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Does earnings quality instigate financial flexibility? New evidence from emerging economy

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ABSTRACT

Purpose: This research aims to examine the empirical relationship between earnings quality and financial flexibility, i.e., how information related to earnings affects firms' cash levels in the emerging economies.

Design/Methodology/Approach: To attain the research objectives, we used panel data for 18 years (2000–2017) obtained from the CSMAR database. Statistical software STATA used for data analysis. Descriptive, multiple correlations, and unbalanced panel data analysis are used.

Findings: Our empirical results negate the works conducted on the advanced economy showing that information related to earnings (Earnings Quality) is negatively associated with firms' Financial Flexibility irrespective of firms' characteristics, i.e., firms with profit or loss and firm's with R&D or without R&D expenditure. However, the firm's earnings quality, firm size, cash flows, financial constraints, dividends, and growth are the dominant predictor of financial flexibility. Moreover, the degree of dominance depends on the firm's specific characteristics.

Research Limitations/Implications: This research has been conducted on the emerging Chinese market. For consistent and robust results, this research excluded the financial and other firms that possess different operational and regulatory attributes than the manufacturing firms. The study is useful for policymakers and managers to design their cash levels and avoid the hurdle of external finance or to accelerate their flexibility to raise money from an external source.

Originality/Value: Previous research addressed the issue related to cost and benefit, information asymmetry, ownership concentration, and firm's propensity to cash holdings. A very little research conducted with earnings quality and cash holdings in the developed market (in Europe and the USA), and thus, for the first time, we address the issue of earnings quality and financial flexibility in the emerging economy.

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1. Introduction

Earnings quality is the earnings where more information is provided about "the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker" (SAFC-1, p. 344). Conversely, the financial flexibility is the firm's capability to raise economic resources, respond expected investment and expansion opportunities as well as provide strength to face any future unexpected events, and contributes to maximizing firm's value (e.g. Bates, Kahle, & Stulz, 2009; Bolton, Wang, & Yang, 2019; Byoun, 2007; Cherkasova & Kuzmin, 2018; Denis & Mckeon, 2009; Ma and Jin, 2016).

The world business today faces significant challenges of survival, growth, and sustainability. Until today, the world's business has come across economic turmoil, recession, environmental, and social challenges. As a corrective measure, a conservatism of accounting may shields business from potential default risks by providing financial flexibility. Alongside, underinvestment is a common problem when firms' have financial distress (e.g. Bhat, Chen, Chen, & Jebran, 2020). As a consequence, firms have to cut investment, dividend payments, unstable payment to vendors, and other payments (e.g. Difficulty in paying employee pensions, tax obligations, etc.). To face the challenges of economic, environmental and political changes firms need to be financially flexible since it provides the strength that boosts firms' to combat underinvestment, risk tolerance and provides sustainability (e.g. Cherkasova & Kuzmin, 2018; Cherkasova & Zakharova, 2016; Nouri & Jafari, 2016; Richardson, 2006).

Anecdotal evidence shows that financial flexibility measured in terms of the level of cash holding depends on the trading-off the costs and benefits of higher liquidity position (Miller & Orr, 1966; Shin, Kim, Shin, & Lee, 2018). Generally, costs typically include the possibility of tax disadvantage and low returns on cash reserves (Bigelli & Sánchez-Vidal, 2012). While benefits are the savings on raising money issuing new capital or disposal of assets, reduced likelihood of default, the escaping of costly funding, or even the scarcity of alternative financing (e.g. Kim, Mauer, & Sherman, 1998; Michalski et al., 2018; Opler, Pinkowitz, Stulz, & Williamson, 1999). According to Myers and Majluf (1984), due to the presence of an information gap between investors and firms, external finance becomes expensive or for the existence of agency problems linked with underinvestment and asset replacement (Jensen & Meckling, 1976). Moreover, for personal benefits managers may maintain a high volume of cash on the balance sheet for keeping optimal debt, risk or dividends desired by the shareholders (Easterbrook, 1984)

In the developed market context Sun, Yung, and Rahman (2012) examine the relationship between cash holding and earning quality and conclude with a negative correlation between them. In contrast, Chung, Kim, Kim, and Zhang (2015) evidenced that where a higher level of information asymmetry firms holds a lower level of cash balances, consistent with the shareholder's monitoring hypothesis when managers are controlled to maintain a considerable cash level that could be misused in the opaque environment.

Emerging countries possess a higher rate of information asymmetry that significantly increases agency costs and instigate firms' to be internally financially flexible by holding cash (e.g. Bolton et al., 2019; García-Teruel & Martínez-Solano, 2008). A

major contributing factor of information asymmetry is the accuracy of financial reporting, and the accounting and finance literature frequently use this as earnings quality (Ball & Shivakumar, 2008; Francis, Lafond, Olsson, & Schipper, 2005). Previous research suggests that higher quality of financial reporting can diminish the information asymmetry (Bushman & Smith, 2001; Leuz & Verrecchia, 2000).

Emerging economies consist of unsophisticated and less developed financial markets as well as inefficient capital markets where commercial banks play a pivotal role in financing (e.g. Al-Najjar & Clark, 2017). Emerging countries' are the countries whose stock market has gone through a radical reformation and introduction of corporate governance guidelines as well as setting regulatory bodies and regulations. For example, China has gone through a radical change of board independence in 2001, and stock restructured in 2005 (e.g. Li, Lu, Mittoo, & Zhang, 2015) and corporate governance guidelines in 2006. In this situation, the association between earnings quality and financial flexibility is unknown in emerging economies. In our knowledge, it is the primitive research on the relationship between earning quality and financial flexibility, and we believe it will fill the literature gap on earning quality and financial flexibility in the emerging markets.

