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Research on the Impact of Deleveraging on the Risk of Stock Price Crash

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Abstract: *Previous studies have shown that the deleveraging method of "other empowerment" is mainly to increase the amount of book capital of enterprises in the form of accounting, and does not substantially enhance the capital strength, which is a superficial "positive" but not "safe", that is, "false positive" and more "unsafe" deleveraging method. This paper uses the data of companies listed on the main board of the non-financial industry in the normal state of the A-share market from 2013 to 2018, and examines the economic consequences of using the "false positive" and more "unsafe" deleveraging method from the perspective of stock price crash risk. The results show that companies that use perpetual bonds to reduce leverage tend to have a higher risk of stock price crash, that is, the issuance of perpetual bonds and the inclusion of equity instruments will increase the risk of corporate collapse. Further research on the overall hybrid securities shows that companies that issue hybrid securities have a higher risk of stock price crash. The conclusions of this paper enrich the research on the economic consequences of deleveraging, and also broaden the research on the factors affecting the risk of stock price crash.*

Keywords: *Hybrid securities, Perpetual bonds, Stock price crash risk*

1. Introduction

Although leveraged manipulation can enable enterprises to achieve certain short-term goals, enterprises should fully understand the risks and potential adverse effects of leveraged manipulation, so as to effectively control leveraged manipulation. The existing research literature and the practice of Chinese enterprises show that companies do have the motivation of leverage manipulation [1]. Other deleveraging methods do not substantially enhance the production and operation capacity and capital strength of enterprises, but are more leveraged in the form of accounting, which is a more "unsafe" ("false positive") deleveraging method [2]. For example, although the issuance of perpetual bonds has brought new financing channels to enterprises and enabled them to take the initiative in the payment of interest and principal, the complexity of the contractual provisions of perpetual bonds, which is a hybrid security with both liability and equity attributes, is likely to be different in terms of legal form and economic substance, resulting in the motivation of manipulating leverage in its accounting classification by artificially manipulating and whitewashing financial statements [3]. Moreover, most of the perpetual bonds issued by enterprises adopt "2+N", "3+N" and "5+N".This means that if the enterprise does not pay interest in the previous fixed period, it will face the reset of interest rates and credit problems in the future, and the enterprise will have a greater potential debt risk when using perpetual bonds as a financing channel to reduce leverage, and this more "unsafe" ("false positive") deleveraging method will essentially increase the leverage of the enterprise, and high leverage will increase the financial risk of the enterprise, which in turn will lead to an increase in the cost of capital of the enterprise, an increase in the risk of bankruptcy, and a weakening of profitability, the risk of stock price crash, and may even threaten national financial security [4].

The classification of perpetual bonds as equity instruments or financial liabilities will directly affect the accounting of enterprises, affect the asset-liability ratio and profit distribution of enterprises, and produce completely different economic consequences [5]. Previous studies have shown that hybrid securities represented by perpetual bonds may affect the capital structure of firms, leading to a number of problems related to shareholder value enhancement, signaling effects, regulatory oversight, financial stability, investment decisions, and especially asset substitution incentives [6] argue that information

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asymmetry theory and agency theory are important factors affecting the risk of stock price crash. Managers tend to hide bad news for self-interested purposes [7] [8] [9] [10], and the accumulation of bad news to a certain extent will lead to the risk of a company's stock price crash. In 2020, the outbreak of the new crown epidemic around the world, many enterprises are facing the dilemma of shutdown, financing difficulties and resumption of production, for those enterprises that use perpetual bonds as the main "other empowerment" method to deleverage, high interest payments lead to a series of negative news and operations such as having to defer interest, roll over or carry out more earnings manipulation, which will undoubtedly increase the information asymmetry and agency problems between internal and external enterprises. Exposing the business to a greater risk of collapse.

Therefore, from the perspective of stock price crash risk, this paper examines the economic consequences of using "real debt", i.e., perpetual bonds, which is a "false positive" and more "unsafe" deleveraging method, which can provide evidence support for enterprises to fully understand the risks and potential adverse effects of leverage manipulation, so as to effectively control leverage manipulation. In addition, this paper will further examine the overall hybrid securities (preferred shares, convertible bonds and perpetual bonds), in addition to perpetual bonds, convertible bonds and preferred shares also have both liability and equity attributes, and the study of hybrid securities as a whole will help to expand the research on the influencing factors of stock price crash risk.

