

# Behavioural finance perspectives on Malaysian stock market efficiency

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## Abstract

This paper provides historical, theoretical, and empirical syntheses in understanding the rationality of investors, stock prices, and stock market efficiency behaviour in the theoretical lenses of behavioural finance paradigm. The inquiry is guided by multidisciplinary behavioural-related theories. The analyses employed a long span of Bursa Malaysia stock market data from 1977 to 2014 along the different phases of economic development and market states. The tests confirmed the presence of asymmetric dynamic behaviour of prices predictability as well as risk and return relationships across different market states, risk states and quantiles data segments. The efficiency tests show trends of an adaptive pattern of weak market efficiency across various economic phases and market states. Collectively, these evidences lend support to bounded-adaptive rational of investors' behaviour, dynamic stock price behaviour, and accordingly forming bounded-adaptive market efficiency.

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## 1. Introduction

In finance, the assumption of the state of market efficiency is the heart in every finance modelling, strategies, and policies design in financial markets. Since its development in the 1960s, the notion of efficient markets has been subjected to intense theoretical and empirical debate for more than century (Ackert & Deaves, 2010; Shefrin, 2007). Nonetheless, this fundamental issue remains puzzled today after for more than 40 years (Verheyden, de Moore, & den Bossche, 2015). In this line of enquiries, the debated issue is whether the market is fully efficient in accordance to efficient market hypothesis (EMH) in modern finance paradigm or adaptively efficient according with the adaptive market hypothesis (AMH) in behavioural finance paradigm. While the AMH is still new

with limited empirical support, mounting evidence of market imperfection and inefficiency challenge the validity of EMH.

To recap, the issue of stock market imperfections and inefficiency has been voiced by scholars since in the 1960s (Grossman & Stiglitz, 1980; Rosenberg, Reid, & Lanstein, 1985; Stigler, 1967). This instability and inefficiency although short lived, will persist consistently in the market so long normal people are trading in the market because of constant human nature that will regularly produce financial fads, euphoria and gloom (Sanford, 1994; Slezak, 2003). In behavioural finance paradigm, this instability and inefficiency are due to behavioural risks that are critical for Asia emerging financial markets (Kim & Nofsinger, 2008). Despite the above arguments, the importance of investor and market imperfection has been ignored in academic and practice due to the popularity of modern finance thoughts. However, relying solely on modern finance perspective probably mislead practitioners as noted below;

*“Today's methods to control and price risk are still based on the neoclassical assumptions of normal distributions and*

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*Brownian motions. This is probably one of the reasons that explain the failure of risk management systems in times of crisis”*

Chittedi, 2014, p. 3.

Our literature observation concludes that the main obstacle lies in philosophy, theories, and methods dispute and divergence of opinions among finance scholars in modern- and behavioural-finance paradigms. The competing perspectives on market efficiency studies between the two paradigms are discussed here based on interconnected theoretical perspectives as presented in the following Fig. 1, which will be briefly summarized thereafter.

Modern finance ideologies are borrowed from modern economics that is based on normative philosophy. This paradigm postulates that reasonable people should act rationally as postulated in rational choice theory (Arrow, 1958). The rational decision means that human think and decides to maximize wealth as described in expected utility theory idealize by von Neumann and Morgenstern in 1944 (Quiggin, 1982). This implies that individual preference is static with risk adverse behaviour and asset prices only influenced by fundamental. Accordingly, constant rational human behaviour expected to imply normality, random walk, mean reversion properties of stock prices, and no expected excess returns. This theorized in the random walk behaviour of stock prices by Louis Bachelier in 1900 and a martingale model of stock prices by Paul Samuelson in 1965 (Fama, 1965). Collectively, this will imply the non-predictability of stock prices to exploit arbitrage conditions. Holding investor and prices behaviours as assumed, a random process of financial series will exhibit independent and identical distribution, such as a Gaussian with zero mean and constant variance (Lim, Liew, & Wong, 2005).

Guided by the above theoretical perspectives, Fama idealizes the EMH as a theoretical framework for market behaviour (Fama, 1965, 1970). There are three versions of the market efficiency measurement, namely weak, semi-strong, and strong. The weak EMH claims that the prices on assets already reflect all past publicly available information. Semi-strong EMH claims both that prices reflect all publicly available information and those prices instantly change to reflect new public information. While, strong EMH additionally claims that prices instantly reflect even hidden or insider information.

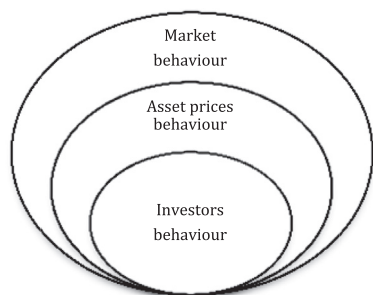


Fig. 1. Theoretical perspectives on market efficiency.

EMH postulates that securities are always efficiently and fairly priced. However, EMH validity comes with several assumptions. First, markets are made up of large, competent and fully informed investors that are always aiming for profit-maximization and risk averse in their decision-making. Second, all agents have homogeneous expectations. Third, current information about the economy and individual firm fundamental are freely available and always instantaneously and correctly fully reflect available information. Fourth, no taxes, no transaction costs, and no danger of bankruptcy. Fifth, competitive pressure among economic agents will keep securities fairly priced as any opportunity to realize an excess profit is exploited without delay and thus disappears (Chittedi, 2014; Fama, 1970). These will collectively form an equilibrium financial market with perfect and competitive under conditions of uncertainty (LeRoy, 1989). However, some scholars are sceptical of EMH's ideas due to both theoretical and empirical disputes that have been well documented in reputed journals.

Meanwhile, the behavioural finance paradigm provides an alternative perspective of human behaviour based on the positive theory that is open to the multidisciplinary understanding of human behaviour. Specifically, investor decision and preference are believed to be boundedly and adaptively rational. Bounded rational means investor decision making involving both elements of rational and irrational. The bounded rational theory asserts that a normal human being is not entirely rational in their decision making due to various behavioural heuristics and biases (Simon, 1955) and individual decisions are under time-inconsistent preferences, incomplete information, and different learning environment (Brocas & Carrillo, 2000). Further, neuroscience perspectives justify the dual process (i.e. cognitive and affective) of human neural basis that rationalize the rational (i.e. cognitive logic) and irrational (i.e. cognitive heuristics and affective bias) factors influencing human decision making (Carmerer, Loewenstein, & Prelec, 2004; Shimp, Mitchell, Beas, Bizon, & Setlow, 2015). While adaptive rational means human preference and expectation are not static but heterogeneously adaptive due to behavioural forces (Tinbergen, 1939).

On asset price behaviour, a number of scholars pointed that financial asset prices are not rationally related to firm and economic fundamentals (Shiller, 1981; Summers, 1986), stock market prices do not follow random walks (Lo & MacKinlay, 1988), and nonstationarity of time series stock market data and incomplete data on information of market participants (Campbell & Shiller, 1987). This evidence cause persuasive proof of market inefficiency that has been theoretically neglected instead has been termed as stylized facts puzzle (Suarez-Garcia & Gomez-Ullate, 2014).

As for the market behaviour, two perspectives of market functioning have been offered that are compatible with behavioural finance perspectives. The first theory is bounded rational market has been suggested in Miller (1987) as a result of bounded rational human behaviour. Bounded rational decision influences the market fluctuations in the following three ways. First, it adds noise to investor decisions and cause

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