

Relationship between Liabilities and Firm Performance of China's Listed Media Companies

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Abstract

Based on financial data for Chinese listed media companies between 2011 and 2016, this paper examines the relationship between liability and corporate performance and offers a structural equation model of *firm performance (media business)*. Results reveal that *debt maturity structure, managerial shareholding, long-term liability, debt/tangible assets ratio* and *asset-liability ratio* are all key factors in *firm performance (media business)*. Additionally, it is found that *debt/tangible assets ratio, asset-liability ratio* and *liability-equity ratio* are associated with *firm performance (overall business)*. This paper presents a structural equation model with four influencing paths related to *firm performance (media business)*. It sets forth suggestions for improving *firm performance (media business)* and capital utilization with the requirement that business managers and policymakers foster better liability management and achieve debt structure optimization.

Introduction

The Opinions on Deepening the Reform of the Press, Publishing, Radio, Film and Television Industries (Office Document No. 17), jointly published by the CPC Central Committee Propaganda Department, the State Administration of Radio, Film & TV, and Press & Publication Administration in August 2001 is recognized as a hallmark

event for media reform in China. This document proposes the establishment of trans-regional media conglomerates with the multimedia business by means of capital and business operations, allowing media groups to raise funds through equity financing. Currently, bank loans, issuing bonds and other forms of debt financing are the most

common forms of financing for media in China. As for the dominant media players, financing is achieved through commercial banks by means of property mortgages, which remains the most important channel for the financing of China's media industry. The news media in China function as state-owned institutions and are given priority by state-owned banks. Developing bank credit business with media groups is an inevitable choice for commercial bank operations. Thus, both sides involved have strong incentives to establish cooperation between banks and media enterprises through bank credit. Considering the demands on both sides, while China's media industry needs financial support, commercial banks must strive to achieve the optimum operation of capital flow and structural optimization. Highly reputable media groups generally tend to issue bonds for large projects. However, bond financing in China's media industries is still a relatively new phenomenon, given immature capital markets, small-scale transactions and weak liquidity problems.

Modern corporate financial theories support the idea that liabilities have positive governance effects on governance efficiency and business performance. Scrutinization of an interactional relationship between liabilities and corporate performance should be based on industrial characteristics. Therefore, there is a need for further research exploring the influences and correlations of liabilities. Accordingly, research questions for this study are: What is the relationship between liabilities and the performance of China's domestic listed media companies? The listed

media companies in this study refer to the listed companies involved in mass media, such as television, radio, publishing, motion pictures and the Internet.

Previous studies

Among prior studies on the relationship between liabilities and *firm performance*, Modigliani and Miller (1963), considering firm income tax, asserted that liability with interest tax effects increase firm value due to the tax-saving effect of liability, and that enterprises have optimal financing structure and maximum value when liability ratios are at 100%. Although the revised M-M theory based on these findings considers tax benefits of debt financing, it ignores the risks of debt financing and costs of bankruptcy and agency costs. Kraus and Litzenberger (1973) filled this gap, considering bankruptcy risk and arguing that firm value depends on increased liability ratio and tax avoidance income, bankruptcy costs and agency costs. Therefore, optimal liability is the optimum point between maximization and debt financing risk.

In subsequent empirical studies examining the relationship between liabilities and firm value, a correlation can be found between liabilities and performance with different relevance directions and degrees, given differing approaches to selecting variables representing *firm performance* and debt financing. Campello (2006) found a negative correlation between *Creditors' Valuation of Assets in Liquidation* and *Relative-to-rival Sales Gains*. Additionally, Cheng (2009) took companies listed in Taiwan as samples

to examine the relationship between liabilities and business performance, finding a negative relationship between liabilities and *Cash Flow to Sales*. Gabrijelcic, Herman and Lenarcic (2013) found a negative correlation between financial leverage and firm performance before and during the recent global economic crisis.

As for studies of liabilities going beyond the indicators mentioned above, researchers have primarily focused on exploring the relationship between firm performance and asset-liability ratio as indicators of liabilities. Theoretical models based on the relationship between asset-liability ratio and firm value have been put forth by researchers through practical experience and mathematical tools, with successive improvements to models and relevant theories. Many researchers (Chathoth and Olsen, 2007; Zhang, Chen and Feng, 2014; Zambuto et. al, 2015) have asserted, based on samples from specific industries or regions, that the asset-liability ratio has a negative relationship with return on assets and return on equity. Likewise, Adewale and Ajibola (2013) put forward that the asset-liability ratio is positively related to return on investment.

As for media industries, findings of empirical research (Zhang and Lu, 2014) include a negative correlation between asset-liability ratio and core business profit rates for listed media companies; that the natural logarithm of total assets and asset-liability ratio have a significant positive correlation; while also finding that the natural logarithm of total assets is positively related to the asset-

liability ratio. This means that firms with more assets are more capable of borrowing. Also worth noting is analysis by Guo (2012) of empirical research on optimal asset-liability and liability-equity ratios, proposing that asset-liability ratios for companies listed in China are around 40%, which may be useful for referencing in terms of optimizing financing structure.