Our contribution to the literature on the determinants of financial flexibility is threefold. First, using the 18425 observations of Chinese emerging market data, we extend the previous research on earnings quality and financial flexibility in the context of emerging markets. Second, we explore the dominant predictors of financial flexibility measured in terms of cash holdings. Finally, how earnings quality is associated with firm characteristics (Profit making or loss-making firms' and firms with R&D and without R&D expenses), and we do tests the results with the firm's attributes of dividend payment.

Our paper constructed as follows. In the next section, we present the literature review and developed out principal research hypotheses. In section 3, we discuss the sample and methodology employed to conduct the research. We then proceed to section four to analyze the empirical results, and finally, we put concluding remarks and implications of the investigation.

2. Literature review and hypothesis development

2.1. Determinants of financial flexibility

According to Opler et al. (1999) firms hold their optimum level of cash as per static trade-off primarily proposed by Miller and Orr (1966). They evidenced that the firm's financial flexibility in terms of cash position is positively associated with the farm's growth opportunities and risk but negatively associated with the firm's size. They also documented that companies with easier access to capital markets tend to hold less cash. This finding suggests that managers hold more cash in their companies' balance sheets due to unavailability or higher cost of external financing, especially when they face future investment needs to support their high growth rate in their business activities. Similar findings are reported by D'Mello, Krishnaswami, and Larkin (2008), while Bigelli and Sánchez-Vidal (2012) added that these findings apply to both private and public firms.

Asymmetries of information between the firm and external investors can escalate the cost of external financing, and this provides incentives for managers to hold more considerable cash to avoid external funding (Myers & Majluf, 1984). Likewise, under-investment or asset exchange can also trigger firms to hold more substantial cash reserves to avoid external financing. Managers can also reduce net debt and inherent financial risks of not paying dividends due to the agency costs between managers and shareholders (Easterbrook, 1984). Similar findings also report by Opler et al. (1999).

However, evidence of high cash holding and conflicts of interest is mixed. Ferreira and Vilela (2004) show that firms hold less cash when ownership is concentrated, and investors are better protected. A similar finding also reported by García-Teruel and Martínez-Solano (2008) that managerial ownership plays significant roles in firms' cash holdings. Conversely, Ozkan and Ozkan (2004) evidence that there is a non- monotonic relation between managerial position and firms cash holding. These results imply that cash levels increase after a critical ownership level, whereas the normal alignment of shareholder's effect by managers caused large cash holdings.

Other factors include the cost of external financing, fluctuation of cash flows, and growth opportunities of the firms' positive influence on the determination of cash flows (e.g. Décamps, Mariotti, Rochet, & Villeneuve, 2011; Kim et al., 1998). Similar findings also reported by Ozkan and Ozkan (2004) that debt levels, investment opportunities, and cash flows have an impact on cash reserves. Moreover, smaller firms with more investment opportunities or having riskier activities hold more assets in the form of cash (Opler et al., 1999).

Thus, a firm's size, risk, profitability, debt level, research and development concentration, and growth opportunities and costs of external funding are the explanatory factors of determinants of cash holding of a firm.

2.2. Earning qualities and financial flexibility

Earnings quality can be defined as those earnings where more information is provided about "the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker" (SAFC-1, p. 344).

Previous works have shown that financial flexibility by cash holding and information asymmetries are positively related (e.g. Dittmar, Mahrt-Smith, & Servaes, 2003; Ozkan & Ozkan, 2004). Information asymmetries are a significant determinant of firms' cost of capital (e.g. Bhattacharya, Daouk, & Welker, 2003). Consistent with this quality of accounting earnings also affects the firms' cost of capital (e.g. Easley & O'hara, 2004).Accounting earnings composed of cash and accrual components. However, when earnings composed with principal accruals, they will be less persistent, resulting in less informative (i.e. of "lower quality") than when they are predominantly cash flows. Therefore, when the earnings are of low quality, firms should accumulate substantial cash levels to escape external financing. The reason is when the earnings quality is poor, and firms find hurdle to raise external funds and consequently involves a high level of costs. Thus, managers may opt-out to be financially flexible by holding high cash that may act as a buffer against cash shortages in the future, resulting from capital expenditure or future losses.

Moreover, low-quality earnings may instigate managers to show a better and comfortable financial position. It also motivates them to maintain a high level of cash reserves to intact investor's confidence to avoid costly external financing and reduce the firm's cost of capital. It is consistent with the pecking order theory that due to the information asymmetries, firms will use internally generated funds rather than external funds (Myers & Majluf, 1984).

H_1: Earnings quality has a negative impact on the firm's financial flexibility

2.3. Earnings quality and financial flexibility for profit and loss-making firms

Shareholders are not expected to see losses year on year due to the option of the liquidation (Hayn, 1995). When the company persists on loss, intangible assets become pertinent for the determination of their market value by the investors (Darrough & Ye, 2007). Joos and Plesko (2005) extend the research and concludes that investors predict the possibility of the negative earning year on year by looking at cash flow and accruals of the reported earnings. Collins, Maydew, and Weiss (1997) show that in the US, reporting losses of firms increasing day by day. Jiang and Stark (2013) evidence that the UK is valuing a loss-making company analyst who focuses on the book value of the company. Bates et al. (2009) document that the average cash to total assets ratio increased from 0.101 to 0.176 for profit-making firms. In contrast, for loss-making firms, the total cash to total assets ratio increased from 0.122 to 0.351 for the period of 1980–2006.

