# Weighting Analysis of a Fund Portfolio of China's New Energy Vehicle Stocks

Xinxin Ye<sup>1,a,\*</sup>, Jin Qin<sup>2,b</sup>, Jiayue Lin<sup>3,c</sup> and Ziheng Yin<sup>4,d</sup>

<sup>1</sup>Hongwen School Qingdao Campus <sup>2</sup>High school affiliated to nanjing normal university jiangning campus <sup>3</sup>Business department Anhui University of Technology <sup>4</sup>Hangzhou New Channel School a. Kasey3925@163.com b. williamsqin2020@163.com c. jinxiyiwen@163.com d. 869231185@qq.com \*corresponding author

*Abstract:* We studied the optimal weighting allocation for a portfolio of stocks in China's new energy vehicle industry, using data on circulation market value, price-to-earnings ratio P/E, growth of net profit after deductions, and institutional position share of the new energy industry for the three years 2019-2021. The return was also considered from the above four dimensions. Combining the above four dimensions, a better model for determining the weight of the new energy vehicle stock portfolio is obtained.

*Keywords:* circulation market value, institutional position share, net profit, P/E, portfolio, new energy vehicle

# 1. Introduction

In recent years, the new energy vehicle sector has become the hottest stock sector in the China's capital market, with a large number of bull stocks that have risen several times or even tens of times. At the same time, investment funds focused on the new energy vehicle sector have received huge subscriptions, reflecting investors' preference to new energy vehicle stocks. Against this backdrop, it becomes critical that fund managers with large amounts of client capital answer how to determine the optimal weighting of a portfolio in the burgeoning new energy vehicle industry. This paper presents the research results regarding sample selection and data sources, statistical analysis, and quantitative results to provide some valuable references for fund managers in China's new energy vehicle industry when choosing the weighting of their equity portfolios. Ultimately, from the data analysis of the recent 3-year bull market for new energy vehicle stocks, the fund portfolio weighting decisions for this sector can be considered in the following order: circulation market value > institutional position share > growth of net profit after deductions > P/E ratio. Furthermore, based on the multi-dimensional overlay analysis, stocks with 20-30% of institutional positions and large-cap leading stocks have the highest portfolio returns.

# 2. Literature Review

We now focus on the work related to equity portfolios in China's new energy vehicle industry, which can be divided into the following categories: investment strategy, investment value, and stock value.

From an investment allocation perspective, Haiting Li proposed that the multi-factor model performed well in A-share [1]; the final five influential factors were: P/B ratio, net profit growth rate, return on net assets, gross profit rate, and prosperity. Yang Chu constructed A set of multifactor dynamic quantitative investment strategies suitable for China's A-share new energy vehicle sector [2], with a specific reference value for some investors. Hui Xu et al. proposed the fund asset allocation strategy [3]. The optimal strategy for stock investment allocation was obtained by applying the meanvariance and AHP algorithms to calculate the weighting coefficients and investment amounts of the ten stocks under maximum investment efficiency.

From the perspective of the investment value of new energy vehicles, Zepeng Chen pointed out that the new energy vehicle industry had a very bright development prospect and hidden a lot of investment opportunities [4]. At the same time, he built an investment value evaluation system for new energy vehicle-listed companies and provided suggestions for investors.

From the influence on stock price, Zhu & Lu explained that the strategy of winners with large circulation market value and losers with small circulation market value was the most pronounced and was a more significant profit pattern [5]. Wei Li explained that pre-tax and post-tax accounting earnings information positively correlated with stock prices [6]. Yingzhi Wu pointed out that the P/E ratio was an essential basis for institutional and individual investors to judge the value of stock investment [7]. Ran Liu proposed that the current P/E ratio could only be used as a reference for investment decision analysis. Only by establishing a relatively mature capital market, the P/E ratio could play a role in investment decision analysis [8]. Daping Wan suggested that an increase in the shareholding ratio of institutional investors, the greater the influence of the herding effect of funds on stock synchronization [10]. Wenbin Chen found that the weighted stock price can reflect the company's stock value more comprehensively and reasonably than the single P/E ratio, P/B ratio, and discounted cash flow valuation method [11].

In summary, the above literature provided a good reference in research methods and theoretical knowledge for portfolio strategy, stock value judgment, and other aspects. On this basis, this paper investigates the portfolio decision-making suggestions of mature securities staff and investors, analyzes the relevant data of new energy vehicle stocks, and lists data comparisons in four dimensions to determine the portfolio weight, which is more understandable and convenient for promotion and reference.