Relationship between firm performance and market signals

In 1958, Modigliani and Miller proposed the "*M-M Theory of Capital Structure*" on account of theoretical evidence found in "*The Cost of Capital, Corporate Finance and the Theory of Investment*," namely that financing structure does not affect firm value in a perfect market (non-corporate and personal income tax, bankruptcy risk, capital market operation assumption). Following the establishment and evolution of modern theories of enterprise finance structure, researchers have introduced the hypothesis of tax effects and bankruptcy risk into the perfect market, making theoretical contributions more feasible in practice, including motivation theory (Cofer and Appley, 1964), signalling theory (for a review, see Connelly et al. 2011) and corporate control theory (Li and Li, 1996), demonstrating that enterprise financing structure affects firm value. As for the influence of financing structure on firm value, Zhang (1995) highlighted three ways this occurs:

Firstly, the financing structure affects the efforts and behaviours of the operators, thereby affecting the firm income flow and

value; secondly, the choice of financing mode influences the investor's judgment of the enterprise's operation through the information transfer function, and then affects firm value; thirdly, the financing structure affects firm value of the enterprise by influencing the allocation of control rights.

From the perspective of information asymmetry, the financial structure theory concerns the information asymmetry between corporate managers and investors, as the management and release of information affect firm valuation by financial market participants. Such information is revealed through financial reports, especially financial indicators related to liabilities. As Zheng (2004) noted: Liability is usually regarded as positive signals by the outside investors, since it reveals that the managers have high expectations for future earnings, conveying managers' confidence in the firm business and motivating managers to work hard. The liability has limited impacts on corporate control rights, and effectively prevent being taken over.

Hence, reasonable liability may have the result of raising firm values and reducing financing costs.

Liabilities and firm performance: a signalling theory approach

Signalling theory explains how decision-makers translate and react to settings of deficient and asymmetric information among parties (Spence, 1973, 1974). Spence (2002) regards signals as a form of sound communication

which diffuses messages from one organization to the other(s). According to signalling theory, enterprise financial structure sends various market signals that reflect enterprise operational conditions. Accordingly, enterprise operators tend to enhance positive signals and avoid negative signals. Referring to the research of Harris-Raviv (1992), Zhang (1995) generalized three signal transmission models using liability ratios, managerial shareholding, and investment information to transfer market signals. Based on these models, subsequent studies have demonstrated some of the signals closely related to business performance. These signal types principally include liability - related variables (debt/tangible assets ratio, *liability-equity ratio*, long-term liability), shareholding - related variable (managerial shareholding), and dividend information - related variable (dividend distribution). The relevant studies are as follows:

1. The *debt/tangible assets ratio* can be considered an extension of the *asset-liability ratio*. This indicator excludes intangible assets (China's intangible assets market remains undeveloped and these assets cannot be used to repay liabilities), and also reflects the extent to which liabilities are protected by shareholder equity.

2. The *liability-equity ratio*, a signal of insider benefit distribution, has a positive relationship with firm value or profitability (Zhang, 1995). Ross (1977) asserted that higher *liability-equity ratio* may tell investors that firms are seeing favourable business conditions, while also raising managers'

expectations of future earnings, thereby increasing investments and firm value. Additionally, Guo (2012) concluded that the reasonable *liability-equity ratio* for general firms is 1.5:1, which could serve as a reference for optimizing enterprise financing structure in a range of industries.

3. Researchers from a variety of countries have placed special focus on debt structure, including *debt maturity structure* and *long-term liability* (bank loans, commercial credit and corporate bonds). In terms of *debt maturity structure*, empirical research shows a significant correlation between current liabilities, non-current liabilities and business performance for listed companies. For example, Ahmad, Abdullah and Roslan (2012) explored the relationship between debt financing and firm performance for Malaysian listed companies, examining *firm size, asset growth, sales growth and efficiency*, and finding that *short-term debt* and *total debt* are strongly correlated with ROA and ROE. Furthermore, the authors found that short-term debt increases the possibility of rent-seeking, pessimistic income and excessive in-office costs, with low debt servicing ratios leading investors to gain greater control over the rights of firms. When it comes to the financing practices of listed media companies in China, short-term liabilities account for a larger portion of total liabilities, and equity financing is more likely to soften the impact of expanding long-term capital demands. In terms of *long-term liability*, the relationship between bank loans, credits and business performance for

listed companies is a prime area for further exploration.

4. The *managerial shareholding* is a signal for conveying the quality of business projects, with the potential to reveal true investment value. As the proportion of *managerial shareholding* increases, so does the value of business projects. Pyle and Leland (1977) established an equilibrium model between entrepreneur shareholding ratios and observed liabilities, and this L-P model is based on the idea that financing and *managerial shareholding* are bound together with high transaction costs, meaning that a high ratio of liabilities corresponds to higher *managerial shareholding* and firm value. Hence, the indicator of *managerial shareholding* is deemed as a costly signal. Notably, some scholars have pointed out that the proportion of capital held by enterprise managers can be thought of as a signal reflecting the operational status of enterprises and quality of investment projects (Harris and Raviv, 1988). Additionally, Bryan, Hwang and Lilien (2000) showed that stockholding managers could deal with relations between the interests of stockholders and operators, revealing that managers manipulate stock purchases by changing their share proportions, leading to changes in *firm performance*.