The contribution of this paper is mainly reflected in the following aspects: First, from the perspective of stock price crash risk, this paper examines the economic consequences of using "clear stock real debt", that is, perpetual bonds, which is "false positive" and more "unsafe", which not only enriches the research on the economic consequences of Chinese enterprises' deleveraging methods, but also broadens the research on the factors affecting the risk of stock price crash. Second, this paper expands the empirical evidence on hybrid securities in developing countries. Finally, the research results of this paper can provide theoretical reference and evidence support for enterprises to fully understand the risks and potential adverse effects of leverage manipulation, so as to effectively control the behavior of leverage manipulation.

The second part is theoretical analysis and research hypothesis, the third part is research design, the fourth part is empirical test and result analysis, and finally the fifth part is research conclusion and enlightenment.

2. Theoretical Analysis and Research Hypothesis

From a macro point of view, since 2008, the leverage ratio of China's non-financial corporate sector has been rising and showing a strong counter-cyclicality, and the deleveraging policy under the premise of ignoring asset price stability (or financial stability) will make the leverage and default rate of the corporate sector rise to a high level at the same time [11]. In the case of high leverage, margin traders tend to adopt a positive feedback trading strategy of chasing the rise and killing the down. Positive feedback trading with high leverage has a large irrational component. When the account leverage of the whole market is generally high, the financing mechanism will significantly increase the risk of price fluctuations and stock price crashes of the underlying stock [12].

From the perspective of micro enterprises, theoretically speaking, the utility of leverage on enterprises is two-way, when the business conditions are good and the performance is high, enterprises can reduce capital costs, save taxes and increase profits by increasing the leverage ratio; When the company's operating conditions deteriorate, its performance is low or even it loses money, the company must reduce its leverage ratio, otherwise it will face the risk of not being able to repay the principal and interest when it expires. In fact, the essence of deleveraging is that highly leveraged firms dynamically adjust their capital structure downward, and changes in capital structure may affect investor confidence. Although the deleveraging policy can reduce the financial risk and bankruptcy risk of enterprises, the decline of the asset-liability ratio will inevitably lead to the loss of incentives for creditors to supervise externally, indirectly exacerbate the encroachment of management on shareholders' interests, and the rise in equity agency costs will seriously dampen the confidence of investors in the market [13], leading to the risk of stock price collapse of enterprises.

The "fake positive" and more "unsafe" deleveraging method of "clear equity and real debt" reduces the pressure of corporate debt repayment while falsely reducing leverage, exacerbating the encroachment of the interests of management and shareholders, and the increase in agency costs and high financial leverage will exacerbate the risk of stock price collapse of enterprises [14]. It can be seen that the use of "fake positive" and more "unsafe" financing mechanisms such as "clear stocks and real

ISSN 2616-5902 Vol. 7, Issue 3: 160-167, DOI: 10.25236/AJBM.2025.070322

debts" to deleverage will excessively push up stock prices, thereby increasing the risk of stock price crashes. Based on this, the following hypotheses are proposed:

Hypothesis 1: The "false positive" and more "unsafe" deleveraging method of "clear equity and real debt" will exacerbate the risk of stock price crash of enterprises.

3. Empirical Study Design

3.1. Sample Selection and Data Sources

In view of the issuance of perpetual bonds in China in 2013 and the availability of data, this paper selects the data of A-share main board listed companies in the sample interval from 2013 to 2018. Based on the consistency and comparability of the sample data, this paper excludes abnormal listed companies such as ST, financial listed companies, samples with missing data on relevant variables, and samples with less than 30 weekly returns per year. A total of 4174 samples were obtained. At the same time, in order to eliminate the influence of extreme outliers on the regression results, this paper also carries out the Winsorize tailing treatment of the continuous variables by 1% above and below.

3.2. Variable Selection

3.2.1. Explained Variables

Referring to existing studies such as Xu Nianhang et al., (2012) [15] In this paper, the negative return skew coefficient (*NCSKEW*) and the yield up-and-down volatility ratio (*DUVOL*) are selected to measure the risk of stock price crash.

3.2.2. Explanatory Variables

In this paper, the dummy variables 0 and 1 are used to measure whether companies have adopted perpetual bonds, which are "clear stocks and real debts", and "false positive" and more "unsafe" deleveraging methods. Specifically, according to whether the enterprise has issued perpetual bonds, the dummy variable $DummyPB_{i,t}$ is designed as the explanatory variable. If the company issues perpetual bonds, the value of $DummyPB_{i,t}$ is 1, otherwise it is 0.

