

The “Perpetually” Efficient Stock Market Nonsense: The Gaslighting Effects

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Abstract

One of the conventional and commonly accepted assumption in the financial world is the Efficient Market Hypothesis (Fama, 1970). However, the intellectual dominance of the efficient-market revolution has more been challenged by economists who stress psychological and behavioral elements of stock-price determination and by econometricians who argue that stock returns are, to a considerable extent, predictable (Malkiel, 2003). “Boom-bust” patterns are the empirical evidence of the efficient market nonsense. We suggest a theoretical linkage between the EMH and the Reflexivity Theory focusing mainly on the psychological profile. We suppose that, during stages of market exuberance/panic, the market pricing produces “gaslighting effects” and that mean-reverting behavior (i.e., contrarianism) is the result of participants’ awareness of psychological deviation from reality. We suspect that investors “benchmarking” plays a primary role on this latter aspect. Outside bubbles episodes, the market pricing is generally efficient and reflects the fundamental value evolution, without producing gaslighting effects.

JEL classification numbers: G10, G11, G14.

Keywords: Efficient Market Hypothesis (EMH), Reflexivity Theory, Gaslighting Effects.

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1. Introduction and Literature Review

One of the conventional and commonly accepted assumption in the financial world is the Efficient Market Hypothesis (Fama, 1970). A capital market is “efficient” if it fully and correctly reflects all relevant information in determining security prices about individual stocks and about the stock market as a whole (Malkiel, 1989). The Efficient Market Hypothesis (EMH) is associated with the idea of a “random walk”, where all subsequent price changes represent random departures from previous prices. Under this circumstance, neither technical analysis nor fundamental analysis would enable an investor to achieve returns greater than those that could be obtained by holding a randomly selected portfolio of individual stocks, at least not with comparable risk (Malkiel, 2003).

Most studies of financial analysts’ forecasts consider the forecast itself as an independent (and objective) variable unaffected by the psychological bias. However, the intellectual dominance of the efficient-market revolution has more been challenged by economists who stress psychological and behavioural elements of stock-price determination and by econometricians who argue that stock returns are, to a considerable extent, predictable (Malkiel, 2003). More and more scholars, indeed, believe that the psychological aspect plays a fundamental role in the financial decision-making. Simon (1979) criticises the EMH and the global rationality assumption of economic theory. Human decision-making is based on formal and informal models of the phenomenon under consideration and the EMH does not fit the actual behaviour of financial analysts (Hunter et al., 1988). “Boom-bust” patterns are the empirical evidence of the efficient market nonsense. The nature of bubbles reflects the dominant role of investors’ psychology in investing. Keynes (1936) states, indeed, that a valuation, which is established as the outcome of the mass psychology of a large number of ignorant individuals, is liable to change violently as the result of a sudden fluctuation of opinion due to factors which really do not make much difference. He uses the analogy of the “Old Maid” (i.e., a famous children’s game) to describe investor behaviour in the stock market: the way to win is to pass along the Old Maid to the next player (Grantham, 2000). Keynes’s idea is not far distant from the Reflexivity Theory (Soros, 2003). This is in sharp contrast to the reigning notions in orthodox economics. The hypothesis of Rational Expectations (RE) requires that the views of all participants will converge to a “single set correct of expectations” and the Efficient Market Hypothesis (EMH) posits that actual outcomes deviate from equilibrium in a random manner save for occasional exogenous shocks (Shaikh, 2013). Although Soros’ argument is similar to the Keynesian notions of equilibration³, the latter makes the important further contribution of emphasizing that the fundamental value itself will generally be affected, but not fully determined, by diverse expectations and actual outcomes. Nowhere is the role of expectations more clearly visible than in financial markets. Buy and sell decisions are based on expectations about future prices, and future

³ A turbulent process in which actual and expected variables gravitate around some fundamental value.

