

## Weak-Form Tests of Market Efficiency in Corporate Debt Restructuring

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### Introduction

The concept of market efficiency has several distinct varieties. In an allocationally efficient (Pareto efficient) market any re-allocation that makes one or more individuals better off would result in at least one individual being made worse off. Operational efficiency in a market deals with the determination of commission fees, the degree of competition between financial market centres and among financial service providers. According to informational efficiency 'a market is said to be efficient if it fully and correctly reflects all relevant information in determining security prices'.<sup>1</sup>

Market efficiency is an essential issue for investment professionals and analysts of the market. Market efficiency depends on the types of information that are reflected in the securities' prices. According to these types, the efficient market hypothesis has three versions: the weak form, the semi-strong form and the strong form, depending on the extent and type of the information that share prices reflect. The issue of market efficiency plays a crucial role in corporate debt restructuring procedures since companies' share prices will be influenced by the information in the market and by how this information is absorbed in these share prices.

According to Norton,<sup>2</sup> if a company decides to restructure its debt, it will be faced, *inter alia*, with three alternatives that are negotiated and implemented out-of-court: out-of-court reorganization, pre-packaged reorganization plans and pre-negotiated reorganization plans. An 'out-of-court reorganization' is the financial restructuring of the debt of the company by means of a contractual voluntary agreement without the intervention of any court or regulatory authority. According to the 'pre-packaged

reorganization plan' the company designs and negotiates a settlement with its creditors without having the need to file a full court-supervised reorganization procedure. A 'pre-negotiated' plan is negotiated between the debtor and its creditors on an out-of-court basis and then is filed with a court to obtain the benefits of its approval, with no requirement for formal solicitation of votes.

In these methods of corporate debt restructuring, the issue of fluctuations in the prices of the shares of the firms may play a significant role in the whole restructuring procedure. The price of shares of a highly indebted company with the onset of financial distress is very likely to experience a decrease, while in the case where the company achieves a successful restructuring, share prices are expected to increase. An example of this tendency in share prices can be found in the pre-packaged reorganization plans. Such a plan contributes to the viability of the company and could increase the value of the shares that were bought at a steep discount after the default.

The case of Telecom Argentina SA, an Argentine listed company, provides a useful illustration. The company went through the restructuring of its debt by means of a pre-packaged deal. As noted by Olivares-Caminal, the share price started from AR\$ 1.6 in October 2001 (six months prior to default), declining to AR\$ 0.61 (announcement of moratorium on interests), before started rising again to AR\$ 6.18 (date of the filing of the APE with the court for homologation), and finally to AR\$ 8.42 (one month after achieving the restructuring).<sup>3</sup> Similarly, the share prices of Net Servicios de Comunicacao SA increased, due to speculation that the firm was near the completion of its debt restructuring program.<sup>4</sup> In addition, Argentine shares increased substantially, at

### Notes

- 1 P. Newman, M. Milgate and J. Eatwell, *The New Palgrave Dictionary of Money and Finance*, vol.1 (Macmillan, London, 1992), p. 739.
- 2 W.L. Norton Jr., *Norton Bankruptcy Law and Practice* (2nd edn.), § 86:1, also available online at <www.westlaw.co.uk>.
- 3 The share data are from: R. Olivares-Caminal, 'Corporate Debt Restructuring in Latin America: New Developments – New Opportunities?' (2005) 6 ICCLR 254–262, at 262.
- 4 <http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/02-25-2005/0003075466&EDATE=>.

the end of the country's record USD 103 billion debt exchange, after a successful restructuring. The debt work-out is expected to produce a widespread return of investor confidence, foreign investment and access to international capital markets.<sup>5</sup>

As mentioned above, the extent to which an increase in the share prices will be a result of a corporate debt restructuring method will depend crucially on how informationally efficient the market is. The Efficient Market Hypothesis (EMH) addresses the issues raised relevant to the degree that share prices reflect all known information. The focus of this paper will be the weak-form tests of the Efficient Market Hypothesis. Initially, the Efficient Market Hypothesis will be briefly outlined. Subsequently, the various models consistent with testing the weak form tests of EMH will be presented. Then, the focus will lie on the problems that cast doubt on the validity of the theory. Finally, this paper will highlight further inconsistencies that arose in the empirical work in the past three decades.

