Analysis of the Influence of "Exploding Fund" Marketing on Fund Trend

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Abstract

In recent decades, "explosive fund" marketing has become an important marketing means, which has a significant impact on investors. This paper establishes a marketing emotion model by studying the marketing emotion index produced by fund marketing. The trend of the selected fund products depends on the stock data, so the fund trend is pushed back by the effect of marketing sentiment value on the stock market. Through cross correlation analysis and principal component analysis, the marketing emotion value is constructed to explore the relationship between Shanghai stock index and marketing emotion index. According to the research, the rising or falling trend of marketing sentiment value will generally lead the Shanghai stock index for three to six months, the fluctuation range of Shanghai stock index is greater than that of marketing sentiment value. This paper examines the reliability of the marketing sentiment model by analyzing the correlation between market sentiment and Shanghai Stock Exchange index, so as to give corresponding suggestions when investors choose funds.

Keywords: *fund marketing, Fund trend, Marketing emotion value, Shanghai Stock Exchange, Fund Index*

1.INTRODUCTION

In recent decades, China's fund market is developing rapidly. WIND data report show：There are more than 63 fund management companies by 2021, and more than 732 investment funds with net asset values, more than 2.4 trillion yuan [4]. Funds have played an increasingly important role in China's capital market. With the popularization of financial management at a younger age, more and more securities companies have begun to guide users to market funds in various forms, such as advertising and we-media. Explosive marketing is an important marketing means for the launch of star funds. But most individual investors don't have relevant professional knowledge, it's difficult to independently judge the advantages and disadvantages of different fund products. In the selection of funds, they tend to rely on the ratings of professional institutions and the information released by fund institutions on the Internet. There are the number of repetitions and the ranking of information, they have a significant impact on investors, which in turn affects the distribution of institutional funds in the stock market. Barberis and Shleifer built emotional models based on investors' beliefs [1]. Delong, Summers and Waldmann constructed the DSSW model. It based on the unpredictability of irrational investor sentiment [6]. The above models are based on the traditional capital pricing model. There is no detailed analysis based on fund. There are common phenomena against common sense in financial market, such as herd behavior of investors [5].

At present, the fund purchase method for explosive marketing. In the paper, marketing sentiment index is constructed based on the influence of marketing on investor sentiment to represent the direction of specific marketing measures on investor decision. The paper reveals the relationship between explosive style fund marketing and fund index trend.

2.MARKETING SENTIMENT PROXY VARIABLES

2.1. Construction of variable indicators

Table 1: Proxy variable index of marketing sentiment value

Proxy variable indicator	
China Investors Sentiment Index, (CISI)	Standard deviation (SD)Similar fund ranking ratio
Excess average return rate (%)	Sharpe ratio
Average Abnormal Return	Sharpe ratio Similar fund

(ARR)(%)	ranking ratio
Average Abnormal Return(ARR) Similar fund ranking ratio	Shanghai composite index
Standard deviation (SD) of return rate(%)	SSE FUND INDEX
Fund company size ranking	

Table 2: Correlation analysis of marketing emotional agent variables

Correlation matrix								
		CISI	Excess ARR (%)	Average rate of return(%)	ARR similar fund	SD of return rate(%)	SD-of similar funds-ranking ratio	Shanghai Composite Index
Correlation	CISI	1	0.56	0.66	-0.57	0.11	0.08	0.67
	Excess ARR%	0.56	1	0.91	-0.95	0.35	-0.12	0.78
	Average rate of return(%)	0.67	0.91	1	-0.89	0.06	0.07	0.86
	ARR similar fund	-0.57	-0.95	-0.89	1	-0.15	0.16	-0.74
	SD of return rate(%)	0.12	0.35	0.06	-0.15	1	-0.33	0.24
	SD of similar funds ranking ratio	0.08	-0.12	0.07	0.16	-0.33	1	0.006
	Shanghai Composite Index	0.68	0.79	0.86	-0.74	0.24	0.006	1

This paper takes public fund, open-end fund and equity fund as the research object. Style marketing mainly refers to: the hot list promotion provided by the fund APP of securities companies; Securities companies in the offline point-to-point promotion behavior. At a certain time span, the two behaviors are uniformly driven. Therefore, in view of the fund promotion situation on the hot list, we can infer the offline fund recommendation. The proxy variables of marketing sentiment are shown in the following table 1.