3.2.3. Control Variables

Referring to the existing studies of Meng Qingbin et al., (2018) [16], Xu Nianhang et al., (2012) [15], the control variables selected in this paper are: equity concentration ($OwnCon10_{i,t}$) and book market value ratio ($BM_{i,t}$)Net Profit Margin on Assets ($ROA_{i,t}$),Asset Responsibility Ratio ($DAR_{i,t}$), Company Size ($Size3_{i,t}$),Average Weekly Specific Rate of Return ($Ret_{i,t}$),Standard Deviation of Weekly Specific Returns ($Sigma_{i,t}$),Average Monthly Excess Turnover Rate ($FulTurnover_{i,t}$),External Financing Ratio ($Extfinrt_{i,t}$), Tobin Q ($QVal_{i,t}$), board size ($lnDirNum_{i,t}$). In addition, individual and year variables are controlled.

3.3. Model Design

Referring to the previous studies of Meng Qingbin et al.,(2018) [16], Xu Nianhang et al., (2012) [15], this paper selects the following model to examine the impact of hybrid securities on the risk of corporate stock price crash.

$$Crash\_Risk_{i,t+1}=\beta_1 DummyHH_{i,t}+\Psi X_{i,t}+\eta_{i,t} \quad (1)$$

In Eq. (1), $Crash\_Risk_{i,t+1}$ are measured by the crash risk of the stock i in year t+1 *NCSKEWnext* and *DUVOLnext*, respectively, DummyHH is the dummy variable of whether the firm issues hybrid securities, and $X_{i,t}$ is a set of control variables, which is measured by the value of year t.

In the model, the risk of stock price crash is $Crash\_Risk_{i,t+1}$ and the reason why the value of T+1 uses the data of the two stock price crash risk measures with a lag of one period is because considering the logic of causal effect, that is, the impact of the company's current issuance of hybrid securities may have a lag effect, which may have a more obvious effect on the risk of stock price crash in the next period. At the same time, such research is also more valuable, for example, after a company issues a hybrid security in the current period, it can be alert to the risk of a possible stock price crash in the future, so as to prepare for it accordingly.

ISSN 2616-5902 Vol. 7, Issue 3: 160-167, DOI: 10.25236/AJBM.2025.070322

The following table (Table 1) describes the variables in this document:

Table 1: Variable Definitions

Variable	Description
NCSKEWnext	The skewness coefficient of negative return of stock i in T+1 year is calculated in Equation (3), the larger the value, the greater the risk of stock price crash
DUVOLnext	The up-and-down fluctuation ratio of the return of T+1 stock i, see Equation (4) for specific calculations, the larger the value, the greater the risk of stock price crash
$DummyHH_{i,t}$	If the business issues perpetual bonds or preferred shares or convertible bonds, the value of DummyHH is 1, otherwise it is 0
$DummyPB_{i,t}$	If the company issues perpetual bonds, the value of Dummy PerpetualBond (DummyPB) is 1, otherwise it is 0
$Sigma_{i,t}$	Standard deviation of weekly earnings of company i in year t
$Network_{s,t}$	The average weekly unique return of stock i in year t
$Size3_{i,t}$	The natural logarithm of the company's total assets (in trillion yuan) at the end of the year t
$BM_{i,t}$	is the reciprocal of the price-to-book ratio,BMI,t = net assets / (stock price at the end of the year t ×number of outstanding shares + net assets per share ×number of non-tradable shares).
$DAR_{i,t}$	Total Liabilities / Total Assets * 100%
$ROA_{i,t}$	Net Profit / Average Total Assets * 100%
$OwnCon10_{i,t}$	The sum of the top 10 shareholders
$FulTurnover_{i,t}$	is the difference between the average monthly turnover rate of stock i in year t and the average monthly turnover rate of stock i in year t-1
$Extfinrt_{i,t}$	(Increase (decrease) amount of operating payables + Financing cash inflow) / Total cash inflow * 100%
$QVal_{i,t}$	(Market Value of Equity + Net Debt) / Current Value of Tangible Assets
$lnDirNum_{i,t}$	The natural logarithm of the number of board members

4. Empirical Test and Result Analysis

4.1. Descriptive Statistical Analysis

As can be seen from Table 2, the values of *NCSKEWnext* and *DUVOLnext* are basically consistent with the existing studies and are within a reasonable range, with mean values of -0.217 and -0.137, and standard deviations of 0.646 and 0.462, respectively.