Looking at the previous literature, the researcher can presume that earning quality of loss-making firms may have less significance to compare between profit-making and loss-making firms entailing a possible weaker relation with financial flexibility in terms of cash holdings. Besides, recent profit and loss companies seem to illustrate a different dimension concerning cash reserves that instigate further analysis.

It is also a debatable area that the existence of losses in the firm's balance sheets may enhance the cost of external financing or even unavailable external funds. Under this particular situation, financial flexibility can be the only source of funding, and any idle funds may increase the substantial opportunity costs. Under this situation, it is presumable that loss-making firms earning quality may have a weaker impact on financial flexibility compared to the profit-making companies.

H_2: Earning quality has a weaker impact on loss-making companies due to the scarce availability of external financing.

2.4. Earnings quality and financial flexibility with R&D expenses

Research and development expenses indicate the growth opportunities of the firms and considered as a value relevant information for investors for loss-making (Darrough & Ye, 2007) as well as profit-making firms (Franzen & Radhakrishnan, 2009).

Cash shortage trigger firms to cut their capital expenditure, especially when external financing to become too expensive due to the information asymmetries (Opler et al., 1999).In line with this Darrough and Ye (2007), when firms incur losses, their

earnings become non-informative for the value of the business; rather, R&D expenses could be extensively relevant for providing information on the business prospects. Moreover, in the presence of information asymmetry, the growth opportunities are a pivotal determinant of valuing the firms (e.g. Myers & Majluf, 1984). In line with this, Myers (1977) contends that high growth firms encounter high agency costs of debts. This implies that with the agency costs of debt, external funding becomes more expensive (e.g. Ozkan & Ozkan, 2004), and firms inclined to be financial flexibility by hold more cash.

Therefore, R&D expenditure can be the significant factor of investor reaction to the context of earnings quality, and investors can infer that firms with high growth and possess substantial R&D expenditure, earning quality may not play a pivotal role as a determinant of financial flexibility.

H_3: Firms with a higher level of R&D have a weaker relation between earnings quality and financial flexibility than their counterparts.

3. Methodology

3.1. Sample and data

To examine the relationship between earnings quality and financial flexibility, we obtained panel data of 2034 manufacturing companies 18 years (2000–2017) data that consists of 18425 firm years' observation from the **CSMAR** database. This database contains detailed data of Chinese listed and unlisted A, B, H, and N categories companies. A type of shares are classified as domestic and tradable on the open market and mostly held by individuals. On the other hand, type B, H, and N shares are classified as foreign share based on holders residency (Xu and Wang, 1999). However, for our research purposes, we downloaded and matched only A-type share of manufacturing companies consisting of eight industries as they are identical in feature and reasonable to produce the best research outcome. See Table 1 for details sample and their construction.

Table 1. Sample details and their construction.

Sample constructions	Number of firms	Observation	Lost
Number of Years (2000–2017)	2034	18425	0
Company Code (Code)		18425	0
Years (year)		18425	0
Cash		18084	341
Firm Size		18084	341
Liquidity		18084	341
Earnings Quality		18425	0
Short Term Debt (STD)		18084	341
Long Term Debts (LTD)		14647	3778
R&D Expenses		18084	341
Depreciation and Amortization		14542	3883
Property Plant and Equipment		14647	3778
Dividends		13415	5010
Operating Profit		18045	8,618
Book to Market		16694	8,618
Z Score		18084	8,618

Table 2. Variable details and expected relationships.

Variables	Descriptions	Expected Sign
Dependent:		
Financial Flexibility (FF)	Cash and Cash Equivalents (Farinha et al., 2018)	?
Independent:		
Earnings Quality (EQ)	Earnings quality measure following (Dechow & Dichev, 2002; Farinha et al., 2018; Raman et al., 2013).	?
Control Variables:		
Cash Flow (CFLOW)	Net operating income plus depreciation and amortization scaled by total assets	+
Firm Size (FS)	Natural Logarithm of total sales revenue	−
Liquidity	Cash and Cash equivalents + Receivable + Inventory-Accounts payable	−
Market to Book (MTB)	MTB is calculated as (Book Value of Total Assets-Book Value of Equity + Market Value of Equity) scaled by total assets.	+
Altman's Z score (Financial Constraints)	Z-Score = 1.2*(cash& cash equivalent-Trade Payables)/ Total Assets + 1.4*(Retained Earnings/Total Assets)+3.3*EBIT/TA + 0.999*Sales/Total Assets (Altman, Iwanicz-Drozdowska, Laitinen, & Suvas, 2014)	+
R&D Expenses	R&D Expenses divided by Total Assets	+
Short Term Debt(STD)	Total short term debt divided by total assets	±
Long Term Debt(LTD)	Total long term debt divided by total assets	?

3.2. Variables and their predicted relationships

Table 2 illustrates the variables detail and their expected relationship with the dependent variable.