## Efficient Market Hypothesis

The concept of market efficiency has been and is likely to continue to be a dominant theme in academic literature and an issue of intense debate in the investment community. The concept of efficiency has several distinct varieties. As Sharpe *et al.* state, 'A market is efficient with respect to a particular set of information if it is impossible to make abnormal profits (other by chance) by using this set of information to formulate buying and selling decisions'.<sup>6</sup> Thus, in an efficient market no abnormal returns can be earned. Information is of utmost importance to the determination of the prices of securities. Hence, markets are efficient if the prices of securities on average quickly and accurately fully reflect all known information. All investors operating in an efficient market should expect to obtain an equilibrium rate of return. The aforementioned notion comprises the Efficient Market Hypothesis (EMH), which has been the core proposition of finance.

There are a number of features that characterize an efficient market. Investors are price takers with no individual influence on the security's price, they behave in a rational, profit-maximizing way and they are capable analysts. In addition to that, access to

currently available information about the future is costless and investors monitor market prices and react quickly and fully to new information by adjusting their holdings appropriately and causing similar adjustments to securities' (stock) prices.

There are three versions of the EMH according to the different types of information reflected in securities prices. Depending on what is regarded as information, Fama<sup>7</sup> defines the weak-form tests of the EMH which stress that securities' prices fully reflect the information included in the past returns. Hence, information cannot be exploited to achieve abnormal returns. Under the weak form of the efficient market hypothesis 'securities (stocks) prices already reflect all information that can be derived by examining market trading data such as history of past prices, trading volume or short interest'.<sup>8</sup> According to the semi-strong version of the EMH, stock (securities) prices already reflect all publicly available information relevant to the prospects of the firm including past data, earning forecasts, reports related to the state of the economy, accounting reports and balance sheet reports. The strong form version of the efficient market hypothesis states that 'prices reflect all information public and private'.<sup>9</sup> Arguably, the latter form of market efficiency is the most difficult to sustain. Fama<sup>10</sup> refers to the weak-form tests as tests for return predictability, to the semi-strong as event studies, and to the strong ones as tests for private information.

According to the EMH, efficient markets are characterized by rational, profit maximizing, price taking behavior of investors, access to currently available information regarding the valuation of the asset is costless and simultaneous, investors monitor market prices and react quickly and accurately to new information inducing securities' prices to adjust accordingly too. In addition, expected security returns cannot be predicted by past deviations from the equilibrium rates of return. After briefly outlining the theoretical underpinnings of the EMH, the article will focus on models for assessing the weak-form efficiency of the market.

## Weak-form efficiency and models

Models provide the criteria for distinguishing market efficiency from inefficiency. Regarding the weak-form tests of the EMH, Fama stated: 'all of the empirical

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5 <<http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/02-25-2005/0003075466&EDATE=>>.

6 W. Sharpe, G. Alexander and J.V. Bailey, *Investments* (6th edn, Prentice Hall, New Jersey, 1998), p. 93.

7 E.F. Fama, 'Efficient Capital Markets: A Review of Theory and Empirical Work', (1970) 25(2) *Journal of Finance* 383–417.

8 Z. Bodie, A. Kane and A. Marcus, *Investments* (4th edn, Irwin McGraw-Hill, Singapore, 1999), p. 331.

9 C. Jones, *Investments* (4th edn, John Wiley, 1994, USA), p. 628.

10 E.F. Fama, 'Efficient Capital Markets II' (1991) 46 *Journal of Finance* 1575–1617.

work on efficient markets can be considered within the context of the general return or fair game model and much of the evidence bears directly on the special submartingale expected return model.<sup>11</sup> Models explaining the behavior of securities' prices are the fair game, martingale, submartingale and random walk model.