The rise of *managerial shareholding* cannot increase without limits to enhance firm value. Hermalin and Weisbach (1991) described the relationship between manager shareholding ratios and firm value as an “N” curve, with inflexion points of 5% and 20%.

Cho (1998) later argued the inflexion points are 7% and 38%. Other researchers, such as Huang, Wang and Zhou (2014) have examined the ways that managers with high shareholdings adopt a series of financial derivatives for hedging stockholders, thus managing earnings to prevent stock overvaluation. Owing to the low insider ownership ratio of China's listed media companies, this study is based on the hypothesis that the curve representing *managerial shareholding* and *firm performance* is the uplink section of the cubic curve mentioned above.

5. The dividend policies convey signals concerning future firm prospects, affecting the external financing needs of enterprises. The corporate dividend policy can be considered to be a kind of financing policy determining investor income distribution and affecting the numbers and categories of financing needs. Prior studies have examined multiple dividend policy signals, including signals of dividends announcements, dividend categories and pay-out ratios. With respect to signal transmission, as managers pursue the latest approaches to cash flow, investment opportunities and profitability, dividend policy announcements and measures will influence investor decision - making. Researchers have concentrated on firm performance after dividend announcements. For instance, Yu & Cheng (2001) showed that both the first profit announcement and general dividend announcement give rise to a significant excess returns of share prices on the first two days of the announcement. Nevertheless, the influence of dividend policies are based on judgments of strengthening and

weakening signals. Whereas a strengthening signal with a dividend decrease leads to a positive market reaction, a weakening signal with dividend increases leads to negative market performance. Additionally, there is a need for further research examining the relationship between changes in dividend policy and future profitability.

Hypothesis

According to prior research, the direction of the relationship between liability and firm performance in various industries can be both positive and negative. The debt financing of China's media industry has several key characteristics that distinguish it from other industries. Firstly, average *asset-liability ratio* for listed media companies are relatively low. Zhang et al. (2014) found that asset-liability ratios for listed media companies in China fell below 40% from 2010 to 2013, showing that moderate corporate debt has tax deductibility effects.

This paper takes the *asset-liability ratio* as the principal indicator for measuring liabilities, deducing that liability is positively related to listed media company performance. The first hypothesis is put forward as:

H1: There exists a positive correlation between liabilities and firm performance of listed media companies.

Furthermore, based on prior research, the *asset-liability ratio* is a market signal transferring information from enterprises to markets. Based on its high correlation with firm performance, the second hypothesis is put forward as:

H2: Liability ratios are market signals directly related to firm performance of listed media companies.

Research design

Sample

According to *The Industry Classification Results of Listed Companies in the Q4 of 2015*, released by the China Securities Regulatory Commission, there are 18 companies in the press and publishing industries, and 15 companies in the radio, television and film recording industries listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange. This paper makes use of three criteria for sample selection. Firstly, the media business must be the principal business conducted by an enterprise, including those in press, publishing, radio, television and film. Secondly, listed media companies in early stages of growth (first three years following listing) are excluded. Thirdly, unstable ST listed companies are also excluded from the sample group. Based on the above criteria, this study deals with 27 listed media companies, making use of 123 samples obtained from financial reports from 2011 to 2016. This study is based on both cross-sectional and time series data of sample companies. The decision to use both types of data is owing to the relatively low number of listed media companies in China.

Variables

Many researchers (Ahmad et al., 2012; Zhang, Chen and Feng, 2014) selected return on net assets (RONA) as the explained variable for measuring profitability and sustainable

development capability. RONA is a more comprehensive indicator than return on assets (ROA), reflecting impacts of capital and liabilities management on earnings, and capabilities in terms of profitability, asset management and equity expansion. Moreover, among indicators for evaluating profitability of listed companies, the ratio of ROA excludes costs from banks, while the ratio of RONA does not. Hence, the present article chooses ROE as the explained variable.

The business development of listed media companies in China has displayed a trend of diversification in terms of media, education, real estate, logistics, tourism and investment. Owing to the differences and diversity in primary business focuses for listed media companies, it is necessary to differentiate listed enterprises. There are two ways to do this: firstly, there is differentiation of companies at the meso - level. Media enterprises can be categorized as one group of companies with primary business focus in the media industry, and another focusing on non-media industries. Secondly, there is differentiation at the micro - level. Corporate business can be divided between media business and non-media business. This study chooses to focus on the second differentiation. On the one hand, there are a limited number of companies from the first differentiation category that meet sample criteria. On the other hand, the purpose of classification is to highlight non-media businesses in the listed companies, whose primary business are beyond media characteristics and business for sample the media companies. The interaction effects between industry, present valuable insights

into firm management and receive more attention from investors, potentially affecting firm performance. This influencing factor may be avoided with the second differentiation method and do not interfere with analysing the performance of the media business. This study focuses on the performance response of listed media companies after transmitting signals to the outside. Because media business taxes are not disclosed on annual financial reports, this study selects *firm performance (media business)* as another explained variable, rather than *profit margin*. In summary, the explained variables are *firm performance (media business)* and *firm performance (overall business)*.

