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Dividend policies and managerial ability beyond financial constraints: insights from China

Dan Hou[1], Ziyan Yuan[1], Alina Taran-Bozbay[2,3] & R. M. Ammar Zahid[4]✉

Managerial ability plays a key role in the development and performance of a business and, implicitly, in corporate financing decisions and dividend opportunities. This study builds on the contradictory literature arguments related to dividend policies and analyses the influence of managerial ability and financial constraints on cash dividends, considering a comprehensive perspective of dividends expressed as both accounting and market measures of payout, yield, and growth in the context of the Chinese financial market. Alternative empirical estimations on a sample of 18,011 firm-year data of Chinese A-share listed companies between 2010 and 2019 indicate that managerial ability has a positive influence over cash dividend distribution, enhancing shareholders' returns and the attractiveness of the companies on the financial market. The effect of managerial ability is challenged by the financial constraints' conditions and state ownership. These results contribute to corporate and regulatory dividend policies, illustrating the importance of understanding the role of managerial influence on dividend decisions.

[1] Yunnan Technology and Business University, Kunming, China. [2] Faculty of Business, Özyeğin University, Istanbul, Türkiye. [3] The Body of Expert and Licensed Accountants of Romania, Suceava, Romania. [4] The Business School, RMIT University, Ho Chi Minh City, Vietnam. ✉email: amrzahid@gmail.com

Introduction

The importance of managerial abilities has intensified in recent years, as the quality of decisions and the vision of business leaders determine a business's success. According to Demerjian et al. (2012), managing competence is an essential element of managerial effectiveness in transforming corporate resources into revenues, in line with the goal of wealth maximization. High-ability managers seem to do better than low-ability managers in a number of areas, including firm performance (Bertrand and Schoar, 2003; Cheung et al., 2017), accurate earnings forecasts (Baik et al., 2011), debt maturity decisions (Bui et al., 2018), capital structure (Zahid et al., 2024a), corporate investment opportunities (Lee et al., 2018; Shang, 2021), corporate sustainability performance (Khan et al., 2022; Zahid et al., 2024b), financial reporting quality and fraud prevention (Garcia et al., 2018). However, the managerial role in dividend decisions interferes with shareholders' interests and voting power, as well as market regulations and corporate investment needs, and it represents a subject of debate and research, especially for emerging markets.

Considering the complexity of the dividend puzzle (Al-Najjar and Kilincarslan, 2016), consisting of multiple perspectives questioning the relevance, monitoring, and signaling role of dividends, as well as the fact that not all countries and tax systems encourage dividend payments nor all investors prefer dividend distribution (but rather capital gains from trading shares), there are mixed arguments about the role of managerial ability in dividend policy decisions (Jiraporn et al., 2016). On the one hand, managers often face pressure to deliver promising financial results, which could lead to the initiation of dividends and the expectation of continued dividend growth, thereby signaling promising future earnings and business performance (Liu and Chen, 2015). In line with the information asymmetry hypothesis (explaining that corporate insiders have access to more information than shareholders), managerial actions are interpreted as predicting the path of a business (Baik et al., 2011). Thus, financial markets often perceive dividend payouts as signs of persistent corporate performance, further dividends, and capital gains, or, on the contrary, an indication that the company intends to enhance equity financing and tries to look attractive to potential investors, from the perspective of share price fluctuation and share dilution (Yang et al., 2020). On the other hand, managers are also assumed to refrain from dividend distribution in favor of reinvestment and further growth or not to pay or enhance dividends unless a certain level of financial stability is achieved to ensure ongoing dividends (Jiraporn et al., 2016).

Emerging markets have varying institutional, regulatory, governance, and business environmental particularities (Yang et al., 2020; Zahid et al., 2023b), and the theories and findings specific to developed markets may not explain the realities of developing markets, confronting specific restrictions and reforms[1]. The current study aims to investigate the influence of managerial ability on dividend policies in China, one of the leading economies worldwide, with a modern socialist regime and a relatively recent and fast-growing capital market, successfully promoting and declaring records in corporate dividend payments[2], as an effect of semi-mandatory, comply-or-explain, and mandatory dividend regulations implemented in the last two decades (Tao et al., 2022). Thus, Chinese listed companies had to pay a minimum required dividend in case of profit. In this unique context, the role of managerial ability is significantly challenged by the shareholders' and market expectations, regulatory pressure, corporate need of investment, innovation, growth, and additionally, the alignment to global sustainability goals, which become a priority for the global economy.

Using 18,011 firm-years observations of Chinese A-listed companies between 2010–2019, this study shows that better managerial skills significantly increase the likelihood of paying cash dividends expressed as dividend payment ratio, dividend yield, and dividend growth ratio. The results hold true to a variety of robustness tests and alternative estimation methods addressing endogeneity and omitted variable concerns. The findings shed light on the extent to which financial constraints reshape the influence of management competencies on dividend decisions and contribute to dividend policy literature with novel evidence about the role of managerial ability on multiple dimensions of cash dividend policies in emerging markets, based on the spectacular case of China.

To the best of our knowledge, this is the first study to address the managerial ability—dividend relationship in the setting of semi-mandatory and mandatory dividend payout, providing evidence about the implementation and effects of such regulatory measures. This research extends the study of Sarwar et al. (2020), who analyzed the role of managerial ability in dividend initiation decisions of state and non-state listed companies before the mandatory dividend regulations. Moreover, this paper investigates dividend policies comprehensively, from both accounting and market perspectives, using an extended set of alternative measures, i.e., dividend payout, dividend yield, and dividend growth. In addition, this research provides new insights into the financial constraints concept as a moderating factor on managerial ability—the dividend relationship. Financial constraints play a significant moderating role in managerial ability and dividend nexus and enhance the importance of excellent managerial skills.

The remainder of the paper is structured as follows: the section "Background, literature review, and hypothesis development" describes the theoretical framework, the dividend regulations in China, and the hypothesis of the study; section "Data and methods" refers to data and methodology; section "Results and discussions" reports the findings, the robustness tests and endogeneity issues; whereas section "Conclusions and Policy Implications" concludes the study.

Background, literature review, and hypothesis development

Dividend directives in China. The Chinese A-share market has been plagued by inadequate investor protection and weak corporate governance since its beginnings in the early 1990s. Dividend payments were low and scarce (Allen et al., 2005), the market being dominated by state ownership. A considerable part of controllable shares was restricted from trade until the 2005–2007 share-split reform, which represented the second privatization of Chinese companies, discharging the share restrictions (Liao et al., 2014).

The Chinese government has enacted a series of regulations governing the dividend payment of publicly traded corporations, and an important guideline was established in 2001 by the China Securities Regulatory Commission (CSRC) for all its stock markets. This guideline stipulated that the lead underwriter must report for new share-issuing companies if they have not paying dividends for three years without a valid reason. Later, in 2004, the CSRC enacted a rule prohibiting publicly traded companies with no cash dividends for three consecutive years from conducting seasoned stock offers or convertible bond offerings (Tao et al., 2022). However, the statute of 2004 did not establish clear requirements for dividend payout, so a new regulation was established in 2006 clarifying that a company must have cumulatively distributed more than 20% of its average annual distributable earnings in cash or stock over the previous three

years to qualify as an issuer of securities. Further, the CSRC increased the minimum cumulative payout percentage from 20 to 30% in 2008, imposing enterprises seeking external public support to pay cash dividends for at least three consecutive years (Tao et al., 2022; Yin and Nie, 2021). As this semi-mandatory dividend rule does not imply that all the companies must pay cash dividends, a vast part of corporations were assumed to shift their financing strategy towards private placements as an alternative to issuing public market shares and bonds (He and Li, 2018).