The fair game is expressed mathematically as

$$\epsilon_{j,t+1} = \frac{P_{j,t+1} - E(P_{j,t+1} | \eta_t)}{P_{jt}} \quad (1)$$

where  $P_{j,t+1}$  is the actual price of security  $j$  next period, and  $E(P_{j,t+1} | \eta_t)$  is the predicted end of period price of security given the current information structure  $\eta_t$ . According to the fair game, the expected return on the asset equals its actual return ( $r$ )

$$E(\eta_{j,t+1}) = E[r_{j,t+1} - E(r_{j,t+1} | \eta_t)] = 0 \quad (2)$$

A submartingale is a fair game described by equation (3)

$$\frac{E(P_{j,t+1} | \eta_t) - P_{jt}}{P_{jt}} = E(r_{j,t+1} | \eta_t) > 0 \quad (3)$$

where expected returns are positive and identifiable by pricing models such as the Capital Asset Pricing Model.<sup>12</sup>

A martingale is a fair game as well, where tomorrow's price is expected to be equal to the current price

$$\begin{aligned} E(P_{j,t+1} | \eta_t) &> P_{jt} \quad \text{or} \\ \frac{E(P_{j,t+1} | \eta_t) - P_{jt}}{P_{jt}} &= E(r_{j,t+1} | \eta_t) = 0 \end{aligned} \quad (4)$$

Finally, a random walk requires stronger conditions than fair games and martingales in terms of parameters of distributions like mean, variance, kurtosis and skewness and is illustrated by

$$\begin{aligned} f(r_{1,t+1}, r_{2,t+1}, r_{3,t+1}, \dots, r_{n,t+1}) \\ = f(r_{1,t+1}, r_{2,t+1}, r_{3,t+1}, \dots, r_{n,t+1} | \eta_t) \end{aligned} \quad (5)$$

The random walk model is based on a very strong assumption that the probability distributions of securities' returns exhibit no serial correlation over time. Fama<sup>13</sup> provided evidence of significant linear dependence in returns. Some serial correlations are even

positive. Other authors have come up with similar results. Hence, the evidence shows that security returns are not random walks. However, returns exhibiting serial correlation are coherent with the fair model and as Copeland and Weston claim, 'the evidence is not inconsistent with fair game models or in particular the submartingale'.<sup>14</sup>

Techniques used by investment analysts include technical analysis and fundamental analysis. Technical analysis or charting involves drawing lines on the charts of past securities' price movement across an interval of time, and searching for recurrent, predictable and identifiable patterns in securities prices which may be exploitable and profitable. Fundamental analysis is the use of earnings and dividend prospects as well as risk evaluation of firms to determine securities prices. Fundamental and technical analysis should be jointly used for an accurate and coherent assessment of share price movements. The EMH predicts that all technical and fundamental analysis cannot lead to higher returns than a simple buy-and-hold strategy, especially when transaction costs are taken into account.

### Pitfalls of the weak-form efficiency theory

Fama states 'the evidence in support of the efficient markets model is extensive and (somewhat uniquely in economics) contradictory evidence is sparse'.<sup>15</sup> Jensen argues 'there is no other proposition in economics which has more solid empirical evidence supporting it than the Efficient Market Hypothesis'.<sup>16</sup> However, in the last decade certain problems have been identified which are further analysed below.

### Accidental closures and volatility

French and Roll<sup>17</sup> examined the volatility of securities and prices after a normal (e.g. of the NYSE every Wednesday in 1968) and accidental closure (e.g. elections day) of the stock markets. They found significant differences in volatility and attributed it to accidental closures of the stock markets, to more frequent arrival of news in trading time, to the bigger effect of private information on prices during trading

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11 Supra note 5, at 389.