Based on the research conducted by Harris-Raviv (1992), Zhang (1995) generalized three signal transmission models: the model of liability ratios, the model of managerial shareholding, and the model of investment signals. The following studies present a series of signals relevant to *firm performance*, including liability-related variables (*asset-liability ratio, debt/tangible assets ratio, liability-equity ratio, long-term liability*), shareholding-related variables (*managerial shareholding*), and dividend variables (*dividend distribution*). Definition and measurement for each variable is provided in Table 1.

Type	Variable	Definition and Measurement
Dependent Variables	asset-liability ratio	asset-liability ratio = current debts / current assets
	debt/tangible assets ratio	debt/tangible assets ratio = debts / (stakeholder equity - intangible assets net value)
	liability-equity ratio	liability-equity ratio = current debt / current stakeholder equity
	debt maturity structure	debt maturity structure = short time debts / total debts
	long-term liability	long-term liability = bank loans / total debts
	managerial shareholding	managerial shareholding = the sum ratio of officers, directors and supervisors of listed companies at the end of report period
	dividend distribution ¹	Yes / No
Control Variables	firm scale	natural logarithm of total assets
Independent Variables	firm performance (media business)	firm performance (media business) (gross profit rate on media business) = (income-cost) / income relevant to media business
	firm performance (overall business)	firm performance (overall business) (return on equity) = after-tax profits / equity

Table 1: Variable definitions

¹ As dummy variables cannot be used for building structural equation models, they are transformed into ordinal level variables for statistical analysis on the basis of standard methods and theoretical inference. *Dividend distribution* is a dummy variable, 1=Yes, 0=No. Previous research indicates that *dividend distribution* can be regarded as a positive market signal and lead to improvements in *firm performance*. The positive correlation reveals that 1=Yes is higher ordered than 0=No.

Method

This study offers statistical descriptions, correlation analysis and regression analysis, building a structural model of influencing mechanisms of liabilities and firm performance for 27 listed media companies between 2011 and 2016. Statistical analysis software used in this study are SPSS 21 and AMOS 21. Independent and dependent variable data were gathered from annual financial reports of said companies published on stock exchange websites. As data heterogeneity is an important consideration (Menard, 2002), this study deals with companies listed in mainland China to ensure relative homogenization of the sample group. Moreover, with respect to differences in categories and business scope, this study uses data closely related to the media business, establishing dummy variables to reduce disparities. A stationarity test was

conducted in order to test the hypotheses in a panel correlational study. The stationarity stipulation was satisfied by the equality of the synchronous and cross-legged correlations.

Results

Descriptive results

As shown in Table 2, the average asset liabilities ratio is 0.3346, and most listed media companies have few liabilities. The average *debt/tangible assets ratio* and average *liability-equity ratio* indicate that the listed companies have solid long-term solvency. The average *debt maturity structure* means that liquid liabilities make up 82.6 percent of total liabilities, while the average *long-term liability* reveals that the proportion of bank loans is less than that of commercial credits. The average *managerial shareholding* was 0.048, and 88 percent of companies made dividend distribution plans.

Variable	Average	Median	Std. Deviation	Max	Min	N
asset-liability ratio	0.3346	0.3173	0.14980	0.80	0.07	123
debt/tangible assets ratio	0.5993	0.4863	0.48509	3.71	0.08	123
liability-equity ratio	0.5984	0.4861	0.43313	2.98	0.08	123
debt maturity structure	0.8260	0.9358	0.22104	1.00	0.09	123
long-term liability	0.1188	0.0323	0.16092	0.62	0.00	123
managerial shareholding	0.0475	0.0000	0.10593	0.42	0.00	123
dividend distribution	0.88	1.00	0.344	1	0	123
firm performance (media business)	0.3764	0.3417	0.13050	0.71	-0.21	123
firm performance (overall business)	0.1007	0.1041	0.05108	0.30	-0.12	123

Table 2: Variable descriptions

Results of correlation analysis

This study made use of a nonparametric normality test on *firm performance (media business)* and *firm performance (overall business)*, and the one-sample Kolmogorov-Smirnov test results reveal that sample data of gross profit rates are not distributed normally. For this reason, Spearman level correlation on *asset-liability ratio*, *debt/*

tangible assets ratio, *liability-equity ratio*, *debt maturity structure* and *long-term liability* with *firm performance (media business)* was used. At the same time, Pearson correlation analysis of independent variables with ROE was conducted. Results are shown in Table 3.

		firm performance (media business)	firm performance (overall business)
asset-liability ratio	Correlation Coefficient	-.215*	.309**
	Sig. (2-tailed)	.018	.001
debt/tangible assets ratio	Correlation Coefficient	-.227*	.394**
	Sig. (2-tailed)	.012	.000
liability-equity ratio	Correlation Coefficient	-.060	.279**
	Sig. (2-tailed)	.507	.002
debt maturity structure	Correlation Coefficient	-.361**	.074
	Sig. (2-tailed)	.000	.425
debt maturity structure	Correlation Coefficient	.257**	.145
	Sig. (2-tailed)	.004	.110

*. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).

