

The Impact of Leverage and Marginal Expected Shortfall on Systematic Risk -- Based on the Analysis of China's Stock Market

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Abstract. In recent years, the systemic risks of China's stock market has broken out frequently. Many scholars believe that leverage is an important factor that affects systemic risk. Based on Acharya(2010), this paper studies the relationship between leverage, Marginal Expected Shortfall and Systemic Expected Shortfall of stocks in China under the background of the global financial crisis in 2008, the COVID-19 epidemic in 2020 and the Federal Reserve's interest rate hike as well as the Russia-Ukraine conflict in 2022 respectively. The results show that: in the global financial crisis in 2008, and under the Russia-Ukraine conflict as well as Federal Reserve's interest rate hike in 2022, stocks with higher leverage and higher Marginal Expectation Shortfall will have greater Systemic Expected Shortfall; However, due to "supply-side reform" and "deleveraging", the effect was not significant under the COVID-19 epidemic in 2020. In addition, the manufacturing industry has performed significant heterogeneity under the two shocks in 2020 and 2022.

Keywords: Marginal expected shortfall; Leverage; Systematic expected shortfall; Systematic risk.

1. Introduction

In recent years, systematic risks in China's stock market have broken out frequently. For example, in June 2015, when the stock market crash broke out, the Shanghai Composite Index dropped from 5,174 points to 3,373 points, which severely hit investor confidence; At the beginning of 2020, the COVID-19 epidemic broke out in Wuhan, and a large number of enterprises stopped working and stopped production. In the first quarter, affected by the epidemic the stock market fell sharply on the first trading day. At the beginning of 2022, the Federal Reserve raised interest rates and the Russian-Ukrainian conflict broke out, which had a strong impact on the stock markets of China and even other countries in the world. The performance of China's stock market under different shocks showed different: during the early global stock market decline in COVID-19, the decline of the Shanghai Composite Index lasted only 3 months, with a decline of 11%; During the stock market crash in 2015, the Shanghai Composite Index fell by 49%. Since 2022, the Shanghai Composite Index have continued to fall by 21%. The macroeconomic environment at the time of these three rounds of declines was also completely different: in 2015, in a loose monetary environment, the leverage ratio was high, shadow banking prevailed, and a large amount of bank funds and off-market fund-raising funds entered the stock market; When the COVID-19 crisis broke out in 2020, China had experienced five years of supply-side reform and "deleveraging"; However, due to the huge economic impact caused by the COVID-19 crisis, and even the liquidity crisis, China had to relax its monetary policy and replenish liquidity in time. The impact of the interest rate hike by the Federal Reserve in 2022 and the conflict between Russia and Ukraine on China's stock market happened in the process of a lever rising again. Many scholars believe that leverage is an important factor affecting systemic risks, and even many scholars blame the stock market crash in 2015 on excessive leverage. Is this conclusion still valid for the two outbreaks of systemic risks in 2020 and 2022? Is there asymmetry in industries? These are all important questions that need to be answered urgently under the current external shock.

The structure of this paper is as follows: the first part is literature review, the second part is research methods and data, the third part is empirical results, and the fourth part is conclusions and suggestions.

2. Literature Review

2.1 Definition of Systemic Risk

Scholars have different definitions of systemic risk. Kaufman and Scott(2003) divided the definitions of systemic risk in the literature into three categories: the huge negative impact on the financial system and even the economic system as a whole; Common risk exposure among financial institutions; "Chain reaction" of financial institutions and markets to crisis events^[1]. Fang Yi et al. (2019) thinks that general systemic risk should include risk accumulation and risk realization. The process of risk accumulation is characterized by the positive changes of financial institutions' asset prices, leverage, credit, etc. in the upward phase of the financial cycle under the positive impact; The process of risk realization is manifested in the downward phase of the financial cycle, and the risks accumulated in the early stage of financial institutions are gradually released. Yang Zihui et al. (2018) think that the core concept of systemic financial risk is risk contagion, that is, a financial market (institution) suffers serious losses, which will quickly spread to related markets or institutions through connection, and eventually cause serious impact on the whole financial system. Fang Yi et al. (2019) summarized the core of systemic risk as three elements: impact, amplification mechanism and negative externality, and two dimensions of time and space^[2-4]. Some scholars have studied the systemic financial risks caused by high leverage, liquidity shortage and extreme losses in the financial market, evaluated the individual risk contribution level or capital shortage degree from a macro perspective, and then put forward a series of risk measurement indicators. Recently, it has become a new research direction to use the idea of network topology to investigate the relevance of financial markets and the infectivity of systemic financial risks.