prices, in turn, are contingent on present buy and sell decisions (Soros, 2003). What happens then if market prices incorporate “irrational expectations” or “irrational exuberance” (Shiller, 2005) as during bubbles (i.e., perpetual higher future growth expectation)? Since market consensus is built into the stock prices, this means that the information content is not only inefficient but also misleading of the likely future outcome. In other terms, the market is acting as a “gaslighter”. We suppose that, during stages of market exuberance/panic, the market pricing produces “gaslighting effects” and that mean-reverting behaviour (i.e., contrarianism) is the result of participants’ awareness of psychological deviation from reality. Ammy-Driss et al. (2023) give an empirical support of the suggested idea showing to which extent the stock markets become inefficient during the COVID-19 crisis (i.e., panic episode). Outside bubbles/panic episodes, the market pricing is generally efficient and reflects the fundamental value evolution, without producing gaslighting effects. Recognizing the market gaslighting effects is of valuable importance to protect capital. While in the short-term investors may perceive to lose the best lifetime opportunity, their recognition enhances the ability to resist the pressure to conform and ultimately accrue their long-term performance. Bagato et al. (2018) introduce a multi-step statistical model able to recognize stressed market periods and identify breakout points and short-term trend and reversal signals. Our aim is to introduce here a pure theoretical idea to stimulate discussion and encourage academics to develop an accurate model supporting the “partial” (or fractal) efficient market hypothesis and the role of gaslighting effects.

2. The “Perpetually” Efficient Stock Market Nonsense: The Gaslighting Effects

Investment is a lump sum payment for a future cash flow. Expectations about the evolution of the future cash flow and the evaluation of good comparable alternatives influence the investment decision itself. Market consensus is built into the stock prices. The correct valuation of what is discounted into the prices allows investors to make their investment decisions. Keynes (1936) states, indeed, that investors devote their intelligence to anticipating what average opinion expects the average opinion to be. In the short term, the ups and downs of prices are influenced far more by swings in investor psychology than by changes in companies’ long-term prospects. Securities prices, indeed, rise and fall much more than profits, introducing considerable investment risk, primarily because of the dramatic ups and downs in investor psychology (Marks, 2022). In normal times (i.e., outside bubbles), we suppose that actual and expected variables have a higher tendency to gravitate around some fundamental value (i.e., equilibration). From a psychological perspective, it means that market psychology is “equilibrate” (i.e., disciplined and foresighted investors) and there is a tendency toward efficiency, although the underlying conditions that are supposed to be reflected in the stock market are also

constantly changing⁴. Our investigation starts, therefore, from the assumption that markets are not perpetually efficient, but “partially efficient”. We suggest a theoretical linkage between the EMH and the Reflexivity Theory focusing mainly on the psychological profile. After all, the markets are governed by behavioural science, not physical science.

The idea of efficient market is summed up in the assertion that “the market is always right”. It means that there are not distortions (i.e., no gaslighting effects) and stock prices reflect perfectly all the available information and the fundamental underlying values. The Reflexivity Theory takes a totally opposite point of view. It does not accept the proposition that stock prices are a passive reflection of underlying values, but market valuations are always distorted. The distortions, in turn, can affect the underlying values (Soros, 2003). If we agree in full of the latter idea, this means that the market generates perpetually gaslighting effects and manipulates the investors’ expectations of future fundamental values. Gaslighting effects, thus, exacerbate the investors’ perception of reality and increase the odds of market bubbles formation. We suspect the truth is in the middle of these two contrasting theories and the identification of the market gaslighting effects (i.e., investors “irrational” exuberance or panic) can help participants to protect their capital and implement the optimal strategies to improve the long-term performance. The concept of gaslighting is well discussed in psychology, but quite innovative in the financial applications. Gaslighting is a conscious or unconscious form of psychological abuse that occurs when a perpetrator distorts information to confuse a victim, triggering the victim to doubt their memory and sanity (Tormoen, 2019). Despite the popularity of the term, sociologists have ignored gaslighting, leaving it to be theorized by psychologists. However, gaslighting is primarily a sociological rather than a psychological phenomenon (Sweet, 2019). Therefore, gaslighting is a staple of finance too. What is the origin of the gaslighting effects and irrational investors’ behaviour? We would define it the illusion of a perpetual motion machine⁵. The main driver is the investor’s search-for-yield behaviour (Campbell et al., 2022), which is strictly linked with the framework suggested by Boissay et al. (2022). Let us take a practical example. During better times and improved economics, investors become more optimistic about the future. Higher projected returns, more and more optimistic investors bet for stronger future economic conditions, causing a ramp-up in stock prices. This originates a mental feedback-loop. In feedback loops, every change can simultaneously represent a cause and an effect (Wellmanns et al., 2020). It is here that starts the “Fear of Missing Out” (FOMO) mentality: investors worry about missing opportunity much more than losing capital. Moral hazard behaviours become dominant and widespread; the market narrative moves towards the recursive “this time is different” theme. Self-reinforcing “irrational” behaviours can be in place for long time. Persistency fuels expectations and manipulates the