#### 3. Method

#### 3.1. Sample Selection and Data Source Section

#### 1. Survey research method

After researching several representatives of Guotai Junan Securities practitioners and senior market participants in the capital market, this paper used professional software to extract some of the analytical data to understand the basic logic and way of thinking about stock pricing in China's capital market and identified four dimensions that could be quantitatively analyzed. Four dimensions include Circulation market value, P/E ratio, net profit and institutional position.

2. Empirical research method

This paper ranks the "new energy vehicle sector" of Great Wisdom Stock Software from four dimensions, including Circulation market value, P/E, net profit, and institutional position. It takes

the top ten stocks in each dimension as a typical analysis sample of the new energy vehicle industry for empirical research.

3. Literature analysis

This research is based on extensive reading, sorting, and refining of relevant literature, learning and mastering relevant theories of a relevant investment portfolio, stock value, new energy vehicles, etc., enlightening methods to solve problems, and promoting the research idea and innovation of this paper.

# 3.2. Statistical Analysis and Quantitative Results Section

Multidimensional analysis

This paper establishes multiple data research subsets and conducts horizontal and vertical data analysis in four combinations. From the perspective of difference, it explores the influencing factors of China's new energy vehicle stock valuation, seeks the optimal solution of China's new energy vehicle stock investment weight, and draws diversified and robust research conclusions. It provides a valuable reference for fund managers in China's new energy vehicle industry to choose the weight of the stock investment portfolio.

# 4. Full Text

# 4.1. Sample Selection and Data Sources

I. Sample selection and data sources

In this paper, the top ten stocks in each dimension were ranked in the "new energy vehicle sector" of Great Wisdom stock software, which is popular in china in four dimensions, including Circulation market value, P/E Ratio, net profit, and institutional position. The stocks in the sample must be typical of the new energy vehicle industry, recognized by the public. Moreover, they must have a high percentage of revenue from new energy vehicle-related businesses to avoid the inclusion of purely thematic and conceptual stocks in the sample. Further considering the data continuity and analyzability of the existing sample, the 3-year data of the above companies from 2019-2021, were finally selected to ensure the robustness of the quantitative analysis results.

On this basis, the testing conditions were determined: the number of stocks to be included in the portfolio of this investment fund was assumed to be 10, with a single stock investment limit of 20%. In order to obtain reliable differentiated research results, the test weighting scheme will be set as follows.

1. Equal weighting (i.e. all ten stocks are weighted at 10%)

2. One band at 0.5% intervals of 12%, 11.5%, 11%, 10.5%, 10%, 10%, 9.5%, 9%, 8.5%, and 8%, respectively

3. One step at 1% intervals of 14%, 13%, 12%, 11%, 10%, 10%, 9%, 8%, 7%, 6%.

4. 2% intervals of 18%, 16%, 14%, 12%, 10%, 10%, 8%, 6%, 4% and 2% respectively.

# 4.2. Statistical Analysis and Quantitative Results

According to the existing research on the factors of stock valuation in China's stock market and researching several representatives of Guotai Junan Securities practitioners and senior market participants in the capital market the results of statistical analysis show that the factors which have a significant influence on stock valuation in China's stock market and can be studied by quantitative data mainly include: 1. circulation market value ( circulation equity ), 2 .price-to-earnings ratio P/E, 3. growth of net profit after deductions, 4. institutional position share ( Note: factors that have a significant influence on stock valuation but cannot be quantified, such as event promotion and hot topics ). Based on this, this paper uses quantitative analysis to explore the optimization path of new energy vehicle stock portfolio weight from the above four dimensions.

#### 4.3. Circulation Market Value Dimension

At present, China's securities market is still in a period of rapid development. Early market participants are mainly retail investors. In recent years, with the increasing participation of institutional investors such as public funds, private equity funds, pension funds, insurance funds, and QFII, the market speculation atmosphere has gradually decreased, and the stock valuation system has become more and more mature. However, it is undeniable that the correlation between the valuation of stocks in China's capital market and their circulation market value (circulation equity) remains prominent. For example, the valuations of Shanghai 50 and Shanghai and Shenzhen 300, dominated by ultralarge blue-chip stocks, remain low.

On the other hand, P/E such as GEM and Science and Technology Innovation Board with smaller circulation equity are always one to two times or even higher than the former. For stocks in the same industry, the valuation of small-cap stocks is usually more than twice as high as that of large-cap stocks. According to the traditional view, stocks with smaller market value are more likely to gain more significant gains. So, does this also apply to new energy vehicle stocks?