2.2 Measurement of Systemetic Risk

Du Guande (2019) summarized the following methods for measuring the systemic risk of a single financial institution: Δ CoVaR and Co-Risk^[5]. Since the financial crisis in 2008, Δ CoVaR proposed by Adrian & Brunnermeier(2016) is the most representative systemic risk measure. This measure is based on the most commonly used VaR in risk management, and it is extended to the conditional value at risk (CoVaR) of the whole financial system when a single financial institution is in a certain state, and the difference of CoVaR of the financial institution in crisis or normal state is taken as the systemic risk measure (relative to individual risk taking)^[6]. Another systemic risk measure that has received wide attention is the DIP(Distress Insurance Premium) proposed by Huang et al.(2009). They regard the large-scale credit default of the banking system as a systemic risk, and calculate the current value of the expected loss caused by the banking sector when the systemic risk breaks out, namely DIP^[7].

Acharya(2010) extended the expected shortfall (ES), a method to measure the risk of a single financial institution, to the whole financial system, and put forward the marginal expected shortfall (MES) of financial institutions to measure the marginal contribution of financial institutions to system losses when there is no crisis, and the systematic expected shortfall (SES) to measure the marginal contribution of financial institutions to system losses when there is a crisis^[8].

2.3 Influence Mechanism of Leverage on Systemetic Risk

Wu Weixing (2016) believes that there is no specific rule for the causes of systemic risk, but there must be "trigger events" in the process of its occurrence. According to Kaufman's and Scott's (2003) classification, this triggering event is "a general event", "a big enough impact" and "the default of market participants" respectively. Wu Weixing (2016) concluded that the transmission mechanism of systemic risk can be divided into "the lack of liquidity of financial institutions leading to crisis", "information asymmetry leading to risk accumulation", "the excessive scale of financial institutions leading to risk aggregation", "close inter-institutional ties leading to risk contagion" and procyclicality of financial market contributes to financial risk fermentation^[9]. Many scholars have studied this issue from the perspective of leverage: Li Zheng (2016) and others first investigated the interactive

relationship between financing transactions and stock prices based on the market data before and after the stock market crash, and found that leveraged transactions represented by financing transactions really aggravated the stock market volatility, prompted the stock market to bubble rapidly, and finally led to the stock market crash crisis^[10]. Lu Lu (2016) found that leveraged trading led to this round of stock market volatility to a great extent: leverage expansion caused the stock market to rise, while "de-leveraging" caused the stock market to fall^[11]. Acharya(2010) believes that the higher the leverage and the greater the marginal system shortfall, the higher the systemic risk of financial institutions. Adrian(2010) pointed out that liquidity and leverage have an important impact on asset prices. The rise of asset prices makes financial institutions obtain a higher capital, thus stimulating financial institutions to seek more liabilities. In the empirical study, it is concluded that "the leverage ratio of financial institutions is pro-cyclical"-leverage and asset prices have a positive feedback effect^[12]. Tang Huailin (2019) pointed out that the sudden exhaustion of financial market liquidity is the key factor leading to the financial crisis, and understanding the relationship between liquidity and liquidity risk and asset pricing mechanism is the core of understanding the financial crisis^[13]. Brunnermeier et al. (2009) divided liquidity into market liquidity and funding liquidity, and put forward the "liquidity spirals" effect, which provided a good explanation for the reasons of market liquidity exhaustion and the stock market crash^[14-15].

To sum up, we can roughly get the mechanism of financial crisis caused by liquidity crisis: at the stage of asset price increase, financial institutions have higher financing capacity due to the increase of their own capital. According to Adrian's (2010) conclusion, leverage is pro-cyclical, and financial institutions will further use their new own capital to expand financing, and the increase of liabilities will exceed that of their own capital, so that leverage will rise, and higher leverage will bring higher capital inflows to the market. Further, leverage and asset price promote each other. In this process, a sudden negative event will often become a "trigger event" to expose systemic risks (Wu Weixing, 2016), but the magnitude of systemic risks depends on the magnitude of negative events and the level of leverage. In the period of high leverage, due to the procyclicality of leverage, asset prices often go up to a great extent. Financial institutions under high leverage are more vulnerable and can bear less losses. Therefore, financial institutions need more liquidity in the period of high leverage. When the "trigger event" occurs, compared with the period of low leverage: the same magnitude of asset price decline will cause greater bankruptcy risk to financial institutions; Financial institutions have greater demand for liquidity; The supply of market liquidity is smaller. Therefore, when the "trigger event" occurs, the asset price falls more seriously in the period of high leverage, and the losses of high leverage institutions become more serious. At the same time, in order to meet the margin requirement and the existence of compulsory liquidation mechanism, the market liquidity demand has risen sharply, and the liquidity supply tends to dry up, thus causing asset prices to plummet.