Table 3: Results of correlation analysis

To explore the correlation between variables of *dividend distribution* and *firm performance*, this study makes use of a normal variable by the method of ranking case, as the non-normal distribution data of *firm performance (media business)*. Thus, it is discovered that *dividend distribution* is not the variable that most significantly distinguishes high performance from low performance using an independent t-test.

Previous research has highlighted the existence of a U-shaped curve or cubic curve between *managerial shareholding* and *firm performance*. The results of curves appear different, taking industrial and geographical characteristics into consideration. It is necessary to explore whether there is a linear relationship between *managerial shareholding* and *firm performance*. Taking *firm performance (media business)* as an independent variable for curve estimation,

this study found that the conic and cubic model do not pass the significant correlation test, while the linear model passes the significant correlation test with a Spearman correlation coefficient of $r = 0.351$. Taking *firm performance (overall business)* as an independent variable for curve estimation, this study found that the linear, conic and cubic model do not pass the significant correlation test ($P > 0.05$).

In summary, results show that *firm performance (media business)* has a significant correlation with *debt maturity structure*, *managerial shareholding*, *long-term liability*, *debt/tangible assets ratio* and *asset-liability ratio* (in descending order). The *liability-equity ratio* is not significant at the 0.05 level, lacking an obvious correlation with *firm performance (media business)*. Additionally, *firm performance (overall business)* has a significant positive correlation with *debt/tangible assets ratio*, *asset-liability ratio* and *liability-equity ratio* (in descending order). The indicators of debt structure and

managerial shareholding are not significant at the 0.05 level.

Overall, there exists a significant correlation between *asset-liability ratio* and *firm performance*, though there appears to be a negative correlation with *firm performance (media business)* and a positive correlation with ROE. Hence, the first research hypothesis (H1) was partially confirmed.

Results of regression analysis

A linear regression model of *firm performance (overall business)* was established which proves to be statistically rational and effective (see Table 4). The model of *firm performance (overall business)* results from the method of backward regression (see Table 5), and it can be expressed as follows:

$$\text{Firm performance (overall business)} = 0.086 + 0.090(\text{debt/tangible assets ratio}) - 0.035(\text{asset-liability ratio}) - 0.046(\text{liability-equity ratio}).$$

Variables	Collinearity Statistics	
	Tolerance	VIF
<i>debt/tangible assets ratio</i>	.131	7.644
<i>asset-liability ratio</i>	.301	3.323
<i>liability-equity ratio</i>	.205	4.882

Table 4: Results of collinearity

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig
	B	Std. Error	Beta		
(Constant)	.086	.013		6.603	.000
<i>debt/tangible assets ratio</i>	.090	.026	.790	3.449	.001
<i>asset-liability ratio</i>	-.035	.056	-.093	-.616	.539
<i>liability-equity ratio</i>	-.046	.023	-.349	-1.950	.053

a. Dependent Variable: *firm performance (overall business)*

Regression Method: Backwards. Adjusted R Square: 0.167

Table 5: Results of regression

Results of structural equation modelling

Based on the theoretical foundations established in the section of previous studies, this study used a structural equation model using five independent variables which have a significant correlation with *Y firm performance (media business)*, arriving at an adjusted structural equation model (shown in Fig. 1). Based on related theories,

it is necessary to modify the original model in two aspects. Firstly, Chi-square must be decreased and probability level increased in accordance with theories and practices. The second step is to test normality, resulting in the reasonable skewness coefficient (-1.7, 2.3) and the coefficient of kurtosis (-1.3, 4.3). Test results for goodness of fit show the model to have enhanced goodness of fit and availability.