The quantitative results of Table 1 and Table 2 show that when a higher weight is given to the new energy vehicle stocks with a more significant market value ( see Table 1 ), the yield with the same weight ( 10 % for each of the ten companies ) is 618 %, and the yields of other weight allocation methods are 627 %, 637 % and 655% in that order, showing an increasing trend; and if the ten stocks with the most considerable circulation market value are tested in reverse, i.e. the stocks with relatively small circulation market value are given higher weights (see Table 2), the returns are 609%, 600%, and 581% respectively, showing a decreasing trend. The maximum return difference between the two strategies is 74% for the large-cap strategy (Portfolio D in Table 1) than for the small-cap strategy (Portfolio D in Table 2).

Overall analysis: In contrast to the conventional view, a higher weighting allocation to new energy vehicle stocks with larger circulation market value can result in significant comparative returns. This may be because new energy vehicle stocks are an emerging sector, and investors are more comfortable allocating to large-cap stocks with leading sector rankings for conservative reasons. In contrast, small and mid-cap stocks are not yet sufficiently explored.

STOCK	CIRCU-	CLOS-	CLOS-	CU-	Р	YI	Р	YI	Р	YI	PO	YI	
(COD	LATING-	ING-	ING-	MU-	0	EL	0	EL	0	EL	RT	EL	l
E)	MARKET-	PRICE(	PRICE(	LA-	R	D	R	D	R	DR	FO	DR	ĺ
	VALUE(BN	201812	202206	TIVEI	TF	R	TF	R	TF	AT	LI	AT	ĺ
	RMB)(2022	31)	21)	NCRE	0	Α	Ο	Α	0	Е	0	Е	
	0621)			ASE(2	LI	TE	LI	TE	LI		D		
				019-	0		0		0		%		ĺ
				2022.6	Α		В		С				
				)	%		%		%				

Table 1: Quantitative analysis results - circulation market value from high to low.

CATL	1183	73.2	507.	594	10	59%	12.%	71%	14	83%	18	107
(300750)	.7		85	%	%				%		%	%
BYD	992.	50.4	340.	575	10	58%	11.5	66%	13	75%	16	92%
(002594)	7	8	9	%	%		%		%		%	
CXXCL	222.	28.2	248.	782	10	78%	11.00	86%	12	94%	14	109
(002812)	0	4	99	%	%		%		%		%	%
EVEBAT-	190.	8	100.	1152	10	115	10.50	121	11	127	12	138
TERY	0		14	%	%	%	%	%	%	%	%	%
(300014)												
TIANQI-	187.	24.4	114.	368	10	37%	10.00	37%	10	37%	10	37%
LITHIUM	0	3	39	%	%		%		%		%	
(002466)												
CHANGAN	152.	3.26	15.3	371	10	37%	10.00	37%	10	37%	10	37%
(000625)	0		6	%	%		%		%		%	
PUTAILAI	113.	16.2	81.5	403	10	40%	9.50	38%	9%	36%	8%	32%
(603659)	0	2	5	%	%		%					
TINCI(00270	111.	3.64	57.5	1482	10	148	9.00	133	8%	119	6%	89%
9)	0		7	%	%	%	%	%		%		
SSGF	57.0	8.35	26.3	215	10	22%	8.50	18%	7%	15%	4%	9%
(600884)			2	%	%		%					
EA-	44.0	26.9	91.3	239	10	24%	8.00	19%	6%	14%	2%	5%
SPRING(300		6	9	%	%		%					
073)												
PORTFOLIO						618		627		637		655
						%		%		%		%

Table 1: (continued).

Table 2 Quantitative results - circulation market value from low to high.

STOCK(	CIR-	CLO	CLO	CU-	POR	YIE	PORT	YIE	POR	YIE	РО	YIEL
CODE)	CU-	SIN	SIN	MU-	TFO	LD	FO-	LD	TFO	LD	RT	D
	LAT-	GPR	G	LA-	LIO	RA	LIO	RAT	LIO	RAT	FO	RAT
	ING	ICE(	PRIC	TIVE	A%	TE	В%	Е	С%	Е	LI	Е
	MAR-	2018	E(20	IN-							0	
	KET	1231	2206	CRE							D	
	VALU	)	21)	ASE(							%	
	E (BN			2019								
	RMB)			-								
	(2022			2022.								
	0621)			6)								

