

Value stocks and growth stocks: A study of the Italian market

Federico Gagliolo¹

Gabriele Cardullo²

Abstract

This article focuses on the study of value and growth stocks in the Italian market during the period 2001-2018, trying to understand if there is a difference in terms of return between the two share classes and which could be the explanation. The analysis reveals a persistent and large value premium in the early 2000s, while after the financial crisis the premium diminished considerably. The excess return provided by value stocks was marked and persistent only in case of smaller firms, while in case of large-cap stocks the phenomenon was limited and present only in the early years of the 21st century. Finally, the analysis suggests that value stocks are not particularly riskier than growth stocks. Therefore, it seems that, at least in part, the value premium in the Italian market may present a mispricing explanation.

Keywords: Value premium; stock return; systematic risk.

JEL Codes: G11; G12; G14;

¹ Department of Economics, University of Genoa, Via Vivaldi 5, Genoa, Italy; e-mail: federicogagliolo@gmail.com.

² (corresponding author) Department of Economics, University of Genoa, Via Vivaldi 5, Genoa, Italy; e-mail: cardullo@economia.unige.it

1. Introduction

For several decades scholars have pointed out the presence of an excess return offered by value stocks with respect to growth stocks (see for instance Lakonishok, Shleifer and Vishny, 1994 and Fama and French, 1992 and 1998).

Value stocks are usually defined as securities traded on the market at a lower price than the issuing company's intrinsic value, estimated from the balance sheet data. On the other hand, growth stocks belong to companies that are usually active in more innovative sectors and, for this reason, they are positively valued by the market with relatively high prices³. In general, in order to identify value and growth shares, investors often refer to some accounting indicators, such as the Price/Earnings (P/E), Price-to-Book (P/B), and Price/Cash Flows (P/CF) ratios. Stocks with low values for these ratios are defined as value, while growth stocks normally present high values for these indicators. The rationale underlying this classification is that, according to standard financial theory, the price of a security incorporates expectations about the company's future results. Therefore, high values for these three ratios imply that investors expect a strong growth for the company over the subsequent years and this implies the classification of its stocks as growth.

The existence of a value premium has been well documented in different countries and it has become increasingly important in financial theory over the time. Several studies, that we present in the next section, have provided various explanations about the difference in terms of performance between the two classes of shares. Indeed, some believe that the value premium is due to a higher risk of value stocks, while others attribute it to market inefficiencies. The situation has changed completely since the burst of the financial crisis in 2008. From that moment, growth stocks have outperformed value stocks, a situation that has never occurred for such a long period of time.

This study aims to verify the existence of the value premium in the Italian stock market and its evolution from 2001 to 2018. We show that value shares outperform growth ones only in the first years of the sample period, with a premium of about 20%. After the outbreak of the financial crisis in 2008, the value premium disappeared, confirming for the Italian case the evidence documented for the US stock market.

The phenomenon is then analysed according to the size of the issuing company, dividing the sample into small-cap stocks and large-cap stocks. Our results indicate that the magnitude of the value premium from 2001 to 2018 was much greater for small-cap companies, about 15% compared to less than 2% present for large-cap firms. This in line with the findings of Chan and Lakonishok (2004) for the US stock market.

Finally, we gauge the riskiness of the stocks by comparing the standard deviation of the returns and the performance of the two classes of shares during negative years for the stock market. Results do not show a clear-cut relation between volatility of stocks and their returns, suggesting therefore the idea that a mispricing explanation for the value premium is more likely.

2. Related Literature

In the literature, the distinction between these two share classes in the stock markets has roots far back in time. Graham and Dodd (1934) were the first to introduce this classification. Part of their book aims to explain the investment approach in stock markets based on finding and buying securities with a lower market price than their intrinsic value derived from company fundamentals. According to their theory, by purchasing "out of favor" stocks, investors may obtain

³ Graham and Dodd (1934) were the first to introduce this classification.

better returns over time. Conversely, the most popular ("glamor") shares, whose prices are inflated by high expectations, may become vulnerable if expectations will prove to be too optimistic.

For several decades, the belief that value stocks offered an excess return with respect to growth stocks was widespread. Numerous studies carried out during the 1980s and 1990s confirm the existence of the value premium on stock markets around the world. For example, Lakonishok, Shleifer and Vishny (1994) show that 10% of the stocks that initially presented the highest book-to-market ratio offer a significantly better performance in the US stock exchange from 1963 to 1990 compared to the decile of the equity securities with the lowest book value with respect to market value. Indeed, in this case value shares provide an extra-return compared to growth shares of 10,5 percentage points on average every year. Furthermore, a significant difference in terms of return emerge between the two classes of shares even when the classification is realized with reference to other accounting indices such as E/P or CF/P. This evidence is confirmed by other numerous studies including E.F. Fama and K.R. French (1992) and it is not exclusively found in the US stock market but present at international level. Indeed, after Chan, Hamao and Lakonishok (1991) identify the presence of a strong value premium in Japan, Fama and French (1998) find a similar evidence in numerous international stock markets: the value premium is present in twelve out of thirteen developed countries taken into analysis from 1975 to 1995. In some of these, such as Australia and Japan, the premium is particularly marked, while in others, such as Switzerland and Germany, less so but still present. The only exception is the Italian stock exchange, where growth stocks outperformed value stocks with an annual premium greater than five percentage points on average, both in the case in which the portfolios of stocks were defined by B/M ratio and by E/P ratio.

