International Journal of Research and Review
Vol. 9; Issue: 10; October 2022
Website: www.ijrrjournal.com
Research Paper
E-ISSN: 2349-9788; P-ISSN: 2454-2237

The Effect of the Asymmetric Information on the Asset's Price and the Strong Efficient Market Hypothesis

Massimiliano di Toro

Ph.D. Swiss Management Center

DOI: https://doi.org/10.52403/ijrr.20221052

ABSTRACT

The research's hypothesis is that the existence of material private information leads to the asymmetric information problem and partially invalidating the strong efficient market hypothesis theory. According to the researcher, due to the asymmetric information the asset could be not considered "fairly" priced until the private material information has been transferred to the public market and consequently eliminating the asymmetric information and the possibility of extra return respect to the market due to the privileged information.

Key words: asymmetric information, Strong Efficient Market Hypothesis, 2008 financial crisis, fair price, asset price.

INTRODUCTION- THEORICAL IDEA

According to the researcher view the asymmetric information is present in the market due to the private material information and partially invalidate the strong efficient market hypothesis (EMH), hence the asymmetric information, under the forms of private material information, allows the insider trader to have an extra performance respect to the market.

Furthermore, although the researcher agrees with the EMH theory that all private and public information are fully reflected on the stock's price, the researcher ague that due the existence of asymmetric information, the asset cannot be considered "fairly" priced, until the private material information become public information and consequently the asymmetric information is eliminated.

According to the researcher's idea the asset can be "fairly" priced only if is totally eliminated the asymmetric information on the market when no private material information exists anymore, because they have become public information.

In my opinion, the asymmetric information was the root of the financial crisis of 2008 and the lack of liquidity, that materially led to the bankrupt, was only the consequence of the asymmetric information. At the base of the financial crise of 2008 there were the Mortgage-backed securities (MBS) through which some institution who knew that the mortgages were granted to people with low incomes (high probability of default) and with defaults history, but through the securitization of MBS has been possible to transfer the risk to the market that was in asymmetric information position.

In my personal view the above real example is a proof that asymmetric information is a market condition that exists, allowing the insider trader to transfer the risk within the market and get advantage. Since the insider has negative and material information not disclosed is able to anticipate the default respect to the large part of the market that is pricing the asset using public information that are not true and correct anymore. Thanks to the asymmetric information the insider will be able to sell the asset, that is not fairly priced, passing the risk to others counterparty that has not material insider information.

It is essential that asymmetric information is reduced, to allow an efficient allocation of investments and a reduction of potential future financial crises.

In my opinion asymmetric information is a bias in decision making process and lead a moral hazard behaviour.

For example, in the eBay Auction the seller is informed of the highest bid of the buyers and in my opinion, this creates a problem of asymmetric information in favour of the seller, because is aware of the price that the buyer is willing to bid and could and lead a moral hazard behaviour, for example asking friend to bid higher of the actual auction price, but less than the third party highest bid, increasing in his favour, the final price of the auction.

Hiding to the he seller the maximum price offered by the buyers could reducing asymmetric information and seller 's moral hazard behaviour. Asymmetric information allow insider to speculate or hedge their position as above-mentioned financial crises.

Conversely, according to strong efficient market hypothesis, even insider information cannot give an investor an advantage or arbitrage.

In my personal view the strong efficiency of the markets is partially valid: I agree that all information in a market, whether public or private, is accounted for in a stock's price, but insiders have an advantage in buying or selling at a market price that still does not discount new material information, for example the true value of the MBS of the global financial crise. So, contrary to strong efficiency market theory there is type of information that can give an investor an advantage on the market.

Strong form efficiency refers to a market where share prices fully and "fairly" reflect not only all publicly available information and all past information, but also all private information (insider information) as well.

In my opinion this s is partially true because the stock cannot be considered "fairly" priced if there is asymmetric information on the market: when the negative and material insider information become public the price will drop and only at this point the asset can be considered "fairly" priced, because there is not any more asymmetric information and consequently all market participants have the same correct and equal information.

Furthermore, according to Strong form efficiency stating that all information in a market, whether public or private, is accounted for in a stock's price this degree of market efficiency implies that profits exceeding normal returns cannot be realized regardless of the amount of research or information investors have access to.

In my opinion this point is not true because using asymmetric information is possible to have extra profit respect to the market return and will be tested with a specific hypothesis question of the research.

Instead, semi-strong efficient market theory stated that all information that is public is used in the calculation of a stock's current price, I think that this is partial true, because if there is asymmetric information the insider take position before the market and so in my personal view the market's price is the reflection of the all the investor's information not only public (public info plus private inside material info) in line with the Strong form efficiency market theory, but this price cannot be considered fairly as suggested by Strong form efficiency , because the majority of the investor they do know about the private material insider information.