12 Capital Asset Pricing Model is a model relating the expected return on an asset to its beta. Beta is a measure of the systematic risk of the asset. Systematic risk in turn is the risk that cannot be diversified away. For more info on this model see: J. Hull, *Options, Futures and Other Derivatives* (5th edn, Prentice Hall, New Jersey, 2003), pp. 701–713.

13 E.F. Fama, 'The Behavior of Stock Market Prices' (1965) 38 *Journal of Business* 34–105.

14 T. Copeland and F. Weston, *Financial Theory and Corporate Policy* (3rd edn, Addison-Wesley, Massachusetts, 1988), p. 349.

15 Supra note 5, at 416.

16 M. Jensen, 'Some Anomalous Evidence Regarding Market Efficiency' (1978) 6 *Journal of Financial Economics* 95–101, at 95.

17 R.K. French and R. Roll, 'Stock Return Variances' (1986) 17 *Journal of Financial Economics* 5–26.

time through the actions of informed investors and to pricing errors created by the trading process. Since the receipt of new information is the cause of prices' movements, there should be no difference in the fluctuation of market movement. If public information causes price volatility, the volatility between two consecutive trading days is lower than when two trading days are separated by a closure of the exchange market. The volatility of prices is higher if induced by private information. The authors concluded 'small return variances over exchange holidays suggest that most of this information is private'.<sup>18</sup>

French,<sup>19</sup> based on his data analysis, argues that on Monday returns are significantly negative. He examined whether these are systematically negative returns or markets are subject to a closed market effect according to which expected returns should be lower after holidays and weekends. According to the 'week-end effect' hypothesis, expected returns should be higher after a holiday or weekend than after a non holiday. His data were consistent with the 'weekend hypothesis'. French concluded: 'the persistently negative returns for Monday appear to be evidence of market inefficiency'.<sup>20</sup> However, transaction costs are significant, so no excess profits can be made by a trading strategy based on these negative expected returns.

### Leptokurtosis

Another deviation from what would be expected under informationally efficient markets is the phenomenon of leptokurtosis which refers to daily indexes of securities' returns exhibiting positive serial correlation when plotted against time. Current returns are affected by previous returns and the distribution graph of returns indicates a higher variance than the normal distribution, by being 'thicker' in the tails of the distribution.<sup>21</sup> A regression of the form

$$r_t = a + br_{t-1-T} + e_t \quad (6)$$

where  $a$  is the expected return,  $b$  indicates the relationship between past and current returns and  $e_t$  shows the variance of return ( $r_t$ ) that is uncorrelated

to previous returns, can be used to examine the serial correlation between current and past returns. Campbell, Lo and MacKinlay<sup>22</sup> present empirical evidence that exhibit significant positive serial correlation. They also categorized portfolios in quintiles depending on their capitalization in the beginning of the year. They found strong evidence against the random walk hypothesis in the portfolio of the companies in the smallest quintile. The companies in the medium quintile exhibit lower serial correlation whereas there is no evidence for serial correlation in the largest quintile.

Blanchard and Watson<sup>23</sup> discussed the speculative bubbles and their relationship with rational behaviour. They claim that the price of an asset may be different from its market fundamental value (the value that depends on information about current and future returns from the asset). They call these deviations rational bubbles. A bubble can be represented by the following equation

$$c_t = E(c_t | \Omega_{t-1}) + \epsilon_t \quad (7)$$

where  $c_t$  is the movement in the price unjustified by information available at time  $t$ , the bubble,  $E(c_t | \Omega_{t-1})$ , is the expected value of the bubble at time  $t$  given the information in the previous period  $t - 1$  and  $\epsilon_t$  is the innovation in the bubble (error term depicting impact of random factors in the price movement). The bubble path must obey the submartingale arbitrage condition. Tirole<sup>24</sup> claims: 'price bubbles are shown to follow discounted martingales. This differs from a finite-horizon stock market, in which the price is equal to the market fundamental of any active trader'.<sup>25</sup>

Adding to the aforementioned deviation, Blanchard and Watson<sup>26</sup> show that if  $p_t^*$  denotes the market fundamental value of the asset and  $p_t$  the price of the asset then the following equation holds:

$$p_t = p_t^* + c_t \quad (8)$$

Let us denote the excess return of the asset in the presence of a bubble as

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18 Ibid, at 23.