Based on data availability and China's national conditions, this paper analyzes the weekly data of China's Shanghai A-share market from March 2018 to March 2022. 1249 open-end funds were selected as a sample of variables.

The samples were divided into four groups, and the data of each group were weighted and averaged according to the fund size, the variable data such as excess average return rate, standard deviation of average return rate and Sharpe Rate were calculated. The data were integrated according to the time series, the data were cut with weekly intervals.

2.2. Cross-correlation analysis between value-agent variables of marketing sentiment and Shanghai Composite Index

In order to further study the correlation between marketing sentiment and SSE Composite Index, the five lag periods are selected to obtain the maximum cross coefficient. As can be seen from table 3, the correlation between the emotional proxy variables and the Shanghai Composite Index is in line with the economic meaning, the investors emotional index and the standard deviation of the return rate also show the leading cross-correlation.

Table 3: Cross correlation coefficient between proxy variables of marketing sentiment value and Shanghai Composite Index

Lag	0	2	3	5	Max coefficient of correlation	Max state
CISI	0.72	0.73	0.73	0.73	0.73	5
CAR(%)	0.78	0.76	0.75	0.74	0.78	0
ARR(%)	0.84	0.83	0.83	0.82	0.84	0
Standard deviation of return rate(%)	0.19	0.23	0.25	0.28	0.28	5
Sharpe ratio	0.83	0.83	0.83	0.82	0.83	3

3. MARKETING EMOTION MODEL

3.1. Principal component analysis and empirical results

Principal component analysis is used in this paper [2], It reduces the information obtained by the number of variables, highlights the core information, and converts multiple variables into a small number of representative comprehensive indicators on the basis of losing more data information.

As can be seen from Table 2, the excess average return rate and average return rate are highly correlated with the average return rate, it is best to choose one of these three variables as a proxy variable of marketing sentiment. The average rate of return is positively correlated with the trend of Shanghai Composite Index. While the ranking ratio of the average rate of return is negatively correlated with the trend of Shanghai Composite Index. The absolute value of the maximum correlation coefficient between average return rate and Shanghai Composite index is 0.84. It is higher than the maximum correlation coefficient between average excess return rate Shanghai Composite index, the maximum correlation coefficient between average return rate and Shanghai Composite index (-0.74). Therefore, the average return rate is selected as the proxy variable of marketing sentiment value.

Table 4: Marketing sentiment values Variance explanatory degree

Com-pos i-tio n	Initial eigenvalu e			Extr-act the sum of load		
	Total	Percent varianc e	Accumul -ates%	Total	Per-cent vari-ance	Accumu -lates %
1	4.12	58.85	58.85	4.12	58.85	58.85
2	1.36	19.36	78.21	1.36	19.36	78.21
3	0.71	10.19	88.41			
4	0.51	7.22	95.63			
5	0.24	3.44	99.07			
6	0.05	0.72	99.79			
7	0.01	0.21	100			
Extraction method：Principal Component Analysis						

(Top header spans: "Total variance interpretation")