Table 2: Descriptive Statistical Analysis

Variable	N	mean	sd	min	p50	Max
NCSKEWnext	4174	-0.217	0.646	-2.403	-0.191	1.852
DUVOLnext	4174	-0.137	0.462	-1.386	-0.125	1.090
DummyPB	4174	0.0161	0.126	0	0	1
DummyHH	4174	0.0225	0.148	0	0	1
OwnCon10	4174	0.558	0.150	0.214	0.563	0.897
BM	4174	0.412	0.218	0.0292	0.375	1.197
ROA	4174	0.0372	0.0414	-0.122	0.0294	0.200
BUT	4174	0.486	0.192	0.0750	0.491	0.902
Size3	4174	-4.979	1.222	-8.560	-5.080	0.439
Right	4174	0.00300	0.00780	-0.0131	0.00230	0.0356
Sigma	4174	0.0571	0.0217	0.0231	0.0523	0.158
FulTurnover	4174	-8.831	38.23	-124.2	-4.093	106.6
Extfinrt	4174	0.268	0.204	-0.162	0.250	0.821
QVal	4174	2.347	1.482	0.910	1.870	13.17
lnDirNum	4174	2.518	0.277	1.946	2.485	3.219

4.2. Regression Analysis

Considering the possible influence of multicollinearity on the empirical results, the VIF values of

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each variable in the regression are calculated in this paper, which are all less than 3, and the maximum value is 2.32, which is much less than 10, which excludes the possibility of serious multicollinearity between variables to a certain extent.

It can be seen from Table 3 that when controlling individual companies alone, the regression coefficients of DummyPB, the dummy variable of perpetual bonds, and the two measures of stock price crash risk, NCSKEWnext and DUVOLnext, are both significantly positive at the 1% level. When controlling for both individual and year, the regression coefficients of the dummy variable DummyPB and the two measures of stock price crash risk, NCSKEWnext and DUVOLnext, are significantly positive at the levels of 5% and 1%, respectively, indicating that the issuance of perpetual bonds is significantly positively correlated with the future stock price crash risk of enterprises under the condition of controlling for equity concentration and book market value ratio, that is, the issuance of perpetual bonds will exacerbate the risk of stock price crash of enterprises. This supports the hypothesis of this paper.

Table 3: Perpetual Bonds and Stock Price Crash Risk

VARIABLES	(1) *NCSKEWnext*	(2) *NCSKEWnext*	(3) *DUVOLnext*	(4) *DUVOLnext*
DummyPB	0.267***	0.237**	0.205***	0.178***
	(2.76)	(2.46)	(3.14)	(2.74)
OwnCon10	-0.108	0.056	-0.064	0.069
	(-0.59)	(0.31)	(-0.52)	(0.57)
BM	-0.467***	-0.298**	-0.438***	-0.312***
	(-3.70)	(-2.23)	(-5.27)	(-3.59)
ROA	-0.432	-0.426	-0.201	-0.151
	(-0.92)	(-0.89)	(-0.60)	(-0.45)
BUT	-0.227	-0.127	-0.129	-0.053
	(-1.41)	(-0.77)	(-1.15)	(-0.46)
Size3	0.179***	0.126**	0.106***	0.073**
	(4.22)	(2.40)	(3.78)	(2.10)
Right	11.972***	12.189***	7.480***	8.527***
	(5.51)	(5.24)	(5.09)	(5.28)
Sigma	-3.397***	-1.186	-2.253***	-1.388**
	(-5.07)	(-1.25)	(-4.79)	(-2.00)
FulTurnover	-0.001***	0.000	-0.001***	0.000
	(-3.86)	(0.05)	(-5.32)	(0.09)
Extfinrt	-0.095	-0.107	-0.041	-0.064
	(-0.87)	(-1.01)	(-0.58)	(-0.92)
QVal	0.068***	0.058***	0.036**	0.027*
	(3.49)	(3.02)	(2.50)	(1.90)
lnDirNum	-0.137*	-0.132*	-0.074	-0.063
	(-1.86)	(-1.78)	(-1.42)	(-1.21)
Observations	4,174	4,174	4,174	4,174
R-squared	0.053	0.073	0.057	0.085
Company FE	YES	YES	YES	YES
Year FE		YES		YES

Note: *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

4.3. Further Analysis

The empirical results of the above show that the use of perpetual bonds, which is a "clear equity and real debt" and a "falsely positive" and more "unsafe" deleveraging method, will exacerbate the risk of stock price crash. In view of the fact that hybrid securities can be subdivided into three types: preferred shares, convertible bonds, and perpetual bonds, this paper further examines whether hybrid securities with the same dual financing attributes as perpetual bonds have the same impact on stock price crash risk as perpetual bonds.