$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	EA-	44.0	26.96	91.39	239	10%	24%	12.00	29%	14%	33%	18	43%
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	SPRING				%			%				%	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	-												
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		57.0	Q 25	26.22	215	100/	220/	11.50	250/	120/	200/	16	2/10/
4)		57.0	0.55	20.32		1070	2270		2370	1370	2070		3470
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	-				70			70				70	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		111	2.64	57 57	1482	10%	148	11.00	162	120/	178	14	207%
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			5.04	57.57		1070				12/0			20770
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Ŭ			70		70	70	70		70	70	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		113	16.22	81.55	403	10%	10%	10.50	120%	110/2	110/2	12	18%
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			10.22	61.55		1070	4070		4270	11/0	4470		40/0
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Ŭ			70			70				70	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	-												
AN    0    %	-	152.	3.26	15.36	371	10%	37%	10.00	37%	10%	37%	10	37%
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$													- / · · ·
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	(00062												
LITH- IUM (00246    0    9    %    %    %    %    %    %      EVE    190.    8    100.1    1152    10%    115    9.50%    109    9%    104    8%    92%      BAT- TERY (30001    0    4    %    10%    115    9.50%    109    9%    104    8%    92%      CXXCL    222.    28.24    248.9    782    10%    78%    9.00%    70%    8%    63%    6%    47%      (00281    0    9    %    10%    78%    9.00%    70%    8%    63%    6%    47%      W0259    7    9    %    10%    58%    8.50%    49%    7%    40%    4%    23%      (00259    7    5    %    10%    59%    8.00%    48%    6%    36%    2%    12%      (30075    .7    5    %    10%    59%    8.00%    <	5)												
IUM (00246 6)    Image: Second seco		187.	24.43	114.3	368	10%	37%	10.00	37%	10%	37%	10	37%
(00246  - <td>LITH-</td> <td>0</td> <td></td> <td>9</td> <td>%</td> <td></td> <td></td> <td>%</td> <td></td> <td></td> <td></td> <td>%</td> <td></td>	LITH-	0		9	%			%				%	
6)    Image: constraint of the second seco													
EVE    190.    8    100.1    1152    10%    115    9.50%    109    9%    104    8%    92%      BAT- TERY (30001 4)    0    4    %    10%    115    9.50%    109    9%    104    8%    92%      CXXCL    222.    28.24    248.9    782    10%    78%    9.00%    70%    8%    63%    6%    47%      (00281    0    9    %    10%    78%    9.00%    70%    8%    63%    6%    47%      BYD    992.    50.48    340.9    575    10%    58%    8.50%    49%    7%    40%    4%    23%      (00259    7    9    %    10%    58%    8.50%    49%    7%    40%    4%    23%      (30075    .7    5    %    10%    59%    8.00%    48%    6%    36%    2%    12%      0)    -    -	-												
BAT- TERY (30001  0  4  %													
TERY (30001 4)  Image: Constraint of the second			8			10%		9.50%		9%		8%	92%
(30001  (30001  (30001  (30001  (30001  (30001  (30001)  (30001)  (30001)  (30001)  (30001)  (30001)  (30001)  (30001)  (30001)  (30001)  (30001)  (30001)  (30001)  (30001)  (3000) <td< td=""><td></td><td>0</td><td></td><td>4</td><td>%</td><td></td><td>%</td><td></td><td>%</td><td></td><td>%</td><td></td><td></td></td<>		0		4	%		%		%		%		
4)													
CXXCL  222.  28.24  248.9  782  10%  78%  9.00%  70%  8%  63%  6%  47%    (00281  0  9  %  10%  78%  9.00%  70%  8%  63%  6%  47%    2)  9  %  10%  58%  8.50%  49%  7%  40%  4%  23%    (00259  7  50.48  340.9  575  10%  58%  8.50%  49%  7%  40%  4%  23%    (00259  7  50.48  340.9  575  10%  58%  8.50%  49%  7%  40%  4%  23%    (00259  7  507.8  594  10%  59%  8.00%  48%  6%  36%  2%  12%    (30075  .7  5  %  10%  59%  8.00%  48%  6%  36%  2%  12%    0)  9  618  609  600  581%	-												
(00281  0  9  %   <	-	222	29.24	249.0	700	1.00/	700/	0.000/	700/	00/	(20/	(0/	470/
2)  -			28.24			10%	/8%	9.00%	/0%	8%	63%	6%	4/%
BYD    992.    50.48    340.9    575    10%    58%    8.50%    49%    7%    40%    4%    23%      (00259    7    7    2000		0		9	70								
(00259  7  % <td>,</td> <td>002</td> <td>50.49</td> <td>240.0</td> <td>575</td> <td>1.00/</td> <td>500/</td> <td>0.500/</td> <td>400/</td> <td>70/</td> <td>4007</td> <td>407</td> <td>220/</td>	,	002	50.49	240.0	575	1.00/	500/	0.500/	400/	70/	4007	407	220/
4)			50.48	340.9		10%	38%	8.30%	49%	/%	40%	4%	23%0
CATL  1183  73.2  507.8  594  10%  59%  8.00%  48%  6%  36%  2%  12%    (30075  .7  .7  .5  %  10%  59%  8.00%  48%  6%  36%  2%  12%    0)  .7  .7  .5  %  618  609  600  581%		/			/0								
(30075  .7  5  %	,	1107	72.2	507 0	504	100/	500/	<u> 8 000/</u>	100/	60/	260/	20/	1.20/
0)    618    609    600    581%			13.2			1070	3970	0.00%	4070	070	3070	270	1270
PORTR-    618    609    600    581%		.,			70								
							618		600		600		5810/2
	FOLIO						%		%		%		30170

Table 2: (continued).