In January 2013, Shanghai Stock Exchange (SSE), one of the three stock exchanges from China, implemented a "comply or explain" dividend policy addressing the payment of cash dividends (He and Li, 2018). Companies trading on SSE were recommended to distribute at least 30% of their yearly net profit as cash dividends (without associating dividends with any other constraints) or to mandatory report their reasons and explain how they intend to use the profits in case of not paying dividends. This guidance was in addition to the prior semi-mandatory dividend regulations. Thus, the SSE companies intending to issue shares must comply with the cumulative three-year 30% cash dividend rule and additionally must yearly disclose the reasons for not providing dividends in cases of positive net income but not distributing a yearly cash dividend of 30%.

Following the SSE's initiative, the CSRC publishes a new regulatory guideline at the end of 2013, imposing all listed companies in China to pay cash dividends every year in the value of at least 20% of their profit. In the case of companies in a sophisticated stage of development and without large capital expenditures, the minimum threshold of dividend payout may reach even 80% of the profit[3], according to the development stage of the company, as part of corporate dividend policy and article of association. Thus, China introduced mandatory dividend distribution (Tao et al., 2016, 2022).

These regulations represent the external monitoring of dividend payments, which ensure the fair treatment of minority shareholders (Tao et al., 2022). Further dividend rules may be expected in the transformative process of the Chinese stock markets, and these represent big changes from the usual way that dividend payments are addressed by the publicly traded companies from the Western developed countries[4]. Moreover, China provides tax exemptions for both capital gains and regular income from investments held for more than a year, with the purpose of stimulating investors to hold the shares and consider dividend gains rather than speculative trading and short-term capital gains (Yao et al., 2020).

Corporate dividend policy and managerial ability. Dividend policy is one of the most controversial issues in corporate strategic decisions related to shareholder primacy. In the absence of market frictions and information asymmetries, a company's dividend policy should not theoretically impact its share price or cost of capital (Miller and Modigliani, 1961). However, as information asymmetries between internal managers and external investors inevitably exist, the signaling theory of dividends implies that managers use payouts to transmit signals to external investors regarding the firm's financial status and growth possibilities (Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985), as well as about their abilities and better understanding of corporate wealth (Al-Najjar and Kilincarslan, 2016). Thus, dividend payments become a trustworthy indication that management is positive about the prospects of the company (Garrett and Priestley, 2000).

Conversely, there is also evidence that dividends are a poor indicator of future profits (Benartzi et al., 1997; DeAngelo et al., 1996) or just a response to shareholders' expectations (Al-Najjar and Kilincarslan, 2016), without guaranteeing further earnings or business growth. In the case of China, in the context of the semi-mandatory dividend requirement for accessing public finance, dividend distribution could be a sign of financing needs and future public offerings. Under the mandatory dividend rule, dividend payment could also be a sign of compliance for profitable firms.

High-ability executives can make more accurate forecasts of future earnings and implement their chosen strategies with greater success (Baik et al., 2011; Demerjian et al., 2012; Holcomb et al., 2009). Multiple studies provide evidence that highly skilled executives are motivated to disclose information that would benefit shareholders, communicating their competence on the market and improving their reputation capital (Baik et al., 2020). Moreover, high-ability managers are more likely to protect confidential information and share useful market data and are considered better equipped to reduce information asymmetry and increase their managerial reputation by providing more shareholder-beneficial information to the market (Baik et al., 2020; Demerjian et al., 2020). Although cash dividends may be used to signal that a company is performing effectively, corporations should avoid cash rewards when they impose capital constraints and result in the foregoing of investment opportunities with positive net present values, hence leading the company to lose money (Campello et al., 2010; Rozeff, 1982).

In contrast to signaling theory, agency theory suggests that dividends may be an effective way to reduce manager-shareholder disagreements (Jensen, 1986). When a company has a surplus of cash flow resources, managers have an incentive to retain them for further investment or maximize their value rather than distribute them to investors. This is because dividend distribution may consequently require managers to raise capital from other sources to sustain and expand the business. Creditor requirements and repayment obligations may put pressure on management (Jiraporn et al., 2016). Dividend payments may decrease agency expenses and shareholder-manager conflicts (Faccio et al., 2001; Lang and Litzenberger, 1989), proving that managers act for the benefit of shareholders. The moral hazard problem emerges when shareholders have insufficient information about the business strategy and shareholders' prospects, allowing management to take self-interest actions at the shareholders' expense (Cui et al., 2019).

Executives play a critical role in monitoring corporations (Gul et al., 2011), and the distribution of dividends is a corporate governance mechanism that may assist in mitigating agency problems (DeAngelo et al., 2006; La Porta et al., 2000; Rozeff, 1982). Prior studies indicate that managers may play a key role in dividend dynamics according to country-level particularities and investor preferences (Al-Najjar and Kilincarslan, 2016). Executives gain experience and credibility by making decisions for their organizations. Over the course of their careers, they create a vital resource foundation for value creation through a combination of inherent aptitude and experiential learning, which influence corporate performance and behavior and, consequently, corporate dividend policies as well. Demerjian et al. (2020) explain that managerial careers and competencies require a lifetime effort, and high-ability managers are assumed to avoid behaviors that could harm their reputations. If market shocks or corporate events occur and result in unexpected and poor firm performance, high-capability managers stand to lose more in terms of income and reputation (Fudenberg and Tirole, 1995; Zahid et al., 2024a). These views motivate high-ability executives to try to differentiate themselves from low-ability executives and decrease the impact of information asymmetry on the market. High-ability CEOs may also be more inclined to change corporate dividend decisions by

increasing cash dividend payments to improve their public image. Further, talented managers, confident in their ability to keep the firm profitable, are more willing to pay larger dividends because they are less concerned about having to reduce them in the future (Jiraporn et al., 2016).

Focusing on dividend-paying firms, those with high-ability managers tend to pay higher dividends and have an influential impact on the financial market. Since dividends are considered long-term commitments to shareholders, high-ability managers can manage resources wisely to sustainably boost firm performance and increase dividend payouts, as well as emphasize corporate image in the financial market (reflected on the market measure of yield).

H_1: Managerial ability is positively associated with cash dividend distribution policies (payout, yield, growth).

Moderating the role of financial constraints. The level of financial constraints significantly shapes corporate financial decisions, including dividend policy and capital structure. Companies that have fewer funding restrictions are more likely to boost dividend payments, reflecting improved corporate governance (Chae et al., 2009). Koo et al. (2017) propose that reduced time spent on earnings management by managers can lead to more cash available for dividends. Additionally, Tsai et al. (2022) find that high-ability CEOs consistently performing well can mitigate corporate financial constraints. Managerial competence helps ease financial constraints, possibly by reducing information asymmetry, mitigating agency conflicts, and enhancing corporate profitability. Furthermore, Huang et al. (2021) indicate that private firms face more severe financial constraints compared to state- and foreign-owned firms, and managerial ability has a more pronounced effect in alleviating financial constraints for private firms.

