

The Effect of The Company Size on the Intrinsic Value and Herd Behaviour

Massimiliano di Toro

Ph.D. Swiss Management Center

DOI: <https://doi.org/10.52403/ijrr.20221051>

ABSTRACT

The goal of the research is to empirically investigate if the company size has an impact on the intrinsic value perceived by the investor and herd behaviour and if the media coverage and publicity influences the decision-making process of the investor. Consequently, the research will investigate if the investor prefers to invest in big size Company instead of to bet on small cap Company and investigate if media coverage and publicity imply an image value and consequently an intrinsic value associated to the Company.

Key words: company size bias, herd behaviour, intrinsic value bias, image value bias, regret bias, recency bias, strategic level-k thinking, beauty contest, bounded rationality.

INTRODUCTION- THEORETICAL IDEA

As time passes, may change variables, information and lead a different choice from the previous one due to the impact of the new information. For this reason, in addition to the bias of the historical past, it is important to take into account time's running.

For example, your car was stolen but later it is found and you are happy now, so even if your economic condition after the car's finding is identical to the previous one, i.e. possession of the car, but your happiness derives from the comparison with a previous negative state, so in the mind the positive event following a negative event could be overweighted. Thus, for stocks that have lost value, the return of the value to its previous pre-decline level, is associate a fact of happiness, although perhaps it only

serves to bring back the initial value of the investment.

The above example could be explained by the frame effect, it is argued that when the information is not transparent and direct, this leads to an alteration in the evaluation.

A sort of frame and lack of information leading asymmetric information problem.

Therefore, the occurrence of negative events, recessions, bearish trends change our expectations of the expected return. The human bias to overweight the recent negative information of the bearish markets makes us increase the subjective perception of the negative event and thus also reduces the expectation of the fair expected return: even a lower return is now acceptable compared to the one before the recent negative info.

For example, assuming that before the Covid pandemic the fair expected yearly return for a stock was 10%, now that we have incorporated the new negative macroeconomics' covid shock could be reasonable also accept lesser yearly return given the new negative scenario. So, time and updated information change the fair value of the stock price.

In the stock price there could also be an intrinsic value a bias due to the Company size, geographical diversification (multinational), image, advertising and marketing, and a bias due to the historical component of the Company: historical performance and dividend payment, financial stability, reliability, good historical management performance.

Nevertheless, the price also depends on a variable component of future estimate of the earning, macro exogen shock or others information that varies in an unpredictable way and consequently any future price is unpredictable. This event could highlight the limit of the discount cash flow model, that use future cash flow to price fairly the asset.

Therefore, if the sales and the expected earnings of the big caps Company are lower than the expectations, these have an amplifying effect on the markets, since they could be indicators of a slowdown in the economy and since the multinational big caps drive the demand for goods, it can be expected that also small caps could recorded negative sales trends (highly correlated to big cap sales). Furthermore, small caps Company face the risk of low diversification of the Company structure and products with exposure to a single Market which could results in a low intrinsic perceived Company's value and a higher risk and stock volatility during an economic downturn.

According to my personal view this bias due to the size and corporate history increase the image effect of the company and therefore the big caps, thanks to the diversification and the big size structure, could induce a herd behaviour investor effect to replicate the capitalization-weighted index.

Indeed, another points that can be observed in the benchmark capitalization-weighted index is that the biggest companies have a greater contribution of the return of the index. The herd behaviour of the investor to continue to invest in the big market companies can be explained by the desire do not assume risks to invest in the company with low market cap and so preferring to follow the market to avoid regret bias.

In my personal view, the investor behaves to follow the market, buying stock with higher market cap, has the aim to reduce the sense of regret if they made a personal wrong choice, so they assess as a better choice to follow the market (herd behaviour). Regret theory is a model in theoretical economics,

where the choice under uncertainty takes into account the effect of anticipated regret.

Another consideration to take into account is that the investor's behaviour is influenced much more from the last information available, behaviour bias to overweight the recent information known as recency bias or availability bias using the data in memory that are more alive.