# 4.4. Price to Earnings Ratio Dimension

P/E ratio is an important indicator of how high or low a stock is valued. Although investors in the China's capital market have gradually begun to embrace the international investment philosophy of giving higher P/E to high-growth stocks, overall, P/E is still one of the key considerations in the decision making of the vast majority of sound investors. Therefore, the P/E ratio is a perspective that we can't avoid.

STOCK( CODE)	P/ E2 01 8	EA RN IN GS 201 8	CLO SIN GPR ICE( 2018 1231 )	CL OSI NG PRI CE( 202 206 21)	CU- MU- LA- TIV E IN- CRE ASE (201 9-	PO RT FO- LIO A%	YIE LD RA TE	POR TFO- LIO B%	YIE LD RA TE	POR TFO LIO C%	YIE LD RAT E	PO RT FO- LI O D%	YIE LD RA TE
SEN-	22	0.2		28.4	2022 .6) 469	10	47%	12.00	56	14%	66%	18	84%
IOR(3005 68)		3	5.01	9	%	%	.,,,,	%	%	1.70		%	0.70
EVE- BAT- TERY(30 0014)	35	0.2 3	8	100. 14	1152 %	10 %	115 %	11.50 %	132 %	13%	150 %	16 %	184 %
CSECO(3 00035)	38	0.1 1	4.16	28.8 5	594 %	10 %	59%	11.00 %	65 %	12%	71%	14 %	83%
WOLON G(600580 )	38	0.1 5	5.7	13.4	135 %	10 %	14%	10.50 %	14 %	11%	15%	12 %	16%
CAP- CHEM(3 00037)	42	0.3	12.53	47.0 3	275 %	10 %	28%	10.00 %	28 %	10%	28%	10 %	28%
PUYAIL AI(60365 9)	43	0.3 8	16.22	81.5 5	403 %	10 %	40%	10.00 %	40 %	10%	40%	10 %	40%
TIANQI- LITH- IUM(002 466)	54	0.4 5	24.43	114. 39	368 %	10 %	37%	9.50 %	35 %	9%	33%	8%	29%

Table 3: P/E ratios from low to high.

GEM(002	62	0.0	3.74	8.37	124	10	12%	9.00	11	8%	10%	6%	7%
340)		6			%	%		%	%				
LNFA(60	63	0.1	11.01	25.5	132	10	13%	8.50	11	7%	9%	4%	5%
3315)		75		2	%	%		%	%				
HONGFA	10	0.1	15.15	39.1	158	10	16%	8.00	13	6%	9%	2%	3%
(600885)	1	5		1	%	%		%	%				
PORTFO-							381		406		431		481
LIO							%		%		%		%

Table 3: (continued).

Table 3 shows that when we rank the P/E ratios from low to high and give a higher allocation weighting to low P/E outperforming stocks, the overall portfolio returns show a clear upward trend from 381% - 406% - 431% - 481%.

Overall analysis: Giving a greater weighting to low P/E outperforming stocks in the new energy vehicle sector can lead to significant comparative returns. However, in terms of absolute return values, the P/E dimension portfolio returns significantly lag behind the circulation market value dimension portfolio. It can also be seen that the portfolio returns in the P/E dimension fluctuate significantly across the weighted portfolios.

#### 4.5. Net Profit Dimension

	1		1					1	1			1
8	NET	CLO	CLO	CU-	POR	YIE	POR	YIE	POR	YIE	POR	YIE
	PRO	SIN	SIN	MU-	TFO	LD	TFO	LD	TFO	LD	TFO	LD
	FIT	GPR	G	LA-	LIO	RAT	LIO	RAT	LIO	RAT	LIO	RAT
	AF-	ICE(	PRI	TIV	A%	Е	В%	Е	С%	Е	D%	Е
	TER	2018	CE(2	Е								
	DE-	1231	0220	IN-								
	DUC	)	621)	CRE								
	TIO		,	ASE								
	NS(2			(201								
	019-			<u>9</u> -								
	2021)			2022								
	,			.6)								
SSG	3725	8.35	26.3	215	10%	22%	12.0	26%	14%	30%	18%	39%
F(60	%		2	%			0%					
0884												
)												
TIN	2812	3.64	57.5	1482	10%	148	11.5	170	13%	193	16%	237
CI(0	%		7	%		%	0%	%		%		%
0270												
9)												

Table 4: Growth of net profit after deductions.