Although the existence of an excess return offered by value stocks with respect to growth stocks is widely documented, the causes underlying the phenomenon are subject of great debate. Studies carried out over time offered numerous explanations, that can be divided into two main classes. The first category tries to explain the phenomenon in terms of a greater risk present in value stocks. In this vein, Black, Mao and McMillan (2009) and Cao, Chen, and Datar (2017) argue that value stocks are more affected than growth stocks by certain macroeconomic variables, such as the level of industrial production, the inflation rate, the money supply, and interest rates. High book-to-market shares seem to be riskier and this could explain the existence of the value premium. Another explanation is presented by Zhang (2005), which described the superior performance by value stocks in terms of a higher asymmetric risk deriving from the greater production capacity of value companies. This makes value stocks riskier than growth stocks in bad economic times and only moderately less risky in good times. Indeed, investments in productive capacity are irreversible and they cannot be easily adapted to the conditions of the period. Therefore, during economically positive periods, value companies can take advantage of their superior production capacity compared to growth companies. But, in bad times, value companies cannot adapt and reduce the level of capital employed and the high fixed costs break down the companies' results. Some additional explanations to the value premium focused on the financial conditions of the issuing companies. The theory presented by Chen and Zhang (1998) find a positive relationship between the book-to-market ratio of stocks and the level of financial instability of the issuing society. Thus, value shares would offer a higher remuneration due to the presence of a financial instability factor, assessed through three indicators of distress, such as cutting dividends by at least 25%, a high ratio of debt to equity, and a high standard deviation of earnings. Finally, several studies such as Zhang (2005), Fama and French (2006, 2007), Garlappi and Yan (2011) and Elgammal and McMillan (2014) seem to explain the existence of the value premium through the higher default risk that affects value stocks.

In the second vein of research there are studies that emphasized the inconsistency of the value premium with the efficient market hypothesis. In some case, they offer a behavioural explanation for the inaccurate estimations of stock prices. One of the main causes of the erroneous assessments

by investors can be identified in the phenomenon of extrapolation. This explanation is supported by Lakonishok, Shleifer and Vishny (1994) and by Chan and Lakonishok (2004). Individuals, trying to estimate the future evolution of stock prices, have the tendency to focus excessively on the recent past and to not consider the phenomenon of mean reversion. This tendency leads to an excessive overvaluation of growth stocks of companies that performed well recently and to an underestimation of value stocks issued by companies coming from less brilliant periods. These erroneous assessments determine the excess return paid by value shares. The phenomenon is then amplified by fund managers, who prefer to select stocks that performed well recently in order to make their portfolios attractive for potential investors.

Another explanation to the value premium, according to Barberis and Huang (2001), consists in the loss aversion of investors. Indeed, value shares are usually associated with issuers that reported poor results in recent past, as it can be inferred from their low price. Investors are worried about the possibility of incurring further losses, thus they ask for a higher return for value stocks, that are perceived riskier than growth stocks, usually issued by companies that performed well in the recent past. The study by Piotroski and So (2012) also supports the thesis that the value premium depends on operators' erroneous assessments. They find that the value premium emerges only when investors' expectations, assessed through the book-to-market ratio, are not aligned with the solidity of the company's fundamentals, measured by a specific measure called FSCORE.

The wide literature about the existence of the value premium has made the phenomenon well recognized and more and more important in the financial world. However, following the 2008 financial crisis, the situation seems to have changed. Data of the last decade show that the value premium has disappeared on the stock markets. The annualized average return on large-cap growth funds monitored by Morningstar was +15,6%, higher with respect to the +13.2% recorded by value funds during the same period. The persistence of this situation seems without precedent. Indeed, growth stocks achieved a better performance than value stocks only for brief periods in the past and the ordinary conditions in which the value premium is positive were re-established in a short time. The persistence of the excess return paid by growth stocks could be due to the expansive monetary policies of recent years which led to historically low long-term interest rates. This context favours a marked increase in prices of growth stocks, as they are strongly linked to the expected cash flows in the future, whose discounted value increases. Another aspect to consider is that a good portion of the value stocks are issued by companies operating in the industrial or financial sector, while growth stocks often come from firms operating in the technological area. This difference can explain the situation that has arisen in the recent economic cycle, during which technological companies achieved decidedly better results than those active in the financial sector. The crucial question is whether the negative value premium that has characterized the last decade can continue in the future or it is destined to end, once the effects of the crisis and the expansive monetary policies are expected to dwindle.

3. Data and methodology

The present analysis covers the period from the end of December 2000 to the end of December 2018, using data on shares forming part of the basket of the FTSE Italia All-Share index of the Italian stock market managed by Borsa Italiana Spa. Due to the limitedness of time series, for the period up to 2009 the sample is made up of 110 shares. For the following period it is possible to extend the analysis including in the sample data for 173 shares. Returns are calculated referring to the data on yearly adjusted closing prices of shares taken from the web site of Yahoo Finance, in order to take into account not only price changes but also dividends paid by the companies.

The distinction between value and growth stocks is realized looking at the data on price-to-book ratios available on Datastream. Thirty percent of the shares in the sample with the lowest values for that ratio is considered as value, while the three deciles with the highest market value with respect to the book value are classified as growth.

Assuming that operators follow a medium term *buy and hold* strategy, it is deemed necessary to redefine the portfolios on the basis of price-to-book ratios every three years, at the end of the year before the beginning of each three-year period.

The existence of a value premium and its evolution over time is first investigated looking at the Italian market as a whole. We conduct a further analysis in order to identify whether differences in terms of performance between value and growth stocks may vary according to the size of the issuing company. For this reason, firms that, at the end of 2018, are included in the basket of FTSE MIB index⁴ or FTSE Italia Mid Cap index⁵ are classified as large-cap companies, while components of the basket of FTSE Italia Small Cap index⁶ are defined as small-cap companies.

Finally, the study is completed carrying out a risk analysis for the two different categories of stocks with the aim of understanding if the eventual excess return offered by shares listed as value may present a rational explanation or not. In order to realize this assessment, we consider the performance of the two categories of shares over the years in which the overall stock market slowed down and the standard deviation of returns of value and growth stocks.

4. Main results

4.1 Composition of the portfolios

The first phase of Italian stock market study requires the definition of a portfolio for value stocks and another one for growth stocks, that are redefined and updated every three years. In case of the overall market analysis the portfolios are made up of 33 shares each in the period from the end of December 2000 to the end of December 2009. For the following period the number of shares included in each portfolio rises to 52, due to the widening of the sample made possible by the increased availability of data. Once defined the portfolios, it is very interesting to evaluate the differences in terms of business areas in which the issuing companies of value and growth stocks operate. In principle, value shares should belong mainly to companies from stable and saturated sectors, while growth stocks should be issued by societies involved in more innovative and dynamic activities, characterized by a greater potential for growth in the future.

