

THE INFLUENCE OF BEHAVIOURAL EFFECTS ON CAPITAL MARKETS: AN ALTERNATIVE EXPLANATION TO EMPIRICAL OBSERVATIONS

César Augusto Mendonça Zambrano

Researcher of the GRT Finance – Group for Research and Teaching in Finance
Faculdade de Economia, Administração e Contabilidade – FEA-RP
Universidade de São Paulo - USP

Prof. Dr. Tabajara Pimenta Junior

Associate Professor
Faculdade de Economia, Administração e Contabilidade – FEA-RP
Universidade de São Paulo – USP
Coordinator of the GRT Finance – Group for Research and Teaching in Finance

Profa. Dra. Perla Calil Pongeluppe Wadhy Rebehy

Doctor Professor
Faculdade de Economia, Administração e Contabilidade – FEA-RP
Universidade de São Paulo - USP

Prof. Dr. Fabiano Guasti Lima

Associate Professor
Faculdade de Economia, Administração e Contabilidade – FEA-RP
Universidade de São Paulo - USP
Coordinator of the GRT Finance – Group for Research and Teaching in Finance

ABSTRACT

The search for understanding the behaviour of capital markets has generated several attempts to model their functioning. The models have evolved from those based on hypotheses on the existence of favourable conditions for negotiations between investors regarding transaction costs, information asymmetry, and other barriers to trade flow. Nevertheless, some questions raised by empirical studies still lack a widely accepted explanation derived from these models. The new study field of behavioural finances opens new possibilities for the understanding of such questions by flexibilising the premise that investors act unlimitedly in a rational way in terms of market decisions. This work explores and discusses how this new theoretical field can shed lights on four controversial questions whose definitive explanation cannot be given by the classic market theories: the asymmetric relationship between prices and trade volume; cash dividend payment by major corporations; over-valuation of popular company assets, and policy favouring assets of local companies in the composition of investment portfolios. By means of a bibliographic review, it is possible to conclude that behavioural theories provide not only an alternative model for explaining the relationship between prices and trade volumes, but also arguments supporting the existence of systematic human judgement failures which, in turn, would account for the other three questions.

Keywords: *Behavioural Finance; Capital Markets; Market's Efficiency.*

1. INTRODUCTION

The market's efficiency in defining the fair price of financial and capital assets has always been the target of heated debates and research efforts during the development of the financial theory. The 1970's saw the peak of the belief in the efficient market. In the academic cycles, the influential work by Fama (1991) represented the belief in the market

capacity to reflect new information readily and accurately into both asset prices individually and financial aggregates as a whole.

In the beginning of the 1970's, Malkiel (1973) launched the idea that a chimp throwing darts randomly could form a portfolio which would have a performance similar to those formed by market professionals. This was based on the idea that all assets were correctly priced, that is, the choice of one or another would be indifferent regarding the risk-adjusted expected return. In fact, the theory of the efficient market gained popularity from this publication.

Several models and tools have been developed to work in the world of perfect market. Although the Fama's work - Fama (1991) - reported small observable abnormalities which do not fit into such a perfect market, they were indeed considered irrelevant in view of the possibilities opened by this supposition.

The first shocks to the theories of efficient market appeared in the mid 1980's with the issue of volatility raised in the academic circles. The studies by Leroy and Portes (1981) as well as by Shiller (2003) have shown that past volatilities of market asset quotations was much explained than the pricing model based on returns measured by these assets. Even though studies by Flavin (1983), Marsh and Merton (1986) and others questioning the validity of the Shiller's models - Shiller (2003) - had been criticised, they were in fact enough for beginning the questioning of assumptions for making the market ideal.

The market efficiency assumptions refer to the inexistence of friction in market operations, absence of transaction costs, diffusion of market power among the participants, and non-restrict access to relevant information. The assumption of unlimited rationality, also needed for construction of the ideal market model, states that asset dealers can make the best use as possible of available information and they will make excellent investment decisions in view of the several situations and scenarios.

After the 1980's and questionings aimed at hypotheses of ideal market, the financial literature has considered several degrees of market inefficiency, such as transaction costs, information asymmetries, feedbacks, and taxation differences, among others. Even though the models of this period had flexibilised the efficient market hypotheses, which lacked any type of transaction friction and information asymmetry, they still were based on the fundamental premise that the participating agents behaved in a rational way unconditionally in view of such conditions. In the 1990's, the first studies on behavioural finances were born in the 1990's to question such assumptions.

The intensification of studies on behavioural finances in the recent years has generated a new theoretical framework for understanding the market behaviour, especially the so-called financial market puzzles, which are observable phenomena in the asset negotiations but poorly explained by classic financial theories. This works is aimed at exploring and discussing how this new theoretical field shed a light on four controversial questions, namely: the asymmetric relation between prices and trade volumes; cash dividend payments by major corporations; super-valorisation of popular company assets; and the favouring of local company assets in the investment portfolio composition.

