

Original Paper

Research on the Applicability of Value Investment in China's A-Share Market

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Abstract

Value investment has been widely respected and applied in the capital market of developed countries, and its effectiveness has also been verified in a large number of practices. However, since it was introduced to China in 1990s, the concept of value investment has been buried for a long time due to the lack of supervision and the backwardness of investment concepts. With the improvement of the market environment, the progress of supervision system and the update of investors' ideas in recent years, does China's A-share market have the conditions for value investment? This paper will discuss this problem theoretically and empirically. Firstly, this paper combs the development of value investment theory and expounds the views and propositions of value investment. Secondly, under the guidance of value investment theory, this paper selects the data of CASMR database 2018-2021. In the first stage, five sectors are selected as the low growth and high growth track of value investment by using multi-factor model. In the second stage, using EVA analysis, five leading stocks in each industry are selected for empirical test, combined with the fundamental analysis in each stage. The results show that the average annual rate of return of the top enterprises is over 50% and the average annual rate of return is over 30% in the high-growth industries screened out under the concept of value investment; This paper verifies that value investment is not only suitable for China A-share market, but also an excellent investment idea with low risk and high return, and puts forward some relevant investment suggestions.

Keywords

A-share market, Value investment, EVA analysis method

1. The introduction

1.1 Research Background

With the booming development of the economy, the Chinese A-share market has developed into A total

market value of more than 90 trillion yuan, an important engine supporting China's economy. However, behind this, the A-share market has suffered from irregular systems and irrational investment for a long time: the frequent "policy market" disturbs the stock price, and the "fuse mechanism" has been repeatedly criticized; Common investor groups, such as money circles, theme speculation, and herd effect.

On the other hand, China stock market is also continuing to deepen its reform, especially the measures such as QFII access and share-trading reform. It has introduced and expanded the mature investor group with institutions as the main body, optimized the pricing function of the secondary market, and laid a foundation for the rise of value investment concept in China A-share market.

1.2 Research Significance

This article has important research significance. On the theoretical level, this paper improves the indexes and formulas of the traditional stock value calculation method. In view of the omission and the completion of the uncovered fields, the original method is relatively simple, and both absolute valuation method and relative valuation method lack inspection, and the sample data is limited, and the time is far away, and the industry is not subdivided. In this paper, the multi-factor stock selection model and EVA method are used to screen the stocks in the industry. Finally, the regression analysis and test are carried out, and the methodology is improved, which makes the calculation of stock value more accurate, with fewer missing factors, wider application scope, and can cope with and handle more variable situations.

On the practical level, this paper provides a more scientific and more widely used stock value calculation method for institutions, companies, individuals and other investors, helping to improve the investment level and profitability. The concise and practical achievements have been fully discussed and summarized, which provides useful reference and reference for investors and provides them with intellectual support and method guidance.

1.3 Research Ideas and Methods

The research methods in this paper are divided into literature analysis and empirical testing.

Literature analysis method: collect relevant literature in the fields of value investment concept and value investment research in A-share market, and write literature review. Describe and define the concept and build the theoretical basis.

Empirical test: Based on the concept of value investment, this paper first selects the stable core index, constructs the multi-factor stock selection model, and selects 5 high-growth industries and 5 low-growth industries based on the current market research report and the attention of analysts; Then, using EVA model, combining with enterprise research reports and the analyst 'concerns, 5 leading stocks are selected in each industry; Finally, t test is used to test the difference of average rate of return. In order to show the research ideas of this paper more intuitively, figure 1 shows the technical roadmap of this paper.