Therefore, this paper further examines whether the deleveraging method of hybrid securities financing will exacerbate the risk of corporate stock price crash. Referring to the design of perpetual bond variables, in the further test, the dummy variables 0 and 1 are used to measure whether the

ISSN 2616-5902 Vol. 7, Issue 3: 160-167, DOI: 10.25236/AJBM.2025.070322

enterprise adopts the hybrid securities deleveraging method. Specifically, the dummy variable DummyHH is designed as the explanatory variable according to whether the company has issued hybrid securities. If the company issues perpetual bonds or preferred shares or convertible bonds, the value of DummyHH is 1, otherwise it is 0. The other control variables remain unchanged. The above regression model is used to investigate the impact of hybrid securities on stock price crash risk. The specific conclusions are as follows:

In Table 4, the regression coefficients of the hybrid security variable DummyHH and the two measures of stock price crash risk, NCSKEWnext and DUVOLnext, are significantly positive at the levels of 1% and 5%, respectively, when controlling individual firms alone. When controlling for both individual and year, the regression coefficients of the hybrid security variable DummyHH and the two measures of stock price crash risk, NCSKEWnext and DUVOLnext, are significantly positive at the levels of 5% and 10%, respectively. All these show that there is a significant positive correlation between the issuance of hybrid securities and the risk of future stock price crash of enterprises under the condition of controlling for factors such as equity concentration, book-to-market ratio, company size, and net asset interest rate, that is, the use of hybrid securities will exacerbate the risk of stock price crash of enterprises, which supports the further speculation of this paper.

Table 4: Hybrid Securities and Stock Price Crash Risk

VARIABLES	(1) *NCSKEWnext*	(2) *NCSKEWnext*	(3) *DUVOLnext*	(4) *DUVOLnext*
DummyHH	0.198***	0.174**	0.130**	0.111*
	(2.65)	(2.28)	(2.29)	(1.93)
OwnCon10	-0.106	0.059	-0.062	0.071
	(-0.58)	(0.32)	(-0.51)	(0.59)
BM	-0.459***	-0.289**	-0.429***	-0.302***
	(-3.65)	(-2.17)	(-5.19)	(-3.49)
ROA	-0.440	-0.428	-0.206	-0.150
	(-0.94)	(-0.90)	(-0.62)	(-0.45)
BUT	-0.233	-0.130	-0.133	-0.055
	(-1.45)	(-0.79)	(-1.19)	(-0.47)
Size3	0.180***	0.126**	0.107***	0.073**
	(4.22)	(2.40)	(3.82)	(2.11)
Right	11.995***	12.264***	7.505***	8.609***
	(5.52)	(5.28)	(5.11)	(5.34)
Sigma	-3.400***	-1.230	-2.250***	-1.421**
	(-5.08)	(-1.30)	(-4.78)	(-2.05)
FulTurnover	-0.001***	0.000	-0.001***	0.000
	(-3.87)	(0.07)	(-5.33)	(0.11)
Extfinrt	-0.101	-0.113	-0.045	-0.067
	(-0.93)	(-1.06)	(-0.63)	(-0.97)
QVal	0.068***	0.058***	0.037**	0.027*
	(3.50)	(3.02)	(2.52)	(1.91)
lnDirNum	-0.139*	-0.133*	-0.075	-0.064
	(-1.87)	(-1.79)	(-1.44)	(-1.22)
Observations	4,174	4,174	4,174	4,174
R-squared	0.053	0.072	0.056	0.084
Company FE	YES	YES	YES	YES
Year FE		YES		YES

Note: *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

Among the control variables, the regression coefficient of the average weekly return (*Ret*) and the risk of stock price crash is significantly positive, which is consistent with the existing studies. The regression coefficient between book to market value ratio (*BM*) and stock price crash risk is significantly negative, and the regression coefficient of asset responsibility ratio (*DAR*) to stock price crash risk is negative, which is consistent with existing studies[17]. The regression coefficient of firm size (*Size3*) and stock price crash risk is significantly positive, which is inconsistent with existing studies [18], which is likely due to the inconsistency of the units used before the logarithm of the firm's asset value, which affects the positive and negative situation of the variable firm size (*Size3*). The regression coefficient between board size (*lnDirNum*) and stock price crash risk is negative, which is

ISSN 2616-5902 Vol. 7, Issue 3: 160-167, DOI: 10.25236/AJBM.2025.070322

basically significant, which is consistent with existing studies. In conclusion, the regression results of the control variables are mostly consistent with the existing studies, indicating that the main regression results are relatively reliable.