The initial eigenvalues of components 1 and 2 are greater than 1, which means that the combination of components 1 and 2 can explain 78.21% of the original index. Can represent 78.21% of the original index.Calculate the principal component coefficients. Calculate the linear combination of A and B, based on the two principal component coefficients.
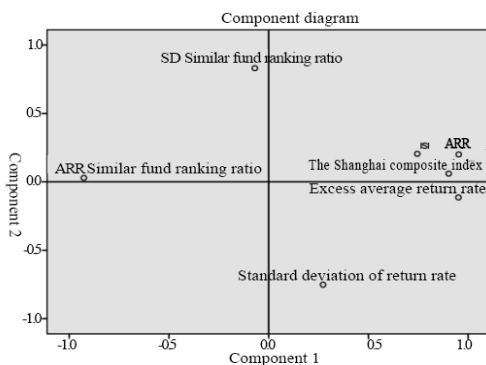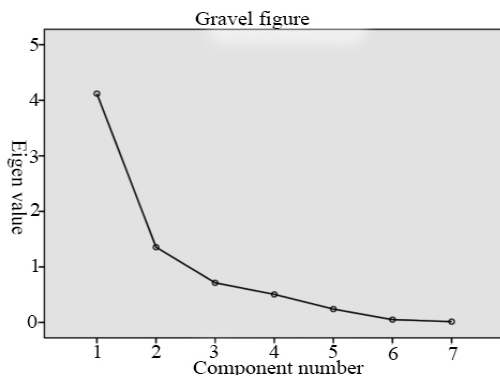
Table 5： Component layout

Table 6: Marketing emotional rubble map

According to the analysis results, two principal components, A and B, were extracted as proxy variables of

marketing sentiment, and the above proxy variables of marketing sentiment were normalized by SPSS to construct marketing sentiment index. As show Table 7:

Table 7: Composition Matrix a

Composition Matrix a		
Composition		
	1	2
ARR(%)	0.95	0.20
Excess ARR%	0.95	-0.11
ARR similar funds	-0.93	0.03
Shanghai Composite Index	0.90	0.06
Index of investor sentiment	0.75	0.21
SD similar funds ranking ratio	-0.07	0.83
SD of return rate(%)	0.27	-0.75
Extraction method：Principal Component Analysis		
A extracted two components		

Table 8: Process for taking the square root

4.119	2.0295
1.356	1.1645

When the initial eigenvalue is greater than 1, the square root is used to divide the component matrix by its value to obtain each coefficient, which is as Table 9：

Table 9: Coefficient list

Coefficient		
ARR(%)	0.314573362	0.172606269
Excess ARR(%)	0.23600943	-0.09789609
AAR Similar fund ranking ratio	-0.18411373	0.024903392
CISI	0.105981933	0.176041219
SD Similar fund ranking ratio	-0.00871785	0.713610992
SD of return rate(%)	0.134515891	-0.645770717

Calculate the Principal Component Score:

A=0.314573362*ZAA+0.23600943*ZE-0.18411373*ZAR+0.105981933*ZI-0.00871785*ZDR+0.134515891*ZD

B=0.172606269*zaa-0.097896093*ZE+0.024903392*ZAR+0.176041219*ZI+0.713610992*ZDR-0.645770717*ZD

As you can see from the equation above, In Principal Component A, Average rate of return, Index of investor sentiment, Standard deviation of rate of return, Excess average rate of return, Average rate of return. The coefficient absolute value of the above five marketing sentiment indicators is greater than other variables.

In principal component B, Standard deviation, Ranking ratio of similar funds, Investor sentiment index, Standard deviation of return rate, Average return rate, The coefficient absolute value of the above five marketing sentiment indicators is greater than other variables too. So, A B is the comprehensive response of the five marketing sentiment

value, which shows that these five indicators for the study of marketing sentiment value for the fund trend is essential.

The corresponding eigenvalues of A and B are 4.12 and 1.356 respectively, the comprehensive weighted average can be used to obtain marketing sentiment through modeling.