This idea seems to be confirmed by Figure 1 and 2. Indeed, inside the value portfolio shares issued by companies operating in the financial sector (31%) and the manufacturing sector (29%) are much more common. Another significant portion of shares (18%) is instead issued by companies active in the production of consumption goods, while other more dynamic sectors such as that of services, technology or health are poorly represented within the portfolio, if not totally absent as in the case of the latter.

Figure 2 shows how the growth portfolio composition by sector of activity of the issuing companies is different from that of the value stock portfolio. The presence of securities of manufacturing or financial societies turns out basically halved. The predominant sector in this case is that of consumer services (24,71%), which includes companies that carry out commercial activities or operate in the field of media and communication. Furthermore, growth stocks are more frequently issued by societies active in more dynamic and innovative sectors such as technology, telecommunications and health than in the case of value stocks. The highest concentration of growth share issuers in these sectors depends on the fact that investors attribute to their business better prospects for development in the following years and for this reason the market value of these securities and, therefore, the price-to-book ratio are higher.

4.2 Value and growth stocks returns

⁴ It includes the forty companies with the largest market capitalization listed on Italian stock market.

⁵ Its basket contains the sixty companies with the largest market capitalization listed on Italian stock market that are not included in FTSE MIB index.

⁶ The components of this index are all the smaller societies listed on the Italian MTA that aren't part of the basket of FTSE MIB index and FTSE Italia Small Cap index.

We compute the average return for stocks classified as value and for those classified as growth. Figure 3 shows in the first section the evolution of annual returns paid by the two classes of shares from 2001 to 2018, while the second section shows the premium offered by value stocks with respect to growth ones.

It appears clear that, during the period between the beginning of 2001 and the end of 2007, value shares provided a better performance than growth shares consistently and continuously, offering an annual premium of about 20 percentage points. This result appears to run counter to the conclusions of Fama and French (1998). The two authors do not find any evidence of the value premium in Italy from 1975 to 1995; rather, their study shows how growth stocks paid an average higher return. So, the results obtained by Fama and French are in a certain way integrated by this study, as the trend observed in the Italian stock market between the 1970s and the 1990s reversed in the early 2000s.

Following the outbreak of the financial crisis in 2008, the trend that consistently characterized the difference in terms of return between value stocks and growth stocks seems to have disappeared. Afterwards, the gap in terms of return between the two categories of shares widened in 2012, but in this case growth stocks offered a better performance of 11,30%. This result, which runs counter to the evidence that emerges from the literature and the results of this study in the early 2000s, seems to be attributable to the performance of shares issued by companies in the financial sector, which reported a worse result than shares from other business areas in that year and which are usually classified as value.

The period between 2013 and 2015 was marked by a slight recovery in the Italian economy and also by a rise in stock prices. In this context the two share classes recorded very positive results, in particular the value stocks which came back to provide a fairly consistent performance premium which varied between +9,24% in 2015 and +22,89% in 2013. However, the trend has reversed again over the last three years.

To sum up, Table 1 shows how the value premium was significantly present in the Italian stock market during the early years of the 2000s with an average annual value of +20,05%, whereas it practically disappeared after the financial crisis. Indeed, during the period between 2007 and 2012, the two classes of shares reported negative results on average and they performed in a very similar way, so that their difference in terms of return was only +0,51% in favour of growth stocks. On the other hand, value and growth shares offered good results over the years between 2013 and 2018, their annual return was +12,71% and +10,01% respectively. Thus, the category of stocks with a low price-to-book ratio provided on average a higher return, but only by 2,70 percentage points.

In conclusion, throughout the entire period the value shares in the Italian stock exchange presented an average annual return of +6,95% compared to -0,46% reported by growth shares. Therefore, the average value premium was equal to +7,41%, a seemingly significant result, which, however, can be attributed solely to the large difference in performance between the two classes of shares in the early 2000s. Subsequently, since the outbreak of the crisis this phenomenon seems to have disappeared, confirming, also in the Italian case, the evidence that emerges from the US stock market analysis over the last decade. This result might be due to the effects of the crisis on the economic and financial system and the quantitative easing policies implemented by the European Central Bank.

4.3 Analysis by company size

It is interesting to analyse whether there are differences in terms of returns offered by the two classes of shares once we take into account the level of capitalization of the issuing companies. For this reason, the entire sample is divided into large-cap stocks and small-cap stocks in

accordance with the arrangements explained above. Subsequently, a portfolio of growth shares and one of value shares are identified for both the two categories of issuers, always using the same method followed for the entire sample.

The average returns of each three-year period shown in Table 2 for value and growth stocks of large and small capitalization companies can be a source of interesting observations. Indeed, focusing on the data for the entire period from 2001 to 2018, it emerges how large-cap issuers (both of value and of growth kind) performed better than small-cap ones. This result seems to contradict the studies of Banz (1981) and other authors on the size effect, according to which low capitalization stocks should pay higher average returns, being at the same time more volatile.

Furthermore, while the performance of value stocks was on average positive and quite similar for large companies (+9,31%) and small ones (+5,88%), in the case of growth stocks a wide difference can be detected. The average annual return of large-cap shares with a high price-to-book ratio was +7,44%, significantly higher than the result of -8,54% provided by those issued by smaller companies. Large-cap growth stocks performed consistently better than small-cap growth stocks in every single three-year interval in which the whole period is divided. So the value premium changes depending on the size of the issuing company. In the case of large-cap, value stocks offered a slightly better performance than growth stocks (1,87 percentage points), while the value premium for small-cap societies was particularly high on average every year (14,43 percentage points). This last result was determined by a constant and significantly better performance in every three-year period by value stocks compared to growth stocks. Only from 2016 to 2018 the returns paid by the two classes of shares were fairly aligned, with low price-to-book ratio shares that performed better but only by +0,35% (see also Figure 4)

Therefore, the value premium in the Italian market was a marked phenomenon exclusively in case of small-cap stocks, while for larger firms, especially after the financial crisis, no particular trend is evident. This conclusion is in line with the study of Chan and Lakonishok (2004), who showed that also in the US stock market the performance difference in favour of value stocks is more evident in case of small companies.