3. Research Methods and Data

3.1 Expected Shortfall (ES), Systematic Expected Shortfall (SES), Marginal Expected Shortfall (MES)

This paper uses the research model of Acharya(2010), uses the method of estimating the risk of the whole market based on the measurement of the risk of a single financial institution, that is, the expected Shortfall (ES), and proposes that SES and MES of financial institutions should be used to measure the contribution of the risk or loss when there is no crisis event. The expected loss refers to the expected rate of return of the financial market R under the assumption that the rate of return is lower than $1-\alpha$ confidence level, which is expressed as:

$$ES_{\alpha} = -E[R|R \leq -VaR_{\alpha}] \quad (1)$$

Assuming that the whole financial market is composed of n financial institutions, and the rate of return of each financial institution is r_i and the weight is y_i , the total income R of the whole financial

system is , and the expected loss of the whole financial institution at the confidence level of $1-\alpha$ can be expressed as:

$$ES_{\alpha} = -\sum_i y_i E [r_i | R \leq -VaR_{\alpha}] \quad (2)$$

Marginal expected shortfall refers to the contribution of institution i to the overall loss of the system when the system's rate of return R is lower than $1-\alpha$ confidence level, that is, when the financial system's income is poor. It can be expressed as:

$$\frac{\partial ES_{\alpha}}{\partial y_i} = -E [r_i | R \leq -VaR_{\alpha}] \equiv MES_{\alpha}^i \quad (3)$$

If the total capital of the whole financial system is W , the total assets of the whole industry are A , and the total capital is lower than the ratio Z of total assets (for example, the capital adequacy ratio stipulated by financial regulatory authorities), it is a systemic crisis event, that is, $W < AZ$, which is defined as a systemic crisis. According to Acharya's theory, the systematic expected shortfall (SES^i) of a single financial institution is equal to the amount that the equity capital w^i of a single financial institution is lower than its target level (the ratio Z of assets a^i) when a systemic crisis event ($W < ZA$) occurs, that is, the systematic expected shortfall of a single financial institution can be expressed as:

$$SES^i \equiv E [za^i - w^i | W < ZA] \quad (4)$$

SES^i refers to the average difference between the capital and the target capital of a single financial institution i when the equity capital W of the system is lower than the ratio $Z(W < AZ)$ of the total assets. It measures the marginal contribution of a single financial institution to the expected shortfall of the whole system when a crisis event occurs.

3.2 The Relationship Between Systematic Expected Shortfall (SES) and Marginal Expected Shortfall (MES) of Financial Institutions

SES measures the marginal contribution of a single financial institution i to the loss of the whole financial system when a crisis happens; MES measured the marginal contribution of a single financial institution i to the loss of the whole financial system when the financial institution i had the worst performance of $a\%$ when no crisis event occurred. Acharya et al. (2010) based on their research, their findings proved that the systemic expected loss can be measured by leverage and marginal expected shortfall, and their relationship can be expressed as follows:

$$\frac{SES^i}{w_0^i} = \frac{za - w_0^i}{w_0^i} + kMES_{5\%}^i + \Delta^i \quad (5)$$

w_0^i is the initial capital of financial institution i , k is the coefficient, and Δ^i is the adjustment item. Formula (5) indicates that, at the worst performance level of 5%, the higher the leverage of financial institution i , the greater the contribution to the loss of the whole financial system when there is no crisis, and the greater the contribution to the expected loss of the system when there is a crisis.