2. LITERATURE REVIEW

2.1 Behavioural Finances

According to Copeland, Weston and Shastri (2005, p. 53), "because we see more value in the expected value of a trade than in the trade itself, we are averse to risks". Not only him but also Markowitz (1959) and various other authors define people as being averse to risks because of the simple reason that as the individuals' needs are met higher levels of wealth yield lower increments of utility.

In the probably most influential article on behaviour finances, "Prospect Theory: An Analysis of Decisions under Risk", Kahneman and Tversky (1979) presented the results of a series of decision-making simulations under risk conditions violating the hypotheses originated from the utility model. Basically, Kahneman and Tversky (1979) demonstrated that people has antagonistic attitudes towards risks, depending on how a decision problem is presented. For example, a sample of individuals was presented with the following problem in table 1.

The great majority (82%) of individuals chose the certain gain of \$2,400 over the minimum probability (1%) of gaining nothing even when the expected result for such a choice is slightly smaller, an observation which is in accordance with the hypothesis of risk aversion. After subtracting a gain of \$2,400 with 0.66% probability from each option, a new decision problem was presented to the sample in table 2.

Although this subtraction had kept the relative utility between both options unchanged, there was a great change in the response profile to the problem as people began making more risky choices. The sample was also submitted to another simulation in which two decisions were made on the same expected result and same gain values as follows in table 3.

One can observe a clear change in risk preference depending on the measurement dimensions involved in the decision-making process, which is not taken into account by traditional utility models. Such preference distortions have been shown to be even more intriguing when negative values of wealth (losses) are involved. In comparison to the mentioned-above problem, a new choice was introduced by using the same measurements applied to the choice between losses in table 4.

When individuals are challenged by a positive wealth variation, they become averse to risks by preferring gains with higher probability (\$3,000; 90%), whereas negative wealth variation makes them to prefer less risky alternatives (\$ -6,000; 45%). Based on such findings and others from elsewhere, Kahneman and Tversky (1979) developed a hypothetical utility curve which served as basis for the construction of most models and theories of behavioural finances. This curve is shown in Figure 1.

This utility curve is interpreted similarly to the standard utility curves, but with two main differences. Firstly, there is a reference point for the wealth continuum. According to Kahneman and Tversky (1979), people create a reference point by which they assess the utility of their results and decisions. A very common reference point used for evaluating investments is the asset purchase price (ODEAN, 1998).

The domains of gains and losses are created from this reference point (zero point). In the domain of gains, the marginal wealth utility is negative, generating a concave curve characterising an attitude of risk aversion. On the other hand, in the domain of losses, the utility curve starts from the zero point, shows a marked decline, and then assumes a convex shape characterising risk-prone attitudes. Most of the models and theories of behavioural finances, such Disposition Effect and Hedonic Editing, had their origin from such a curve.

2.2 Disposition Effect

Based on the prospect theory by Kahneman and Tversky (1979), Shefrin and Statman (1984) developed the disposition effect theory. Essentially, it supports that investors are more prone to hold their losing shares (or even other risk assets) rather than the gaining ones. By losing and gaining shares we mean those which have lost or gained, respectively, value compared to their reference point, usually the asset purchase price.

According to the prospect theory, when investors enter the domain of gains within the utility model they become averse to risks, requiring a higher expected return rate in order to maintain the purchase position. Conversely, when the investors are challenged by a loss, they enter the domain where utility curve is convex and they adopt a more tolerant attitude

towards risks, accepting to hold their assets even when the expected future return is slightly lower than the original values.

In addition to the prospect theory, other behavioural phenomena are used to base the disposition effect as follows:

- Search for Psychological Satisfaction to Avoid Regret and Seek Pride: According to studies conducted by Thaler (1980), Shefrin and Statman (1984) have included the fact that many investors see a positive return of their investments as a sign of success and good judgement, whereas a loss would mean admitting a mistake or a failure. This would be an additional boost for investors to realise their gains rather than their losses. Still, for authors like Kahneman and Tversky (1979), and Thaler (1980), the feeling of regret due to a loss would be stronger than the feeling of proud for a gain, thus making investors more reluctant to realise both gains and losses (SHEFRIN and STATMAN, 1984).
- Unlimited Self-Control: Studies by Glick (1957) focusing on future market investors are also used by Shefrin and Statman (1984) to support the disposition effect. These studies show that professional investors are more likely to face difficulties in realising their losses despite counting on decision-making models in their activities. Interestingly, because these investors are often aware that loss realisation is the most favourable decision to be taken and even though they hold their losing assets for long time, the issue of investor self-control has been raised. Therefore, there would be a conflict between the rational and emotional aspects of the investors (SHEFRIN and STATMAN, 1984).