19 R.K. French, 'Stock Returns and the Weekend Effect' (1980) 8 *Journal of Financial Economics* 55–69.

20 Ibid, at 68.

21 For more details on the normal distribution see further: D. Gujarati, *Essentials of Econometrics* (McGraw-Hill, USA, 1992), pp. 59–66.

22 J. Campbell, A. Lo and C. MacKinley, *The Econometrics of Financial Markets* (Princeton University Press, Princeton, 1997).

23 O. Blanchard and M. Watson, 'Bubbles, Rational Expectations and Financial Markets' in P. Wachtel (ed), *Crisis in Economic and Financial Structure* (Lexington, Massachusetts, 1982).

24 J. Tirole, 'On the Possibility of Speculation under Rational Expectations' (1982) 50(5) *Econometrica* 1163–1182.

25 Ibid, at 1165.

26 Supra note 21.

$$p_t - E(p_t | \Omega_{t-1}) = \eta_t + \epsilon_t \quad (9)$$

where  $\eta_t$  denotes the innovation in the market fundamental value. The distribution of  $\epsilon_t$  exhibits 'fat' tails. While the bubble is growing, it will generate small positive excess returns. After the time of the crash these positive returns will be followed by large negative ones. As McQueen and Thorley<sup>27</sup> argue 'a long run of positive excess returns suggests the presence of a bubble and a bubble decreases the probability of a negative abnormal return'.<sup>28</sup> Blanchard and Watson claim 'if we assume that market fundamental innovations are not leptokurtic, we can attribute "fat" tails in excess returns to the presence of bubbles'.<sup>29</sup> However, because 'fat' tails may be attributed to the innovations in market fundamentals, Blanchard and Watson's results have important limitations.

A method to assess the existence of positive or negative returns is the runs test. The runs test refers to a number of sequences of consecutive positive or negative returns, or runs, being compared against the sampling distribution under the random walk hypothesis in search for serial correlation in stocks' returns. Fama<sup>30</sup> argues that large price changes tend to be followed by large ones. Based on his data he argued that there were fewer runs than expected for one-day intervals, which comprises evidence of minimal positive serial correlation between successive returns. However, for longer intervals this was not the case. Nevertheless, the average profits on each trade are small and when transaction costs are taken into account these strategies are unprofitable. Thus, no abnormal returns can be earned.

### Grossman–Stiglitz arguments

Grossman and Stiglitz<sup>31</sup> assumed that information is costly to acquire. The Grossman–Stiglitz paradox suggests that asymmetric information is commonplace in asset markets. They assumed that there are two assets, yielding a certain return of  $r$  and  $u$  respectively. Term  $u$  consists of two parts  $\theta$  and  $\epsilon$ . Term  $\theta$  is observable at cost  $c$  while term  $\epsilon$  is unobservable

$$u = \theta + \epsilon \quad (10)$$

Informed traders' decisions will depend on  $\theta$  and on the price of the risky asset. Uninformed investors' decisions will depend only on the price. An overall equilibrium requires both types of investors to have equal expected utility. The authors argue that the bigger the number of the informed individuals and the lower the ratio of expected utility of the informed to the uninformed, the more informative is the price system. Moreover, the higher the cost of information the lower is the number of informed individuals. The greater the quality of information, the more informed individuals' demands will vary and the more will prices vary with  $\theta$ . On the contrary, the bigger the magnitude of noise, the lower the proportion of uninformed individuals since they will have lower expected utility.