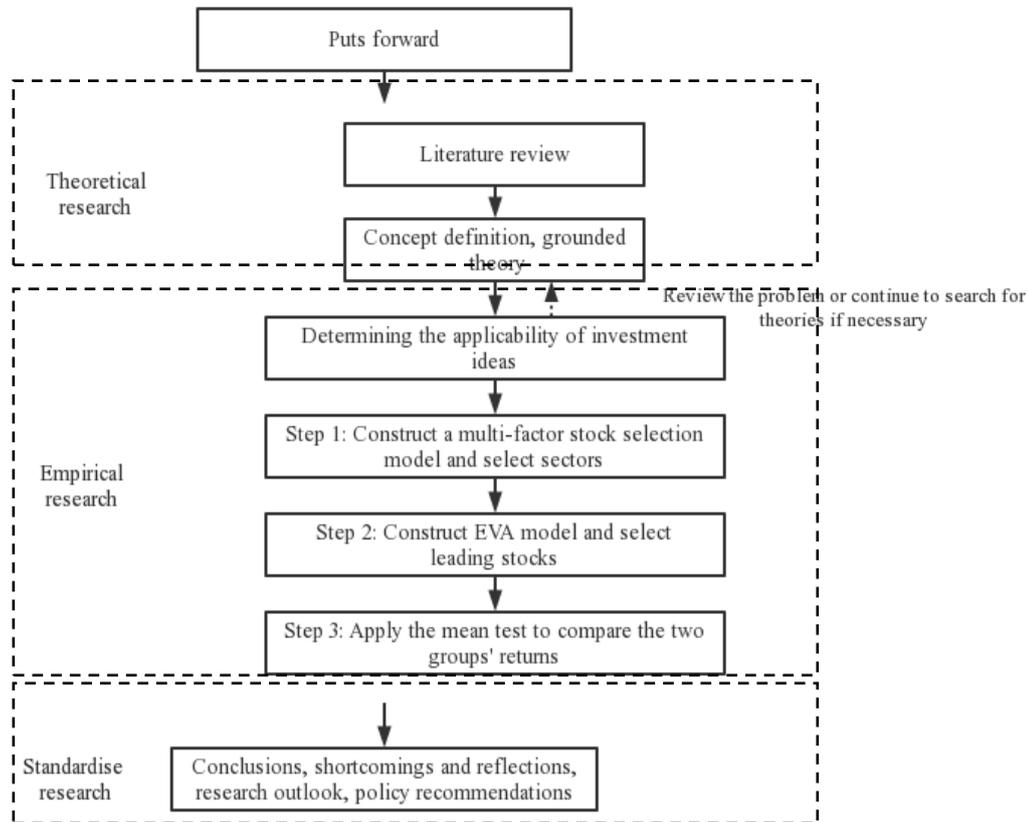


Figure 1. Technical Roadmap of This Paper

2. Theoretical Foundation and Literature Review

2.1 A Review of Domestic and International Theories on Value Investing

At the beginning of the 20th century, the United States completed the second industrial revolution and became one of the most developed economies in the world. The vibrant economic environment and the vast world of opportunities have given birth to a high rate of return on investment. This series of social and historical background gave birth to the explosive growth of the American capital market. On the one hand, it gave birth to large-scale high-quality companies such as Rockefeller, General Electric, Carnegie Steel, and on the other hand, due to the lack of supervision over speculation and insider trading, people's general concept at that time was to regard stock as a kind of gambling and speculation. Until the bubble burst in 1929, the 10-year Great Depression hit the American economy and deeply influenced investors' thinking. Then, the financial practitioners represented by Benjamin Graham began to explore and criticize the speculative investment concept represented by Edgar Smith, and gradually put forward the new concept of value investment in the long exploration. The concept of investment based on clear value refers to quantitative factors, that is, based on the company data, which influence at the same time. The economic factors, political factors, industry development prospects and stability

factors of securities investment, focusing on the growth and development potential of listed companies, and aiming at determining the intrinsic investment value of stock ^[1-3].

2.2 *The Applicability of Value Investing in China*

There are obvious differences among scholars on whether value investment is suitable for China stock market, and most of them are supported by empirical data. Some scholars hold a negative attitude and focus on the future prospects. Such as He Xiannan It is believed that the feasibility of non-tradable shares, high price / earnings ratio, low quality of listed companies, the capital market and other imperfect problems, making the value investment become the main stream of the market, has not been widely concerned by the market, showing the concern that the value investment held by the fund may transform into a “new banker”. Jiang Junxian According to the price, the value of investment theory pricing theory between price and the company performance variables, through empirical analysis that value investment although not comprehensive promotion, but China’s stock market has begun to have some conditions of the value investment, the performance of the price interpretation ability gradually enhanced, and with the establishment of relevant systems and further growth of institutional investors, value investment concept will become the mainstream in the future, is also the direction of the healthy development of China’s stock market. Liu Yuehong it is believed that market stability and smooth and accurate information transmission are the necessary conditions for value investment, but it still needs to develop in China, and it is explained by the positive correlation between price-to-book ratio and stock price.