3.3. Empirical model

To pursue our research objectives to examine how earnings quality affects financial flexibility in the emerging economy of a firm_i at time_t is portrayed below:

Model 1:

$$\text{Financial Flexibility } I,t = \boldsymbol{\beta}_{0+} \sum\nolimits_{k=0}^{n} + \boldsymbol{\beta}_{i,kY_{i,k,t}} + \boldsymbol{\varepsilon}_{it} \quad (1)$$

where,

Financial flexibility $_{i,t}$ is the vector of the dependent (endogenous) variable of the i^{th} firm's cash ratio over the t^{th} period.

$Y_{i,k,t}$ is the matrix of n^{th} firms independent (explanatory) variables that include the earning quality proxy,β_0 is the intercept, $\beta_{1,k}$ is the matrices of coefficients.

$\varepsilon_{i,t}$ is a vector of error terms.

3.4. Variables and their specification

3.4.1. Dependent variable: financial flexibility

In the recent literature Arslan-Ayaydin et al. (2014) financial flexibility is a proxy of the firm's leverage and cash holdings. They suggest that firms with high cash holding and low leverage are flexible firms as these firms as a more exceptional ability to raise external funds. Conversely, firms with high leverage and low cash position indicate less flexible firms. Consistent with this approach Ma and Jin (2016) measures

financial flexibility considered firms liquidity, leverage, and internal funds. A single index is the index of either leverage Billett et al. (2007); Denis & Mckeon, 2009; or cash holdings (Arslan-Ayaydin et al. 2014; Byoun, 2008; Hoberg et al. 2014; Marchica and Mura, 2010). Using the single index method, this research used cash holdings as a proxy of financial flexibility, which is measured of cash and cash equivalents scaled by total assets following (Farinha, Mateus, & Soares, 2018; Ozkan & Ozkan, 2004).

3.4.2. Independent variable

Following the literature, we used the determinant factors of financial flexibility consists of the following:

3.4.2.1. Earnings Quality. To construct earnings quality, we used the industry cross-sectional approach primarily suggested by Dechow and Dichev (2002) extended by Francis et al. (2005) and (Farinha et al., 2018). The proposed model considered that accruals help match past, present, and future cash flows, and the standard deviation of the estimated residuals is a scale of earnings quality of the firms. The higher value of the measures is the indicator of lower earnings quality, and the lower value indicates higher-earning quality. We used the following regression model for estimation of earnings quality followed by Farinha et al. (2018) in the UK and Raman, Shivakumar, and Tamayo (2013) in the US.

Model2:

$$\begin{aligned}\textbf{Earning Quality } (\mathbf{EQ}) &= \mathbf{ACC_{i,t}} \\ &= \boldsymbol{\alpha} + \boldsymbol{\beta_1}\mathbf{CFlOW_{i,t-1}} + \boldsymbol{\beta_2}\mathbf{CFLOW_{i,t}} + \boldsymbol{\beta_3}\mathbf{CFLOWi_{,t+1}} \\ &\quad + \boldsymbol{\beta_4}\boldsymbol{\Delta}\mathbf{REV_{i,t}} + \boldsymbol{\beta_5}\mathbf{PPE_{i,t}} + \boldsymbol{\varepsilon_{i,t}}\end{aligned} \tag{2}$$

where,

$ACC_{i,t}$ is the total accruals of the company i^{th} in year t .It is the difference between current assets changes in two consecutive years and cash &cash equivalents and depreciation and amortization (Botsari and Meeks, 2008).

$CFLOW_{i,t}$ is the cash flow from the operation of firm i^{th} in year t^{th}. It is measured as net operating income (before extraordinary items) subtracted by total accruals for firms i^{th} in year t^{th}.

$\Delta REV_{i,t}$ is the total Revenue of the i^{th} firms in the year t^{th} changes. PPE is the property, plant and equipment.

This study calculates the standard deviation of the error term for the specific firms, and a particular time uses the method used by Dechow and Dichev (2002). Higher the standard deviation, the more considerable uncertainty of information presented by earnings entailing lower the earnings quality for the specified company.

3.5. Descriptive statistics

Table 3 shows all variable summary statistics of the emerging economy from 2000 to 2017. The table shows that financial flexibility measured by cash holdings are

Table 3. Table showing the descriptive statistics.

Variables	Observation	Mean	Std. Dev.	Min	Max
Year	18,425	2010	4.971	2000	2017
Financial Flexibility	18,084	0.183	0.139	0.000	0.998
Firm Size ln (FS)	18,084	9.392	0.512	7.027	11.859
EQ	18,084	0.186	0.134	−0.740	0.846
Liquidity	18,084	0.186	0.134	−0.740	0.846
Short Term Debts (STD)	18,084	0.739	6.078	0.000	406.607
Long Term Debts (LTD)	18,084	0.408	5.669	−9.895	497.292
Research and Development (R&D)	18,084	0.212	3.951	−1.000	287.966
Cash Flow (CFLOW)	18,084	0.043	0.137	−6.633	3.085
Book to Market (MTB)	16,694	0.850	0.917	0.008	21.190
Z score (FC)	18,084	0.852	3.792	−203.128	8.635
Dividend (DIV)	13,415	0.531	0.499	0.000	1.000
Profit or Loss (PL)	18,045	0.845	0.362	0.000	1.000

Table 4. Pairwise Pearson correlation matrix.