Organizations that are not financially constrained have more options for determining dividends since they can access a broader range of capital markets instead of raising costly external capital. Companies that are financially constrained face considerable hurdles in supporting their expected investments solely through internal resources (Bodnaruk et al., 2015; Kaplan and Zingales, 1997), so they are expected to retain earnings. Firms with low financial resources have a more difficult time acquiring external capital, which raises the unpredictability of their profitability and pushes them to avoid taking risks (Chae et al., 2009). These disadvantages lead to the assumption that financially unrestricted enterprises will be in a better position to pay a steady dividend and maintain financial flexibility than financially restricted companies.

Firms with effective high-ability management and greater financial flexibility have a stronger incentive to eliminate information asymmetry. Thus, firms with high-ability executives and without financing restrictions may have a higher dividend payout proportion to diminish the information gaps and signal the markets about corporate potential, in line with the following hypothesis:

H_2: The association between managerial ability and cash dividend policies is significantly negatively moderated by corporate financial constraints.

Data and methods

Data and sample. The baseline sample of this research includes all Chinese A-share companies listed on the Shanghai Stock Exchange (SSE) and the Shenzhen Stock Exchange (SZSE) for the period 2010–2019, with 23,193 firm-year observations. Chinese companies listed on the Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) issue two types of shares: A-shares, quoted in Chinese renminbi (RMB), and B-shares, quoted in foreign currencies (USD for Shanghai B-shares and HKD for Shenzhen B-shares). A-shares are for domestic and qualified foreign institutional investors (QFIIs), while B-shares may have directors with foreign experience and distinct dividend policies. So, following Tao et al. (2022), this research focuses on A-shares only to exclude B-share influence. Furthermore, we have excluded enterprises in the financial sector, applied preferential market treatment (ST, ST*), and excluded values for the primary variable (dividend), resulting in a final sample of 3999 firms with 18,011 firm-year observations (details can be found in Appendix Table A1). Further, the sample distribution based on industry has also been provided in the Appendix. The primary source of data is the Chinese Stock Market and Accounting Research (CSMAR) database. To decrease the influence of extreme values, all continuous variables are winsorized at the 1st and 99th percentiles.

Variable measurements

Dependent variables. Three alternative metrics for dividend payment serve as proxies for dividend policies. First, the dividend payout ratio (Div_payout), measured as dividends paid divided by total assets (Benlemlih, 2019; Zahid et al., 2023a), indicates the proportion of dividends scaled to the firm's size and total corporate resources. Second, we determine dividend yield (Div_yield) by dividing the dividend per share by the share price (Al-Najjar and Kilincarslan, 2016; Byoun et al., 2016; Saeed and Zamir, 2021), which represents the return measure of shareholders' remuneration in relation to the market share price (Hussain & Akbar, 2022). Therefore, it also reflects the sentiment of the market and the adjustments made to dividend policies. Third, dividend growth (*Div_Growth*) is the rate of rise in dividends paid over time (Cooper and Lambertides, 2018). The following Eqs. (1), (2), and (3) illustrate the calculation of these three dividend measures.

$$DivPayout = \left(\frac{Dividend\ Paid}{Total\ Assets}\right) * 100 \tag{1}$$

$$Div_{Yield} = \left(\frac{Dividend\ per\ Share_t}{Price\ per\ Share_t}\right) * 100 \tag{2}$$

$$DivGrowth = \left(\frac{Dividend\ Paid_t - Dividend\ Paid_{t-1}}{Dividend\ Paid_{t-1}}\right) * 100 \tag{3}$$

Independent variables. In line with prior literature, the management ability (*MA*-score) metric created by Demerjian et al. (2012) is determined to measure how well executives turn a given set of resources into profits, utilizing a two-stage technique comprised of data envelope development analysis and multivariate regression. Using data envelopment analysis (DEA), Demerjian et al. (2012) propose to model income as a function of revenue-generating resources (Net Property, Plant and Equipment—*PPE*, Net Operating Leases—*OLease*, Net Research, and Development—*RD*, Purchased Goodwill—*GW*, Other Intangible Assets—*OtherInt*, Cost of Inventory—*CGS*, and Selling, General and Administrative expenses—*SGA*). Equation (4) is used for the computations.

$$\max_y \theta = \frac{\text{Sales}}{\nu_1 CGS + \nu_2 SGA + \nu_3 PPE + \nu_4 OLease + \nu_5 RD + \nu_6 GW + \nu_7 OtherInt} \tag{4}$$

DEA optimization method computes a firm's efficiency score (max_y θ) by evaluating its sales optimization relative to industry peers (on a scale from 0 to 1), and it reflects a combination of managerial abilities and firm attributes.

The second step entails estimating the Tobit model at a sector-specific level to disaggregate total company efficiency into firm efficiency and managerial competency; the efficiency score is regressed on a set of variables that affect managerial ability, including firm age—*Ln(Age)*, operational complexity—*BusinessSegmentConcentration*, foreign currency exposure—*ForeignCurrencyIndicator*, market share—*MarketShare*, positive free cash flow - *PositiveFreeCashFlow*, firm size —*Ln(TotalAssets)*, and time —*YearIndicators*. The Tobit model residual (*MA* score) from estimating Eq. (5) is used to assess the efficacy of managers.

$$\begin{aligned} \textit{Firm Efficiency} \;=\; & \beta_0 + \beta_1 Ln(TotalAssets) + \beta_2 MarketShare \\ & + \beta_3 PositiveFreeCashFlow + \beta_4 Ln(Age) \\ & + \beta_5 BusinessSegmentConcentration \\ & + \beta_6 ForeignCurrencyIndicator \\ & + Year\ Indicators + \in \end{aligned} \tag{5}$$

This *MA* score has been validated by several conclusive tests in prior studies (Demerjian et al., 2020; Doukas and Zhang, 2020; Khan et al., 2022; Shang, 2021; Zahid et al., 2024a), and it is assumed that it represents an adequate proxy for measuring management ability, as it allows separating the effect of management skills from the effect of other corporate factors.

Moderating variables. The influence of financing constraints (*FC*) as a moderating factor on the correlation between management skills and dividend policy is assessed using an adjusted version of Kaplan and Zingales (1997) approach. The Kaplan and Zingales (*KZ*) index utilizes five accounting ratios to categorize firms according to both qualitative and quantitative data, with the *KZ* coefficient serving as a measure of financial constraints as shown in Eq. (6)

$$\begin{aligned} KZ_{it} = & -\left(1.002\,\frac{CF}{K_{t-1}}\right)it + (0.283Q)it \\ & + \left(3.139\,\frac{D}{TotalCap}\right)it - \left(39.368\,\frac{Div}{K_{t-1}}\right)it - \left(1.315\,\frac{Cash}{K_{t-1}}\right)it \end{aligned} \tag{6}$$

where, *KZ* coefficient measures financial constraints; *CF* represents net cash flows; *K* is the company's stock value; *Q* represents Tobin's Q; *D* denotes the total debt; *TotalCap* refers to the company's entire capitalization; *Div* is dividend payments, and *Cash* measures the sum of cash value and short-term investments. This method is deemed reliable due to its capability to address various financial challenges and a firm's dependence on equity (Khan et al., 2022; Zahid et al., 2024a).

Control variables. As suggested in the dividend determinants literature, numerous governance and firm-related factors impact corporate dividend policies (Benlemlih, 2019; Saeed and Zamir, 2021).