4.4 Risk analysis of value and growth stocks

One of the main questions to which scholars tried to provide an answer is whether the value premium is attributable to a difference in terms of risk between value and growth stocks or to erroneous assessments by investors. We carry out a risk analysis of the two share classes in order to individuate a possible cause underlying the existence of the value premium. The analysis is realized by using measures such as the standard deviation of returns and the performance of the stocks over the years in which financial markets recorded a slowdown.

4.4.1 Overall market analysis

Table 3 shows the standard deviation of the returns of value and growth stocks for the entire period taken in analysis and the single periods of six years in which it is possible to divide it. During the entire period, value stocks presented a slightly higher volatility of returns than growth stocks, however this difference does not seem sufficient to explain the value premium recorded. Recall that the value premium was particularly significant only from 2001 to 2006 (+20,05%); yet, during those years, standard deviation of value and growth shares did not show significant differences. Only in subsequent periods the value stocks showed a slightly higher standard deviation, to which, however, did not correspond particular differences in terms of return provided. On the basis of these results, the excess return paid by value shares could hardly be explained as a sort of insurance guaranteed to investors due to a greater risk they take.

We also study the performance of the two share classes in correspondence with the years in which stock prices declined. This is because, even in case of no differences in terms of volatility of returns, a value premium might be the price value companies must pay for bearing a greater systematic risk. Figure 5 represents the evolution of the value premium and the performance of the overall Italian stock exchange⁷. In case of years marked by a slowdown in financial markets the background of the graph is darker, while years characterized by a rise in stock prices are represented by a white background.

Figure 5 seems to suggest that during years in which the stock market as a whole increased, value stocks normally paid higher returns than growth stocks. On the other hand, the evidence appears to be less clear for periods characterized by falling share prices. In 2001, 2002 and 2007, value stocks performed better than growth ones, while during the negative years for the stock exchange following the crisis, the excess return offered by low price-to-book ratio shares shrank, often resulting negative. Moreover, the value premium was particularly negative in 2016 and 2017, two years in which the overall market showed a very different trend. Indeed, the first year was marked by a decrease in the stock exchange, while the second one was characterized by a marked rise in share prices. Therefore, it seems that the value premium tended to be positive during good years, while different trends emerged before and after the crisis in case of negative years. Before 2008, value stocks outperformed growth stocks even in case of declining markets, while after the crisis high price-to-book ratio stocks often provided a higher return, although usually in a limited way, except in 2016. In conclusion, value shares tended to be less performing in the event of a market slowdown in the aftermath of the crisis and thus they resulted to be riskier, according to this assessment. However, this condition did not occur during the early 2000s and therefore it cannot justify the large value premium recorded in that period.

4.4.2 Risk analysis for small-cap and large-cap stocks

The previous analysis underlined that the value premium was markedly and persistently positive only in case of small-cap companies, while the two categories of shares did not show a permanent and significant difference in term of returns in the event of larger issuers. For this, it seems interesting to investigate if a rationale for these trends could be linked to a different relative volatility between value and growth stocks.

The first measure taken into consideration is the standard deviation of returns for value and growth stocks over the entire period and for the single periods of six years in which it can be divided. As regards large-cap companies, Table 4 shows that value shares were decidedly more volatile in all single periods, especially starting from 2013. Totally different are the data in the case of small-cap companies showed in Table 5. Indeed, low price-to-book ratio shares showed a lower volatility of returns both in the early 2000s and after 2013, while between 2007 and 2012 the standard deviation of value and growth shares was almost identical.

Therefore, value stocks appear to be riskier than growth stocks only in the case of large-cap companies, for which, however, a significant value premium has not been detected. Only from 2001 to 2006 value stocks provided an excess return which could be justified by a greater volatility, while the higher standard deviation in subsequent periods did not correspond to a better performance. Therefore, investments in large-cap value shares have turned out losing in recent years, both in terms of lower remuneration and greater volatility. On the other hand, the risk-return trade off seems to disappear completely in case of small-cap stocks. Value stocks paid a substantially higher return than growth stocks but they were also less volatile during the period analysed. For this reason, the value premium recorded in case of smaller companies was not

⁷The performance of the overall Italian stock exchange is assessed through the FTSE MIB index.

associated to a greater volatility and, thus, it cannot easily be explained by resorting to this risk indicator.

In order to analyse more deeply the riskiness of the two share classes and how it can vary with the size of the issuing company, we gauge the evolution of the value premium depending on the state of the overall market. Figure 6 shows the evolution of the value premium in the case of shares issued by large companies. Value stocks outperformed growth stocks during 2001 and 2002, two particularly negative years on the stock markets, the same trend that emerged during years marked by rises in stock prices. However, this trend inverted since 2007 and growth stocks often provided a higher annual return during the periods in which the markets slowed down. Therefore, on the basis of this evaluation, as from the conclusions deriving from the analysis of the standard deviation, value shares resulted more risky only starting from 2007, a period during which, however, they did not offer a better performance.

The evolution of the value premium depending on the overall market trend is presented for stocks issued by small-cap companies in Figure 7. In this case, value stocks paid a higher return both in positive and in bad years for the markets. This situation can be also noticed after the crisis, contrary to the cases analysed previously. High price-to-book stocks provided a significantly better performance (with a value premium of -11.06%) only during 2017, a year in which the Italian stock exchange recorded a substantial increase. Consequently, even from the analysis of systematic risk, it emerges that value stocks were less risky than growth stocks in case of small issuers and therefore it is not possible to provide any explanation based on risk for the consistent and constant value premium recorded over the time.