Variables	Cash	FS	EQ	Liquidity	STD	LTD	R&D	CFLOW	MTB	FS	DIV	PL
Cash	1.000											
FS (ln)	−0.184	1.000										
EQ)	−0.164	−0.191	1.000									
Liquidity	−0.164	−0.191	1.000	1.000								
STD	0.019	−0.194	0.036	0.036	1.000							
LTD	0.023	−0.137	0.039	0.039	0.760	1.000						
R&D Expenses	−0.008	−0.078	−0.012	−0.012	0.068	0.018	1.000					
CFLOW	0.197	0.095	0.010	0.010	−0.028	−0.030	−0.079	1.000				
MTB	−0.204	0.394	−0.090	−0.090	−0.062	−0.045	−0.031	−0.112	1.000			
FS	0.123	0.172	0.027	0.027	−0.096	−0.020	−0.260	0.483	−0.001	1.000		
DIV	−0.052	0.056	−0.023	−0.023	0.056	0.048	−0.008	0.003	0.081	0.019	1.000	
PL	0.202	0.066	0.027	0.027	−0.019	0.002	−0.028	0.403	−0.143	0.191	−0.014	1.000

responsible for 18.3% of the total assets of the Chinese Listed Manufacturing firms. The earnings quality shows that 18.6% of earnings provide the feature of relevant information about the firm's financial performance.

Firms have a higher average value of Short Term Debts (STD) to Long Term Debt (LTD), indicating STD is 73.90% and LTD 40.8% of firms' total assets. It means that firms' have more short term debts than long term debts. Firms' Cash Flow (CFLOW) is responsible for 4.3% and Research and Development Expenditures (R&D) 21.2% of total assets. About 84.5% of firms are profit-making firms that show higher growth opportunities (MTB 85%), and 53.1% of companies are dividend-paying companies.

3.6. Multicollinearity

Table 4 illustrates the results of the Pearson pairwise product-moment correlation matrix between variables. The highest value is 0.483 for Cash Flows (CFLOW) and Financial Constraints (FS). This variable is considered as a control variable. Our main studying variable's highest number is 0.403 between CFLOW and Profit or Loss-making firms. According to Hasan et al. (2014), Bryman and Cramer (1997) the simple correlation between independent variables is not harmful if the value less than 0.90. Thus, the correlation matrix advocates that multi co-linearity is not a problem analyzing the results of multivariate analysis.

Table 5. Relationship between earnings quality and financial flexibility (all samples).

Financial Flexibility	Financial Flexibility				
	Full Sample	PFIRM	LFIRM	With R&D	Without R&D
Earnings Quality (EQ)	−0.232***	−0.246***	−0.0820***	−0.257***	−0.174***
	(−25.76)	(−24.05)	(−5.86)	(−22.72)	(−12.30)
Firm Size ln(FS)	−0.0924***	−0.108***	−0.0325***	−0.104***	−0.0554***
	(−31.74)	(−33.32)	(−5.75)	(−28.33)	(−10.97)
Short Term Debts (STD)	−0.00126*	−0.00128*	−0.00231*	−0.00121*	−0.00162
	(−2.36)	(−2.20)	(−2.27)	(−1.99)	(−1.43)
Long Term Debts (LTD)	0.00131	0.000816	0.00400*	0.00140	0.000225
	(1.59)	(0.93)	(2.30)	(1.50)	(0.13)
Research and Development (R&D)	0.000176	−0.00263	−0.000262	−0.000497	0.0259***
	(0.42)	(−1.34)	(−0.84)	(−1.10)	(3.97)
Cash Flow (CFLOW)	0.108***	0.343***	0.0421***	0.118***	0.0848***
	(10.35)	(15.58)	(4.75)	(8.65)	(5.36)
Book to Market (MTB)	−0.0135***	−0.0132***	−0.00640***	−0.0188***	−0.00811***
	(−9.86)	(−7.63)	(−3.68)	(−10.01)	(−4.26)
Financial Constraints (FS-Z score)	0.00416***	0.0174***	0.000898*	0.00331***	0.00418***
	(10.00)	(18.52)	(2.54)	(5.77)	(7.23)
Dividend (DIV)	−0.118***	−0.0140**	0.000336	−0.0145***	−0.00515
	(−5.14)	(−5.58)	(0.08)	(−5.23)	(−1.30)
_cons	1.047***	1.225***	0.434***	1.165***	0.685***
	(38.77)	(40.59)	(8.33)	(34.43)	(14.73)
N	12391	10630	1761	8933	3458

t statistics in parentheses = *p < 0.05; **p < 0.01; ***p < 0.001.

4. Empirical results

4.1. Determinants of financial flexibility

To attain out fist objective regarding the dominant predictor of financial flexibility in the emerging economies, we use OLS estimators (Equation (1)). And the results are presented in Table 5 for the full sample of 12391 and profit-making firms 10630, loss-making firms 1761, firms with growth (R&D) and firms without growth 8933 and 3458 firm-year, respectively.

This section addresses our ***H_1: Earnings quality has a negative impact on financial flexibility*** and determinants of financial flexibilities for all samples. The variable Earnings Quality denies the result conducted in advanced economies of a positive relationship with financial flexibility (Farinha et al., 2018; Sun et al., 2012). The coefficient between earnings quality and financial flexibility is $\beta = -0.232$, p-value < 0.001, which implies that an increase of 1% earnings quality (an increase in the uncertainty of the information presented by earnings) financial flexibility will reduce by 0.232%. The result is inverse with the results reported by Farinha et al. (2018) on UK firms. It is due to the higher information asymmetry and market characteristics of the emerging market than the developed market. However, this finding supports our hypothesis that earnings quality has a negative relationship with financial flexibility in the emerging economy.