2.3 Price-Volume Relationship and Disposition Effect

The main theoretical models seeking to explain the dynamics of price and volume observed in the market assume the Osborne's concept - Osborne (1959) - in which market volume is directly related to the diversity of opinions or evaluations generated among the agents. In the theoretical model by Copeland (1976), such diversity would be asymmetrically grounded during dissemination of new information. After being criticised for imposing learning constraints on uninformed investors, Jennings, Starks and Fellingham (1981) conceived a new market structure in which opinion diversity would be generated by the existence of two groups of investors, that is, the pessimists and optimists, whose differences in opinion would result in increase in the volume. After documenting the feedback strategy adopted by part of the investors, the authors developed their current concept. Hong and Stein (1999) developed a model based on the existence of two classes of investors: the "informed" and "momentum" ones. These two latter attribute the asymmetric price-volume relationship to the restrictions imposed on short-time positions, remaining as the main theoretical framework in studies investigating such a relationship.

The behavioural studies have investigated how market agents behave when they have to make a decision. Through a rational approach, it is possible to infer how individually-based conclusions drawn in the above-mentioned studies affect the market on an aggregate basis

With regard to the correlation between prices and volumes, the disposition effect explains theoretically how investors behave on an aggregate basis, resulting in a market dynamics which would be in accordance with that observed in empirical investigations, that is, a dynamics in which price variations affect volume. In this sense, a model created from the concepts of the disposition effect becomes a complement or even an alternative to explain why asset trading volume increases when prices rise and decreases when prices fall.

According to the disposition effect, the main reason motivating investors to sell winning stocks and hold the losing ones can be explained by the prospect theory through the value curve drawn by Kahneman and Tversky (1979). The difference between the market agents' positions on this curve results in price variation, which would generate a divergent perception of the value and motivate information exchange among agents, thus increasing the trade volume. Figure 4 illustrates the dynamics of this process between two investors.

When an agent buys a share, the reference point to assess the value of this asset (its utility degree) becomes automatically the share value, according to the model. If the share reaches price X_1 after the purchase of it for value X_0 , the investor perceives a utility gain U_1 in that position.

After this first rise in price, it is supposed that a new valorisation of the asset occurs until the price reaches level X_2 . When $X_2 = 2X_1$, U_2 is less than $2U_1$ for this investor due to the shape of the utility curve. At moment t_2 , other agents lacking this stock cannot use the reference point X_2 and consequently they use X_1 to assess it, which is the asset value at the moment in which it is regarded as a purchase possibility. For these agents, the expectancy regarding the valorisation of X_1 and X_2 generates utility gain U_1 , which is higher than that (ΔU) of the agent who already had the asset, considering the same price variation. This basically occurs because of the difference in the reference points among the traders.

Because at moment t_2 the expectancy regarding the valorisation of X_1 and X_2 generates a higher utility U for agents who had no assets at moment t_1 , an assessment difference is created between the investors which culminates in the increase in trade volume.

The reverse is true when prices fall. In this case, those agents who already had assets before the decrease in price perceive both a higher expected value recovery and a minimised loss with the price fall. This makes these investors more inclined to hold their assets compared to those who want to purchase them, even considering the same expectancy regarding the future value of the asset, thus reducing the trade volume.

Other concepts comprising the disposition effect, such as limited self-control and regret aversion, are also involved in such a disposition difference leading the investors to increase or decrease their trade volume.

As well as the models developed by Jennings, Starks and Fellingham (1981) and Hong and Stein (1999), the theories of prospect and disposition effect allow deriving a market dynamics which can fit to the empirical results observed over the years by several studies investigating the price-volume relationship in the capital market.

Almost all theoretical models describing the market dynamics have been originated from empirical observations made by previous studies and sought to explain such observations by fitting models to several assumptions. In this sense, the model obtained from the disposition effect is differentiated as it was not conceived to be fitted to the price-volume relationship, but developed based on the study of individual investors' behaviour without any ambition to provide results already found by studies on this issue.

With regard to the assumptions, the models developed by Jennings, Starks and Fellingham (1981) and Hong and Stein (1999) are fundamentally based on the existence of heterogeneity among investors, which generates volume and would account for the variety of evaluations inducing exchange. Both models also make use of restrictions to short-term positions to explain the fall in volume during a low-price period. Interestingly, in the Hong and Stein's (1999) models, one of the investor categories accounts for the correct asset pricing. Conversely, a model based on the disposition effect considers investors homogeneously, that is, all follow the prospect theory value curve even though other forms of heterogeneity among them are not disregarded. The utility curve is itself enough to explain the asymmetric relationship between volume and price variation, with no restrictions to short-term positions being needed.

All the three models can describe the asymmetric relationship between volume and price variation, but they differ as to the extension in which they explain the market dynamics as a whole. Jennings, Starks and Fellingham (1981) limit themselves to describing it as new information in the market, which ends up altering the trade volumes. On the other hand, the Hong and Stein's (1999) model goes far beyond this by suggesting a more complete market dynamics – a kind of cycle beginning when new information is processed, generating a price overreaction among momentum investors which then converges again to baseline

values as informed investors take a selling position. In this sense, the disposition effect is also limited to explaining how a given rise in prices generates an increase in trade volume as, differently of the Hong and Stein's (1999) model, it does not predict a reversal point to keep price fluctuation converging to baseline values.