Nevertheless, I agree with the semi-strong form theory that only information that is not readily available to the public can help investors boost their returns to a performance level above that of the general market.

The efficiency of the markets holds that everything that the market does is right, and therefore all the assets are priced rightly, but in my opinion this theory is not correct if compared with the empiric crash of the real estate market and the speculative internet bubble: proving that the market is not always correct in pricing the assets, if there is asymmetric information that allow insider to speculate or hedge their position.

This asymmetric information is one of the main points that could lead a suboptimal choice under economic decision-making process.

Research Questions

The research question is analysing if the asymmetric information has an impact on market efficiency and in particular on the strong efficient market hypothesis.

a) Null Hypothesis (Ho): would state that there is no significant impact of asymmetric information on market efficiency.
b) Alternative Hypothesis (H_1): There is significant impact of asymmetric information on market efficiency.

According to the pioneer Frama (1970) idea all assets are fairly price on the market because all information public and private are reflected in the market's prices, and there is no type of information that can give an investor an advantage on the market.

PRESENTATION OF RESULTS

For each research question is present a table to represent the sample's answer.

The table shows the number of the sample that has participated and is showed the percentage's answer type. The survey has been conducted with a web-based survey thorough Likert-type survey using closing question. Is present a statistical result table that contain the standard deviation, average score, Z-score, p-value and the result of the test if the null hypothesis is rejected or not.

Below is analysed the sub-question number 1 relative to the research question.

1. Do you have an insider material information of an imminent merger of two big food companies where Company's A will acquire 100% of Company's B. With the goal to anticipating the market and so before the acquisition will become public information and assuming that after the acquisition the Company A share's price will go up, would you be willing to buy immediately the share of company A?

a) Null Hypothesis (1Ho): would state that there is no significant impact of asymmetric information on market efficiency. You will not buy immediately the share of company A.
b) Alternative Hypothesis ($1H_1$): There is significant impact of asymmetric information on market efficiency. You will buy immediately the share of company A.

The reason behind this research question is to demonstrate that differently from the strong efficient market hypothesis theory, private material information can give to the investor an advantage respect to the market, due to the asymmetric information and so get a better performance. Furthermore, also if all information private and public are reflected in the asset's price, until is present on the market asymmetric information, the asset price cannot be considered fairly priced. In case exist a material private information, the goal of the researcher is to analyse the asymmetric information effect on the insider trader's behaviour,

The following tables show the answer and statistic result of the empirical research question.

Table 1 Answer Choices Sub-Question 1

Answer Choices	Responses %	Responses
Strongly disagree	6,99%	29
Disagree	10,84%	45
Neither agree nor disagree	40,72%	169
Agree	33,98%	141
Strongly agree	7,77%	31
Total	100%	415

Table 2 Statistical Results Sub-Question 1

Standard Deviation	Average Score	Z -score value	Reject null hypothesis? If Z score > 1,645	p value	Reject null hypothesis? If p-value < 5%
0,99	3,2	4,115	Yes	0,00%	Yes

Z-score is higher than the one-side Z-score critical value 1.645 for 95% confidence level and the p-value is less of .05 significance level, the null hypothesis is rejected. The empirical research supports the alternative hypothesis that there is a significant impact of asymmetric information on market efficiency, hence the investor taking advantage of the asymmetric information due to private material insider information, will buy immediately the share of company A.

Anticipating the pricing movement of the stock and getting a better performance respect to the other investors.

The Efficient Market Hypothesis (EMH) states that asset prices reflect all available information and trade at their fair value and EMH assumes the absence of asymmetric information in trading activities in a typical stock market. The empirical research shows that in presence of private material information, asymmetric information is present in the market and the insider trader can use it to get an advantage and beat the market, because he can do a directional trading before to the other investors.

In my view, the financial crise of 2008 linked to the subprime mortgage and mortgage-backed securities (MBS), is a proof that the asymmetric information is present on the market and that the material insider information influences market efficiency. Furthermore, I personal agree with EMH that asset prices reflect all available information, indeed both insider trader and overall market they trade on the information they have. Therefore, the insider trader thanks to his asymmetric information will trade ahead of the market and will start to buy the stock A anticipating the future price 's stock increase (directional trading), in this way the prices reflect all available public and private information, but cannot be considered fair price.

Conversely, I do not agree with Efficient Market Hypothesis that asset trade a "fair" value, because until the private material information is not becoming public, the price stock cannot be considered fairly priced, due to the fact the majority of the market do not know yet this material information, so due to the asymmetric information position that they have, they cannot price fairly the stock. Indeed, when the private material information becomes public, only at these points we could consider that the asset is fairly priced, because all the market and investor have the same information and we can consider the whole market free of the asymmetric information bias. Asymmetric information is present within the market and influences market efficiency, and do not let the asset trade a fair value.