Some scholars have also demonstrated the rationality and limitation of value investment. Sun Youqun, Chen Xiaoyang, Wei Fei This paper analyzes the macro-economic situation of China and the micro-situation of listed companies, and draws the conclusion of value investment in China stock market. Wang Chunyan, Ouyang Lingnan. This paper theoretically demonstrates that China stock market has a high investment value, and then analyzes the relationship between the two.

Between the book value and market value of listed companies (hereinafter referred to as book value ratio) and the return on investment, it is found that the return on investment in stocks with higher book value ratio is higher, which shows that value investment is suitable for China stock market. Xu Chenggang. It is believed that the price / earnings ratio of China’s stock market has been relatively reasonable, and the dividend situation of listed companies’ performance has improved, which is reflected in the return to value in the stock price. The external environmental factors, such as the immature stock market and the lack of investment value of enterprises, have a certain influence on the application of value investment, but it can not be denied that value investment is applicable in China. Zeng Gui and Li Yimin summarizes the research on the applicability of value investment to the Chinese stock market, that most theorists do not really understand the core idea and basic idea of value investment, simply distinguish value investment from non-value investment according to the p/e ratio or the length of holding time.

3. Current Description of A-Share Value Investing Performance

3.1 Historical Background of Value Investing in A-Shares

3.1.1 1990-2005

The China stock market started in the early 1990s, when the number of listed companies was small and limited, and supervision was the beginning of the market economy. In just two years, the Shanghai Composite Index rose by 1,228% by 1993. Since then, with the improvement of investors' quality and risk awareness, value investment has gradually began to enter investors's field of vision. From 1996 to 2002, in the past 10 years, investors took corporate performance as the investment standard, and blue-chip stocks represented by Sichuan Changhong were sought after. Then, under the tide of internet, investors turned to high-growth networks and high-tech enterprises. However, due to the absence of regulation, a large number of institutional investors in the same period with huge capital admission with its exclusive funds and information advantage "sit", "strategy" is roughly as follows: "banker" the first to cooperate with listed companies release induced false information, self-valuation, and at a low price a large number of shares, until the control most of the shares. Then through the buying and selling method to raise the stock price, and finally through the issuance of good news, to attract retail investors to enter the plate. In the worst of times, almost all institutions were punished for manipulating the market.

3.1.2 2005-2020

With the continuous improvement of the securities market supervision system in the new century, the securities market phenomenon has been impacted to some extent. In addition, the fund advocating value investment has gradually expanded, and the concept of value investment has begun to be popularized in the society. With the introduction of more and more books on investment in developed capital markets in Europe and America, investors have a deeper understanding of value investment. From 2005 to 2007, China's A-share market experienced the most intense of the "bull and bear conversion" in history. Many investors began to learn from the bitter experience and had a more personal understanding of the necessity of value investment.

Since then, although the specific model of value investment is still controversial, the voice of denying the concept of value investment has basically disappeared.

3.2 The Reality of Value Investing in A-Shares

The biggest policy innovation in the A-share market started in 2005, and the reform of non-tradable shares was completed in 2007. By the end of 2007, 98% of the companies had completed and reformed, announcing that the reform of non-tradable shares had been basically completed.

The reason why the reform of non-tradable shares can create a good institutional soil for the return of value investment is mainly derived from the following aspects:

Previously, since the non-current shares held by the major shareholders could not be traded, they preferred using the actual control in their hands to issue shares at a high premium regardless of the cost, and using the current stock shareholders to raise the value of the non-current shares in their hands.

After the goal is achieved, the company will be “hollowed out” by transferring assets, and the existing shareholders will suffer losses.

Secondly, the non-tradable reform has enhanced the liquidity of the stock market, mobilized the capital activity of non-tradable shares, and solved the situation that the price of non-tradable shares was undervalued and the price of tradable shares was overvalued in the past.

Finally, the reform of non-tradable share has reduced the speculative psychology of investor. The reform of non-tradable shares makes market expectations more rational, and the operators of listed companies also shift their focus to improving their competitiveness.