The last information that the mind perceives is crucial in the final judgment, for example with the momentum strategy, where according to the theory the stock that has outperformed the market recently will continue the trend also in the future, could be explained if we take in consideration the tendency of human behaviour to overweight the recent information (recency or availability bias).

Availability bias matters for the financial markets, as memory of recent market news or events can lead investors to irrationally believe that a similar event is more likely to occur again than its objective probability. As a result, investors may make decisions to sell into bear markets or buy into bubbles, since crashes and bubbles can be salient in the minds of individuals as they are recently occurred.

This availability bias could lead a behaviour bias in stock's selection: investor could be more willing to take in consideration the company of which there are more available news in the media as an unconscious influence of the information.

Using the same approach in finance, the trailing Company dividends in the past could be used as a proxy to estimate forward dividends.

This could mean that the external condition of the world, our availability of the information, our memories, our emotions, our unconscious affect our decision making. For example, I did a test starting from the companies they had experienced in the past 25 years the growth in the annual dividend paid. I selected the portfolio's companies based on sustainability of the financial indicator of the company. The stock has been selected using fundamental analysis,

with the aim of select the companies that had already experienced a growth dividend in the past and they have a good financial indicator also: sales per share, cash flow per share, book value per share, expected dividend growth.

The selected companies had a better performance respect to the market. This could mean that, at least in the short period, the information of the company with good financial indicators is reflected in the price, so the investor behaves like if the asset could have a future path based on historical path, that is a kind of historical bias value or intrinsic value referred to the Company size, past financial health, marketing, good management reputation.

For example, if in the last years, the dividend of the company has grown, we assume that the dividend continues to grow as we assume for the price in the momentum strategy an historical recency bias.

A low price-book associate with an increase in the dividend (high dividend yield) might be a good signal to buy the title, using the momentum reversal of the price (price decreases) and the positive momentum of the financial factor, increase yield, sales, cash flow, book value, Company with good fundamental that are undervalued.

In this scenario it is expected that the financial indicators continue to be positive in the future, ensuring a more probable dividend and leads the behaviour of the investor to buy and hold the stock until is fairly priced in the medium term.

The historical bias associated to a company with positive financial information and good management track record will increase the investor perceived intrinsic value of the stock independent of the real stock market price.

The investor in making decision take into account the historical bias, so the investor relay on the past to make economic decision and this is an irrational behaviour because the probability of one positive event could occur again is not dependent from the past, because the events are independent.

In my opinion there is an emotional and unconscious bias linked to recency bias or investor perceived Company's intrinsic value the that lead the investor to forecast the future looking at the past, but in reality, the events are totally independent.

Similar in the normal life when we face an event already happened, we associate the probability that it occurs again using the past event and so we tend to overestimate the event will happen again.

On other hand, we could also observe a human opposite behaviour for the event has happened few times in the past.

I have notice that in the game of the Italian lottery called "gioco del lotto", when the extraction of one number is missing from a lot of time, a lot of people usually are confident that the next time the probability to extract this number will be higher respect to the previous extraction, also if the real probability of the extraction of one number is constant withing the game.

All the examples used in this outline are proofs that in our decisions we take into account the emotional sphere and we interact with the external environmental with a heuristic methodology, not using a default algorithm approach like a neoclassic homo economics.

Framing bias occurs when people make a decision based on the way the information is presented, as opposed to just on the facts themselves. This can be seen from the fact that investors react to the same information differently if it is presented in a different way.

The negative information if weighed more heavily in the mind, for example to get an economic subsidy there is the obligation to sign to the unemployment office monthly, the presence of a coercive obligation event could give a negative perception of the subsidy, when instead the subsidy is a positive element for the person that is unemployed.

Conversely the mind does not associate the obligations to the word work: office hours and mandatory signature of presence with badges are also obligation. Therefore, the

work activity involves more constraints than the monthly obligation to sign in case you get subsidy, but because in the word work is no associate transparent or immediate negative effects, the mind does not immediately perceive them as a sort of framing bias.

Decision making is altered by the weight attributed to the most recent event and it is not easy in the very short term to evaluate a decision as highlighted by the bounded rationality theory and furthermore if the information is not transparent, the choice could be not optimal.