Short term debt (STD) is negatively related to the firm's cash holdings. This finding resembles the findings of Hall, Mateus, and Mateus (2014). The firm size (FS) also shows a negative relationship with cash financial flexibility as expected. This finding

implies the argument the too big to fail; to means that big firms are less likely to go bankrupt, entailing firms feel comfortable with less financial flexibility. Book to Market (MTB) and Dividend also shows a negative relation with financial flexibility. This relationship indicates that with reduces of the MTB, the financial flexibility also decreases.

Long Term Debts (LTD) and Research and Development (R&D) Expenditure shows the positive relation witch financial flexibility. It implies that firms having long term debts are inclined to pile up cash for facing the possible financial crisis owing to payment of debts.

Similarly, firms with greater R&D expenditure incline to be more financially flexible by holding more cash. However, Cash flow (CFLOW) plays a significant positive relationship with financial flexibility. It means that if the firm's cash flow increases, the firm financial flexibility also increases and supports our prediction.

Financial Constraints (FC) represented the Altman's Z score shows the financial health of the company and predicts the possibility of bankruptcy. It shows a positive relationship with financial flexibility, meaning that consistent with a lower risk of default instigates the financial enhancement flexibility by piling up cash reserves.

4.2. Earnings quality and financial flexibility for profit (PFIRM) and loss (LFIRM) making firm's

This section mainly addresses the question of whether or not earning quality is more substantial for profit-making firms and weaker in loss-making firms on financial flexibility in the emerging economy. By answering this question, this study provides evidence on hypothesis ***H_2: Earning quality has a weaker impact on loss-making companies due to the scarcity of availability of external financing***

The empirical regression results are reported in Table 6, considering 14191firm year observations for profit-making firms and 2503 loss-making firms from 2000 to

Table 6. Earning quality and financial flexibility relationships with profit firms and loss firms.

Dependent Variable (Cash Holdings)	Profit Firms (PFIRM)	Loss Firms (LFIRM)
Independent Variables:		
Firm Size ln (FS)	−0.0641***	0.000782
	(−25.26)	(0.19)
Earnings Quality (EQ)	−0.234***	−0.101***
	(−26.39)	(−8.52)
Short Term Debts (STD)	−0.000350	−0.00180
	(−0.62)	(−1.83)
Long Term Debts (LTD)	0.000318	0.00526***
	(0.37)	(3.34)
Research and Developments (R&D)	−0.00183	−0.000187
	(−1.21)	(−0.76)
Cash Flow (CFLOW)	0.373***	0.0421***
	(18.88)	(5.14)
Book to Market (MTB)	−0.0149***	−0.00724***
	(−9.72)	(−4.48)
Fianancial Constraint (FC-Z score)	0.0188***	0.000629
	(20.37)	(1.79)
_cons	0.809***	0.140***
	(33.99)	(3.72)
N	14191	2503

t statistics in parentheses = *p < 0.05; **p < 0.01; ***p < 0.001.

2017. The results show that earnings quality negatively related to the profit-making firm as well as loss-making firms. However, the relationship is weaker in loss-making firms compared to its counterpart. The coefficient between earnings quality and financial flexibility $\beta = -0.232$, p-value < 0.001 for profit-making firms, while the coefficient $\beta = -0.101$ and p-value < 0.001 for loss-making firms. The results infer that loss-making firms' earnings report a less informative performance result, which shows minor importance for the investors that turn into weaker relation to financial flexibility. This result vindicating our hypothesis 2 and confirm that loss-making firms' earnings quality has a weaker impact on financial flexibility.

Firm size has a strong negative impact on financial flexibility for profit-making firms as big firms are considered stable and less likely to go for bankruptcy, entailing them to be less flexible by holding less cash. However, loss-making firms have a positive relationship with financial flexibility but not statistically significant. The result is due to the propensity to tackle unexpected shocks like the possibility of default or underinvestment

Short term debts have a negative relationship with financial flexibility for both types of firms but not statistically significant. In contrast, long term debts are significantly related to the financial flexibility of loss-making firms at a 1% level.

Cash flows have a significant impact on financial flexibility for both profit-making firms and loss-making firms at the 1% level. Still, the coefficient for profit-making firms is higher than the loss-making firms. The coefficient implies the increase of 1% cash flows the financial flexibility improve by 0.373% the profit-making firms, whereas, only .0421% financial flexibility escalated by loss-making firms. Financial constraints significantly positively related to financial flexibility for profit-making firms but not for the loss-making firms'.

The book to Market ratio shows a significant negative relationship with firms' cash holding for both profit-making firms and loss-making firms'. However, the coefficient

Table 7. Earnings quality and financial flexibility concerning R&D.

Dependent Variable(Financial Flexibility) Independent Variables:	(1) With R&D	(2) Without R&D
Firm Size ln. (FS)	−0.0559***	−0.0196***
	(−19.62)	(−4.86)
Earnings Quality (EQ)	−0.246***	−0.171***
	(−25.08)	(−14.14)
Short Term Debts(STD)	−0.000363	−0.000958
	(−0.61)	(−0.86)
Long Term Debts (LTD)	0.00113	0.00141
	(1.23)	(0.84)
Research and Development(R&D)	−0.000417	0.0197***
	(−1.21)	(3.47)
Cash Flow (CFLOW)	0.176***	0.155***
	(14.65)	(12.04)
Book to Market(MTB)	−0.0245***	−0.0137***
	(−14.99)	(−7.84)
Financial Constraint (FC-Z score)	0.00311***	0.00406***
	(5.56)	(6.96)
_cons	0.771***	0.391***
	(29.00)	(10.50)
N	11895	4799

t statistics in parentheses = *p < 0.05; **p < 0.01; ***p < 0.001.

is higher for profit-making firms than the loss-making firms'. Research and Development Expenditure has negative relationships with financial flexibility but statistically insignificant.