4. An Empirical Study on the Usefulness of Value Investing in the A-Share Market

4.1 Data Selection and Research Ideas

A-share companies often have a large number of long-term investment projects, usually with a business cycle of 3 years; Moreover, in recent years, China’s economic growth has entered a new pattern of low growth and low quality. The closer the time is, the more mature the economic development and policy regulation will be, and the more non-value factors will be reduced, make the advantages of value investment more prominent. Therefore, this paper finally selected 2018-2021 as the research period, and selects CSMAR stock exchange database and EVA database as the data source.

In terms of research ideas, this paper first constructs a multi-factor stock selection model, and selects 5 high-growth industries and 5 low-growth industries based on the current market research report and the attention of analysts; Then, using EVA model, combined with the enterprise research reports and the analysts’ attention, 5 leading stocks are selected in each industry; Finally, t test is used to test whether the average rate of return has changed.

4.2 Selection of Industries: Multi-Factor Analysis Method

In order to verify the rationality of the selected track, combining the qualitative analysis of the market and the mathematical quantitative analysis.

Firstly, according to the industry financial indicators in the CSMAR database, this paper collects the relevant data of various industry sectors in 2018-2021, and refers to Wang Chunli. These indicators are shown in Table 1.

Table 1. Enterprise Growth Indicators

Factor type	Factor name
Revenue indicators	increase rate of business revenue
	Operating profit growth rate
	net profit growth rate
	Industry sustainable growth rate
Asset index	Total asset growth rate

Cost index	Net asset growth rate
	Growth rate of sales expenses
	Management expense growth rate

Next, before using factor analysis, it is necessary to test its feasibility. In this paper, KMO test which is commonly used in the academic circles is selected. KMO test is to compare the correlation coefficient between the variables, and then determine whether the variables are partially correlated. The closer the KMO is to 1 (as shown in Table 2), the more obvious the correlation, and the more applicable the factor analysis is.

Table 2. Schematic Diagram of the KMO Test Results

Detection category	range of value	Factor analysis, fit for the situation
KMO price	Greater than 0.9	fit...perfectly
	0.8~0.9	Very suitable for
	0.7~0.8	fit
	0.6~0.7	It's just right
	0.5~0.6	Not very suitable
	Less than 0.5	unsuited

Test result p-value =0.001, indicating the null hypothesis of irrelevant variables being rejected at the 99% level. Meanwhile, KMO = 0.688, which means that the factor analysis can be performed. The analysis results are shown in Table 3:

Table 3. Factor Analysis Results

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1				
Factor2				
Factor3				
Factor4				
Factor5				
Factor6				
Factor7				
Factor8				

Note. N=286.

As shown in the table, with the characteristic root greater than 1,3 of the 8 factors were extracted as principal component factors, and the total contribution rate was 0.692.

Using these three principal component factors, the industry average return rate of 2018-2021 was returned to obtain the estimation equation:

Using this formula, we estimate the Tongxin 56 industry sector commonly used in the A-share market, and divide the industries with “low growth track” and “high growth track” by analyzing the market fundamentals and considering the size of the sector and market attention.

At present, China is carrying out the energy revolution in an all-round way. According to the information and opinions in the book *Energy Revolution in China*, China will update its energy structure by 2 trillion yuan in the 40 years from 2010 to 2050. This is also in line with China’s energy self-sufficiency and the central government’s proposal to meet the Paris climate agreement, reduce carbon emissions, and achieve “carbon peak” and “carbon standard”. Today, with the great rejuvenation of the nation, the external environment of China is deteriorating, and the technology of the West is blocked. The external security situation and the demand for strengthening weak links are surging. At present, China’s semiconductor industry is relatively weak, while the demand for national defense security is increasing. Therefore, the national defense industry and the semiconductor industry will also have higher growth in the next few years. Biomedicine is also an important part of the economy and society in the case of an epidemic disease and aging population. In order to eliminate the epidemic situation, restore investment, consumption, net export and optimize the population structure, fight against aging, reduce the impact of the aging society, and achieve the goal of “Healthy China 2030”, the biomedical industry will also grow rapidly in the next few years. In addition, the leading enterprises in the above five industries have excellent financial statements, high P/E ratio, high return on net assets, rapid year-on-year growth and other financial indicators, which meet the definition of high-growth companies in the value investment concept. At the same time, the above industries were covered by a research report of a large number of investment securities companies such as Changjiang Securities, Everbright Securities, Huatai Securities and CITIC Securities, and were widely recognized by such first-line securities investment companies and employees.