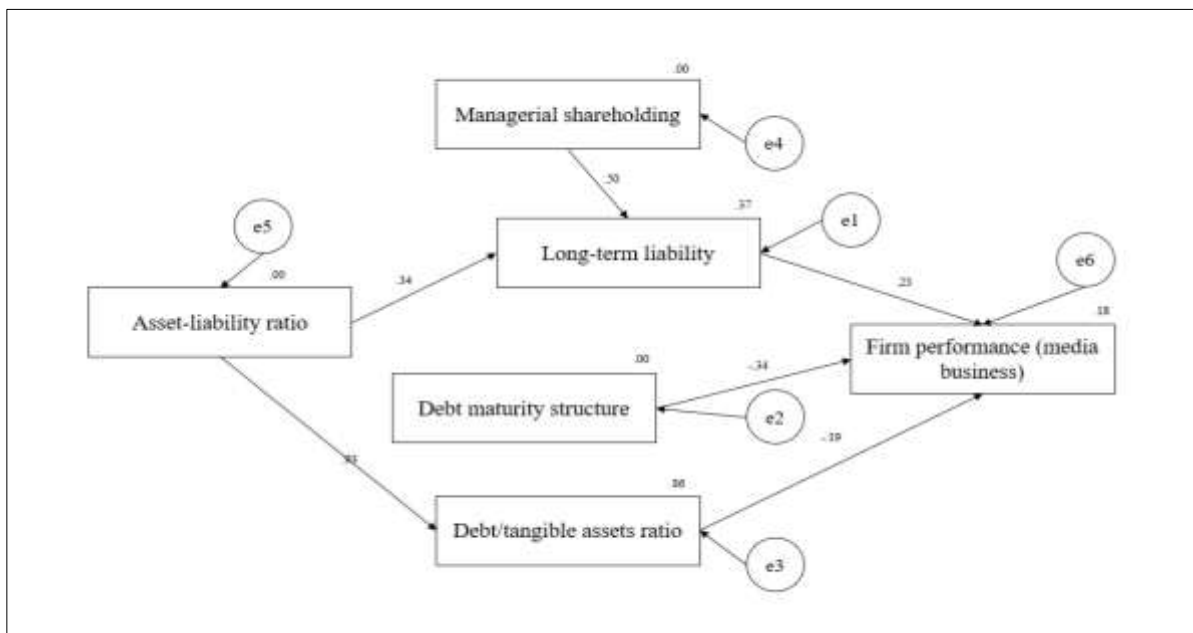


Figure 1: Adjusted structural equation model (normalized)

Additionally, goodness-of-fit test reveals that the model has been fitted (see Table 6).

Significances of the paths are presented in Table 7.

Index	Standards	Fitting Degree
Chi-square	Smaller is better.	16.833
probability level	P < 0.05	0.051
GFI	GFI < 0.9	0.959
RMR	Influenced by units.	4.572
RMSEA	RMSEA > 0.1	0.086
AGFI		0.903
NFI		0.949
RFI	close to 1.0	0.915
IFI		0.976
TLI		0.959
CFI		0.975
CMIN	close to 0	16.814, acceptable
CMIN/DF	close to 0	1.868, acceptable
AIC	The value of theoretical model is smaller than the value of independent model and saturated model.	Standards satisfied
CAIC		Standards satisfied

Table 6: Results of goodness-of-fit test

	Estimate	S.E.	C.R.	P
long-term liability ← asset-liability ratio	.415	.089	4.660	***
debt/tangible assets ratio ← asset-liability ratio	2.759	.101	27.367	***
long-term liability ← managerial shareholding	.770	.112	6.902	***
firm performance (media business) ← long-term liability	49.237	19.482	2.527	**
firm performance (media business) ← debt maturity structure	-54.446	13.393	-4.065	***
firm performance (media business) ← debt/tangible assets ratio	-16.751	7.884	-2.125	*

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

***. Correlation is significant at the 0.001 level (2-tailed).

Table 7: Results of unstandardized coefficients

In order to explore the influence mechanism between *asset-liability ratio* and *firm performance (media business)*, this study uses *firm performance (media business)* and independent variables as the basis for a structural equation model. The structural

equation model established in this study has four paths affecting *firm performance (media business)* at significant levels.

Path 1: asset-liability ratio → long-term liability → firm performance (media

business). With increasing demand for debt financing in China's media industry, bank loans and policy-related loans account for the majority of liabilities and boost the management capability of the capital and *firm performance (media business)*.

Path 2: asset-liability ratio → debt/tangible assets ratio → firm performance (media business). Excessive liabilities, seen as an optimistic signal in the financing market, are more likely to undermine the ability of listed media companies to repay debts and bring bankruptcy risks under control, leading to a squeeze on profits.

Path 3: debt maturity structure → firm performance (media business). This influencing path illustrates the weaker economization effects of corporate liquidity on interest costs. Short-term debts bring about refinancing risks that influence the refinancing and management process. These include excessive investment in the media business, and declines in estimated profits.

Path 4: managerial shareholding → long-term liability → firm performance (media business). This path can be summarized in two ways. On the one hand, Liu, Peng and Zhang (2010) found that the equity nature of state-owned companies plays an implicit guarantee role in weakening the positive relationship between the accounting information quality and credit debts. Regarding the political connection, state-owned media companies are more likely to obtain financing by means of commercial credits, short-term financing bills and financial support from the

government². Conversely, private media firms, with higher managerial shareholding, primarily depend on bank loans. On the other hand, considering the supervisory role played by commercial banks, media enterprises favoured by banks have more possibilities to be profitable.

According to these three indirect paths and one direct path, this study concludes that the asset-liability ratio does not directly play the dominant role in market signals, but indirectly affects firm performance (*media business*) by influencing other intermediate variables. Therefore, the second hypothesis (H2) is disproved.