In conclusion, the risk measures used shows how the excess return paid by the value shares with respect to growth shares can hardly be explained in terms of a greater level of risk that characterizes the former. This is particularly evident in the case of small-cap companies, whose low price-to-book ratio stocks provided a marked and persistent superior return over the entire analysed period, while exhibiting a lower standard deviation. Therefore, it may be the case that the value premium on the Italian stock exchange depends, at least in part, on an erroneous assessment of the operators.

5. Conclusions

In this study we find an annual value premium of +7,41% from 2001 to 2018 for the Italian stock market. However, the phenomenon has not been uniform over time. Indeed, from 2001 to 2006, value stocks provided a higher annual return than growth stocks with a rather significant difference of +20,05% on average. Instead, during the financial crisis and in the following years, the returns of the two share classes were quite aligned. The tendency emerged from the analyses conducted in reference to the US market appears to be confirmed also in the case of the Italian stock market. Value stocks no longer offer an excess return with respect to growth stocks as in the past.

The study also shows that the small-cap stocks presented a significantly high value premium over the various periods, in contrast to large-cap stocks for which it was quite limited and present only in the early 2000s. On the other hand, in the case of smaller issuing companies, the excess return provided by value shares with respect to growth shares was significant also following the crisis. Also this evidence appears to be in line with previous studies in the literature.

Finally, according to the risk analysis of the two share classes, the value premium, when present, is hardly attributable to a greater risk of low price-to-book shares. The marked performance premium offered by value stocks in the early 2000s seems it cannot be explained in terms of higher volatility of these securities. The ordinary trade-off between risk and return vanished

completely in case of small-cap stocks. Indeed, in this case, value shares offered a significantly better performance and resulted at the same time less risky. These results seem to point towards different explanations for the value premium. It remains unclear the mechanism underlying such market failure, whether it has a behavioural component or not. This, together with a convincing explanation on why the value premium disappeared after the financial crisis in 2008, remains one of the issues that deserve further scrutiny in the years to come.

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FIGURES AND TABLES (Source: personal elaboration of data from Datastream and Borsa Italiana)

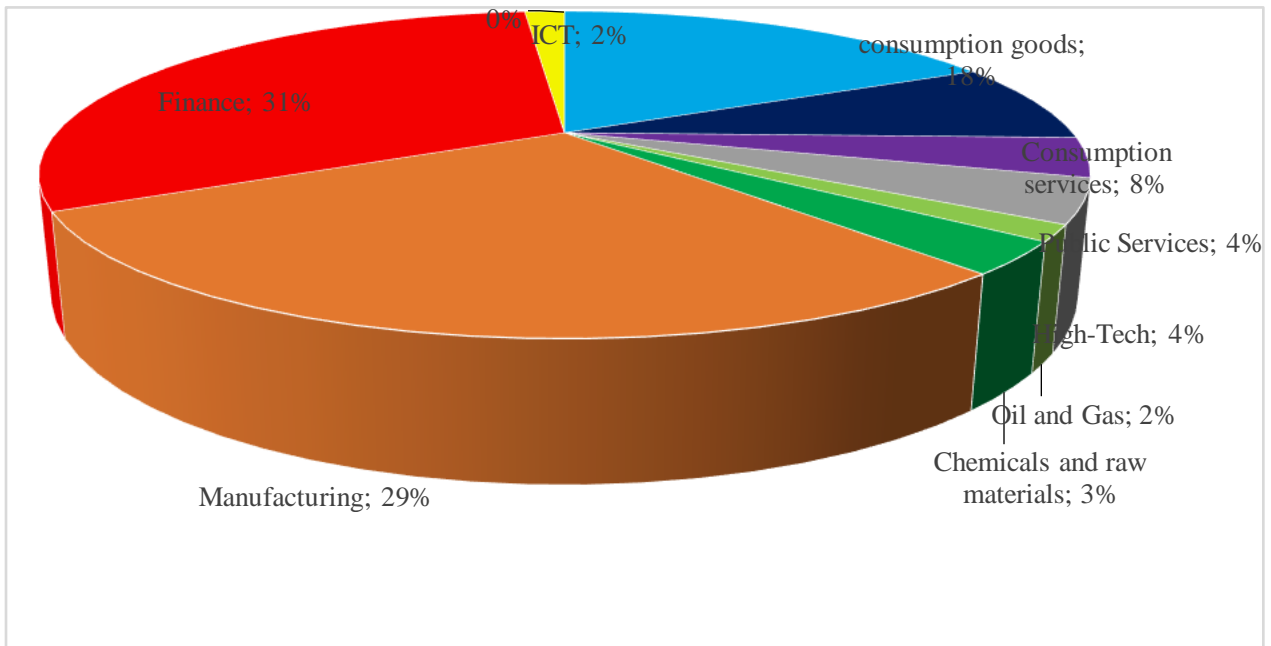


Figure 1 - Value stocks portfolio's composition for business areas of issuing companies. Source: Personal elaboration of data about business areas of issuing companies from <https://www.borsaitaliana.it/borsa/azioni/settori.html>.