The firm-related metrics influencing dividend policies consist of: (i) *firm size - LnSales*, given that larger corporations are more likely to pay dividends (Deng et al., 2017); (ii) *financial leverage—Lev*, as debt may be substitute for dividends to reduce agency costs (Brockman and Unlu, 2009; Huang et al., 2011) and thus, it is expected to have a negative coefficient; (iii) *financial performance—ROA*, considering that profitable firms pay out more dividends (Brockman and Unlu, 2009); (iv) *tangible assets—PPE/TA*, reflecting capital intensive corporate operations, which guarantee corporate going-concern and growth; the firms with high tangible assets may rely on profit reinvestment rather than dividends allocation (Boțoc and Pirtea, 2014; Dewasiri et al., 2019); (v) *cash holdings—CR cash ratio*, greater amounts of net cash inflow being associated with a higher probability of dividend payments (Deng et al., 2017), and (vi) *FAge*—the natural logarithm of years since listing plus one, which proxies the potential of market growth and earnings due to firm's experience of operations and established reputation; older firms may be expected to pay larger dividends or on contrary, to count on their market position and focus on reinvestment for maintaining or renewing their operating capacity (Guan et al., 2018).

The corporate governance characteristics included as control variables in the study are (i) *board size - BS* (measured as the total number of directors on boards and referring to decision-making concentration or dilution of voting power); (ii) *CEO duality* (equals 1 if CEO is also a member of the board of directors and 0 otherwise, reflecting its implication in corporate strategies and the level of connection between management and governance activities) following Yuan et al. (2019); (iii) *independent directors—IndDir* on board—the natural logarithm of independent directors; and (iv) *CEO tenure* reflecting the number of years spent at the position. Furthermore, state ownership dominates the corporate ownership structure in China's emerging financial market. Therefore, control also encompasses state-owned versus non-state-owned SOE enterprises.

Model specification. We estimate the panel regression model given in Eq. (7) with a fixed effect to test the hypothesis about the links between managerial ability and corporate dividend policy. This method controls time-invariant characteristics of the entities being studied, helping to eliminate bias from unobserved variables that do not change over time.

$$\begin{aligned} Div_{it} = \alpha + & \beta_1 MA_{it} + \beta_2 CR_{it} + \beta_3 ROA_{it} + \beta_4 FSize_{it} \\ & + \beta_5 Lev_{it} + \beta_6 FAge_{it} + \beta_7 PPE_{it} + \beta_8 SOE_{it} + \beta_9 CEODual_{it} \\ & + \beta_{10} BSize_{it} + \beta_{11} IndDir_{it} + \beta_{12} CEO_Tenure_{it} \\ & + \sum_{i=1}^{n} \beta_n \text{Industry_Dummies}_{it} + \sum_{i=1}^{n} \beta_n \text{Year_Dummies}_{it} + \varepsilon_{it} \end{aligned} \tag{7}$$

Where:

i indicates the firms, and *t* indicates the time (fiscal year);
Div_{it} is the dividend paid measured by *Dividend Payout, Dividend Yield* and *Dividend Growth* alternatively;
the main explanatory variable is *MA* reflecting the managerial ability score calculated based on Demerjian et al. (2012);
CR is cash ratio, *Cash* is the natural logarithm of net cash inflows available;
ROA is return on assets;
FSize is firm size measured by the natural logarithm of total sales;
Lev is leverage measured as the ratio of total debts to total assets;
FAge denotes the age of the firm from the date of inception;
PPE represents the net property, plant, and equipment divided by total assets;
SOE is state-owned enterprises vs. non-state-owned enterprises;
CEO duality depicts the dual role of the CEO as a board member;
BSize refers to the total number of directors on the corporate boards;
IndDir represents the number of independent directors;
CEO Tenure represents the number of years spent in the position.

Industry and year dummies are used to avoid common endogeneity issues arising from time or across industries. ε refers to the error term.

Table 1 Descriptive statistics.

	Mean	Std. dev.	Median	Min	Max	N
Dividend Payout	1.215	1.866	0.632	0	64.656	18011
Dividend Yield	0.675	1.000	0.362	0.000	27.444	18011
Divided Growth	2.289	7.876	0.000	0.000	125.141	18011
Dividend paid	0.704	0.457	1.000	0	1	18011
MA	0.001	0.157	−0.019	−0.314	0.391	18011
FC (KZ)	−15.50	107.72	−2.37	−5685.9	212.82	18,011
CR	0.170	0.138	0.128	0.006	0.841	18011
ROA	0.035	0.372	0.039	−48.316	8.441	18011
FSize	21.279	1.426	21.149	9.044	27.813	18011
Lev	0.422	0.559	0.398	0.007	63.971	18011
FAge	2.082	0.838	2.197	0.000	3.332	18011
PPE	21.953	1.220	21.797	18.367	26.369	18011
SOE	0.218	0.159	0.187	0	1	18011
Duality	0.356	0.479	0.000	0	1	18011
IndDir	0.374	0.054	0.000	.333	.571	18011
BSize	8.588	1.667	9.000	2.000	18.000	18011
CEO tenure	5.657	3.748	0.000	3	8	18011

Where *MA* represents the CEOs managerial ability, FC(KZ) is financing constraints measured as Kaplan-Zingales score. CR is cash ratio; ROA is return on assets. *FSize* is firm size, Lev is leverage, FAge denotes the age, *PPE* represents the net property, plant, and equipment divided by total assets. SOE is state-owned enterprises vs. non-state-owned enterprises. Duality depicts the dual role of the CEO as a board member. *BSize* refers to board size. IndDir represents the independent director. CEO tenure represents the number of years spent at the position.

In addition, the impact of financial constraints (*FC*) on the association between managerial ability and dividends is further analyzed as illustrated below in equation (8). Using the above model as a starting point, an interaction variable was added to highlight the moderating effect of financing constraints (*MA* x *FC*) on the managerial ability and dividend policy nexus.

$$\begin{aligned} Div_{it} = {} & \alpha + \beta_1 MA_{it} + \beta_2 FC_{it} + \beta_3 MA \times FC_{it} + \beta_4 CRatio_{it} \\ & + \beta_5 ROA_{it} + \beta_6 FSize_{it} + \beta_7 Lev_{it} + \beta_8 FAge_{it} + \beta_9 PPE_{it} \\ & + \beta_{10} SOE_{it} + \beta_{11} CEODual_{it} + \beta_{12} BSize_{it} + \beta_{13} IndDir_{it} \\ & + \beta_{14} CEO_Tenure_{it} + \sum_{i=1}^{n} \beta_n Industry_Dummies_{it} \\ & + \sum_{i=1}^{n} \beta_n Year_Dummies_{it} + \varepsilon_{it} \end{aligned} \quad (8)$$

The term "*MA* x *FC*" expresses the moderating effect of financing constraints (*FC*). All other variables remain unchanged from the original model i.e., Eq. (7).

Results and discussions

Descriptive statistics and correlation analysis. Table 1 indicates the descriptive statistics for the selected variables of the study. Dividend payout mean value is 1.215 and a standard deviation of 1.866, which indicates that Chinese companies distribute a small fraction of their total assets as dividends, in line with prior studies affirming the low dividend payment ratios of Chinese listed companies (e.g., Allen et al., 2005; Huang et al., 2011; Tao et al., 2022). The average values for dividend yield and dividend growth are 0.675 and 2.289, respectively, suggesting a lower average return from the market share price, but a consistent growth trend in the cash dividend over time. Moreover, maximum values show that some Chinese companies may provide promising yields and significant dividend growth. The DEA optimization method derives the MA from a company's efficiency, which can range from 0 to 1. As a residual value from DEA regression estimations, MA has a mean value of 0.001, with a standard deviation of 0.157 and negative minimum values. The KZ index, which measures financing constraints, has a mean value of −15.50, indicating that firms with a value greater than −15.50 face difficulties in obtaining external financing for their investments. Descriptive statistics for all the other control variables are also consistent with the literature.