Discussion

This paper finds that the five variables related to *firm performance (media business)* are *debt maturity structure, managerial shareholding, long-term liability, debt/tangible assets ratio, and asset-liability ratio* (in order of strong to weak correlation). The relationship between *liability-equity ratio, dividend distribution and firm performance (media business)* is

² China's media industry has been given more political attributes (policy promotion and other tasks relevant to social benefits), among which are those in support of financial assistance from the government. The Ministry of Finance of China proposed the 2016 Special Central Fund for the Development of Cultural Industry, allocating RMB 1.56 billion for market-oriented investment, and RMB 2.86 billion in investment in major projects. Most applicants have been media and communication companies.

not obvious. Furthermore, according to the results of structural equation model, four paths of impacting *firm performance (media business)* were identified: *asset-liability ratio* → *long-term liability* → *firm performance (media business)*; *asset-liability ratio* → *debt/tangible assets ratio* → *firm performance (media business)*; *debt maturity structure* → *firm performance (media business)*; and *managerial shareholding* → *long-term liability* → *firm performance (media business)*. Additionally, three variables found to be relevant to *firm performance (overall business)* are *debt/tangible assets ratio*, *asset-liability ratio* and *liability-equity ratio* (in order of strong to weak correlation). The relationship between *debt maturity structure*, *long-term liability*, *managerial shareholding*, *dividend distribution* and *firm performance (overall business)* is not obvious.

Considering the characteristics of China's media industry, hypotheses were tested using secondary data analysis of pooled cross-sectional data. Given the problems encountered in research results, some corporate strategies and policy suggestions for optimizing liability management and debt structure are proposed below.

The first proposal is to expand debt scale and optimize business structure. Research results show that *asset-liability ratio* and tangible net profit ratio have a negative correlation with ROE, and it is possible to expand the debt scale for the improvement of capital utilization on the condition that return on total assets is greater than the debt

interest ratio. The capital management of China's media groups has shown itself to be inefficient and irrespective of profitability. The negative correlation of signals about liabilities and *firm performance (media business)* found in this study are also an indicator that fund allocation and media business must be optimized. For boosting *firm performance (media business)*, corporates are projected to invest in optimistic businesses and projects, establishing reasonable and sophisticated fund management institutions. Recently, China has witnessed expanding operations in the media business alongside increasing investment demands, which are disapproved by the present debt financing capacities and availabilities owing to state-driven media convergence in China. Hence, this study recommends media companies pursue expanding the scale of liabilities by issuing convertible bonds, while at the same time enhancing investor confidence in new media and the synergistic effects of traditional and new media business.

The second proposal is to take advantage of the supervisory effects of banks and introduce new credit products. In statistical terms, *firm performance (media business)* greatly increases when the ratio of bank loans is raised, owing to the vital monitoring role of banks. The positive signalizations of bank loans on corporate governance are principally reflected in financial analysis, qualification review, project tracking and supervision of corporate borrowers, regarding the variety of returns and risk of investment funds. Specifically, the *Bank of Beijing* invested in the film & TV production of

Bona Film Group with an approach of "copyright pledge + packaged loans"; *China Minsheng Bank* offered credit to 23 directors by means of closed capital management provided by professional investment companies to ensure special funds for special use; and *China Merchants Bank* has appointed loan officers to supervise the film-making process, while also handling performer tax liability. Therefore, this study proposes that commercial banks develop diversified credit products suitable for the creative industries in order to relieve financing difficulties faced by media conglomerates. At the same time, this can be beneficial for improving the effectiveness of corporate governance and declining information asymmetry due to the relatively impeccable credit evaluation and regulatory systems of commercial banks. Additionally, interest policies act as a checks on debts and borrowers, while the renewals policy performs a refinancing function, resulting from a comparison of interest policies and loan renewal policies (Hu et al., 2008). Therefore, it would be possible for commercial banks to adjust relevant policies according to the risk-income symmetrical principle.

The third proposal is to develop long-term lending markets, avoiding investment myopia and excessive risk-taking. As shown in the statistical description, the ratio of current liabilities is approximately equal to total liabilities for many listed media companies in China. As for rising risks caused by excessive short-term debt, managerial shareholding are concerned about losses of business opportunities leading to investment myopia, excessive investment in certain businesses

and other irrational management behaviours. From the perspective of market management, the objective is providing better access to non-current liability for media companies, especially for firms engaged in long-term investment.

The fourth proposal is to increase the managerial shareholding and manage a principal-agent relationship. Severe divisions exist between private and state-owned listed media companies around the idea of managerial shareholding. State-owned media companies in China are generally stuck in a single property right institution and faced with the "enterprise owner absence problem," meaning that it is difficult to establish effective hierarchical governance and a decentralized decision-making system in the absence of a standardized corporate governance structure and effective supervision. Likewise, Qian (2010) pointed out that the framework of "institution managed as enterprises" in news media could not adapt to the progress of societal innovation and industrial development. This study also accuses the Chinese government of intervening in the inclinations and behaviours of investment and management of the media business, as reflected in limited access to finance in news media. Concerning the current structure of property rights, it is possible to decrease the ratio of state-owned shareholders by converting state-owned shares into preferred shares. Hence, this study is in favour of increasing managerial shareholding, reducing percentages of state-owned shareholding and the diversities of property right bodies. Concerning the political ideology influencing state-owned

listed media companies in mainland China, "converting stock rights to bonds" is a better way to transform state-owned shareholdings into the moderate shareholding of directors, supervisors and senior managers, meaning not only more debts for companies, but a positive signal of promising business for investors.