3.3 Measurement Model and Data

In order to test whether the financial institutions with high leverage and great contribution to the financial system loss when no crisis occurred have made great contribution to the whole financial system loss after the crisis occurred, this paper establishes the following measurement model:

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$$SES^i = \alpha_{11} + \alpha_{12}Leverage^i + \alpha_{13}MES^i + \varepsilon \quad (6)$$

In formula (6), leverage represents industry leverage, MES represents marginal expected loss, and SES represents systemic expected loss. If α_{12} is significantly negative, it means that high leverage will lead to larger SES; If α_{13} is significantly positive, it means that MES will lead to larger SES. In order to consider the influence of leverage and marginal expected loss of a specific industry on systematic expected loss, this paper adds industry dummy variables to experiment, and the econometric model is as follows:

$$SES^i = \alpha_{21} + \alpha_{22}Leverage^i + \alpha_{23}MES^i + \alpha_{24}MES^i \times Fin^i + \alpha_{25}Lev^i \times Fin^i + \alpha_{26}MES^i \times ManF^i + \alpha_{27}Lev^i \times ManF^i + \varepsilon \quad (7)$$

Where Fin^i is the virtual variable of financial industry, if the sample is financial industry, $Fin^i=1$, otherwise, it is 0; $ManF^i$ is a dummy variable of manufacturing industry. If the sample is manufacturing industry, $ManF^i=1$, otherwise, it is 0. $MES^i \times Fin^i$ represents the cross-product term of marginal expected loss and financial industry performance, $Lev^i \times Fin^i$ represents the cross-product term of leverage and financial industry performance. If α_{24} is significantly positive, MES in financial industry has a significantly greater impact on SES; If α_{25} is significantly negative, the Leverage of the financial industry has a significantly greater impact on SES; The manufacturing industry is the same.

SES^i uses the data of stock price increase and decrease in 2008, January 14th to March 23rd, 2020, December 31st, 2021 to April 29th, 2022 (Fan Xiaoyun, 2011)^[16], and $Leverage^i$ uses the data of stock price increase and decrease in 2007, 2019 and 2021 (Tang Huailin, 2019), while MES^i uses the data of daily stock return rate of enterprises at the worst 5% level in 2007, 2019 and 2021 (Acharya, 2010).

At the same time, ST enterprises, listed or delisted enterprises in the whole year of 2008, January 14 to March 23, 2020, December 31, 2021 to April 29, 2022 and other enterprises unable to obtain data were excluded from the sample selection.

3.4 Descriptive Statistic

Table 1. Data before and after the financial crisis in 2008

Var		Obs	Me	Std.	Mi	Ma
SE S	Wh	127	-	0.2	-	4.2
	Fin	38	-	0.1	-	0
	Ma	667	-	0.2	-	4.2
ME S	Wh	127	-	0.0	-	0.0
	Fin	38	-	0.0	-0.1	0.0
	Ma	667	-	0.0	-	0
Lev	Wh	127	1.7	1.2	-	12.
	Fin	38	2.2	1.4	0.2	8.4
	Ma	667	1.8	1.2	-	12.

Table 2. Data before and after COVID-19 epidemic in 2020

Var		Obs	Me	Std.	Mi	Ma
SE S	Wh	336	-	0.1	-	2.1
	Fin	98	-	0.1	-	0.4
	Ma	212	-	0.1	-	2.1
ME S	Wh	336	-	0.0	-0.1	-
	Fin	98	-	0.0	-	-
	Ma	212	-	0.0	-0.1	-

	Wh	336	0.2	0.4	-	4.8
Lev	Fin	98	0.3	0.4	-	2.4
	Ma	212	0.2	0.4	-	3.9

Table 3. Data before and after Russia-Ukraine War in 2022

Var		Obs	Me	Std.	Mi	Ma
SE S	Wh	388	-	0.2	-	3.0
	Fin	115	-	0.1	-	0.3
	Ma	251	-	0.1	-	2.1
ME S	Wh	388	-	0.0	-	-
	Fin	115	-	0.0	-	-
	Ma	251	-	0.0	-	-
Lev	Wh	388	-	0.5	-	5.6
	Fin	115	-	0.2	-	1.0
	Ma	251	0.2	0.5	-	5.6

Tables 1, 2, and 3 respectively counted the industry information of the whole industry, financial industry and manufacturing industry before and after the crisis events in 2008, 2020, and 2022. From the data, it can be concluded that after the crisis, the financial industry's systematic expected loss is the largest in all three groups of data, indicating that it suffered the most serious loss.