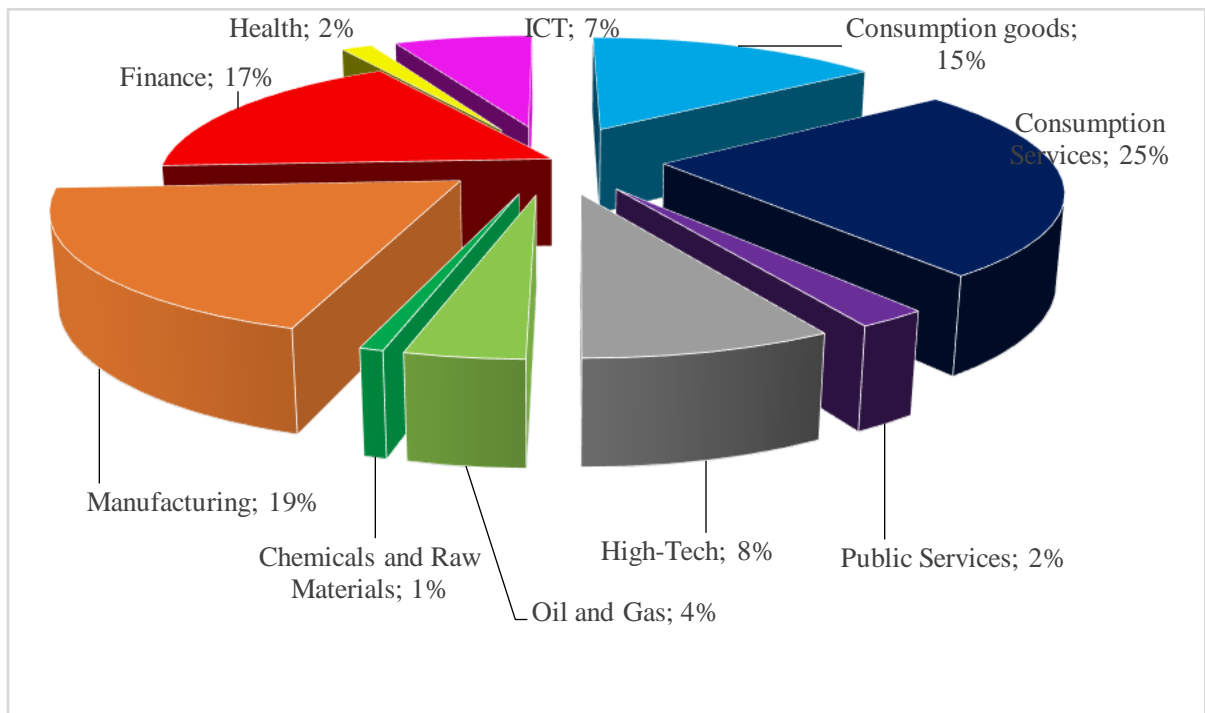


Figure 2 – Growth stocks portfolio's composition for business areas of issuing companies.

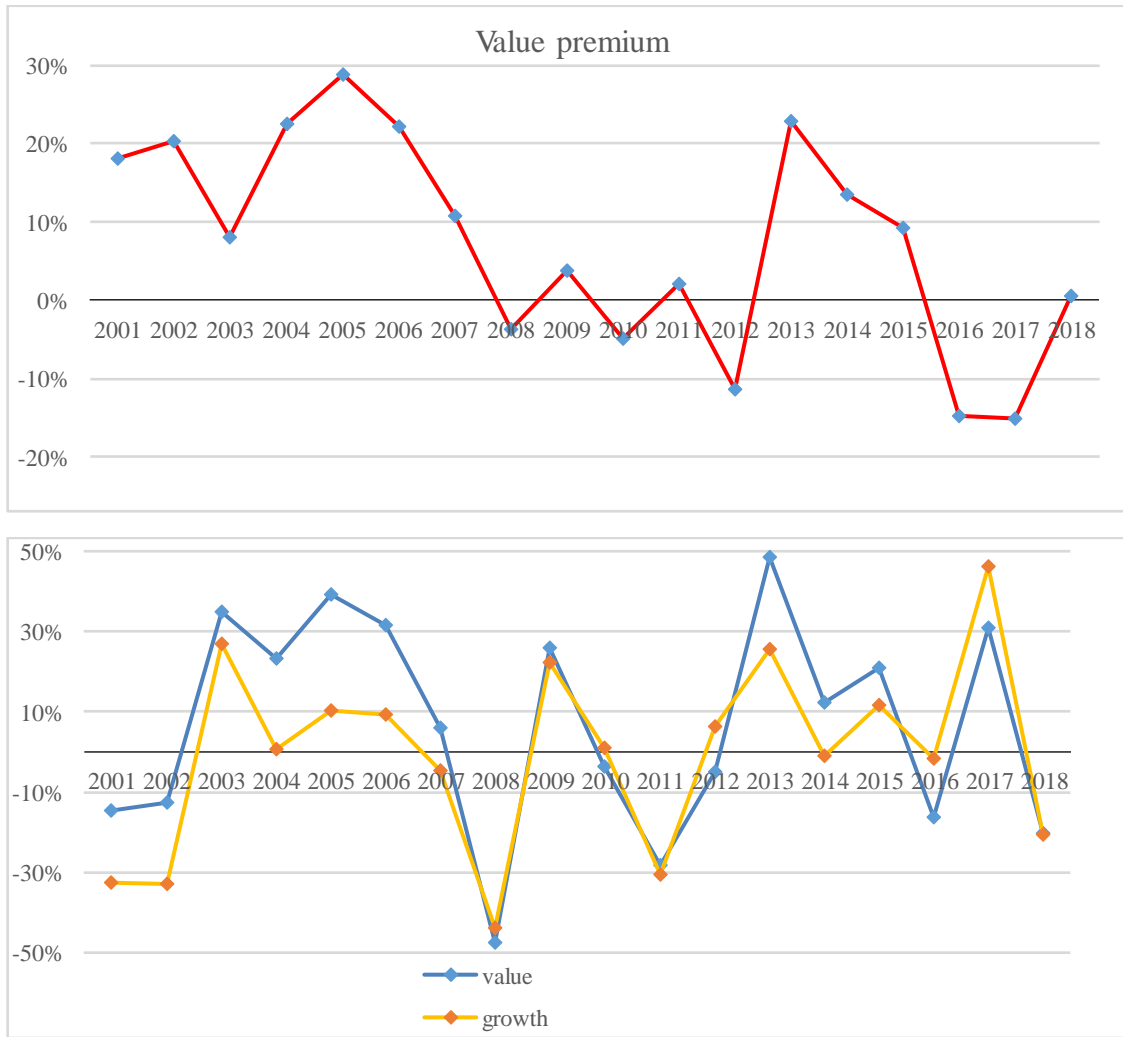


Figure 3 – Value and growth returns from 2001 to 2018

Period	Value return	Growth return	Value premium
2001-2006	+16,93%	-3,11%	+20,05%
2007-2012	-8,79%	-8,28%	-0,51%
2013-2018	+12,71%	+10,01%	+2,70%
2001-2018	+6,95%	-0,46%	+7,41%

Table 1 - Value and growth returns from 2001 to 2018.