⁴ It is difficult to establish any firm relationship between changes in stock prices and changes in underlying conditions.

⁵ A hypothetical machine that can do work infinitely without an external energy source.

perception of reality, altering investors memory of past lessons. That is why we define these externalities as “gaslighting effects”. Bubbles are about psychology, not metrics (Soros, 2003). This terrible lust to participate in profit making comes along at the end of every one of the great bubbles. So, get rid of this FOMO is essential for being immune to the market gaslighting effects even if this could likely mean to sacrifice the short-term performance in favour of a long-term-oriented investment approach. This requires a resolute focus on risk aversion rather than maximizing immediate returns, strong discipline, and self-control. It is still valid in the opposite example of market crashes. During these tough times, market valuations are always distorted and deviate from their fundamental values. In other terms, it means that market become inefficient. Different markets discount variables/scenarios that cannot coexist at the same time (i.e., creating a “surreal” environment)⁶. As said before, market inefficiency can be quite persistent. Persistency is the fuel and, simultaneously, a powerful weapon of the gaslighting effects in manipulating the market mindset. We suspect that investors “benchmarking” (and the behaviour of Algo accounts) plays a primary role on this latter aspect. Institutions care about their performance relative to a certain index, thus tilt their portfolios towards stocks that compose their benchmark index. The resulting price pressure boosts index stocks. Trades by institutions induce excess correlations among stocks that belong to their benchmark, generating an asset-class effect (Basak et al., 2013). Figure 1 shows the suggested conceptual behavioral model.

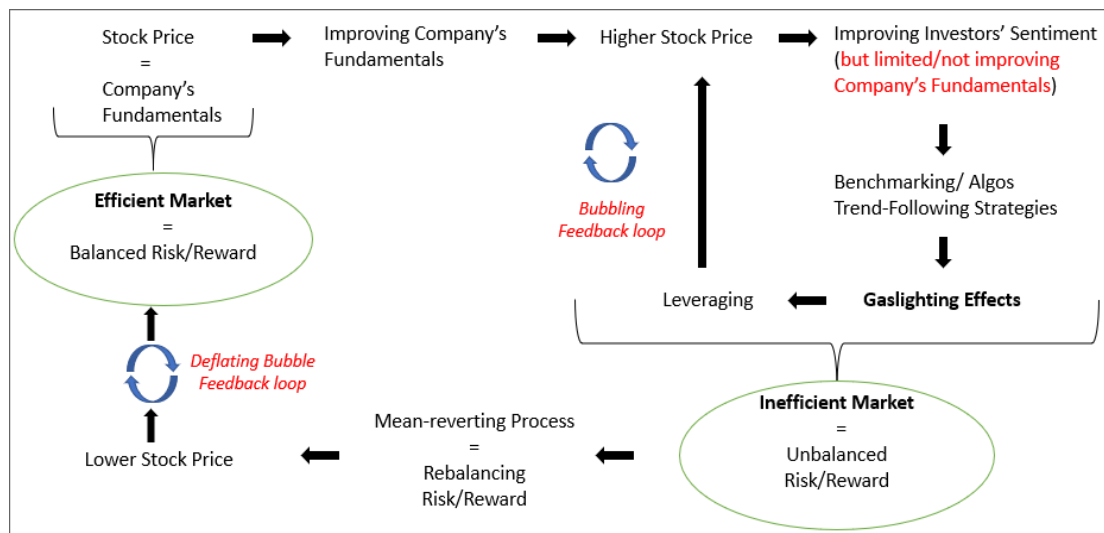


Figure 1: Illustrative scheme of gaslighting effects genesis. The evolution from efficiency to inefficiency

⁶ Gaslighting, indeed, is a type of psychological abuse aimed at making victims seem or feel “crazy,” creating a “surreal” interpersonal environment (Sweet, 2019).