For the manufacturing industry, the fluctuation range of systematic expected loss and marginal expected loss is large, and the fluctuation range of SES and MES manufacturing data in 2008 and 2020 is the same as that of the whole industry, which shows that manufacturing is an important factor that causes the losses of the whole industry before and after the crisis. As for leverage data, the higher the leverage, the greater the risk, and the ability to resist losses will deteriorate when a crisis happens. The financial industry has the highest leverage ratio in 2008 and 2020, which leads to the largest systematic expected loss. For 2022, the manufacturing industry has the largest leverage, which leads to a greater loss than the industry average.

4. Empirical Results

Table 4. Industry-wide sample regression results

	2008			2020			2022		
	(1	(2	(3	(4	(5	(6	(7	(8	(9
MES	2.916	2.908	2.931	0.248	0.267	0.647	3.738	3.736	2.584
Lever	-	-	-	0.007	0.009	0.011	-	-	-
MesF		0.444			0.816			-	
Mes			-			-			1.293
LevFi		-			-			0.085	
Lev			0.002			-			0.045
_cons	-	-	-	-	-	-	-	-	-
Num	1270	1270	1270	3367	3367	3367	3881	3881	3881

Note: ***, ** and * are significant at 1%, 5% and 10% levels respectively.

4.1 Empirical Results of the Whole Samples

The results of experiment (1) and experiment (7) show that the regression coefficients of MES and Leverage are both significant at the significant level of 1% in 2008 and 2022, indicating that they have a good correlation with SES. The MES coefficient is positively correlated, which indicates that the greater the marginal expected loss of financial institution *i* is when there is no crisis, the greater the contribution to the systemic expected loss of the whole industry when there is a crisis, which is consistent with the hypothesis put forward above. However, the leverage coefficient is negative, and the leverage itself is positive, which indicates that the enterprises with high leverage ratio in the

absence of crisis events have great risks for their own enterprises, and there is a potential spillover risk for the whole industry, resulting in the greater contribution to the loss of the whole industry in the event of crisis events, which is consistent with the above assumptions.

For the regression data in 2020, experiment (4) shows that leverage and MES have little correlation with SES, which is due to the implementation of the deleveraging policy in China's 13th Five-Year Plan. In 2017, the leverage ratio decreased by 10.9% compared with that in 2012-2016. In 2020, the state held a meeting to continue to strengthen the implementation of the deleveraging policy, and China's total leverage was effectively controlled. At the same time, the leverage structure was gradually reduced. Therefore, this explains the low degree of leverage correlation. As the leverage ratio drops, the risk contribution to the whole market is not high.

However, as the epidemic has dealt a heavy blow to the whole industry, especially the manufacturing industry, which has generally stopped work and production, and suffered serious losses, the state has to adopt a relatively loose monetary policy, such as the central bank reducing the deposit reserve ratio of financial institutions by 0.5 percentage point in 2020, so as to alleviate the pressure faced by the real economy under the epidemic. Therefore, the loose monetary policy has increased the leverage ratio of financial institutions as a whole, and the impact of highly leveraged financial institutions on the systemic expected loss of the whole industry has gradually increased, which explains that the regression results are significantly correlated at 5% level and the leverage coefficient is negative. However, the loose monetary policy at this time is a monetary policy within the control range. Compared with 2008, the monetary policy at this time is more mature, so the correlation coefficient is small, and its influence on the whole industry is relatively controllable.

4.2 Empirical Results on Specific Industries

In order to explore whether a specific industry will have a moderating effect on the marginal expected loss and leverage, this part introduces dummy variables, and explores whether the impact produced when the industry is financial or manufacturing is significantly related to the change of systemic expected loss of the whole industry.

4.2.1 Empirical Results on Financial Industry

When the industry is financial, for experiment (2), the adjustment effect of the cross-product term is not significant, which indicates that the marginal expected loss and leverage of the financial industry have no significant correlation with the systemic expected loss of the whole industry, and do not contribute much to the systemic expected loss.

However, with the continuous expansion of China's opening to the outside world and the increasing frequency of international cooperation, the inter-regional linkage has been strengthened, and the mutual influence between China's stock market and foreign stock markets has gradually intensified. Especially for the financial industry, for the cross-product term of experiment (5) MESFin, the regression result is significant at the level of 10%, which indicates that the contribution of China's financial industry to the systematic loss of the industry has a stronger correlation than that of 2008, which indicates that the scale and influence of China's financial industry are constantly expanding. However, in terms of the adjustment effect of leverage and specific industries, the regression results of the two groups of data are not significant. The high leverage of the financial industry does not aggravate the impact of the leverage of the whole industry on the systemic expected loss. This is because the stability mechanism of the financial system itself makes these relatively fragile financial institutions with high leverage and high MES not significantly increase the overall loss.