The relevant formula is:

$$Q = \frac{4.119 * A + 1.356 * B}{0.88406}$$

Through the modeling of principal component analysis, the trend chart of Shanghai Composite Index and marketing sentiment value can be described, and the statistical description of marketing sentiment can be obtained:

Table 10: Description statistics of marketing sentiment values

	Num case	Min	Max	Ava	SD	Skewness	Kurtosis
Q	173	-14.64	6.93	-1.27	3.97	0.09	-0.39

Table 11: Marketing sentiment and the Shanghai Composite Index
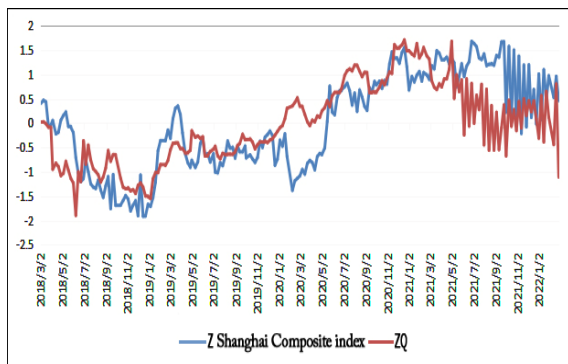
As show in Table11, Shanghai Composite index volatility than the marketing sentiment index, the marketing sentiment index ahead of the Shanghai Composite index.

Through the statistical description of the two, it was found that the minimum value of standardized marketing sentiment appeared in June 2018, with a value of -2, the marketing sentiment value was extremely low. The standardized Shanghai Composite Index also reached -2. In September 2018, the marketing sentiment rebounded and gradually improved, the Shanghai Composite Index began to transition from shock to rising trend in July 2019. In May 2021, the marketing sentiment index started to shock, and the Shanghai Composite Index also started to shock in September 2021. From March 2018 to December 2018, From April 2019 to January 2020, the shape of the marketing emotion with the Shanghai composite index trend is very consistent. Marketing emotions can reflect the tendency of the Shanghai composite index. And it has a leading response capability. Marketing sentiment index can judge the trend of stock market in the later period. Thus, investors can judge the trend of the fund and provide basis for fund investment decisions.

3.2. The market significance of marketing sentiment

Based on the above analysis, it is concluded that marketing sentiment is closely related to the Shanghai Composite Index. In order to verify the explanatory power of the index, which is composed of two marketing sentiment agents. Now make linear regression analysis of marketing market Q sentiment and Shanghai Composite index.

Table 12: Marketing sentiment and Regression analysis of the Shanghai Composite Index

Model summary				
Model	R	R^2	After R^2	Standard estimate error
1	0.82	0.67	0.67	0.55463195

The Coefficient of judgment is 0.82. The adjusted value R^2 is 0.67 greater than 0.5, so it has a good fit.

Table 13: Results of significance test

ANOVAa						
Mod		Sum squares	Degree freedom	Mean Square	F	Signi-ficant
1	Regress	107.15	1	107.15	348.31	.000b
	Residua	52.60	171	0.31		
	Total	159.74	172			
a Dependent variable：：Zscore(Shanghai composite Index)						
b Predictive variable：(Constant quantity)，Zscore(Q)						

If the significance level of regression equation is approximately 0.00, the linear model α=0.05, is reasonable. Because of the probability P<α, There is a significant linear relationship between explanatory variables and explained variables. The choice of linear model is reasonable.

The calculation formula is:

$$Zscore = 0.79 * Zscore(Q) - 0.18$$

As shown in Table 12: $P < 0.05$, The regression results are highly significant, goodness of fit is very good, the marketing sentiment is very strong to explain the change of the Shanghai Composite Index. Marketing sentiment is one of the predictors of fund ups and downs.

Table 14: Regression results

Coefficient a						
Mo-del		Standar-dization Coeffi-cient		Non-standar-dization Coefficient	t	Signifi-cance
		B	standard error	Beta		
	Con-stant	-0.18	0.04		-4.30	0
		0.79	0.04	0.82	18.66	0
a Dependent variable：Zscore(Q)						

Table 15: Maximum cross-correlation Coefficient between marketing sentiment index and Shanghai Composite Index

Lag period	0	1	2	3	Max Lag period	Max CC
Marketing sentiment value	0.81	0.79	0.78	0.77		
Lag period	**4**	**5**	**6**	**7**	0	0.82
Marketing sentiment value	0.75	0.73	0.72	0.71		

The maximum cross-correlation coefficient is used to illustrate its explanatory power to the market. As shown in Table 15.