Further, Table 2 provides the results of the correlation analysis of the variables under consideration and the VIF test. The coefficients indicate a favorable and statistically significant relationship between the managerial competence of executives and dividend measures (0.0862***, 0.0570***, 0.0568***). Additionally, there is a significant correlation between all three dividend measures. A number of other control variables show a substantial correlation with our primary dependent variable, highlighting the importance of including them in regression models. Further, the VIF (variance inflation factor) results show the presence of multicollinearity, but most of the VIF test values are around 1 and less than 2, showing that multicollinearity will not be an issue in regression models.

Managerial ability and dividend policy. Table 3 presents the findings of baseline regressions estimating the impact of managerial ability on dividend policy. We measure the dividend policy from three different perspectives: dividend payout, dividend yield, and dividend growth. The significant positive coefficient of MA in all three models shows that companies with a highly skilled CEO and management team have a greater dividend payout, dividend yield, and dividend growth. That means that the executives' ability to allocate corporate resources contributes to shareholders' remuneration and the growth of dividends over time. These findings validate and expand upon previous research by Sarwar et al. (2020) in China, Park and Song (2019), and Lee et al. (2018) in the US. Especially in the Chinese context of semi-mandatory dividend distribution, executives' reputation is linked to the dividend policies and signals they provide to financial markets, whereas dividends represent part of the expected investors' return as compensation for their investment regardless of the change in the stock price (Cohen and Yagil, 2009). Thus, the ability to manage a company should lead to growth, earnings, and, consequently, dividend payments.

Additionally, the regression results reveal that the dividend payout and dividend yield rise with the firm's abundant cash flows, higher returns on assets, large size (natural logarithm of net sales), property plant and equipment, and larger board size, while they decrease with the firm's leverage, age, and state-owned enterprises. Firm size, sales growth, and cash inflows enhance dividend growth. These controls demonstrate that corporate factors influence dividend propensity and payout ratio, aligning with previous studies like Sarwar et al. (2020).

MA and dividend policy: the moderating role of financing constraints. To further analyze whether the financial constraints of companies affect the MA and dividend policy nexus, we introduced an interaction term (MA × FC(KZ)) to account for the moderating role of financing constraints (FC), as measured by the KZ index. Table 4 demonstrates that financing constraints significantly negatively impact all three dividend measures, particularly the dividend payout and yield models. These results prove that firms with limited available funds for investment and business activity may have difficulties in dividend payment. The interaction term between managerial ability and financial

Table 2 Correlation matrix and VIF test.

	Dividend payout	Dividend yield	Divided growth	MA	CR	ROA	FSize	Lev	FAge	PPE	SOE	Duality	BSize	IndDir	CEO tenure	VIF
Dividend payout	1															
Dividend yield	0.883***	1														
Divided growth	0.346***	0.395***	1													
MA	0.0839***	0.0559***	0.0620***	1												1.556
CR	0.242***	0.201***	0.0175*	0.0763***	1											1.325
ROA	0.0725***	0.0599***	0.0277***	0.0514***	0.0591***	1										1.188
FSize	−0.0521***	0.0222**	0.268***	0.188***	−0.204***	0.0367***	1									2.164
Lev	−0.137***	−0.114***	0.0114	0.0157	−0.159***	−0.506***	0.135***	1								1.389
FAge	−0.234***	−0.230***	0.0624***	0.0480***	−0.232***	−0.0381***	0.356***	0.152***	1							1.713
PPE	−0.114***	−0.0269***	0.281***	0.0784***	−0.234***	0.0201*	0.575***	0.153***	0.423***	1						2.126
SOEs	−0.0658***	−0.0347***	0.0269***	−0.0960***	−0.310***	−0.0294***	0.139***	0.0561***	0.134***	0.103***	1					1.758
Duality	−0.168***	−0.138***	0.0493***	0.0433***	−0.0645***	−0.00850	0.336***	0.111***	0.504***	0.350***	0.192***	1				1.804
BSize	0.0838***	0.0645***	−0.0256**	−0.0242**	0.0601***	0.0117	−0.179***	−0.0552***	−0.267***	−0.187***	−0.0901***	−0.314***	1			1.182
IndDir	−0.0230**	0.0136	0.0854***	−0.0138	−0.0593***	0.0143	0.270***	0.0496***	0.193***	0.300***	0.166***	0.304***	−0.190***	1		2.286
CEO tenure	−0.0126	−0.0191*	−0.00289	0.0149	0.0256**	−0.00482	−0.0390***	−0.00585	−0.0613***	−0.0250**	−0.0449***	−0.0730***	0.110***	−0.481***	1	1.382

Where *MA* represents the CEO's managerial ability; *CR* is cash ratio; *ROA* is return on assets; *FSize* is firm size; *Lev* is leverage; *FAge* denotes the age, *PPE* represents the net property, plant, and equipment divided by total assets; *SOE* is state-owned enterprises vs. non-state-owned enterprises; Duality depicts the dual role of CEO as a board member; *BSize* refers to board size; *IndDir* represents the independent director; CEO tenure represents the number of years spent at the position.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

constraints (MA × FC (KZ)), on the other hand, shows that financial constraints have a positive and moderating effect on all three models of dividend policy. Thus, even in the context of financial constraints, managerial ability continues to play a dominant role. In other words, financial constraints both enhance and test managerial ability, ensuring the semi-mandatory dividend payment (Yao et al., 2020). This result brings novelty and complements Sarwar et al. (2020), who indicate that superior managerial ability influences dividend policies mostly for unconstrained firms classified based on the KZ index of constraint and financial distress.

Additional tests: moderating effect of state ownership. Corporate ownership and potential agency conflicts between ownership and management influence resource allocation and performance (Zahid et al., 2023b), including dividend payout policies. Crane et al. (2016) demonstrate a positive correlation between institutional ownership and dividend payouts, particularly in firms with higher expected agency costs. Gaspar et al. (2013) explore the influence of shareholder investment horizons on payout policies, finding that short-term investors tend to favor share repurchases over dividends, with market reactions reflecting this preference. Di Giuli et al. (2021) investigate the impact of common ownership on dividend policies, revealing a convergence toward the dividend strategies of existing portfolio firms. Lastly, Wang et al. (2023) delve into the role of the second-largest shareholder in moderating the relationship between the controlling shareholder's stake and cash dividends, highlighting the nuanced dynamics within corporate governance structures, particularly in the context of China's emerging financial market. SOEs could face particular challenges regarding financial and resource allocation. Government actions or political agendas can impose soft budget constraints (Dai and Cheng, 2015), which may redirect financial resources. Emphasizing national development goals, social welfare programs, and other strategic priorities may cause enterprises to shift their focus, thereby impacting the investors' experience. Thus, we analyzed the moderating impact of SOEs in the MA dividend payout relationship.

The results reported in Table 5 show a significant negative impact of SOEs on the dividend payout policy. Moreover, the interaction term (MA × SOEs) shows state ownership negatively moderates the relationship between managerial ability and dividend payout. It is consistent with existing literature that SOEs suffer from inefficient operations and inflexible management structures, hindering national economic progress (Li et al., 2024). Non-SOEs, on the other hand, typically operate more efficiently and have stronger governance systems (Jiang et al., 2013).