								0.67.1				1.0-
CXX	1189	28.2	248.	782	10%	78%	11.0	86%	12%	94%	14%	109
CL(0	%	4	99	%			0%					%
0281												
2)												
AZ-	1150	3.74	24.5	555	10%	56%	10.5	58%	11%	61%	12%	67%
URE	%	5.71	1	%	1070	5070	0%	5070	11/0	0170	1270	0770
COR	/0		1	/0			070					
P(00												
2245												
)	1000	10.2	40.0	200	100/	200/	1.00/	200/	1.00/	200/	1.00/	200/
DFD	1002	10.3	40.2	290	10%	29%	10%	29%	10%	29%	10%	29%
(002	%	2	6	%								
407)												
E-	812	16.3	37.0	127	10%	13%	10.0	13%	10%	13%	10%	13%
NEB	%	1	7	%			0%					
ULA												
(300												
648)												
PU-	797	16.2	81.5	403	10%	40%	9.50	38%	9%	36%	8%	32%
TAI	%	2	5	%			%					
LAI(	, 0	-	Ũ	/ 0			, 0					
6036												
59)												
CAT	619	73.2	507.	594	10%	59%	9.00	53%	8%	48%	6%	36%
		13.2	85	%	1070	3970	%	5570	070	4070	070	3070
L(30	%		83	70			70					
0750												
)	(12	0	100	1150	1.00/	1.50/	0.50	00/	70/	010/	40/	1.60/
EVE	613	8	100.	1152	10%	15%	8.50	9%	7%	81%	4%	46%
BAT	%		14	%			%					
TER												
Y(30												
0014												
)												
TIA	461	24.4	114.	368	10%	7%	8.00	29%	6%	22%	2%	7%
NQI-	%	3	39	%			%					
LIT												
HIU												
M(0												
0246												
6)												
POR						597		601		606		615
TRF						%		%		%		%
OLI						70		70		/0		70
0									I		I	

Table 4: (continued).

Profit growth is the core driver of a stock's rise. The growth of net profit after non-recurring gains and losses is an essential basis for investors' valuation and is our critical analytical perspective.

As seen from Table 4, greater weight is given to stocks with significant increases in net profit after deduction, with returns showing a progressive trend from 597% - 601% - 606% - 615%.

Overall analysis: Giving higher weights to stocks with significant profit increases can lead to better yields. However, it is difficult to predict the profit increase for investors; the actual performance often deviates greatly from expected performance. Historical performance of high growth does not mean that the future could also be high growth.

#### 4.6. Institutional Position Dimension

In the China's capital market, the proportion of institutional position in circulation is an indicator of great concern to investors. The greater the proportion of institutional positions, the more significant increase in positions, which usually means the greater chance of the stock rising. Therefore, institutional position share is also important for us to observe.

STOCK( CODE)	PUB LIC FUN DS PO- SI- TIO N SHA RE 2022 0630	CLOS- ING- PRICE(2 0181231)	CLOS- ING PRICE(2 0220621)	CU- MU- LA- TIV E IN- CRE ASE (20 19- 2022 .6)	PO RT FO LI O A %	YI EL D RA TE	PO RT FO LI O B%	YI EL D RA TE	PO RT FO LI O C%	YI EL D RA TE	PO RT FO LI O D %	YI EL D RA TE
CSECO( 300035)	37.3 8%	4.16	28.85	594 %	10 %	59 %	12. 0%	71 %	14 %	83 %	18 %	107 %
SEN- IOR(300 568)	33.9 3%	5.01	28.49	469 %	10 %	47 %	11. 5%	54 %	13 %	61 %	16 %	75 %
CAP- CHEM( 300037)	31.2 0%	12.53	47.03	275 %	10 %	28 %	11. 0%	30 %	12 %	33 %	14 %	39 %
EVE- BAT- TERY(3 00014)	29.5 1%	8	100.14	1152 %	10 %	115 %	10. 5%	121 %	11 %	127 %	12 %	138 %

Table 5: Institutional position share	re.
---------------------------------------	-----