Thus, even in the financial market not all information of a security is immediately transparent due to the presence of asymmetric information, this leads to altered choices on the basis of this lack of transparency and thus there is an inefficient allocation of investment capital.

This inefficient allocation of investment capital is also present in recession phase.

In my opinion investor behaviour saving during the recession is a human emotional reaction to the feeling of economic uncertainty and future's fear and can be explained due to the recency bias. This behaviour leads a spiral effect pushing the investor behaviour to save instead of to invest with consequent lower demand's asset and value that has been already negative affected by reduction of the future expectation of the Company's profit.

For this reason, during the recession phase the stock market will be further bearish trend not only due to the Company's diminishing earnings and expectation, but also due to the change of the investor's behaviour that due to is emotional feeling of uncertainty decide to decrease the capital to be invested in the stock market and prefer saving.

The recession has a double effect on the stock market, lower earning (economic effect) and crowding out of investments in favour of savings (recession effect on investors behaviour).

Controversially economic expansion involves an opposite double effect on the

stock market, increase of earning 's expectation (economic effect) and consequently emotional effect due to the availability bias to increase the amount of capital invested in the stock market and asset and decrease in savings (expansion effect on investors behaviour).

Hence, during a recession the stock's price will go down because of lower earnings (higher unemployment, lower consume demand and consequent production), but also because less investment in the stock markets and greater propensity to save, then the macroeconomic effect has an amplifying effect on the stock markets due to the change of the investor behaviour linked to the emotional perception of the recession.

Furthermore, if we look at the stock market as a Keynesian beauty contest, is a concept according to Keynes (1936) to explain price fluctuations in equity markets, our choice is not important, but is important the choice of others: so is not important that we consider the Company a good investment, but is important that other investors consider the Company good and consequently will be purchased and the capital gain increases.

In addition, large investment funds can move the price of the stock, moreover the information costs and financial skills are needed to do stock's analysis, so is better to have a herd behaviour that in behaviour finance is the tendency of the individuals to follow the sentiment of the majority. Herding occurs in finance when investors follow the crowd instead of their own analysis. To make some rational behind the herd's behave we could sustain that it is better to follow the market to save information costs and time and avoid regret effect. In behaviour finance the regret effect is the fact that we deviate in following the market and in the event that our choice is wrong there is a more amplified feeling of loss: personal risk of deviating from the behaviour of the flock.

PRESENTATION OF RESULTS

The goal of the research questions is analysing if there is an empirical bias due to

the Company size, marketing factor, good track record of the management, more media coverage and publicity and other element that could increase the intrinsic value precepted and lead to the investor to prefer to invest in big market cap company respect small cap size. The effect of company size could increase the perceived intrinsic value of the company and could explain the herd behaviour of the investor that to avoid regret sentiment prefer to choose big size company instead to decide to bet on small cap company. If the company is a big cap, it means that the company has been already chosen from other investor during the past as good investment and so indirectly we can find herd behaviour and intrinsic value within the investor choice.

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.

The first research question is if the Company size has an impact on the intrinsic value and herd behaviour? And the second research question is if the Company's media coverage and publicity implies an image value bias and consequently an effect on the Company intrinsic value.

Below is analysed the question number one relative to the research.

1). Assuming that during an economic recession you hold 2 equity shares: 1 small cap share of smaller companies) security and 1 big cap (share of larger companies) security. If you need to sell 1 equity share which one you will sell. Considering that fact that big cap stocks refer to the largest publicly traded companies with market caps of more than \$10 billion and so they are big size, multinational, and with sector and product diversification, you will prefer to

keep the big cap shares and sell the small cap share?

- a) Null Hypothesis (1H₀): would state that there is no significant impact of the Company size on the intrinsic value and herd behaviour. You are indifferent to sell small or big size company. No Company size bias
- b) Alternative Hypothesis (1H₁): there is significant impact of the Company size on the intrinsic value and herd behaviour. You will prefer to keep the big cap shares and sell the small cap share. There is a company size bias.