In summary, market signals relevant to liabilities exert impacts with different magnitudes and characteristics on firm performance. Regarding the establishment of information disclosure mechanisms in place, disclosing ample information on tax-paying, debt-using and returns-distribution for media enterprises is the most effective means of protecting investors, establishing public confidence, and boosting efficiency of the market and corporate management.

Conclusion

Based on the review and summary of relevant theoretical and empirical research, this study makes use of financial data of listed media companies in China from 2011 to 2016 for conducting correlation analysis and establishing a structural equation model. Limitations that have been discovered in this process are principally reflected in the following aspects, which may potentially be further explored in future studies:

Firstly, this study uses secondary data analysis with the limitations associated with financial report statistics, and some poor operational variables were abandoned in the selection process. Additionally, some potential variables not mentioned in this study could be the subject of further research. *Secondly*, due to a lack of amounts and the use of debt financing in financial reports for listed companies, determining in what aspects and to what extent debt financing affects specific media business is difficult. Thus, this study was unable to interpret the effects of debt financing on segmental media industries such as publishing, radio, TV and films. *Thirdly*, the respective causal effects between firm performance and liabilities were not soundly explained, without statistically controlling for the endogeneity given the limited data. The question of whether firm performance drives liabilities or the other way around could be answered with a large scale of data and appropriate statistical methods. *Fourthly*, specific issues about the relationship between firm performance and liabilities in the Chinese market need to be investigated. For instance, future studies may compare the financial structure of media listed companies and other listed companies (e.g. e-commerce), as well as compare the Chinese firms to other media corporations in other countries.

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Appendix. Sample of media listed companies

Code	Company	Main Businesses	Listed Time	Sample Period
000607	Huamei Holding	Advertising, publishing, information service, product sales, distribution, education.	1996-08-30	2014-2016 (3)
000719	Land Media	Publishing, product sales, printing.	1997-03-31	2011-2016 (6)
000793	China Media	Communication and culture industries, gas, digital content service, network and information security service, cartoon, real estate.	1997-07-29	2011-2016 (6)
300148	Tangel Publishing	Publishing, mobile internet games.	2010-12-15	2012-2016 (5)
600229	City Media	Books, journals, electronic video & audio, new media products.	2000-03-09	2015-2016 (2)
600373	Chinese Media	Publishing, distribution, product sales, etc.	2002-03-04	2011-2016 (6)
600551	Time Publishing	Publishing, distribution, electronic publishing, artworks, TV and movies, international trade.	2002-09-05	2011-2016 (6)
600633	Zhejiang Daily	Publishing, distribution, advertising, wireless value-added service, online games, information service, product sales.	1993-03-04	2011-2016 (6)
600757	Changjiang Publishing	Publishing, product sales, etc.	1996-10-13	2011-2016 (6)
600825	Xinhua Media	Books, audiovisual, advertising.	1994-02-04	2011-2016 (6)
600880	B-ray Media	Traditional media business.	1995-11-15	2011-2016 (6)
601098	China South	Publishing, media, digital education, finance.	2010-10-28	2012-2016 (5)
601801	Wanxin Media	Publishing, audiovisual products, multi-media service, advertising.	2010-01-18	2012-2016 (5)
601928	Phoenix Media	Publishing, audiovisual products, cultural products, software engineering, games, TV & film.	2011-11-30	2013-2016 (4)
601999	Northern United	Publishing, audiovisual products, etc.	2007-12-21	2011-2016 (6)
000156	Wasu Media	Information communication.	2000-09-06	2012-2016 (5)
000665	Hubei Radio & TV	Cable television service.	1996-12-10	2013-2016 (4)
000802	Beijing Culture	Tourism, hotels, film & TV, brokerages.	1998-01-08	2014-2016 (3)
002071	Great Wall Movie & TV	Film & TV, advertising.	2006-10-12	2015-2016 (2)
002624	Perfect World	Film & TV.	2011-10-28	2015-2016 (2)
300027	Huayi Brothers	Film & TV, entertainment, brand licensing.	2009-10-30	2011-2016 (6)
300133	Huace Film & TV	Film & TV, Cinemas, advertising, brokerages, distribution.	2010-10-26	2012-2016 (5)
300251	Enlight Media	Film & TV, cartoon, games.	2011-08-03	2013-2016 (4)
300291	Hualu Baina	Film & TV, brand marketing, sports.	2012-02-09	2014-2016 (3)
300336	New Culture	Film & TV, LED media business, advertising.	2012-07-10	2014-2016 (3)
600088	China TV Media	Film & TV, advertising, tourism.	1997-06-16	2011-2016 (6)
600136	DDMC Culture	Film & TV, culture, sports, cartoon, games, investment.	1998-03-03	2015-2016 (2)