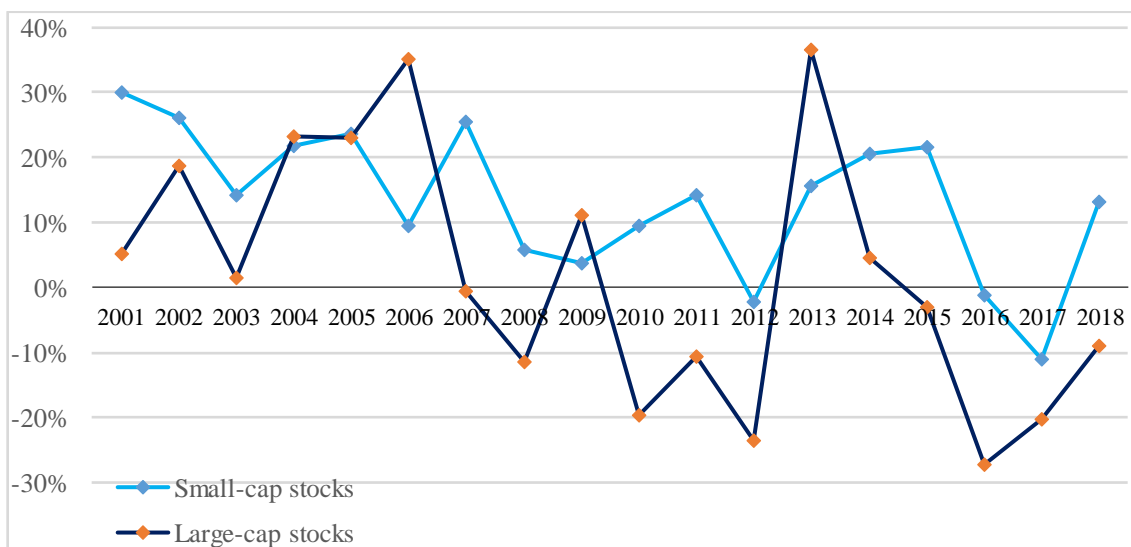


Figure 4 – Value premium over the years for small-cap and large-cap companies

Period	Large-cap stocks			Small-cap stocks		
	Value return	Growth return	Value premium	Value return	Growth return	Value premium
2001-2003	+5,18%	-3,27%	+8,45%	+1,74%	-21,69%	+23,44%
2004-2006	+37,53%	+10,48%	+27,05%	+19,97%	+1,67%	+18,30%
2007-2009	-1,37%	-1,10%	-0,27%	-4,05%	-15,69%	+11,64%
2010-2012	-14,12%	+3,84%	-17,96%	-10,68%	-24,26%	+13,59%
2013-2015	+35,41%	+22,72%	+12,69%	+26,26%	+7,02%	+19,23%
2016-2018	-6,78%	+11,98%	-18,75%	+2,05%	+1,70%	+0,35%
2001-2018	+9,31%	+7,44%	+1,87%	+5,88%	-8,54%	+14,43%

Table 2 – Value and growth stocks returns for large-cap and small-cap societies

Period	Value	Growth
2001-2006	24,25%	24,59%
2007-2012	25,91%	24,51%
2013-2018	26,91%	23,47%
Entire period	26,79%	24,07%

Table 3 – Standard deviation of returns for value and growth stocks from 2001 to 2018

Period	Value	Growth
2001-2006	22,31%	18,95%
2007-2012	33,82%	28,13%
2013-2018	36,03%	23,52%
2001-2018	32,05%	23,54%

Table 4 – Standard deviation of returns for value and growth stocks issued by large-cap companies from 2001 to 2018

Period	Value	Growth
2001-2006	22,73%	28,43%
2007-2012	23,31%	23,27%
2013-2018	24,12%	27,29%
2001-2018	24,04%	26,42%

Table 5 – Standard deviation of returns for value and growth stocks issued by small-cap companies from 2001 to 2018

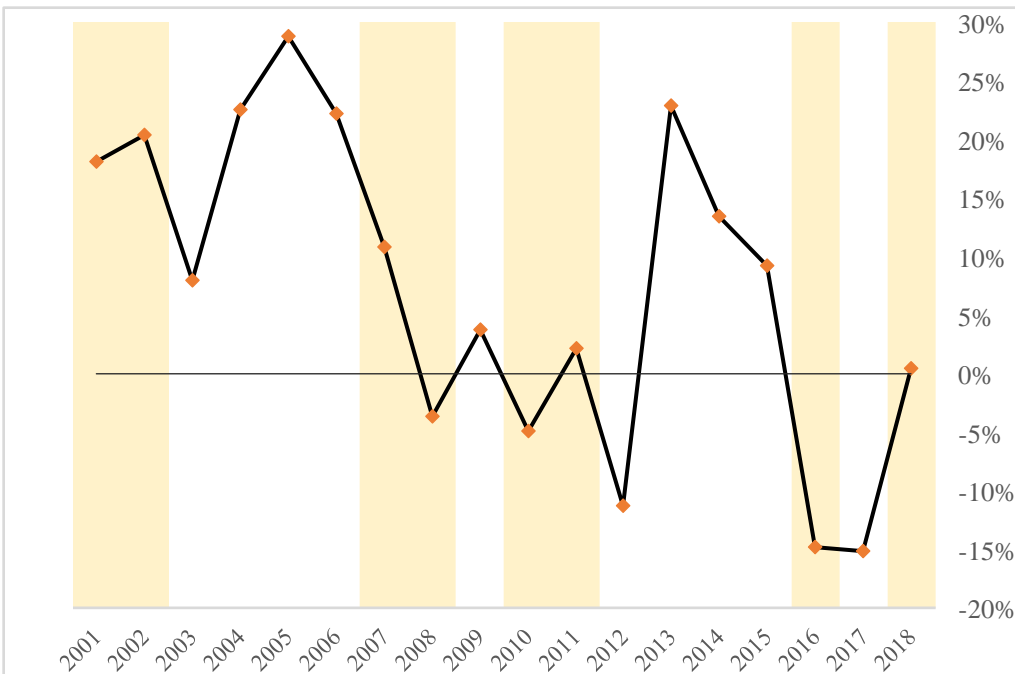


Figure 5 – Evolution of value premium from 2001 to 2018 depending on the overall stock market trend.