4.3. Earnings quality and financial flexibility concerning R&D expenditure

Table 7 tabulates the relationship between earnings quality and financial flexibility based on R&D expenditure. For a better analysis, we divided the firms as firms with having R&D and without having R&D and sought a relationship with financial flexibility.

Table 7 reports that Firm Size (FS), Earnings Quality (EQ), and Book to Market (MTB) have a significant negative relationship with financial flexibility. The coefficient between earnings quality and financial flexibility $\beta = -0.246$, p-value < 0.001 for firms with R&D and $\beta = -0.171$, p-value < 0.001 for firms without R&D. However, the relationship with financial flexibility is stronger for R&D expenditure companies than their counterparts. Firms having R&D expenditure show a significant association with financial flexibility when firms have no R&D expenditure at 1% significance level than the firm with R&D Expenditure. This finding supports the hypothesis ***H_3: Firms with a higher level of R&D have a weaker relation between earnings quality and financial flexibility than their counterpart.***

Cash flow (CFLOW) and Financial Constraint (FC) has a significant positive relationship with financial flexibility for both firms with R&D and firms' without R&D. The link signifies at a 1% level, indicating that with 1% of CFLOW increment can trigger a 0.176% increase of financial flexibility for firms with R&D expenses, whereas, with the rise in 1% of CFLOW the financial flexibility increases by 0.155% for firms without R&D expenditure. Financial Constraints (Z SCORE) shows a significant relationship with financial flexibility at a 1% level, meaning that with the

Table 8. Earnings quality and financial flexibility concerning dividend Payout.

Dependent Variable financial flexibility)	(1) With Dividend	(2) No Dividend
Independent Variables:		
Firm Size ln(FS)	−0.0494***	−0.0723***
	(−14.07)	(−16.63)
Earnings Quality (EQ)	−0.217***	−0.264***
	(−17.98)	(−18.45)
Short Term Debts (STD)	−0.00160**	0.00136
	(−2.67)	(1.01)
Long Term Debts (LTD)	0.00288**	−0.000898
	(3.00)	(−0.54)
Research And Development (R&D)	0.00109	0.0000227
	(0.80)	(0.05)
Cash Flow (CFLOW)	0.0906***	0.209***
	(5.64)	(13.16)
Book to Market(MTB)	−0.0163***	−0.0230***
	(−9.79)	(−9.24)
Financial Constraints(FC-Z score)	0.00983***	0.00318***
	(8.01)	(6.53)
_cons	0.686***	0.926***
	(20.78)	(22.85)
N	6553	5838

t statistics in parentheses = *p < 0.05; **p < 0.01; ***p < 0.001.

increment of 1 FC, the financial flexibility increase by 0.0311% for firms with R&D expenditure and 0.0406% for without R&D firms.

4.4. Determinants of financial flexibility with dividend payout

This section discusses the determinants of financial flexibility with the firms' specific characteristics of dividend payment strategy. Table 8 shows the multiple relationships with financial flexibility and independent variables. It indicates that when the firm is more prominent than they hold less cash irrespective of dividend payment status. It further means that greater firms have a significant negative relationship with financial flexibility at a 1% level in both cases.

4.5. Discussion of the results

4.5.1. Negative relationship between earnings quality and financial flexibility in the emerging economy

We can support our hypothesis H_1 that earnings quality has a negative impact on the financial flexibility measured in terms of the level of cash holdings. We also contribute to the accounting and finance literature that emerging markets have the opposite relationship between earnings quality and financial flexibility compared to the developed markets (Farinha et al., 2018). We reported that the minimum earnings quality is −74.6%, and average earnings quality is 18.6% in the Chinese emerging markets. Earnings quality is also considered as the accuracy of financial reporting (Ball & Shivakumar, 2008; Francis et al., 2005). which has a direct impact on information asymmetry (Leuz & Verrecchia, 2000), as poor earnings quality instigates information asymmetry while the accuracy of financial reports mitigate information asymmetry (Bushman & Smith, 2001).

Emerging countries' are the countries whose stock market has gone through a radical reformation and introduction of corporate governance guidelines as well as setting regulatory bodies and regulations. For example, China has gone through a radical reform of board independence in 2001, and stock restructured in 2005 (e.g. Li et al., 2015) and corporate governance guidelines in 2006. We expected that reported earnings quality was worse during this period of 2000–2006, causing the negative earnings quality −74.6%. However, after the implementation of corporate governance and other regulatory measures since 2006 and onwards, the earnings quality improved and reached an average of 18.6%. We evidence that earnings quality has a negative impact on financial flexibility. It means with the improvement of 1% of earning quality *(ceteris paribus)*, the financial flexibility measured in cash holdings will reduce by 0.232%. Also, poor earnings quality instigate agency problem (e.g. Jensen & Meckling, 1976) and put pressure on managers to focus on short term goal and inclined to hoard cash (e.g.,Sun et al., 2012), which in turn misappropriation of cash (e.g. He & Wintoki, 2016). Conversely, proper financial reporting reduces the information asymmetry and increases earnings quality (Bushman & Smith, 2001), which in turn release pressure on managers hoarding less cash due to the availability external financing and may focus on long term goal.

