors can focus on long-term goals, diversify their investments, and seek advice from financial experts. Tools like automatic savings programs and default investment options can also help manage these biases.

For policymakers, it's important to have strong regulations to prevent risky behavior in the financial markets. Learning from past bubbles and crashes can help create rules that keep markets stable and protect investors.

In conclusion, the study of market bubbles and crashes, coupled with an understanding of the underlying behavioral explanations, provides valuable insights into the dynamics of financial markets. By bridging the gap between economic theory and behavioral finance, this research contributes to a deeper comprehension of investor behavior. As financial markets continue to evolve, staying aware of these psychological and economic forces will be crucial for achieving long-term investment success and fostering a more stable global economy.

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