Recognizing gaslighting effects and implementing long-term oriented strategies could be, in practice, costly in the short-term. Many investors cannot bear them, since they should beat the defined benchmark (i.e., maximize their Sharpe ratio) in an environment of strong competition (i.e., commitments to clients). It seems quite clear the implication of this phenomenon: self-reinforcing bubbling dynamics. We think that one solution is having clients with a long-term orientation. It is crucial to bound the gaslighting effects and enable investors to maintain a long-term oriented approach for deploying future high-return opportunities while others are paying the bill of their irrational and speculative behaviour. The recognition of these distortions and the implementation of long-term mean-reverting strategies allow the return to (not perpetual) efficiency.

3. Brief Empirical Evidence

Most of the time, perhaps three-quarters of the time, major asset classes are reasonably priced relative to one another (Grantham, 2021). The one-quarter represents the human fallibility, the deviation from market efficiency.

We show in this section some relevant historical episodes, especially deploying the most recent market bubble experiences, to illustrate extreme speculative investor behaviour to support the idea of “partial efficiency”. Let us start with the Tech bubble of 2000s. Technology stocks dominated all other sectors of the market, with euphoria spreading to smaller and speculative issues. Stock market reached levels never seen before. There was a widespread participation in the speculative investment environment. From 1997 to March 2000, as technology stocks rose more than five-fold, institutions bought more new technology supply than individuals. Among institutions, hedge funds were the most aggressive investors, but independent investment advisors and mutual funds (net of flows) actively invested the most capital in the technology sector (Griffin et al., 2011). Hedge funds did not exert a correcting force on stock prices during the technology bubble. Instead, they were heavily invested in technology stocks, consistently with models in which rational investors may prefer to ride bubbles because of predictable investor sentiment and limits to arbitrage (Brunnermeier et al., 2004). Although this did not seem to be the result of unawareness of the bubble, in March 2000, market participants started to recognize the clear unsustainability of the current distortions (i.e., unlikely growth expectations) and the mean-reverting process begun. The technology stock reversal in March 2000 was accompanied by a broad sell-off from institutional investors but accelerated buying by individuals, particularly discount brokerage clients (Griffin et al., 2011). The rise and fall of Puma Technology stock is illustrative (Grantham, 2000). In 1995, it was possible for investors to purchase this stock company at 25 cents per share in a venture start-up. As it came public, in early March 2000 it quoted at 41 dollars per share and an even more improbable 102 dollars per share in mid-March. Four weeks later, it traded down 80% at 20¼ dollars per share. In case one is tempted to believe that this reflects considered re-evaluation of great fundamental changes, consider the facts of terrible Tuesday,

March 4th. In the last 3 hours, the stock rallied with the rest of NASDAQ, in this case by almost 70%, to close down less than 1% for the day, having fallen over 40% in the morning on no news! (Grantham, 2000) Obviously, this empirical evidence does not support the idea of “perpetual” efficient markets, rather it suggests a more likely partial or fractal efficiency. The more recent Financial Crisis of 2007-2009, which started from the United States sub-prime mortgage market and spread to US financial sector, has similar implications even if with a different characterization (i.e., real-estate bubble rather than a pure stock market bubble as in 2000s). A 2000s-like stock market bubble experience is the so-called “meme stock mania” of 2021. Once again, the case of GameStop is exemplar. Many retail investors deployed the Reddit social media platform to speculate on the meme stocks, that is company shares with large communities of online and social media followers. One of the most famous meme stock companies is GameStop. In early 2021, shares in the American video game retailer GameStop surged more than 700% in one week following the speculative involvement of individual investors, a move touted as investors piling in to buy stock they like (Long et al., 2022). The week after the peak, the stock lost around 90%. It is quite unlikely that in two weeks are changed the company’s fundamentals. It was just the outcome of extreme speculative behaviours due to the illusion (rather than trivial expectations) of a bright future profitability. And, in an environment with the common belief of Central Banks saviour of last resort, it is made worsen of moral hazard behaviours. These “irrational” behaviours remained in place for a relatively long time in the following period (“sticky irrationality”), even if the corrective process gradually continued, proving the convergence pattern towards rationality (and efficiency). Same story for the world of cryptos. That is the case of Silvergate Capital⁷ (not to mention FTX Exchange story). The hype surrounding crypto prompted Silvergate Capital to go public in November 2019 at a share price of 13 dollars, and within two years, the price was up over 1,500% to reach an all-time high of 219 dollars. Nowadays, it is suffering the customers' deposits withdrawal in the wake of FTX's collapse. Share price plunged lower than 3 dollars in the early-March 2023, suggesting a mean reverting process from the previous market (pricing) inefficiency.