This latter analysis is important for understanding the implications of each model. By proposing that a price overreaction causes an increase in trade volumes, the Hong and Stein's (1999) model promotes the trade volume to an important indicator of market asset value in relation to the baseline value, providing signs that trade volume behaviour might contain information on future price variations for that asset, although no time horizon is considered. According to the disposition effect, on the other hand, a rise in price always results in an increase in negotiations but with no indication whether asset pricing is going to be correct or will be eventually corrected. The same occurs with the Jennings, Starks and Fellingham's (1981) model, where volume indicates only the disagreement between two groups. None of them is assertive enough for value assessment.

It is possible to test empirically the disposition effect, including how to guide the price-volume relationship or verify its explanation power. The model built from this theory shows that increase in volume occurs through the exchange between investors who have assets and those who have no position. Evidence that a significant part of the exchanges occurring in the high-price period is the result of the stronger position by the agents, that is, when they purchase more assets, certainly weakens such a hypothesis. On the other hand, if most of the purchase is done by new investors in that position during this period, then the hypothesis will be strengthened. Such evidence could be demonstrated by historical portfolio data of unidentified investors. A study by Griffin, Nardara and Stulz (2006) found that the correlation between prices and volumes is relatively stronger when individual investors are isolated from a given market. This first evidence provides support to the behavioural model as it is already expected that such a correlation becomes stronger among individual investors.

2.4 Dividend Puzzle, Hedonic Editing, and Mental Accounting

When it became clear that the distribution of cash dividends in some markets was more costly than other forms of result distributions (e.g. re-purchase of shares), although part of the companies had a regular distribution policy, the hypotheses that there was a demand for dividends by the investors began to be explored. Such a demand would account for the inclusion of a premium in the stock prices of companies who distribute cash dividends, which might motivate managers to do so.

Theoretical models have been developed to explain such a demand so long as it is rationally based, that is, that investors indeed benefit concretely from the dividend distribution. Among these models, the most prominent one addresses dividends as providers of information, thus enabling investors to take advantage during evaluation of the company. Baker and Wurgler (2004) were pioneers in proposing that there may be no concrete benefit in the dividend distribution, with the demand for it occurring due to emotional issues. For example, Baker and Wurgler (2004) cite earlier authors such as Graham and Dodd (1951) and Gordon (1959), who reported that among popular investors there was the belief that dividends were a safe way to obtain returns, even when the asset values oscillated wildly. By keeping a constant distribution pace, the executives contribute to perpetuating this feeling of security.

Adding to the Baker and Wurgler's (2004) assumptions, the behavioural models of mental accounting and Hedonic editing can provide reasons leading investors to perceive more value in those stocks with dividends, although this might be regarded as an error of judgement".

The hedonic editing model states that, in general, individuals tend to mentally work out the results by either aggregating or segregating them depending on the psychological comfort perceived. In fact, several forms of hedonic editing can be drawn from the prospect theory

value curve, such as that in which individuals prefer to gain “2” and lose “10” rather than losing “8”, or have a gain of “10” and another gain of “2” rather than gaining “12”. Stocks with no dividends totally limit the possibilities of interpreting the investment results and they can be disregarded by those investors who prefer to be sure they will count on at least a green number in their investment assessments.

Distribution of dividends also facilitates the mental accounting, that is, the way investors organise their accounts mentally. For example, an individual can use the dividends while holding the assets for future retirement. This would help investors maintain their self-control regarding the investments, thus being one of the reasons Baker and Wurgler (2004) include in their explanation of why investors might feel better with such a distribution.

The author of this work cannot provide a form to explore empirically, by using market data and portfolios, the power these behavioural issues have on the shareholders’ preference for stocks with dividends. Such issues do not exclude rational motivations for this kind of preference and it is not possible to isolate them, except by means of studies on an individual or small-group basis, which allows a qualitative questioning to be carried out. However, the resulting evidence cannot be extended to the market as a whole. In this sense, the major implication of behavioural theories is that investors may systematically commit errors of judgement as they give preference to stocks because of purely illusory or cognitive reasons.

2.5 Anchoring, Representativeness, and Preference for Stocks of Popular Companies

Which are the fundamentals underlying the contrarian trading strategy? Why do neglected stocks produce systematically higher returns compared to those of popular companies, yet many support that the risk between both categories is insignificant?

Lakonishok, Shleifer and Vishny (1994), among other authors refuting the hypothesis that low stock returns with certain market attractiveness are the result of their less risk exposure, propose that errors of judgement are involved in such an event. Such an error occurs due to the extrapolation of past returns into a far distant period in the future. Therefore, stocks becoming popular in a high-growth period are over-valorised by the belief that they will keep or resume the same growth.