4.2.2 Empirical Results on Manufacturing Industry

When the industry is manufacturing, for experiment (3), in 2008, MES and leverage in the whole industry were both significant at 1%, indicating a strong correlation. However, the regression results of the cross-product of manufacturing and MES in leverage showed that they were not significant. Similar to the financial industry, the influence of MES and leverage on SES in the whole industry could not be significantly strengthened when a specific industry was manufacturing. This is probably

due to the fact that the MES of manufacturing industry itself is not large. The results of descriptive statistics in Table (1) show that the fluctuation range of MES of manufacturing industry in 2008 is not large and relatively stable, so whether it is manufacturing industry or not will not directly lead to a significant increase in SES of the whole industry. Moreover, this effect probably exceeds the adjustment effect of manufacturing high leverage on SES, so the regression result of LevManF shows that it is not significant.

Comparing two groups of data in 2020 and 2022, according to experiment (6) and experiment (9), MES and MesManF are both significant at 1% level, which indicates that the joining of manufacturing industry is significantly related to the change of SES in the whole industry. Considering the actual situation in 2020 and 2022, after the outbreak of COVID-19 epidemic, a large number of factories and physical shops in China were shut down and went bankrupt. Express delivery has been shut down nationwide, and people have to be isolated at home for several months because of the epidemic situation, which has dealt a huge blow to the real economy, and the manufacturing industry is difficult to develop. Therefore, the industry itself has a high MES. At the same time, because of the large number and large scale of manufacturing enterprises, it has a greater impact on SES. Compared with the financial industry, people can buy and sell securities and stocks through online platform transactions. The impact of the epidemic on the financial sector is not significant compared with the manufacturing sector, which explains why after the epidemic in 2020, the impact of MES and Leverage on SES is still insignificant after considering the impact of the financial sector, but SES is significantly related at 1% after considering the manufacturing sector. With the Russia-Ukraine conflict in 2022, the domestic and foreign stock markets fluctuated to varying degrees. This crisis event mainly affected the international oil price, automobile manufacturing and transportation, which are one of the important parts of the manufacturing industry. At the same time, due to the loose monetary policy implemented by the central bank, such as lowering the deposit reserve ratio by 0.5 percentage point and lowering the LPR interest rate, the domestic economic development was resumed. This makes the leverage ratio of manufacturing industry rise. Secondly, the cross-product coefficient of MESManF is positive and correlated at a significant level of 1%, which will aggravate the influence of MES on SES, indicating that the participation of manufacturing industry will increase the systemic expected loss of the whole industry. Therefore, according to the data in Table (3), the absolute number of MES average in manufacturing industry is larger than that in the whole industry, and its marginal contribution to SES is greater, which explains why the regression results are significantly correlated at the level of 1% after considering manufacturing industry.

5. Conclusions and Suggestions

Based on Acharya's theoretical research, this paper discusses the systematic expected shortfall of China's stock market under the COVID-19 epidemic and Russia-Ukraine conflict, and analyzes whether financial institutions with higher marginal expected shortfall and high leverage will have higher systematic expected shortfall after the crisis. Conclusions are as followed:

For the whole industry, the influence of MES and leverage on systemic risk is significant.

When the industry is financial industry, the interaction between financial industry and MES and leverage on SES is not obvious.

When the industry is manufacturing, the interaction between manufacturing and MES on SES is extremely significant, but the cross-product term with Leverage has no significant impact on SES. This is because SES and MES are already losses, while leverage represents high risk and potential, which does not mean that these institutions will have significant losses after the crisis. Based on the above conclusions, this paper puts forward the following policy suggestions:

China's regulatory agencies should pay attention to such enterprises, especially the manufacturing industry, which have a high marginal loss contribution to the industry in daily operation. They are likely to have a huge impact on the whole financial system when sudden crisis comes.

Regulators should strengthen the supervision of these enterprises, conduct regular reviews, formulate higher regulatory standards, and carefully guard against the impact on China's financial system.

The People's Bank of China should formulate a reasonable monetary policy according to the market conditions to prevent or deal with risks, stabilize the market and improve investor confidence.

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