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

Table 1 Answer Choices Research-Question 1

Answer Choices	Responses %	Responses
Strongly disagree	1,20%	5
Disagree	8,19%	34
Neither agree nor disagree	48,19%	200
Agree	34,70%	144
Strongly agree	7,71%	32
Total	100%	415

Table 2 Statistical Results Research-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%
0,79	3,4	10,315	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 the investor prefers to keep the big cap shares and sell the small cap share.

Because in the question does not specify about the financial health of the company, but the only difference highlighted is the size, so the investor should be, in theory, indifferent to sell the small or big cap share. Instead, if the investors keep the big size, indirectly recognize an extra value of the company due to is size and the consequent effect on intrinsic value that could be the multinational corporation, sector and product diversification, good historical

management tracking record, survivorship bias, high media coverage, publicity and marketing impact and so on. Furthermore, the investor does not want to have a regret bias, in terms of betting alone on small cap company, instead prefer to continue to invest in big cap and follow the herd.

The big size bias could explain the herd behaviour, indeed if the company is a big cap, it means has been already chosen in the past from the other investors. So, big market size, it means that the investors have already invested within the company huge amount of capital, carrying out a potential herd behaviour bias due to the size effect and image bias, that increase the company's intrinsic value during the decision-making process.

Another explanation could be also linked to the beauty contest and strategic level k thinking, according to this strategy is more important to guess which is considered good investment from others investor, instead of what we consider should be a good investment.

Therefore, under decision making process, for an investor level-k thinking following a beauty contest strategy, the logic consequence effect is to choose a herd behaviour and so hold a big cap stock.

The high intrinsic value that the decision maker attribute to the big caps is not only linked to the advertising 's effect, but also to multinational structure with production's diversification and faster amortization of the fix cost due to the high production, experience and skills of management and other specific factors that reduce the economic crise's impact and that could make the difference respect a small cap.

Below is analysed the research question number 2 relative to the intrinsic value of the company associated to media coverage and publicity.

2. Assuming that 2 company have equal financial indicators and expected future cash flow. One company is very well- known, the other company is totally unknown. If you need to choose to invest in only one of the 2 companies, do you prefer investing in the

company that you already well know, because you have heard it for media, TV, newspapers, so with higher media coverage and publicity?

- a) Null Hypothesis (2H₀): would state that there is no significant impact of the media coverage and publicity on the Company intrinsic image value. You are indifferent to invest in any of the 2 companies.
- b) Alternative Hypothesis (2H₁): There is significant impact of media coverage and publicity on the Company intrinsic image value. You will prefer to invest in a company that you already well know.

The reason behind this research question is to shows that the investor is willing to invest in company that already know due to the intrinsic image value bias associated to the media coverage and publicity that affect decision-making process.

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

Table 3 Answer Choices Research-Question 2

Answer Choices	Responses %	Responses
Strongly disagree	1,93%	8
Disagree	12,05%	50
Neither agree nor disagree	39,04%	162
Agree	38,31%	159
Strongly agree	8,67%	36
Total	100%	415

Table 4 Statistical Results Research-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%
0,88	3,4	9,260	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 the investor is willing to invest in company that already know due to the intrinsic image value's bias, due to media coverage and publicity that affect decision-making process.

In theory because the companies have equal financial indicators and expected future cash flow and expected growth, consequently they should be priced with equal value.

Indeed, if we use discount cash flow model to price the asset, the investor should have no preference from one company to another, because they have the same value due to the equal financial indicators, future cash flow and growth expectation. Therefore, the fact that investor has chosen company that already know, indirectly means that has also considered the intrinsic image value due to the media coverage, publicity, marketing and history and the trust sentiment. Hence, if a parity of financial indicator and expected future cash flow, the investor prefers to invest in the company that already well know, because he has heard it for media, TV, newspapers, it means that indirectly recognize a bias due to the company's public image and intrinsic value linked to the unconscious effect of the media coverage that implies an unconscious herd behaviour bias linked to the publicity.

Due to image bias and the consequent higher intrinsic value the investors prefer to invest in the well-known company and avoid regret (bias), instead of to take the risk of choose a not know companies, indeed there is an implicit higher risk in choosing companies that investor do not know well, because imply an asymmetric information problem, furthermore the investor behaviour could be also linked to mind's bias to be reluctant to exchange the certain for the uncertain or unknown (risk averse). For example, is probable that you prefer to keep your trusted dentist, when you already know his professional ability, respect to choose a new dentist and incur of the risk of less professional ability.