Grossman and Stiglitz argue that a situation where prices convey all information cannot be compatible with a stable and competitive stable equilibrium. They conclude: 'because information is costly, prices cannot reflect the information which is available, since if they did, those who spent resources to obtain it would receive no compensation. There is a fundamental conflict between the efficiency with which markets spread information and the incentives to acquire information'.<sup>32</sup> According to EMH no abnormal returns can be earned in an efficient market. However, with no abnormal returns there are no incentives to acquire costly information. Any movement in prices could be induced by trading at 'incorrect prices'. Grossman and Stiglitz argued that sensible asset market equilibrium should leave some incentive for analysis.

### Other non-profitable trading strategies

Deviations from what would be expected under the EMH relate to the time patterns in securities' returns that indicate higher returns in January and especially in the first five trading days. Financial economists attribute this effect to investors selling in December securities for which they have incurred losses and buying equivalent ones, creating a tax loss which

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27 G. McQueen and S. Thorley, 'Bubbles, Stock returns and Duration Dependence' (1994) 29(3) *Journal of Financial and Quantitative Analysis* 379–401.

28 Ibid, at 383.

29 Supra note 21, at 312.

30 Supra note 11.

31 J.S. Grossman and E.J. Stiglitz, 'On the Impossibility of Informationally Efficient Markets' (1980) [June] *The American Economic Review* 393–408.

32 Ibid, at 405.

may cover the transaction costs. Nonetheless, this explanation fails to explain why private pension funds that are not subject to income taxes do not take advantage of the higher returns in January. Keim<sup>33</sup> claims 'January marks a period of increased uncertainty due to the impending release of important information'.<sup>34</sup> When transaction costs are taken into account, such trading strategies prove to be not profitable. In an efficient market no seasonal pattern should be observed because investors by profitably adjusting their trading strategy would eliminate this seasonality.

Further evidence casting doubt on the accuracy of the tests assessing weak-form efficiency of the market includes the size effect according to which small firms have earned excess returns for substantial periods of time. Dimson,<sup>35</sup> however, claims that the observed autocorrelations of abnormal returns in small stocks may be due to infrequent trading. Other theories incorporate the low liquidity of small firm stocks, tax issues, high transaction costs,<sup>36</sup> large information costs in the assessment of small firms and on the rebalancing of portfolios by institutional investors. Lakonishok et al.<sup>37</sup> find a difference in returns between high market to book and low market to book securities, which cannot be explained by the compensation for risk. Poterba and Summers<sup>38</sup> examined the market overreaction and the mean reversion of securities. According to the authors, low returns securities are expected to have high returns in the future and vice versa. Some of their findings however, have been questioned in the literature.<sup>39</sup>

### Evidence regarding semi-strong and strong-form tests

Regarding contradictory evidence against the semi-strong tests of market efficiency, Ball<sup>40</sup> found that the

reactions of stock prices to earnings announcements are incomplete and attributed them to inadequacies of the CAPM. Jaffe<sup>41</sup> concludes that announcements concerning mergers, dividend increases or stock splits are partially anticipated by the market and excess profits can be generated based on this private information. Excess returns for common shares observed after the announcement date can result from unexpected quarterly earnings, contradicting the strong-form tests of EMH. Although most of these inconsistencies cannot be profitably exploited when transaction costs are taken into account, block trading in which investors trade large blocks of shares can be an exception. As Copeland and Weston argue, the abnormal returns earned by the individuals who participate in the block price are evidence of strong-form inefficiency.<sup>42</sup>

Fama refers to the joint-hypothesis problem evident in semi-strong and strong tests of EMH and states, 'market efficiency per se is not testable. It must be tested jointly with some model of equilibrium, an asset pricing model'.<sup>43</sup> Appraisals of market efficiency depend upon a model of asset prices. Anomalous evidence regarding behaviour of returns is not necessarily a consequence of market inefficiency. It can as well be a result of an inappropriate model.<sup>44</sup>

As this paper has indicated, the impact of an informationally inefficient market on the share prices may mitigate the effect of the corporate debt restructuring on prices and thus may underestimate the benefits of debt restructuring for the company as they are illustrated by the increase in the company's share prices.