This error of judgement proposed by Lakonishok, Shleifer and Vishny (1994) has in fact behavioural roots, more precisely related to the concept of anchoring, which explains how individuals strongly adhere to an initial reference point when they are seeking information which is not readily available. In this case, investors would count on historical stock returns, thus overestimating their prediction of future returns.

In addition to the anchoring, the heuristics of representativeness is another behavioural concept widely presented in this question. Companies undergoing a growth and consolidation process usually become strongly structured, are better administrated due to the great professionalisation and gain a huge public exposure, thus being regarded as good organisations among the public. According to the heuristics of representativeness, individuals categorise stocks in the same way they do with companies, that is, they consider that good stocks are stocks of good companies regardless of any evidence pointing to returns lower than similar ones.

The factors producing return differences between more popular stocks and others neglected by the market have been further discussed elsewhere, according to Chan and Lakonishok (2004) in their work on the theme. The behavioural theories are basically aimed at grounding and diversifying the arguments on the idea that this difference is the result of a biased judgement by the investors, thus opposing the risk-adjusted return theory for small shares.

2.6 Heuristics of Availability and Preference for Local Companies

The question on the preference for stocks of local companies has been little discussed in the academic settings. Indeed, until some decades ago the world finance system was in fact more segmented due to communication and bureaucratic differences between countries. With the growing globalisation, some authors have been calling attention to the persistent preference for assets of national companies in the investment portfolio composition. Coval and Moskowitz (1999) demonstrated that there is indeed a preference for stocks of regional companies, even in professional portfolios, thus suggesting that such a preference can appear from factors other than national barriers.

According to the heuristics of availability, investors tend to give more significance to readily available information. The most important outcome from the heuristics of availability is that the objects to which such information refers end up being favoured by evaluators. In the case of two companies providing equal access to information for a given investor, but with one of them being closer to the investor, it is likely that the investor will have a more readily available image in terms of cognition and will favour such a company, even if this results in sub-optimal decisions.

This heuristics is not necessarily related to the physical proximity of the company, as observed in empirical studies conducted by Coval and Moskowitz (1999). One of its implications is that exposing investors to the image of a company (even if no practical information is aggregated to them) can contribute to increasing the demand for its stocks, which in turn reflects in the prices.

However, one cannot deny that information asymmetry means a greater preference for assets of regional or national companies, as demonstrated by Ahearne, Griver and Warnock (2004), who described how the participation of Japanese companies in the portfolio of American investors significantly increased with the introduction of information on them in the American public listings.

3. CONCLUSIONS AND FINAL CONSIDERATIONS

The present work was aimed at exploring and discussing how behavioural finances shed a new light on four controversial questions in the capital market: the asymmetric relationship between prices and trade volumes; cash dividend payment by major corporations; super-valorisation of popular company assets; and the favouring of local company assets in the investment portfolio composition.

With regard to the four questions, theories attacking the market efficiency hypothesis state that volumes are limited to the needs of liquidity and rearrangement of the investment portfolio. Several studies have investigated the relationship between volume and prices, and the results showed a positive correlation between these variables. Some authors, like Osborne (1959), argued that the divergence of opinions among market agents would cause a variance in asset prices and increase in trade volumes. Others, like Odean (1998) and Bange (2000) argue that the existence of a feedback to the decisions made by the market agents makes an increase in prices to be a sign of future increases. Copeland (1976) proposed one of the first models in which the existence of information asymmetry and opinion divergence were thought to interfere with the behaviour of prices and volumes.

The behavioural finances offer an alternative model which can explain the empirical observations of correlation and causality between these variables without needing to suppose the existence of heterogeneous groups of investors, which has been a constant in the classic market model. When Shefrin and Statman (1984) theorised the disposition effect from the prospect theory by Kahneman and Tversky (1979), they found an agency conflict between the rational and planning part and the primitive and emotional part of the investors. That is, it does not depend on the heterogeneity of agents, but on those who lose or win in relation to the portfolio. This was also observed by Odean (1998), who reviewed the studies conducted by Lakonishok and Smidt (1986) and Harris (1983).

The question regarding the cash dividend payment was initially discussed by Miller and Modigliani (1961) and later by Black and Scholes (1974), Bhattacharya (1979), Hakansson, Kunkel, Ohlson (1982), and Baker and Wugler (2004), among others. In all these studies, the supposition that investors, stockholders and managers behave entirely rationally was the basis motivating the dividend payments. In the modern financial view, studies have usually concluded that companies pay dividends to stockholders because there is a demand for such a payment, and therefore they seek to explain this demand by using rational arguments to demonstrate some value in the presence of the dividends. Only recently Baker and Wugler (2004) carried out a study in which they admitted the existence of feelings, such as sense of security and low risk resulting from a policy of continuous distribution of dividends.