Robustness tests

Alternative variables analysis. To bolster the credibility of our results, we adopted the alternative variable approach, which involved including the alternative proxy to measure the cash dividend paid, specifically a dummy variable called "1" for the dividend paid and "0" for no dividend. Specifically, we applied the logistic regression model to estimate the Eq. (7) by replacing the dependent variable. The Logit model helps estimate the probability of an event occurring, such as a change in dividend policy, based on the explanatory variables. Moreover, we used an alternative proxy for measuring the financing constraints. Specifically, we use the WW index, developed by Whited and Wu (2006) and further utilized in previous research (Castro et al., 2015; Khan et al., 2022). We determine

Table 3 Baseline regression.

Variables	Dividend payout	Dividend yield	Divided growth
	I	II	III
MA	1.047*** (0.101)	0.380*** (0.055)	2.112*** (0.489)
CR	2.335*** (0.111)	1.128*** (0.060)	5.768*** (0.567)
ROA	0.227*** (0.060)	0.464*** (0.045)	0.016 (0.303)
FSize	0.252*** (0.022)	0.113*** (0.012)	0.517*** (0.107)
Lev	−0.372*** (0.041)	−0.437*** (0.032)	−0.160 (0.217)
FAge	−0.205*** (0.020)	−0.180*** (0.011)	−0.335*** (0.111)
PPE	−0.214*** (0.027)	−0.050* (0.015)	−1.674*** (0.128)
SOE	−0.106** (0.065)	−0.102* (0.058)	−1.201* (0.510)
Duality	−0.353*** (0.035)	−0.171*** (0.019)	−0.752*** (0.169)
BSize	0.009** (0.031)	0.009** (0.017)	0.237* (0.149)
IndDir	0.039*** (0.011)	0.022*** (0.006)	0.128** (0.055)
CEO_tenure	0.001 (0.003)	0.010 (0.001)	0.016 (0.013)
_cons	−0.089 (0.347)	−1.924*** (0.189)	−22.889*** (1.672)
Industry-Year FE	YES	YES	YES
Observations	18011	18011	18011
R-squared	0.136	0.148	0.103
No. of ID	3999	3999	3999

Where MA represents the CEOs managerial ability. CR is cash ratio; ROA is return on assets. *FSize* is firm size, Lev is leverage, FAge denotes the age, *PPE* represents the net property, plant, and equipment divided by total assets. SOE is state-owned enterprises vs. non-state-owned enterprises. Duality depicts the dual role of CEO as a board member. *BSize* refers to board size. IndDir represents the independent director. CEO tenure represents the number of years spent at the position.
The estimated model is defined by Eq. (7).
Standard errors are reported in parentheses. ***$p < .01$, **$p < .05$, *$p < 0.1$.

Table 4 Moderating role of financing constraints in MA-dividend policy nexus.

Variables	Dividend payout	Dividend yield	Divided growth
	I	II	III
MA	0.625*** (0.105)	0.006 (0.056)	2.160*** (0.557)
FC(KZ)	−0.372*** (0.008)	−0.200*** (0.004)	−0.524*** (0.042)
MA × FC (KZ)	0.042* (0.030)	0.051*** (0.016)	0.391** (0.165)
CR	1.008*** (0.126)	0.591*** (0.067)	1.168* (0.676)
ROA	0.463*** (0.084)	0.131*** (0.045)	1.300*** (0.431)
FSize	0.211*** (0.022)	0.081*** (0.012)	0.426*** (0.109)
Lev	−0.318*** (0.061)	−0.106*** (0.033)	−1.025*** (0.319)
FAge	−0.091*** (0.020)	−0.031*** (0.011)	−0.046 (0.115)
PPE	−0.301*** (0.026)	−0.048*** (0.014)	−1.601*** (0.131)
SOE	−0.310*** (0.103)	−0.098* (0.055)	0.708 (0.519)
Duality	−0.277*** (0.034)	−0.129*** (0.018)	−0.634*** (0.172)
IndDir	−0.010 (0.030)	−0.004 (0.016)	0.171 (0.151)
BSize	0.036*** (0.011)	0.020*** (0.006)	0.124** (0.055)
CEO tenure	0.004 (0.003)	0.002 (0.001)	0.022* (0.013)
_cons	2.713*** (0.340)	−0.370** (0.181)	−18.676*** (1.750)
Industry-Year FE	YES	YES	YES
Observations	18011	18011	18011
R-squared	0.234	0.241	0.115
No. of ID	3999	3999	3999

Where MA represents the CEOs managerial ability. FC(KZ) is the financing constraints measured as KZ index. CR is cash ratio; ROA is return on assets. *FSize* is firm size, Lev is leverage, FAge denotes the age, *PPE* represents the net property, plant, and equipment divided by total assets. SOE is state-owned enterprises vs. non-state-owned enterprises. Duality depicts the dual role of the CEO as a board member. *BSize* refers to board size. IndDir represents the independent director. CEO tenure represents the number of years spent at the position.
The estimated model is defined by Equation (8).
Standard errors are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

the WW index using Eq. (9) as follows:

$$WW\ index = (-0.091 * CF) - (0.062 * Div_POS) + (0.021 * LTD/TA) - (0.044 * Ln(TA)) + (0.102 * ISG) - (0.035 * SG) \quad (9)$$

Where: *CF* represents cash flow divided by total assets; *Div_POS* is the dividend payout, having a value of 1 for companies that pay dividends in cash for a period and 0 otherwise; *LTD/TA* represents the ratio of long-term debt to total assets; *Ln(TA)* represents the size of the firm calculated as the natural log of total assets; *ISG* represents the industry sales growth, and *SG* refers to the internal sales growth of the company.

Results in Table 6, columns I and II confirm our previous findings that managerial ability is positively related to the dividend paid and financing constraints have a significant positive impact on dividend payout. Further, column III shows the effect remains consistent even after changing the proxy for the moderating variable (financing constraints). These findings reinforce the notion that constrained circumstances and long-term dividend

Table 5 Moderating effect SOEs in MA-dividend payout relationship.

Variables	Dividend payout	Dividend yield	Divided growth
	I	II	III
MA	1.239*** (0.120)	0.364*** (0.065)	1.286** (0.588)
SOEs	−0.341*** (0.035)	−0.170*** (0.019)	−0.862*** (0.170)
MA × SOEs	−0.092** (0.174)	0.049 (0.094)	−1.133** (0.083)
CR	2.353*** (0.111)	1.129*** (0.060)	5.362*** (0.570)
ROA	0.230*** (0.060)	0.464*** (0.045)	0.102* (0.305)
FSize	0.099*** (0.012)	0.110*** (0.006)	1.704*** (0.056)
Lev	−0.378*** (0.041)	−0.437*** (0.032)	−0.064 (0.218)
FAge	−0.231*** (0.020)	−0.181*** (0.011)	−0.117 (0.111)
PPE	−0.164* (0.106)	−0.102* (0.058)	0.760 (0.512)
Duality	−0.007 (0.031)	−0.009 (0.017)	−0.263* (0.150)
BSize	0.032*** (0.011)	0.022*** (0.006)	0.177*** (0.055)
IndDir	−0.003 (0.003)	−0.010 (0.001)	0.030** (0.013)
CEO tenure	−0.074 (0.093)	0.034 (0.050)	−0.564 (0.448)
_cons	−1.139*** (0.317)	−1.950*** (0.172)	−13.901*** (1.534)
Industry-Year FE	YES	YES	YES
Observations	18011	18011	18011
R-squared	0.133	0.148	0.094
No. of ID	3999	3999	3999

Where MA represents the CEOs managerial ability. SOE is state-owned enterprises vs. non-state-owned enterprises. CR is cash ratio; ROA is return on assets. *FSize* is firm size, Lev is leverage, FAge denotes the age, *PPE* represents the net property, plant, and equipment divided by total assets. Duality depicts the dual role of CEO as a board member. *BSize* refers to board size. IndDir represents the independent director. CEO tenure represents the number of years spent at the position.
Standard errors are in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 6 Alternative variable analysis.