Insider material information and asymmetric information, bring to have advantage respect to the other investors, because the insider trader can move ahead (buying) anticipating the market. Furthermore, you could have also opportunities for arbitrage if the interest rate is less than the expected capital gain, the investor could borrow money, buy the stock today, that is still priced without the good material information, and sell the stock later when the good private information will become public information and consequently increasing the stock 's price.

Asset price is not fair priced until is present asymmetric information within the market and furthermore, asymmetric information could lead an arbitrage strategy to the insider trade, getting a free risk return.

Is plausible that during the financial crise 2008, the investors or investment banking that they have asymmetric information of the mortgage subprime and backed mortgage security, have avoid the bankrupt rid off from the balance this asset or could also speculate on it, selling at high price before the crash. In other terms, thanks to the asymmetric information they were able to transfer the risk to other investors.

Below is analysed the sub-question number 2 relative to the research question.

2. You have invested in Company A' shares so far. Do you have an insider material information of an imminent default of Company A. Before the default becomes public information and consequently Company A share's price

will go down, do you decide to immediately sell Company A' share due to the imminent default?

a) Null Hypothesis (2Ho): would state that there is no significant impact of asymmetric information on market efficiency. You will not sell immediately the share of company A.
b) Alternative Hypothesis ($2H_1$): there is significant impact of asymmetric information on market efficiency. You will sell immediately the share of company A.

The reason behind this research question is to prove that differently from the strong efficient market hypothesis, the private material information can give to the investor an advantage respect to the market due to the asymmetric information and so get a better performance. Furthermore, until is present the asymmetric information on the market, the asset price cannot be considered fairly priced, nevertheless all information private and public are reflected in the price. The goal of the researcher is to analyse the asymmetric information effect on the insider trader's behaviour in case of negative material private information.

The following tables show the answer and statistic result of the empirical research question.

Table 3 Answer Choices Sub-Question 2

Answer Choices	Responses %	Responses
Strongly disagree	6,99%	29
Disagree	13,49%	56
Neither agree nor disagree	43,37%	180
Agree	26,27%	109
Strongly agree	9,88%	41
Total	100%	415

Table 4 Statistical Results Sub-Question 2

Standard Deviation	Average Score	Z -score value	Reject null hypothesis? If Z score > 1,645	p value	Reject null hypothesis? If p-value < 5%
1,02	3,2	3,994	Yes	0,00%	Yes

Z-score is higher than the one-side Z-score critical value 1.645 for 95% confidence level and the p-value is less of .05 significance level, the null hypothesis is rejected. The empirical research supports the alternative hypothesis that there is significant impact of asymmetric information on market efficiency, hence the investor will sell immediately the share of company A taking advantage of the asymmetric information due to private material insider information.

Insider information lead to have advantage respect to the other market's participant, because the insider trader can beat the market moving ahead. Furthermore, the insider trader has also opportunities for arbitrage, short the stock and buy later a cheaper price to close the borrowing short position, because when the negative material private information will become public the stock's price will decrease.

Hence, in the event of negative news, material private information does not let the stock trade a fair value and allow the insiders trader to anticipate the stock's crash and beat the market. When the private material negative news becomes public, there will be a sales of the stock and so a decrease of the stock's value, but the insiders were able to sell it when the stock price was still high or could use speculative strategies through the short selling. Therefore, the hypothesis of strong market efficiency is not totally valid in presence of asymmetric information that allows the insider trader to anticipate future bearish market trends and get better performance.

Contrary to the EMH, asymmetric information is present within the market and influences market efficiency and do not let the asset trade a fair value, at least until the private material information has become public information and at this point, we can consider the asset fairly priced.

The following example will clarify the researcher view and statement.

Let's assume that you bought a stock of a company, where the main business is based in Country A and let' assume the market price of today is 100 EUR. Now you get a private material insider information that the company will be in bankrupt and furthermore you have a military secret information that a boarder Country will start a war against Country A, where you have invested. Is logic and rational that based on the above information you will try to immediately sell the title, and let's assume due to the liquidity and your huge selling's shares amount, the price today move from 100 EUR TO 98 EUR. This price cannot be considered fair as stated in EMH, because the price is the result of the position of the whole market, that is based on the public information that there is no bankruptcy and no imminent war, and the selling position of insider trading due to the private material information. Therefore, the researcher agrees with EMH that asset prices reflect all available information, both private and public, but does not agree that the stock price is fair, because almost the market is in asymmetric information and so prices the stock value using public information that are not any more correct.

Assuming that after one week the insider private information become public, so the Company publicly announce to be in bankrupt and furthermore the Country is attacked from a neighbour State, is reasonable that all investors will try to rid off the stock starting to sell on the market and assuming, for example, that the price reach 40 EUR.

Only when the material insider information will become public, we could consider that the asset is "fairly" priced, because there is no asymmetric information (private material information) and all economic agent has the same information.