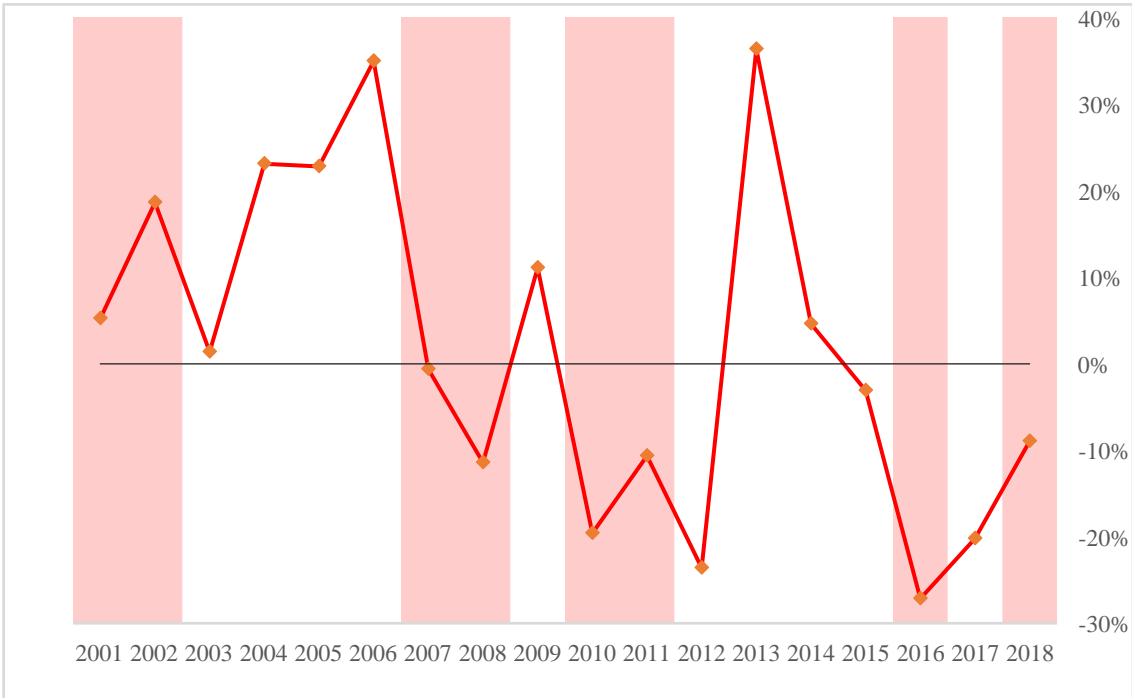


Figure 6 – Evolution of value premium for large-cap stocks from 2001 to 2018 depending on the overall stock market trend

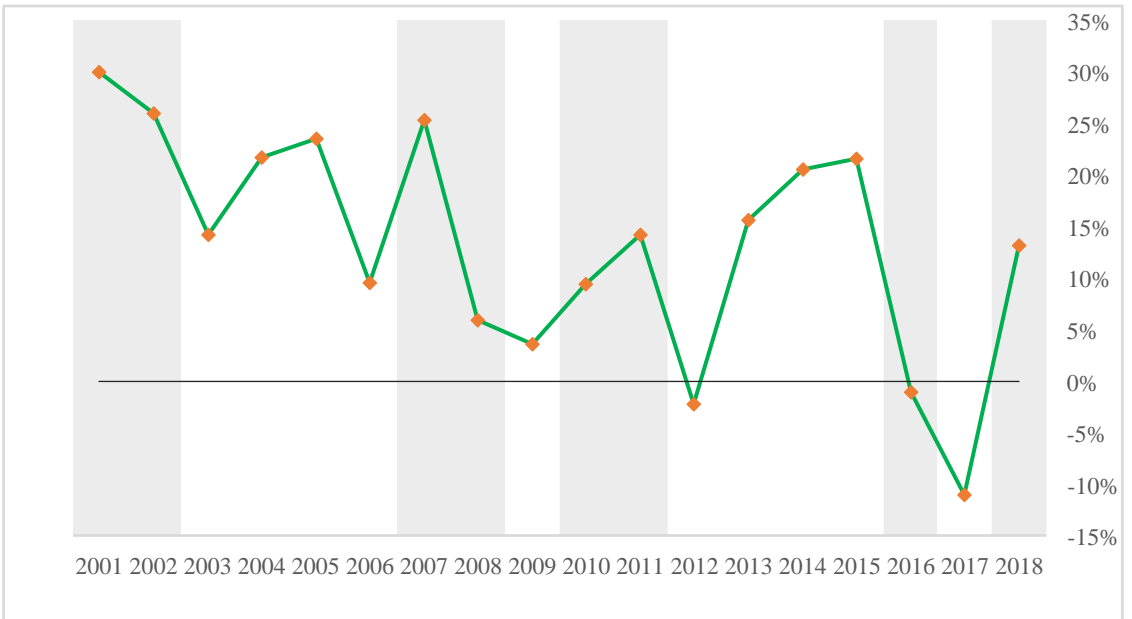


Figure 7 – Evolution of value premium for small-cap stocks from 2001 to 2018 depending on the overall stock market trend.