In contrast, in banking, energy, communications, building materials and other industries, in the early stage of reform and opening up to the generation around 2010, the traditional infrastructure energy and financial industries represented by banking infrastructure energy have achieved rapid growth. At present, the current market is saturated, and demand has not increased significantly. At the same time, according to its financial indicators, it can be seen that the P/E ratio is low, the return on net assets and profit rate are low.

5. Selection of the Top Companies: The EVA Method

How to establish an appropriate evaluation system to measure the value of enterprises, so as to select enterprises with development potential and investment value, is a long-term concern in the theoretical

circles. Generally speaking, according to the number of factors, it can be divided into single-factor model and multi-factor model, the former is simplicity and the latter is completeness; According to the evaluation method, it can be divided into market method, cost method and income method.

The purpose of EVA method (economic added value added Analysis) is to calculate the market added value, that is, the difference between the market added value and the capital invested by shareholders. Enterprises with the same market capitalization may have different asset values; However, enterprises with similar asset value may have a big profit gap. If we compare enterprise management and enterprise growth from a single data, the results is often wrong. It is difficult to judge the growth and profitability of an enterprise. The EVA method combines opportunity cost with actual cost to calculate the actual capital efficiency of the company. Based on this method, it is more convenient to select companies with higher efficiency, higher economic added value and better growth. Therefore, in the stage of enterprise selection, this paper refers to the research results of Chen Wang, Li Mengling and Xia Qian, and chooses EVA method for the analysis.

EVA, the method is an improved version based on the residual income method. The main idea is that all the assets owned by the enterprise need to bear a certain cost, and the residual capital gains of enterprises make up all the capital cost, which is the economic added value, that is, the value created by the enterprise, so the enterprise value can be connected through the economic added value of the enterprise. The valuation model is as follows.

This paper uses the EVA topic of enterprise financial data in CASMR database to calculate and analyze the EVA situation and valuation of a-share listed companies from 2018 to 2021. Based on the fundamental analysis of enterprises and the research report of secondary market funds, 5 leading stocks are selected in each industry, and the EVA calculation results are shown in Table 4.

Table 4. Calculation Results of EVA Value of Two Groups of Stocks (Unit: Ten Thousand Yuan)

Low growth group	stock code	EVA price	High growth group	stock code	EVA price
Bank Of China	601988	3012394.0	0Ningde era	300750	184426.44
ICBC	601398	927219375	BYD	002594	35850830
China Merchants Bank	600036	2449880.75	5Tongwei shares	600438	119315.86
Everbright Bank	601818	-1098079.25	Longji shares	601012	157524.08

Industrial Bank	601166- 777632.50	The sky	600096-23571.47
PetroChina	601857-1227665.00	The star half guide	60329012458.4 6
Sinopec	600028265326425	ShiLan micro	600460- 13043 29
Shanghai petrochemical	600688370081.77	Huiding technolo gy	60316053901.09
Intercontinental and gas	oil 600759-12891.93	North China gen	00237169393.89
China oil engineering	600339-42262.50	Unigrou national micro	P 00204927863.49
China Unicom	600050- 820635.96	Zhenhua technolo gy	000733-8279.81
China munications	Telecom 601728 250214.01	Torch electroni c	60367819486.6 9
China Commun Corp	Mobile 600941N /A	Av IC	00217961212.28
Zto pulse	national 603559845 99	Philharm onic	300696277650
Dream technology	network 002123 18334.59	Air hair power	- 600893 15471.28
Tower card group	002233126553.7 4	Watson biologica l	133624.0 300142 5
Jinyu Group	- 601992 146608.54	Kangtai biologica l	30060142999. 13
Upper cement	peak 000672131229.9 7	Concino	688185-55421.42
Opai home	60383312427064	Renhe pharmac eutical	0006506039473

Note. There is no data of “China Mobile” in CSMAR database, but considering that China Mobile is one of the “three major telecom operators” in China, it is still chosen after comprehensive analysis and research report.