EA- SPRING(30007 3)	26.45 %	26. 96	91.3 9	239 %	10 %	24 %	10.0 %	24 %	10 %	24 %	10 %	24 %
AZ- URECORP(00 2245)	25.80 %	3.7 4	24.5 1	555 %	10 %	56 %	10.0 %	56 %	10 %	56 %	10 %	56 %
TINCI(002709)	23.67 %	3.6 4	57.5 7	1482 %	10 %	148 %	9.5 %	141 %	9%	133 %	8%	119 %
TIANQILITH- IUM(002466)	21.31 %	24. 43	114. 39	368 %	10 %	37 %	9.0 %	33 %	8%	29 %	6%	22 %
CXXCL(00281 2)	19.53 %	28. 24	248. 99	782 %	10 %	78 %	8.5 %	66 %	7%	55 %	4%	31 %
PU- TAILAI(60365 9)	17.57 %	16. 22	81.5 5	403 %	10 %	40 %	8.0 %	32 %	6%	24 %	2%	8%
PORTFOLIO						632 %		628 %		625 %		618 %

Table 5: (continued).

From Table 5, we see that the greater the weight given to stocks with a more significant proportion of institutional positions, the returns are 632% - 628% - 625% - 618%, respectively, showing a decreasing trend in steps. The larger the institutional position share is not the better, with some positions being too large and making it more challenging to upgrade positions in the future . Alternatively, a single institutional position may be too large, resulting in a pattern similar to that of a "sitting banker", which may lead to more risk. It is easier to achieve comparative returns with an institutional position of 20-30%. This view is reflected in Table 5. The top three highest-yielding stocks in Table 5 all have institutional positions in the 20-30% range. In addition, institutional positions can be increased or decreased and changed during the lifetime of the portfolio, which is not as good as known data such as circulation market value and P/E.

# 4.7. Multi-dimensional Overlay Analysis

From the analysis of the first four dimensions, it can be seen that the highest return is 632% for the portfolio ranked by institutional positions, followed by 618% for the portfolio ranked by circulation market value in descending order under the same weighting scenario. We, therefore, considered overlaying these two dimensions to see if there were better portfolio results. In terms of return, we found that the top three stocks had institutional positions in the range of 20%-30%, so we selected six stocks with institutional positions in the range of 20%-30%. In contrast, other stocks were selected in descending order of circulation market value, overlapping stocks were eliminated, and finally, ten stocks were selected after the two dimensions were stacked. See Table 6.

STOCK( CODE)	PU BL IC FU N DS PO SI- TI O N SH A RE 20 22 06 30	CIR CU- LA TIN G MA RK ET VA LU E 202 206 21)	CL OSI NG PRI CE( 201 812 31)	CLO SIN G PRI CE(2 0220 621)	CU- MU- LA- TIV E IN- CRE ASE (20 19- 2022 .6)	PO RT FO LI O A %	YI EL D RA TE	PO RT FO- LIO B%	YI EL D RA TE	PO RT FO- LI O C%	YIEL D RAT E	P R TF O LI O D %	YIE LD RAT E
EVE- BAT- TERY(30 0014)	29. 51 %	190 4	8	100. 14	1152 %	10 %	115 %	12.0 %	138 %	14 %	161%	18 %	207 %
EA- SPRING( 300073)	26. 45 %	438	26.9 6	91.3 9	239 %	10 %	24 %	11.5 %	27 %	13 %	31%	16 %	38%
AZ- URECOR P(002245 )	25. 80 %	282	3.74	24.5 1	555 %	10 %	56 %	11.0 %	61 %	12 %	67%	14 %	78%
TINCI(00 2709)	23. 67 %	110 8	3.64	57.5 7	1482 %	10 %	148 %	10.5 %	156 %	11 %	163%	12 %	178 %
TIANQI- LITH- IUM(002 466)	21. 31 %	187 7	24.4 3	114. 39	368 %	10 %	37 %	10.0 %	37 %	10 %	37%	10 %	37%
CXXCL( 002812)	19. 53 %	222 2	28.2 4	248. 99	782 %	10 %	78 %	10.0 %	78 %	10 %	78%	10 %	78%
PU- TAILAI( 603659)	17. 57 %	113 4	16.2 2	81.5 5	403 %	10 %	40 %	9.5 %	38 %	9%	36%	8 %	32%
BYD(002 594)	15. 35 %	992 7	50.4 8	340. 9	575 %	10 %	58 %	9.0 %	52 %	8%	46%	6 %	35%

Table 6: Combination of public funds position share and market value.

CATL(30 0750)	14. 60 %	118 37	73.2	507. 85	594 %	10 %	59 %	8.5 %	50 %	7%	42%	4 %	24%
CHANG AN(0006 25)	7.9 4%	152 3	3.26	15.3 6	371 %	10 %	37 %	8.0 %	30 %	6%	22%	2 %	7%
PORT- FOLIO							652 %		668 %		683%		714 %

Table 6: (continued).