4.4. Robustness Test

In this paper, the PSM propensity matching method is used to refine the samples according to the 1:3 principle for regression to test the robustness of the main regression results. The regression results are shown in Table 5, and the regression coefficients for the two measures of stock price crash risk, *NCSKEWnext* and *DUVOLnext*, are 5 for the mixed security variable *DummyHH* and the stock price crash risk when controlling individual firms alone% and 10% are significantly positive; When controlling for both individual and year, the regression coefficients of the two measures of the mixed security variable *DummyHH* and the stock price crash risk, *NCSKEWnext* and *DUVOLnext*, are significantly positive at the 5% level, indicating that the main regression results are robust.

Table 5: Robustness Test of Hybrid Securities and Stock Price Crash Risk

VARIABLES	(1) *NCSKEWnext*	(2) *NCSKEWnext*	(3) *DUVOLnext*	(4) *DUVOLnext*
DummyHH	0.450**	0.507**	0.374*	0.422**
	(2.20)	(2.39)	(1.86)	(2.01)
OwnCon10	0.077	0.449	-0.011	0.160
	(0.08)	(0.45)	(-0.02)	(0.22)
BM	-2.052***	-2.223***	-1.331**	-1.459**
	(-2.83)	(-3.00)	(-2.31)	(-2.43)
ROA	-3.282	-7.065	-5.058	-6.548
	(-0.74)	(-1.46)	(-1.26)	(-1.55)
BUT	-1.291	-2.702	-0.516	-1.284
	(-0.75)	(-1.44)	(-0.37)	(-0.80)
Size3	0.335	0.778**	0.295*	0.670**
	(1.37)	(2.36)	(1.76)	(2.07)
Right	10.427	5.941	2.585	3.313
	(0.84)	(0.42)	(0.22)	(0.26)
Sigma	-12.084***	-8.189	-9.537***	-9.705**
	(-4.08)	(-1.44)	(-4.01)	(-2.36)
FulTurnover	-0.001	-0.000	-0.000	0.001
	(-0.50)	(-0.13)	(-0.10)	(0.34)
Extfinrt	-0.222	-0.040	-0.102	-0.041
	(-0.27)	(-0.05)	(-0.16)	(-0.07)
QVal	0.162	0.412	0.537	0.665
	(0.40)	(0.98)	(1.38)	(1.58)
lnDirNum	0.819	0.399	0.783**	0.498
	(1.43)	(0.69)	(2.19)	(1.51)
Observations	290	290	290	290
R-squared	0.291	0.337	0.320	0.361
Company FE	YES	YES	YES	YES
Year FE		YES		YES

Note: *, **, and *** indicate significance levels of 10%, 5%, and 1%, respectively.

5. Conclusions

In recent years, the use of hybrid securities by domestic enterprises has gradually increased, but considering its dual attributes of equity and debt and the degree of freedom of the management to classify its financing attributes, its hidden risks cannot be ignored, especially the use of perpetual bonds, which are "clear shares and real debts", and "false positive" are more "unsafe".The risks caused by the deleveraging method should be more cautious. There is still very little research on this. Therefore, this paper selects A-share listed companies from 2013 to 2018 as the sample period, and uses the panel data fixed-effect regression model to investigate whether the use of perpetual bonds and hybrid securities will affect the stock price crash risk of enterprises. The empirical results show that the issuance of

ISSN 2616-5902 Vol. 7, Issue 3: 160-167, DOI: 10.25236/AJBM.2025.070322

perpetual bonds, which is a "clear stock and real debt" and a more "unsafe" deleveraging method that is "false positive", will significantly increase the risk level of stock price crash. Through further research on hybrid securities, it is found that the use of hybrid securities to reduce leverage will exacerbate the risk of stock price crash.

This paper argues that deleveraging is not only a "false-positive" and more "unsafe" deleveraging method, but also a high-risk deleveraging method that will lead to the risk of corporate stock price crash. Enterprises should be cautious in using this method to reduce leverage; Second, regulators should strengthen the supervision of information disclosure of companies that issue hybrid securities, and reduce the degree of information asymmetry between enterprises and investors, so as to prevent the adverse impact of possible stock price crash risks on the construction of market economy in the future. Third, investors should remain rational and understand the company's information and knowledge of hybrid securities in many ways when hybrid securities investment is emerging, so as to avoid investment losses caused by the risk of possible stock price crashes in the future and safeguard their own interests.

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