### Concluding remarks

In conclusion, empirical evidence shows that returns follow a submartingale and inconsistencies exist and

### Notes

33 D.B. Keim, 'Size Related Anomalies and Stock Return Seasonality: Further Empirical Evidence', (1983) 12 *Journal of Financial Economics* 13–32.

34 *Ibid.*, at 30.

35 E. Dimson, 'Risk measurement when shares are subject to infrequent trading' (1979) 7 *Journal of Financial Economics* 197–216.

36 R. Roll, 'On Computing Mean Returns and the Small Firm Premium' (1983) 12 *Journal of Financial Economics* 371–386.

37 J. Lakonishok, A. Schleifer and R. Vishny, 'Contrarian Investment, Extrapolation and Risk', unpublished paper, University of Illinois, 1993; in Elton and Gruber, *Investments* (vol. 2, MIT Press, Massachusetts, 1999), p. 426.

38 M. Poterba and L. Summers, 'Mean Reversion in Stock Prices: Evidence and Implications' (1988) 22 *Journal of Financial Economics* 27–59.

39 M.J. Kim, C. Nelson and R. Startz, 'Mean Reversion in Stock Prices? A Reappraisal of the Evidence' (1991) 58 *Review of Economic Studies* 515–528.

40 R. Ball, 'Anomalies in Relationship between Securities' Yields and Yield-Surrogates' (1978) 6 *Journal of Financial Economics* 77–96.

41 J.F. Jaffe, 'Special Information and Insider Trading' (1974) 47 *Journal of Business* 410–428.

42 T. Copeland and F. Weston, 'Financial Theory and Corporate policy' (3rd edn, Addison-Wesley, Massachusetts, 1988), p. 375. Another case is in Initial Public Offerings (IPO), by buying securities at the subscription price and selling them a month later.

43 *Supra* note 8, at 1575–1576.

44 e.g. CAPM in R. Ball, *supra* note 40

in some cases for significant periods of time. Most of them are disseminated by exploitation by investors. One of the most important weaknesses of the weak-form tests is examined by Grossman and Stiglitz who claim that there cannot be a stable equilibrium when there is symmetric information. The movement in prices may reflect trading at 'incorrect' prices. Another pitfall concerns the weekend effect. Negative returns on Monday across daily, weekly and monthly data are not lower after non-holiday periods than after holiday or weekend periods. Finally, the leptokurtosis phenomenon is evident in the distribution of securities' returns across periods and in rational bubbles.

These phenomena indicate that current returns are serially correlated with past returns, which is in contrast to the EMH. Other inconsistencies include size effects and seasonality effects such as the January effect and the intra-day effect when returns exhibit particular patterns. Nonetheless, in most cases if transaction costs are taken into consideration, any profitable opportunities for investors are eliminated. Thus, no abnormal returns can be achieved which coincides with the prediction of EMH. In our evaluations, we should also bear in mind the joint hypothesis

problem. As Fama claims 'when the process generating equilibrium expected returns is better understood, we will have a more substantial framework for more sophisticated intersecurity tests of market efficiency',<sup>45</sup>

As abovementioned, in an informationally inefficient market, share prices may not accurately reflect all the available information. This fact implies that the likely increase in the share price will not only reflect the benefits to the company of the debt restructuring process as they are viewed by investors but other factors as well. If these factors would *ceteris paribus* lead to a downward pressure in share price, then the net impact of the debt restructuring process is underestimated and the actual benefits of this process are higher than the increase in the price indicates. Similarly, if the share price is influenced by favourable factors, then the increase in price overestimates the impact of the debt restructuring process. Thus, although many factors are taken into account affecting the share price of the company which restructures its debt, the existence of other influences on the share price mitigates the impact of the debt restructuring on share price.

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45 *Supra* note 7, at 416.