The theories of behavioural finances offer arguments for the thesis that investors have a preference for shares paying dividends for sentimental rather than rational reasons. The mental accounting was introduced in the finance field by Thaler (1999), derived from the utility curve in the prospect theory (Kahneman and Tversky, 1979), in which individuals are thought to categorise their positions in terms of gains and losses based on a reference point. Similarly to the utility curve in the prospect theory, the hedonic editing demonstrates that individuals edit the gains and losses resulting from their investments in order to maximise the psychological utility of these.

With regard to the third question on the greater demand for popular company assets, several studies such as those by Arbel and Strebel (1982), Fama and French (1992), and Lakonishok, Shleifer and Vishny (1994) showed that the returns based on the share price variations of these popular companies are inferior to the returns offered by companies neglected by the market agents. In function of the results from these studies, the so-called contrary strategy emerged an investment strategy aimed at investing in those companies neglected by the majority of the investors, thus becoming known in the capital market worldwide. In this sense, Tversky and Kahneman (1974) studied how psychological factors influence the individuals' judgement. In the field of behavioural finances, the anchoring heuristics is used to describe the bias of people who make decisions and estimate other information based on an initial reference. Moreover, the representativeness heuristics shows that investors tend to assume that shares from good companies are also good shares, and for this reason they pay more for them.

Finally, several studies such as those by French and Poterba (1991), Kang and Stulz (1997), and Tesar and Werner (1991) have already shown that investors prefer shares from companies seated in their own countries, despite the globalisation and easiness for international investments. In the beginning, the phenomenon was attributed to differences in legislation, taxes and high costs of transaction. As these barriers were overcome, new studies such as those by Coval and Moskowitz (1999), one of the pioneers of this phase, pointed to the existence of information asymmetry as a result of the distance between international companies and investors. The theorists of the behavioural finances point to a new factor to explain why this effect is not described by the modern financial theories. According to Strong and Xu (2006), the market agents rely on the availability heuristics by Tversky and Kahneman (1974) to assess the likelihood of a certain event occurring or investors making a decision depending on how easy the information can be brought to their mind. Therefore, this favouring would cause companies to increase the demand for their assets through a greater public exposure of their image. Long distances would not impede such a greater exposure nowadays.

Overall, as well as the flexibilisation of the premise that a market without attrition and asymmetries, in the beginning of the 1980's, resulted in the emergence of most theoretical models studying the capital market functioning until today, the flexibilisation of the premise that market agents act entirely rationally before investment decision also opens new possibilities for interpretation of various empirical explorations of the market, not yet performed, and elaboration of new descriptive methods taking into account human systematic errors in the decision-making. The contribution of this study is aimed at structuralising a reflexion on this issue and its outcomes.