Finally, this paper chooses new energy, semiconductor, biomedicine, military industry and wind power generation as high growth track for value investment. Banking, energy, communication, building materials and engineering are regarded as low growth track of value investment, and 5 leading stocks are selected in each industry, as shown in Table 5.

Table 5. List of Selected Stocks

low-growth group	bank	Bank Of China	ICBC	China Merchant s Bank	Everbrigh t Bank	Industrial Bank
	the sources of energy	PetroChina	Sinopec	Shanghai mical	Interconti petroche nental oil and gas	China oil engineeri ng
	communication	China Unicom	China Telecom municatio ns	China Communi Corp	Mobile Zto cation national pulse	Dream network technolog y
	building materials	Tower card group	Jinyu Group	Upper peak cement	Opai home	Sofia
	engineering	Chinese architectu re	China Communi cations constructi on	China jiaoye	Sinoma Internatio nal	Power China
high-growth group	New energy battery	Ningde era	BYD	Tongwei shares	Longji shares	The sky
	semiconducti ng material	The half guide	starShiLan micro	Huiding technolog y	North China gen	Unigroup national micro
	war industry	Zhenhua technolog y	Torch electronic	Av IC	Philharmo nic	Air hair power
	biological medicine	Watson biological	Kangtai biological	Concino	Renhe pharmace utical	Yiqiao shenzhou

wind powerMingyang South network GCL The
generation intelligent energy Huaneng internatio nal can
branch Yangtze electric
power

6. Subgroups Compare

Next, T-test is carried out to check whether there is a significant difference in the average output between the two groups. Its calculation formula is as follows:

Stata 15.0 was used for the test, in which the low growth group was named Group 0 and the high growth group was named Group 1, and the test results are shown in Table 6.

Table 6. T-Test of the Difference in Stock Yield between the Two Groups

Group	obs	mean	Std.err.	Std.dev.	[95% Conf. Interval]
0	95				
1	92				
Combined	187				
diff					
Ha: diff < 0		Ha: diff != 0		Ha: diff > 0	

As shown in the middle, Ha: diff!= 0 for significance below 1%, indicating rejection of the null hypothesis. That is, the difference between the two means is significantly different from 0 (T hat is, there are significant differences between the two means). There is a diff <0, and its significance is less than 0.0001. It can be concluded that the mean value of group 0 is lower than that of group 1, that is, the yield rate of the low growth group is lower than that of the high growth group.

The above analysis shows that this paper uses the multi-factor method to determine the division of high and low growth tracks, and uses the EVA method to select the representative leading stocks, and at each stage of the fundamental analysis, which has a certain response. The value shows the applicability of value investment in the a-share market.

7. Summarize

According to the idea and method of value investment, according to the fundamentals and financial indicators of individual stocks, the industries is divided into high maturity growth and low growth by multi-factor stock selection method, and the leading stocks in the industry are selected by EVA method for investigation. Among them, it is not difficult to find that many enterprises with low growth have a huge market value and form a high monopoly operating income in a certain industry.

Companies, even though its profit margin is very low, have not yet formed an industry monopoly. We should choose the former according to subjective impression. However, through the analysis of value

investment, it can be found that the mature and stable enterprises have low capital utilization ratio and small market added value. The idea of value investment is not to look for mature, stable and faster-growing enterprises, but to look for enterprises with stronger growth and faster growth. The enlightenment of value investment analysis is: investment should pay attention to the efficiency and growth of capital, not to the opportunity cost, but to the long-term growth.

Through this study, investors and financial practitioners can get the following suggestions.

First of all, we should adhere to the concept of value investment and use value investment to guide our investment behavior. In the past, the A-share market in China was highly volatile, and investors lost more and won less. The main reason was the flood of speculation and frequent transactions. In fact, the benefits of adhering to the concept of value investment are much higher than those of frequent short-term operations.

Secondly, there must be a sense of risk. Value investment has always placed capital preservation in the important position of the investment strategy. Shareholders can spread your risk by putting your eggs in different baskets, but we should also remember the “profit-only theory” and look at your shareholding in the longer term.

Finally, the mentality is the “ballast stone” of stock investment. Stock investment is a “long-distance race”. In the long run, the core income of stocks is to share the growth dividend of the overall economy, not short-term speculation. In addition, for the so-called inside information and hot spot tracking, we should keep an objective and calm judgment, and we can not follow others.

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