Financial gaslighting effects reverberate also on the perception of the macroeconomic environment. Very illustrative in this perspective is also the recession expectations in 2022 for 2023: In Q4 2022, the expectations for US economy recession due to FED aggressive monetary policy stance were high (c.d. hard landing). In Q1 2023, after a strong market bounce and improvements of sentiment indicators, the market narrative moved towards the so-called “soft-landing” or even “no-landing”. What is really changed? We think that is the point. It is important to remark that the “partial efficiency” of markets is socially costly. Lin et al. (2014) examine a potential relation between stock market volatility and mental disorders. Using data on daily incidences of mental disorders in Taiwan over

⁷ Silvergate Bank was launched as a savings and loan association in the late 1980s, reorganized into a community bank in the mid-90s, and pivoted into cryptocurrencies a decade ago.

4000 days from 1998 through 2009 to assess the time-series relation between stock price movements and mental disorders, they observe that stock price fluctuation clearly affects the hospitalization of mental disorders. Authors find that during a 12-year follow-up period, a low stock price index, a daily fall in the stock price index and consecutive daily falls in the stock price index are all associated with greater of mental disorders hospitalizations.

4. Conclusion

This paper introduces the idea of “partial” (or fractal) efficient markets. Most of the time, perhaps three-quarters of the time, major asset classes are reasonably priced relative to one another (Grantham, 2021). The one-quarter represents the human fallibility, the deviation from market efficiency. We suggest a theoretical linkage between the EMH and the Reflexivity Theory focusing mainly on the psychological profile. Securities prices, indeed, rise and fall much more than profits, introducing considerable investment risk, primarily because of the dramatic ups and downs in investor psychology (Marks, 2022). In normal times (i.e., outside bubbles), we suppose that actual and expected variables have a higher tendency to gravitate around some fundamental value (i.e., equilibration). From a psychological perspective, it means that market psychology is “equilibrate” (i.e., disciplined and foresighted investors) and there is a tendency toward efficiency, although the underlying conditions that are supposed to be reflected in the stock market are also constantly changing. The idea of efficient market is summed up in the assertion that “the market is always right”. It means that are not distortions (i.e., no gaslighting effects) and stock prices reflects perfectly all the available information and the fundamental underlying values. The Reflexivity Theory takes a totally opposite point of view. It does not accept the proposition that stock prices are a passive reflection of underlying values, but market valuations are always distorted. The distortions, in turn, can affect the underlying values (Soros, 2003). If we agree in full of the latter idea, this means that market generates perpetually gaslighting effects and manipulates the investors’ expectations of future fundamental values. We suspect the truth is in the middle of these two contrasting theories and the identification of the market gaslighting effects (i.e., investors “irrational” exuberance or panic) can help participants to protect their capital and implement the optimal strategies to improve the long-term performance. We show some relevant historical episodes, especially deploying the most recent market bubble experiences, to illustrate extreme speculative investor behavior to support the idea of partial efficiency. It is important to remark that the partial efficiency of markets has huge side-effects, and it is socially costly. Lin et al. (2014) find a potential relation between stock market volatility and mental disorders.

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