REFERENCES

- AHEARNE, A. G; GRIEVER, W. L; WARNOCK, F. E. (2004). Information costs and home bias: an analysis of US holdings of foreign equities, *Journal of Financial Economics*, v. 62, n. 2, p. 313-336.
- ARBEL, A; STREBEL, P. (1982). The neglected and small firm effects. *Financial Review*, v. 17, n. 4, p. 201-218.
- BAKER, M; WURGLER, J. (2004). Catering theory of dividends. *The Journal of Finance*, v. 59, n. 3, p. 1125-1165.
- BANGE M. (2000). Do the portfolios of small investors reflect positive feedback trading? *Journal of Financial and Quantitative Analysis*, v. 35, p. 239-255.
- BHATTACHARYA, S. (1979). Imperfect information, dividend policy, and "the bird in the hand" fallacy. *The Bell Journal of Economics*, v. 10, n. 1, p. 259-270.
- BLACK, F.; SCHOLES, M. (1974). The effects of dividend yield and dividend policy on common stock prices and returns. *Journal of Financial Economics*, v. 1, n. 1, p. 1-22.
- CHAN, L. K. C; LAKONISHOK, J. (2004). Value and growth investing: review and update. *Financial Analysts Journal*, v. 60, n. 1, p. 71-86.
- COPELAND, T. E. (1976). A model of asset trading under the assumption of sequential information arrival. *The Journal of finance*, v. 31, n.4, p. 1149-1168.
- COPELAND, T. E; WESTON, J. F; SHASTRI, K. (2005). *Financial theory and corporate policy*. 4 ed. USA: Pearson Education.
- COVAL, J. D; MOSKOWITZ, T. J. (1999). Home bias at home: local equity preference in domestic portfolios. *The Journal of Finance*, v. 54, n. 6, p. 2045-2073.
- FAMA, E. F; FRENCH, K. F. (1992). The cross section of expected stock returns. *Journal of Finance*, v. 47, n. 2, p 427-465.
- FAMA, E. F. (1991). Efficient capital markets: a review of theory and empirical work. *The Journal of Finance*, Chicago: American Finance Association, v. 25, n. 2, p. 386-487.
- FLAVIN, M. A. (1983). Excess volatility in the financial markets: a reassessment of the empirical evidences. *Journal of Political Economy*, v. 91, n. 6, p. 929-956.
- FRENCH, K. R; POTERBA, J. M. (1991). Investor diversification and international equity markets. *The American Economic Review*, v. 81. n. 2, p. 222-226.
- GLICK, I. (1957). *A social psychological study of futures trading*. PhD. Dissertation. Chicago University.
- GORDON, M. J. (1959). Dividends, earnings, and stock prices. *The review of economics and statistics*, v. 41, n. 2, p. 99-105.
- GRAHAM, B; DODD, D. (1951). *Security analysis*. 3a. ed. Nova York: McGraw-Hill.
- GRIFFIN, J. M; NARDARI, F; STULZ, R. M. (2006). Do investors trade more when stocks have performed well? evidence from 46 countries. *Review of Financial Studies*, v. 20, n.3, p. 905-951.
- HAKANSSON, N. H; KUNKEL, J. G; OHLSON, J. A. (1982). Sufficient and necessary conditions for information to have social value in pure exchange. *The Journal of Finance*, v. 37, n. 5, p. 1169-1181.
- HARRIS, L. (1983). The joint distribution of speculative prices and daily trading volumes. *Working Paper*. University of Southern CA.
- HONG, H; STEIN, J. C. (1999). A unified theory of underreaction, momentum trading, and overreaction in asset markets. *The Journal of Finance*, v. 54, n. 6, p. 2143-2184.
- JENNINGS, R. H; STARKS, L. T; FELLINGHAN, J. C. (1981). An equilibrium model of asset trading with sequential information arrival. *The Journal of Finance*, v. 36, n.1, p.143-161.
- KAHNEMAN, D; TVERSKY, A. (1979). Prospect theory: analysis of decision under risk. *Econometrica*, v. 47, n. 2, p. 263-291.
- KANG, J; STULZ, R. M. (1997). Why is there a home bias? An analysis of foreign portfolio equity ownership in Japan. *Journal of Financial Economics*, v. 46, n. 1, p. 03-28.
- LAKONISHOK, J; SHLEIFER, A; VISHNY, R. W. (1994). Contrarian investment, extrapolation, and risk. *Journal of Finance*, v. 49, n. 5, p.1541-78.
- LAKONISHOK, J; SMIDT, S. (1986). Volume for winners and losers: taxation and other motives for stock trading. *The Journal of Finance*, v. 41, n.4, p. 951-974.

LEROY, S. F; PORTER, R. D. (1981). The present-value relation: tests based on implied variance bounds. *Econometrica*, v. 49, n. 3, p. 97-113.

MALKIEL, B. G. (1973). *A random walk down wall street*. 1a. ed. New York: W. W. Norton & Co.

MARKOWITZ, H. M. (1959). *Portfolio selection*. New Haven: Yale University Press.

MARSH, A. T; MERTON, R. C. (1986). Are stock prices too volatile? *The American Economic Review*, v. 76, n. 3, p. 483-498.

MILLER, H. M; MODIGLIANI, F. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, v. 34, n. 4, pp. 441.

ODEAN, T. (1998). Are investors reluctant to realize their losses? *The Journal of Finance*, v. 53 n. 5, p. 1775-1798.

OSBOURNE, M. F. M. (1959). Brownian motion in the stock market. *Operations Research*, v. 7, p. 145-173.

SHEFRIN, H; STAMAN, M. (1984). The disposition to sell winners too early and ride losers too long: theory and evidence. *The Journal of Finance*. v. 40, n. 3, p. 777-790.

SHILLER, R. J. (2003). From efficient markets theory to behavioral finance. *Journal of Economic Perspectives*, v. 17, n. 1, p. 83-104.

STRONG, N; XU, X. (2006). Understanding the equity home bias: evidence from survey data. *The Review of Economics and Statistics*, v. 85, n. 2, p. 307-312.

TESAR, L. L; WENER, I. M. (1991). Home bias and high turnover. *Journal of International Money and Finance*, v. 14. n. 4, p. 467-492.

THALER, R. H. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior and Organization*, v. 1, p. 39-60.

THALER, R. H. (1999). Mental accounting matters. *Journal of Behavioral Decision Making*, v. 12, p. 183-206.

TVERSKY, A; KAHEMAN, D. (1974). Judgment under uncertainty: heuristics and biases. *Science*, v. 185, p. 1124-1131.