The maximum correlation Coefficient is 0.82 between the index of marketing sentiment and the Shanghai Composite Index, which is much higher than 0 and close to 1. The current market sentiment index has obvious influence on the Shanghai composite index with seven lag periods. The conclusion is: Marketing sentiment has a strong explanatory power to the change in the Shanghai Composite Index. Market sentiment is one of the predictors of the rise and fall of the stock market and can judge the trend of the fund.

4.CONCLUSIONS

The study of stock index is conducive to intuitive research on the strength and influence of marketing sentiment value. Through the construction of marketing sentiment value, Q value can be used to predict the future trend of the fund.

The accuracy of the predicted value is tested through correlation analysis, and then the reliability of the marketing sentiment model is tested. The value of significance test is 0.00 approximately. Significance level $\alpha = 0.01$, $P < \alpha$. It is considered highly correlated with the SSE Fund index, with a correlation of 0.914. Marketing sentiment model is more reliable, marketing sentiment has a certain impact on the fund trend, so popular style fund marketing will have a certain leading role in the fund trend.

Table 16: forecast fund trend and Shanghai Stock Exchange Fund Index Correlation

Correlation			
		YC	Zscore(Shanghai Stock Exchange Fund Index)
YC	Pearson correlation	1	0.914
	Significant (Double Tail)		0
	Number of cases	172	172
Zscore	Pearson correlation	0.92	1
	Statistical significance	0	
	Number of cases	172	205

Standardized market sentiment forecast value and standardized Shanghai Stock Exchange index make trend chart. As follow Table 17:

Table 17：Forecast fund trend and Shanghai Stock Exchange Fund Index Comparison Chart
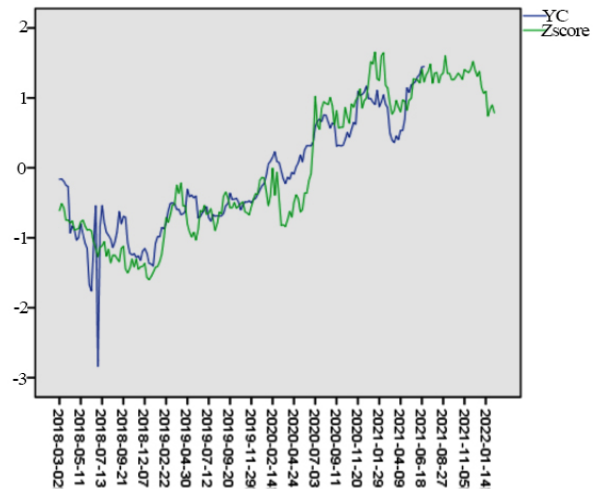
The analysis object adopted is the stock index in this paper, and the data used for the final prediction and inspection is the Shanghai Stock Index. The results of the marketing sentiment value on the stock market can be reversed to get the predicted value of the fund trend, so as to get a more intuitive conclusion. The impact of the explosive style fund marketing on the fund trend. Marketing sentiment value will rise or fall, it will lead the Shanghai Composite Index. It beats the Shanghai index by three to six months. The fluctuation range of Shanghai Composite Index is larger than that of marketing sentiment, which also reflects the Effect of Sheep Flock [3].

The malpractice of fund marketing is: When the fund trend is good, the hot list will be the first to push the fund, It may cause chasing up to kill, guide investors will buy in the high position of the fund. Therefore, investors should not blindly follow the fund information recommended by the fund company's APP hot list. Instead, they should judge the timing of entry and get higher returns with lower risks.

This paper studies the relationship between fund trend and the fund prediction index constructed by marketing sentiment index for nearly five years. The impact of changes in various indicators on fund trends needs to be further studied. Using the Shanghai Stock Exchange index to construct the Sharpe ratio, The relationship between rational marketing sentiment and Sharpe ratio was studied by generalized impulse analysis. It Gets more specific data on the relationship between marketing and fund movements, Makes the conclusion more realistic.

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