In the above example 40 EUR is the fair price after the private information has become public, indeed 98 EUR cannot be considered fairly priced, because almost the whole market trades the stock on public information that are not anymore correct. Nevertheless, both asset price 98 EUR and 40 EUR reflect all available private and public information in line with Efficient Market Hypothesis, but respect to the EMH, only when the stock reach 40 EUR could be considered fairly valued, because there are not anymore private material information and so no asymmetric information.

For example, if according to the public information the Company, Country and sector outlook are good, is reasonable that the investor continues to buy or hold the stock, instead of to sell it, as he will do if he has the private material information of the war and bankruptcy.

This is a proof that the presence within the market of the asymmetric information leads an inefficient price of the asset or leads the investor to take different position respect the one he will take if he was aware of the private material information. Hence, the asymmetric information changes the investor's behaviour and the asset's price.

Indeed, if you do not know that the company will be in bankruptcy, you may continue to use the "old" and public future earning expectation to discount the value of the company, so you will get a price value according to discount cash flow model that incorporates public information that are not anymore true. Hence, your company value will be wrong and with no fair price of the company, because you are not considering within the discount cash flow model the new updated private material information of the bankrupt and the Country's war and consequently the new updated "true" expected earnings.

SUMMARY OF RESULTS

The research question shows that the asymmetric information has an impact on market efficiency and in particular on the asset fair value, differently from the strong efficient market hypothesis. The research question proves that when there is private material and not disclosed information, the asymmetric information is present within the market and influences market efficiency. Consequently, the asset is not fairly priced until is present asymmetric information within the market that permit arbitrage. In other words, the asset is fairly priced only when all the private material information become public and consequently is eliminated the asymmetric information within the market and there is no arbitrage opportunity.

The sub-question number 1 research finding is that asymmetric information influences market efficiency and do not let the asset trade a fair value. Insider material information and asymmetric information, bring to have advantage respect to the other investors, because the insider trader can move ahead (buying) anticipating the market or could have also opportunities for arbitrage.

The sub-question number 2 shows that there is significant impact of asymmetric information on market efficiency, hence the investor will take advantage of the asymmetric information due to private material insider information.

Insider information lead to have advantage respect to the others market's participants, because the insider trader can beat the market moving ahead so selling the asset before the default. Furthermore, the insider trader has also opportunities for arbitrage.

Until is present asymmetric information within the market the asset's price cannot be consider fair and furthermore, asymmetric information could help the insider trade to develop an arbitrage strategy and get a free risk return.

The research main findings:

- if within the market is present private material information, the asymmetric information influences market efficiency and allows arbitrage,
- asset's price is not "fair" until is present asymmetric information within the market,
- only when the asymmetric information is eliminated from the market, the asset's price can be considered "fair".

The research question show that the asymmetric information has an impact on market efficiency and in particular on the strong efficient market hypothesis.

According to Fama (1970) and his efficient market theory (EMT), since stocks always trade at their "fair" market value, then it is virtually impossible to either buy undervalued stocks at a bargain or sell overvalued stocks for extra profits, furthermore in the EMT is assumed no existence of asymmetric information. Instead, the research finding is that if asymmetric information is present within the market this influences market efficiency and allows extra return and arbitrage, so is possible to do an extra profit respect to the market using the insider private material information and using the advantage of the asymmetric information.

Consequently, the asset cannot be considered "fairly" priced, until the insider private material information become public and consequently eliminating the asymmetric information on the market.

In my personal views the financial crises 2008 is an empirical proof of the existence in the market of the asymmetric information of the Mortgage-backed securities, for this reason the MBS were not priced fairly, differently from the expectation of the strong efficient market hypothesis.

Due the fact that the asymmetric information due to the insider trading material information cannot be eliminated, until the private information become public, my practical recommendation to the investor is to increase the diversification of the portfolio investment with the goal to reduce the idiosyncratic risk or unsystematic risk linked to particular stock. Hence in this way, if is present any material private information that the Company could go in bankrupt, the impact of the stock's negative return, could be mitigated due to the diversification effect and consequently with less impact on the whole investor's investment portfolio.

Conflict of Interest: None

REFERENCES

1. Di Toro, M. (2022). The effect of the Relative Rationality on the economic decision-making process. *Doctorate Thesis, Swiss Management Center*.
2. Frama, E. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of finance, 25*(2), 383–417.

3. Malkiel B. (1973). *A Random walk down wall street*. Norton Edition. New York, NY: W. Norton and Company.

How to cite this article: Massimiliano di Toro. The effect of the asymmetric information on the asset's price and the strong efficient market hypothesis. *International Journal of Research and Review*. 2022; 9(10): 463-470. DOI: *https://doi.org/10.52403/ijrr.20221052*

******