Variables	Dividend paid	Dividend paid	Dividend paid
	I	II	III
MA	0.062*** (0.024)	0.196*** (0.026)	0.054* (0.032)
FC (KZ)		0.042*** (0.002)	
MA × FC (KZ)		0.077*** (0.007)	
FC (WW)			−0.007** (0.006)
MA × FC (WW)			0.023* (0.019)
CR	0.150*** (0.026)	0.211*** (0.031)	0.124*** (0.029)
ROA	0.080*** (0.014)	0.081*** (0.021)	0.082*** (0.015)
FSize	0.088*** (0.003)	0.079** (0.003)	0.090** (0.003)
Lev	−0.101*** (0.010)	−0.083*** (0.015)	−0.097*** (0.010)
FAge	−0.100*** (0.005)	−0.066*** (0.005)	−0.103*** (0.005)
PPE	−0.168*** (0.025)	−0.205*** (0.025)	−0.177*** (0.027)
SOE	−0.052*** (0.008)	−0.040*** (0.008)	−0.051*** (0.009)
Duality	−0.006 (0.007)	−0.005 (0.007)	−0.005 (0.008)
BSize	0.012** (0.013)	0.022* (0.033)	0.032* (0.053)
IndDir	0.031 (0.013)	0.021 (0.011)	0.011 (0.011)
CEO tenure	−0.054* (0.022)	−0.066* (0.022)	−0.042* (0.024)
_cons	1.230*** (0.076)	0.997*** (0.077)	1.210*** (0.081)
Industry-Year FE	YES	YES	YES
Observations	18011	18011	18011
R-squared	0.130	0.150	0.129
No. of ID	3999	3999	3999

Where MA represents the CEOs managerial ability. FC(KZ) is the financing constraints measured as KZ index. FC (WW) is financing constraints measured as WW index. CR is cash ratio, ROA is return on assets. *FSize* is firm size, Lev is leverage, FAge denotes the age, *PPE* represents the net property, plant, and equipment divided by total assets. SOE is state-owned enterprises vs. non-state-owned enterprises. Duality depicts the dual role of CEO as a board member. *BSize* refers to board size. IndDir represents the independent director. CEO tenure represents the number of years spent at the position.
Standard errors are in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

perspectives challenge and highlight managerial ability. Otherwise, in stable circumstances with regular, semi-mandatory dividend payments, the role of managers may seem diminished, as well as their potential opportunistic behavior toward earnings management practices.

Alternative estimations (sysGMM)-endogeneity issue. Subsequently, we used an alternative estimation method (sysGMM) as a robustness test to confirm the association of variables in our main analysis. We use Sys-GMM, an advanced estimation technique, for dynamic panel data models. It helps address potential endogeneity issues by using lagged values for the variables as instruments. This method improves efficiency and consistency in the presence of autocorrelation and heteroskedasticity. As shown in Table 7, there is a positive association between MA and alternative dividend measures, and financing constraints

Table 7 Robustness test - sysGMM regression estimations.

	Dividend payout I	Dividend yield II	Divided growth III	Dividend payout IV	Dividend yield V	Divided growth VI
MA	0.483*** (0.134)	0.253*** (0.083)	0.679 (0.478)	0.963*** (0.236)	0.275** (0.119)	0.935 (0.663)
FC (KZ)				−0.158*** (0.022)	−0.081*** (0.009)	−0.218*** (0.041)
MA × FC (KZ)				0.237*** (0.078)	0.063* (0.037)	0.405* (0.231)
Dividend Payout$_{(t-1)}$	0.178** (0.074)			0.196*** (0.074)		
Dividend Yield$_{(t-1)}$		0.149*** (0.043)			0.167*** (0.044)	
Divided Growth$_{(t-1)}$			−0.294*** (0.020)			−0.276*** (0.020)
CR	1.756*** (0.245)	0.861*** (0.118)	3.194*** (0.514)	0.589*** (0.215)	0.322*** (0.124)	1.779*** (0.581)
ROA	0.347* (0.189)	0.571*** (0.111)	0.380 (0.330)	0.077* (0.127)	0.141** (0.093)	0.231 (0.379)
FSize	0.167*** (0.029)	0.093*** (0.022)	0.433*** (0.118)	0.121*** (0.026)	0.084*** (0.016)	0.505*** (0.123)
Lev	−0.289** (0.145)	−0.439*** (0.085)	−0.336 (0.250)	−0.070* (0.098)	−0.109** (0.073)	−0.171* (0.291)
FAge	−0.403*** (0.046)	−0.255*** (0.025)	−0.113 (0.104)	−0.265*** (0.035)	−0.192*** (0.021)	0.001 (0.121)
PPE	0.258** (0.115)	0.125* (0.073)	0.432 (0.516)	0.049* (0.106)	0.078** (0.067)	0.549 (0.542)
SOE	−0.136** (0.064)	−0.054 (0.035)	−0.637*** (0.178)	−0.028* (0.053)	−0.027* (0.031)	−0.518*** (0.182)
Duality	−0.018* (0.045)	0-.017* (0.026)	0.088 (0.118)	−0.036* (0.042)	−0.003* (0.024)	0.161 (0.122)
BSize	0.221* (0.135)	0.152* (0.081)	0.985** (0.445)	0.234* (0.121)	0.171** (0.074)	1.241*** (0.470)
IndDir	0.069 (0.145)	0.046 (0.087)	0.436 (0.543)	0.046 (0.130)	0.015 (0.082)	0.580 (0.575)
CEO tenure	−0.206 (0.138)	−0.145* (0.084)	−0.511 (0.442)	−0.018 (0.117)	−0.079 (0.076)	−0.346 (0.461)
_cons	0.652 (0.729)	−0.784* (0.459)	−17.682*** (3.595)	1.911*** (0.665)	−0.170 (0.416)	−20.002*** (3.694)
AR1 (p-value)	−2.62	−3.38	−6.53	−2.77	−3.66	−6.82
	0.009	0.001	0.000	0.006	0.000	0.000
AR2 (p-value)	1.08	1.02	−2.67	1.33	1.43	−2.52
	0.115	0.308	0.008	0.183	0.153	0.012
Hansen-J (p-value)	0.104	0.219	0.556	0.409	0.112	0.664
Difference in Hansen-J (p-value	0.106	0.399	0.798	0.140	0.239	0.654
F-Stat (p-value)	0.000	0.000	0.000	0.000	0.000	0.000
Observations	15907	15907	15907	15907	15907	15907
No. of ID	3999	3999	3999	3999	3999	3999

Where MA represents the CEOs managerial ability. FC(KZ) is the financing constraints measured as KZ index. CR is cash ratio; ROA is return on assets. *FSize* is firm size, Lev is leverage, FAge denotes the age, *PPE* represents the net property, plant, and equipment divided by total assets. SOE is state-owned enterprises vs. non-state-owned enterprises. Duality depicts the dual role of CEO as a board member. *BSize* refers to board size. IndDir represents the independent director. CEO tenure represents the number of years spent at the position.
Standard errors are in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

positively moderate these relationships. Further, the post-estimation tests suggest the model fitted well. These results strengthen our primary conclusions and demonstrate an overall favorable link between MA, dividend payout, dividend yield, and dividend growth, regardless of the intensity of corporate financing constraints.