Table 1:

| Alternatives | Conditions | Choice by the individuals |
|--------------|---------------------------------------|---------------------------|
| A | Gain of \$2,500 with 33% probability | 18% |
| | Gain of \$2,400 with 66% probability | |
| | Gain of \$0 with 1% probability | |
| B | Gain of \$2.400 with 100% probability | 82% |

Table 2:

| Alternatives | Conditions | Choice by the individuals |
|--------------|--------------------------------------|---------------------------|
| A | Gain of \$2,500 with 33% probability | 87% |
| | Gain of \$0 with 67% probability | |
| B | Gain of \$2,400 with 33% probability | 13% |
| | Gain of \$0 with 66% probability | |

Table 3:

First choice between:

| Alternatives | Conditions | Choice by the individuals |
|--------------|--------------------------------------|---------------------------|
| A | Gain of \$6,000 with 45% probability | 14% |
| B | Gain of \$3,000 with 90% probability | 86% |

Second choice between:

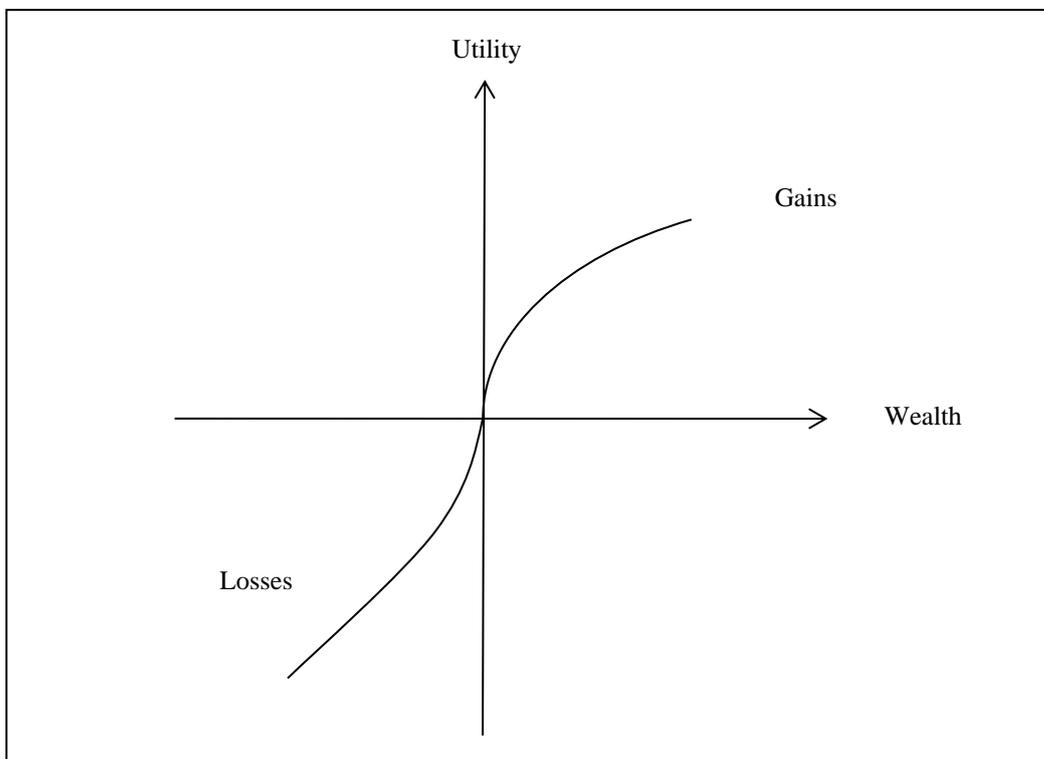
| Alternatives | Conditions | Choice by the individuals |
|--------------|-------------------------------------|---------------------------|
| A | Gain of \$6,000 with 1% probability | 73% |
| B | Gain of \$3,000 with 2% probability | 27% |

Table 4:

Choice between:

| Alternatives | Conditions | Choice by the individuals |
|--------------|---------------------------------------|---------------------------|
| A | Loss of \$6,000 with 45% probability | 92% |
| B | Loss of \$ 3.000 with 90% probability | 8% |

Figure 1. Prospect theory utility curve.



Source: Kahneman e Tversky (1979)

Figure 2 – Valorisation ΔX according to the prospect theory utility curve at moment t_1 for the investor (a).

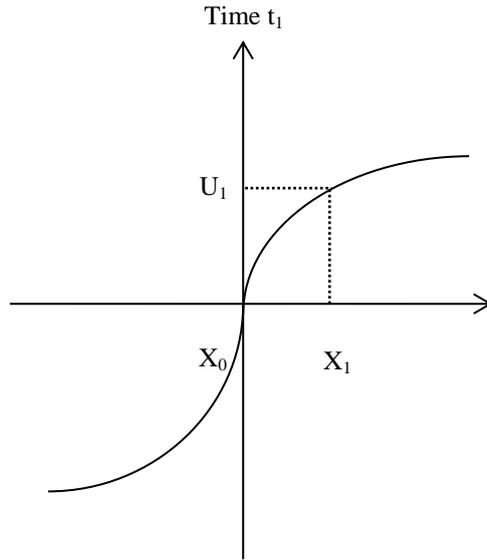


Figure 3 – Valorisation ΔX according to the prospect theory utility curve at moment t_2 for the investor (a) who already has the asset and for the investor (b) who contemplates the purchase possibility.