As can be seen from Table 6, considering the two-dimensional factors with the highest returns stacked on top of each other, there is a substantial increase in the portfolio return, with the same weighting increasing the portfolio return to 652%, which is higher than the peak portfolio return of the first four dimensions sorted separately. Here's a bar chart that shows the difference more clearly. See Table 7.

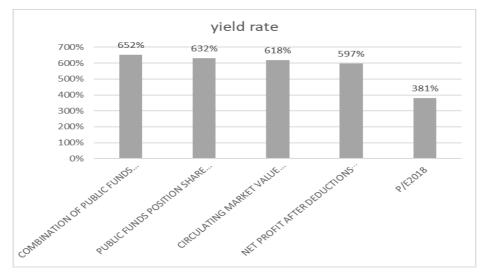


Figure 1: Yield rate of each dimension.

(Four dimensions and multi-dimension:

Combination of public fund position share and circulation market value, circulation market value, public fund position share, net profit growth, and P/E ratio.)

# 5. Conclusion

In this paper, through quantitative analysis of the historical data of the bull market of new energy vehicles in the past three years, the following conclusions are drawn: as a fund manager of the new energy vehicles industry, when determining the portfolio weighting, four dimensions should be paid attention to - First, select industry leaders with sizeable circulation market value and high visibility. This is because new energy vehicle stocks are an emerging industry, investors know little about smaller companies, and most capital is concentrated in large and well-known companies. At the same time, large companies have stronger R&D, capabilities are more likely to gain advantages in rapid product iteration. Therefore, the higher the popularity and the greater the circulation market value of new energy vehicle stocks, the higher the allocation weight should be;Second, consider the institutional position share. But it is not that the more significant the institutional position share is, the better

it will be; we should focus on stocks with an institutional position share of 20%-30%. The data test in this paper shows that the institutional positions of the top three stocks with yield are all in this range.Therefore, stocks with institutional positions in the 20-30% range should be assigned a higher weighting; Third, consider the growth of net profit after deductions; the more significant the increase in net profit, the greater the allocation weighting.and here there are high requirements for the performance forecast level of sell-side investment research reports; Fourth, consider the P/E ratio, the lower the current P/E ratio, the higher the allocation weighting should be. But P/E ratio in the four dimensions of the portfolio measured, the return is significantly lower than the other three dimensions. This may be because investors in new energy vehicle stocks place more emphasis on industry leadership and enterprise size and have a higher tolerance for high P/E ratio, reflecting that the new energy vehicle industry is an emerging industry and valuation is more dependent on growth.

In conclusion, from the data analysis of the recent 3-year bull market for new energy vehicle stocks, the fund portfolio weighting decision of this sector can be considered in the following order: circulation market value > institutional position share >growth of net profit after deductions > P/E ratio. Furthermore, based on the multi-dimensional overlay analysis, stocks with 20-30% of institutional positions and large-cap leading stocks have the highest portfolio returns.

#### References

- [1] Li,H.T.,(2022) Research on quantitative investment of new energy vehicle sector based on Multifactor model. East China Normal University.
- [2] Chu, Y., (2021) Research on Machine Learning Multi-factor Stock Investment Strategy in New Energy Vehicle Industry. Guangdong University of Technology.
- [3] Xu,H., Yan,Y.X., Zhu,J.M., (2020) Analysis of fund asset allocation strategy based on AHP. Journal of Natural Science, Harbin Normal University, 36 (04): 80-87.
- [4] Chen,Z.P., (2020) Research on Investment Value Evaluation of New Energy Vehicles Listed Enterprises. Shandong University of Finance and Economics.
- [5] Zhu, T., Lv,S., (2016) An empirical study on the impact of market capitalization utstanding in Shanghai market on inertia and reverse strategy. Taxation and Economics, 2016(02): 39-43.
- [6] Li,W., (2019) An empirical study on the dynamic correlation between accounting earnings and stock price changes. Academic Research, 2019(07):57-61.
- [7] Wu,Y.Z., (2009) Application of P/E Ratio in the Analysis of Stock Investment Value. Productivity research, 2009(21):84-85.
- [8] Liu, R., (2011) The effectiveness of P/E ratio in investment decision analysis. HUNAN UNIVERSITY.
- [9] Wan, D.P., (2021) The impact of institutional investors' shareholding on stock price volatility. Shanghai University of Finance and Economics.
- [10] Shan, J., (2015) The Influence of Fund Herd Effect on Stock Price Synchronization. University of Science and Technology of China.
- [11] Chen, W.B., (2009) Valuation study of stock based on China's stock market. North China Electric Power University.