Omitted variables analysis. To mitigate errors resulting from omitted variables, a pool of control variables is assembled to enhance the accuracy of the model. Specifically, the following firm-level and corporate governance-related variables are included to estimate the main model: (i) Total debts to total assets ratio, (ii) Firm total institutional investor, (iii) Log of firm total assets, (iv)Earnings before income and tax, (v) Research and development expenditure, (vi) CEO education, (vii) CEO financial background and retiring CEO. The results of omitted variables are presented in Table 8 and are consistent with our main findings.

Conclusions and policy implications

In conclusion, our study examined the influence of managerial ability on dividend payments within Chinese publicly traded companies. Unlike prior research on dividend policy, our study adopts a multi-measure approach to dividend policies and incorporates the KZ index of financing constraints. The findings underscore the significant positive impact of CEO managerial abilities on dividend payout, yield, and growth. This means that firms led by capable management tend to exhibit higher dividend payments, consistent with the notion that such companies are confident in maintaining payout levels over the long term. Additionally, our results indicate that the moderating effect of financial constraints strengthens the impact of managerial capability on dividend payments. This suggests that managerial ability plays a vital role in reducing information asymmetry and resolving agency conflicts, particularly in emerging markets like China. These findings are robust across various sensitivity analyses, including alternative proxy for financial constraints and dividend paid, omitted variable tests, and alternative estimations using the SysGMM approach. These findings underscore the importance of fostering managerial competence in business processes and management, with potential implications extending beyond China to other emerging economies.

Practical/managerial implications. By demonstrating the significance of CEO managerial ability in shaping dividend policy, our research contributes to the dividend policy literature, particularly within developing countries. This insight should be essential for boards of directors when evaluating the costs and

Table 8 Omitted variable analysis.

Variables	Dividend payout	Dividend yield	Divided growth
	I	II	III
MA	1.586*** (0.229)	0.519*** (0.126)	1.737* (0.898)
TDTA	−0.474*** (0.070)	−1.281*** (0.096)	−0.593* (0.326)
Institutional investor	0.000 (0.004)	−0.014*** (0.002)	−0.032* (0.017)
LnTA	−0.085*** (0.030)	0.129*** (0.018)	1.957*** (0.119)
EDIT	0.544*** (0.100)	0.166*** (0.055)	0.462 (0.384)
Rd_exp	4.417*** (0.308)	1.593*** (0.197)	5.675*** (1.213)
CEO_degree	0.026*** (0.006)	−0.000 (0.003)	0.015 (0.023)
CEO_finback	−0.058 (0.040)	−0.025 (0.022)	−0.110 (0.154)
CEOR	0.061 (0.133)	0.050 (0.072)	−0.298 (0.507)
_cons	2.242*** (0.674)	−2.017*** (0.384)	−38.899*** (2.625)
Industry-Year FE	YES	YES	YES
Observations	18011	18011	18011
R-squared	0.142	0.156	0.101
No. of ID	3999	3999	3999

Where MA represents the CEOs managerial ability. TDTA is the Total debts to total assets ratio. EDIT is Earnings before income and tax; Institutional investor is Firm total institutional investor; *LnTA* is Log of firm total assets; Rd_exp is Research and development expenditure; CEO_degree is CEO education; CEO_finback; CEO financial background and CEOR retiring CEO.
Standard errors are in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

benefits of hiring CEOs. Stakeholders, regulators, and academics alike stand to benefit from understanding the implications of managerial ability, along with other executive qualities, including demography, human and social capital, and political connections, on corporate financial decisions. Our findings support agency theory by showing how capable management reduces agency costs and aligns shareholder-manager interests. However, state ownership negatively moderates this relationship. Additionally, the study aligns with signaling theory, indicating that firms with strong management signal confidence through dividend distributions. Furthermore, the moderation effect of financing constraints on the relationship between managerial ability and dividend decisions supports the Pecking Order Theory. Policymakers and regulatory bodies can leverage these insights to inform legislation and initiatives related to corporate governance and CEO compensation. This research provides consistent evidence that a company's dividend policy is dependent on the skills of its management. Thus, investors wanting a fair return on investment must take managers' competence into account.

Limitations. There are a few caveats to our research. Firstly, financial statements provide the information for the managerial ability measure, which extrapolates managerial strategic decisions. Secondly, our focus on cash dividends excludes considerations of stock dividends, share buy-backs, or preferred shares/special dividends, as cash dividends are mandatory in China. Future research could explore these areas further. Lastly, our study is confined to China's unique financial structure and accounting rules, warranting caution when generalizing findings to other contexts. Future scholars could expand upon this work to encompass other economies and explore additional dividend policy dimensions.

Data availability

This study is based on secondary data. All the data is available on the CSMAR data stream (https://data.csmar.com) with some restrictions (membership) to access.

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Notes

1 Many emerging markets are dominated by state ownership and eventually faced various privatization programs. In China, listed companies had a split-share structure, with a part of the share being tradable and another part being restricted for trading until the 2005–2007 reform, which permitted the privatization of the restricted shares (Liao et al., 2014), an important step for the development of the Chinese financial market.

2 The news report records dividend payments over the last decade. For example: Shanghai Stock Exchange (2023), *China Securities Journal: Cash Dividends Increase Year by Year: Dividends of SSE-listed Companies Surpass Financing Amounts Last Year*, published on 13 July 2023, at http://english.sse.com.cn/news/newsrelease/voice/c/5723710.shtml (accessed 20 January 2024); The Business Times (2024), *China companies pay out record dividends amid market plunge*, https://www.businesstimes.com.sg/international/global/china-companies-pay-out-record-dividends-amid-market-plunge (accessed 29 January 2024); Financial Times (2024), Shares in Chinese state enterprises jump as investors seek high dividend yield, https://www.ft.com/content/bcb144e4-646c-489a-ac43-557387bdf5d2 (accessed 29 January 2024).

3 China Securities Regulatory Commission (2023), CSRC Releases No. 3 Guideline for the Supervision of Listed Companies - Cash Dividend Distribution of Listed Companies, published on 30 November 2013 at http://www.csrc.gov.cn/csrc_en/c102030/c1370626/content.shtml (accessed 10 January 2024).

4 Shanghai Stock Exchange (2023), SSE Refines Self-Regulation Rules for Share Repurchase and Dividends, Encouraging Listed Companies to Proactively Reward Investors, published on 15 December 2023 at http://english.sse.com.cn/news/newsrelease/c/5733621.shtml (accessed 10 January 2024).

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Author contributions

Conceptualization, DH, ZY, ATB, and RMAZ; Data curation, DH; Formal analysis, DH and ZY; Investigation, ATB; Methodology, DH and ATB; Project administration, RMAZ;

Resources, ZY; Software, DH; Visualization, ZY; Writing—original draft, DH, ATB, and RMAZ. All authors have read and agreed to the published version of the manuscript.

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The author(s) declare no competing interests.

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Informed consent
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Additional information
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Correspondence and requests for materials should be addressed to R. M. Ammar Zahid.

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