4.5.2. The earnings quality and financial flexibility association with the firm's characteristics of profit making firms' and loss making firms

We find evidence to our hypothesis H_2 that loss-making firms have weaker impacts on the firm's financial flexibility compared to the profit-making firms. It means that loss-making firms' earnings reports, a less informative performance result which shows minor importance for the investors that turn into weaker relation to financial flexibility.

The profit-making firms can be turned to the loss-making firm by investing excessive amounts in R&D or unplanned expenses (e.g. Darrough & Ye, 2007). Loss-making firms are at risk of liquidation (Hayn, 1995), and investors become reluctant to invest in these companies. Consequently, external financing become costly (Easley & O'hara, 2004) as well as sometimes more difficult. In this situation, managers become more dependent on financial flexibility and hold more cash for the firm's survival and progress (e.g. Bates et al., 2009). In the time of financial constraints, an additional dollar of extra internal cash is appreciated for shareholders due to its power to avoid excessive, costly external funds (Faulkender & Wang, 2006). The inaccuracy of accounting information is higher in the emerging economies due to the improper implementation of corporate governance guidelines and other disclosure requirements. Lack of regulation in practice entails higher information asymmetry instigating managers to use internal funds (e.g. García-Teruel & Martínez-Solano, 2008) such as cash and rely on financial flexibility more cash.

Loss-making firms with poor earnings quality are more likely to influence the firm's behavior to hold more cash than firms with better earnings quality. This finding upholds the arguments of agency theory that with the presence of information, asymmetry managers tend to hold more cash and squander the firm's resources.

4.5.3. The earnings quality and financial flexibility relationships with the firm's nature of R&D expenses

Earning quality reduces the information asymmetry by providing accurate and timely information on a firm's earnings, which in turn makes firms to hold less cash and becomes financially flexible securing cheaper external funds (e.g. Sun et al., 2012). Our regression results report that the firms having R&D investments and a 1% increase in earnings quality will reduce financial flexibility by 0.246%.On the other hand, the firms that have no R&D investments and a 1% increase in earnings quality will downsize financial flexibility by 0.176%. ***Thus, we negate our hypothesis that the level of R&D has a weaker relationship between earnings quality and financial flexibility.***

The findings indicate that the higher level of R&D resulting from lower earnings quality reduces the financial flexibility buy spending cash. The explanation of this finding is when there is information asymmetry firms hold more cash and managers squander cash (Jensen & Meckling, 1976).On the other hand, lower R&D is responsible for maintaining more cash, so does earnings quality and improves financial flexibility. The explanation of these findings could be firms hold more cash for precautionary as well as increment of domestic and international competition can motivate firms to use cash as a strategic weapon (Lyandres & Palazzo, 2012).

5. Conclusions

This study addresses the dearth area of research on the effect of earnings quality and firm-level characteristics on financial flexibility in the emerging economy. The understanding of earnings quality is essential in the emerging economy due to its unique feature of financing. Developing economies stimulate new investment opportunism and insist managers find tools for increasing the flexibility to attract additional resources for their business development and expansion. Moreover, it becomes expensive and often difficult to obtain capital form a third party as well as impossible when the economy faces hard times. This study will assist managers in being financially flexible and avoiding crucial procedures to obtain external credits to secure a sustainable pace of development and have a financial advantage over their counterparts.

Using panel data analysis, we examine 2034 manufacturing companies 18 years of data obtained from the Chinese big database CSMAR. We consider the 18425 firm-year observation from 2000-2017. This study sets out to address four main research questions: What are the dominant predictors of financial flexibility? Second, what is the association between earnings quality and financial flexibility? Third, how earnings quality is linked to firms with profit or loss? Finally, does earnings quality influence the firms' financial flexibility in the emerging economy?

Our results support the following findings: First, earnings quality is a dominant predictor of financial flexibility, showing the negative relationship with financial flexibility. It implies that if firms' earnings represent the related information, firms become confident, and it becomes easier to raise external funds entailing them to hold less cash. Similar results come from the firm-specific characteristics of firms with profit, firms with R&D, or without R&D and firms with dividends and without dividends. Secondly, following our hypothesis 2, we find that earning quality has a weaker impact on loss-making companies due to the scarcity of the availability of external financing. Thirdly, we negate our hypothesis 3 that firms with a higher level of R&D or growth rate have a weaker relation between earnings quality and financial flexibility than their counterparts. Finally, we find evidence that earnings quality influence the firm's financial flexibility

Overall, this study offers several comprehensions for researchers and managers. The results indicate that high-level earnings opaqueness companies seem to have difficulty in raising external funds due to their information asymmetry in the emerging economy. However, this case may differ from different degrees of firms' characteristics like Profit firms, Loss Firms, Firms with R&D, or without R&D and firms with or without dividends.

6. Implications

This research has been conducted on the emerging Chinese market. For consistent and robust results, this research excluded the financial and other firms that possess different operational and regulatory attributes than the manufacturing firms. The study is useful for policymakers and managers to design their cash levels and avoid the hurdle of obtaining external finance. Or to accelerate their flexibility to raise

money from an external source. The study of financial flexibility for financial firms may be an excellent initiative for future projects.

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