The result of the test is in line with the previous research question, where the investor has a Company size's bias that implies an effect intrinsic on the precepted value of the Company due to also the image value of the publicity and media coverage that impact the investor decision-making process.

In the second research question the size effect is not highlighted in the question, but is focussed to show how the media coverage and publicity increase the company intrinsic

value and this is indirectly valid also for the big size. Indeed, when the company are big size, they have always indirectly high media coverage due to the impact on the economy and due to the own high human and financial resource allocated to the marketing and publicity. For example, if a small company of 3 person will go in bankrupt no one of the most famous national newspaper will report the news, instead if one big company will be shut down, the news will be immediately reported in the main page, due to the negative consequence on the economy, unemployment and social impact. Furthermore, one a big size company open a new production site this is usually free reported by the local media due to the good social impact on hiring of many new employees. Because the research has confirmed the impact of the media coverage and publicity on the image value associated to the Company, consequently the intrinsic value associated to the big size is also indirectly represented by the high media coverage and publicity. Hence, to the big size is always associated an image value linked to the high media coverage and publicity and consequently a further intrinsic value. Indeed, the research results show a positive correlation between the media coverage and publicity and the perceived intrinsic image value attributed to the Company. Due to the fact that the decision maker chose the company with high publicity and media coverage, indirectly mean that the media coverage should be positive information. Conversely, if the media coverage is reporting negative information on the Company, in theory, this should imply a negative perceived intrinsic image value and affects the final investor decision-making, because in this scenario both Companies are risky. Indeed, the investor that choose the unknown company is in a position of asymmetric information and so high risk, but also choosing the well-known company is also risky investment due to the negative information on the media.

SUMMARY OF RESULTS

The research questions have showed that the company size has an impact on the intrinsic value and herd behaviour. The most important behavioural findings of the research question are company size bias, image value bias, intrinsic value bias.

The research-question 1 result show that there is a bias due to the company size, marketing factor, good track record of the management, more financial stability and more media coverage and publicity and other elements that could increase the intrinsic value precepted and lead the investor to prefer to invest in big market cap company respect small cap size. To the big size the investor associated a higher intrinsic value that could explain the herd behaviour of the investor that to avoid regret sentiment prefer to choose big size company instead to decide to bet on small cap company.

The research-question number 2 shows that the investor is willing to invest in company that already know maybe due to the herd behaviour bias linked the media coverage and publicity that increase the perceived company intrinsic image value. The investor should be indifferent to invest in both company in terms of discount cash flow value, but the emotional bias of the publicity, media coverage and marketing add more intrinsic value to the well-known company.

The size's bias and image value bias through the publicity and media coverage increase the company intrinsic value during

the decision-making process. The regret bias, herd behaviour, strategic level-k thinking and unconscious effect of the media coverage and publicity could be the explanation of the investor decision-making process.

REFERENCES

1. Di Toro, M. (2022). The effect of the Relative Rationality on the economic decision-making process. Doctorate Thesis, Swiss Management Center.
2. Kahneman, D. and Tversky A. (1982). The psychology of preference. *Scientific American*, 246, 160-173.
3. Keynes J. (1936). *The general theory of employment, interest and money*. London, U.K.: Palgrave Macmillan.
4. Loomes, G. Robert Sugden, R. (1982). Regret Theory: An Alternative Theory of Rational Choice Under Uncertainty. *The Economic Journal*, 92 (368), 805–824.
5. Prechter, R. (2001). Unconscious herding behavior as the psychological basis of financial. Market Trends and patterns. *The Journal of Psychology and Financial Markets*, 2(3), 120-125.
6. Tversky A e Kahneman D. (1981). The framing of decisions and the psychology of choice. *Science new series*, 211 (481), 453-458.

How to cite this article: Massimiliano di Toro. The effect of the company size on the intrinsic value and herd behaviour. *International Journal of Research and Review*. 2022; 9(10): 455-462. DOI: <https://doi.org/10.52403/ijrr.20221051>
