

Digital Transformation and Remuneration Stickiness: The Role of CEO Duality and Nature of Property Rights

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ABSTRACT:- Remuneration Stickiness (RS) is one of the issues in contemporary corporate governance. Due to its negative economic consequences to entities, determinants of remuneration stickiness should be examined. In this study, the following three objectives are expected to be achieved. 1) To examine the relationship between digital transformation (DT) and remuneration stickiness. 2) To testify the role of CEO Duality on the effect of digital transformation on remuneration stickiness. 3) To investigate the role of the nature of property rights on the effect of digital transformation on remuneration stickiness. To do so, the observations from Chinese A-share public enterprises between 2011 and 2020 are selected. The findings show that 1) There is a negative relationship between digital transformation and remuneration stickiness. 2) CEO Duality negatively moderates the effect of digital transformation on remuneration stickiness. 3) The nature of property rights negatively moderates the effect of digital transformation on remuneration stickiness. Based on the findings, this study can provide implications for future remuneration package design, corporate governance, and the digital transformation agenda.

Keywords:- Remuneration Stickiness, Digital Transformation, CEO Duality, Nature of Property Right, Information Asymmetry Theory

I. INTRODUCTION

In contemporary corporate governance, the phenomenon of remuneration stickiness (RS), where executive remuneration does not fluctuate proportionally with organisational performance, has garnered significant attention.

Despite extensive research on executive remuneration stickiness, it is still relevant. Specifically, in the Chinese context, due to its cultural context, conventional Chinese values commit to stability and harmony, which might influence how remuneration is structured. There is often a focus on maintaining a stable income for executives, reflecting broader cultural attitudes towards remuneration stability. Besides, about remuneration

transparency, transparency is lacking due to information asymmetry. This can make it difficult for stakeholders to assess whether remuneration packages are justified by maximising stakeholders' wealth.

Thus, RS should be addressed in the Chinese context. For enhancing transparency to alleviate remuneration stickiness, digital transformation (DT) as a new and systematic operational mode in entities can do so (Li, 2023) [1]. Due to its abundant information analysis ability in corporate governance, how digital transformation influences RS deserves further investigation.

Based on the above analysis, research questions in this study are proposed as follows.

RQ1. Does digital transformation influence remuneration stickiness?

RQ2. What is the role of Chief Executive Officer (CEO) Duality on the effect of digital transformation on remuneration stickiness?

RQ3. What is the role of the nature of property rights on the effect of digital transformation on remuneration stickiness?

By solving these three RQs, this study can provide both theoretical contributions and practical contributions. For theoretical contribution, this study is expected to fill the literature gap, which is the lack of study between digital transformation and remuneration stickiness. For practical contribution, this study is expected to provide guidance for remuneration design and employee competition in corporate governance.

The rest of this paper is organised as follows. The next chapter is Literature Review and Hypothesis Development. Following by Chapter 3 Research Methodology, discusses the research method and research design. Chapter 4 is Results and Discussions, which describes the findings of this study. Lastly, Chapter 5 is Conclusions which presents the conclusions and limitations in this study.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Definition of Research Key Terms

Digital transformation refers to the integration of digital technologies into areas of business, leading to fundamental changes in how organisations operate. This transformation involves adopting technologies such as cloud computing, big data analytics, artificial intelligence, and automation to enhance efficiency, drive innovation, and improve customer experiences (Fitzgerald et al., 2014) [2]. It can change traditional business models and practices, and create new opportunities for business operations. For example, it can lead to new forms of work and organisational structures, such as remote work and agile teams (Bharadwaj et al., 2013) [3].

Remuneration stickiness refers to the phenomenon where organisational performance fluctuates but executives' remuneration remains stable. Thereinto, several factors cause remuneration stickiness, including executive expectations, and corporate governance norms (Kahn, 1995) [4]. For instance, organisations might avoid reducing executives' remuneration due to concerns about executives' morale, retention, and productivity (Dube et al., 2010) [5].

2.2 Literature Review

Previous studies which investigated research question one are limited. Li et al. (2023) suggested

that digital transformation can reduce firm pay inequality among executives and ordinary employees. Specifically, they pointed out that this effect shows heterogeneity results among different natures of property rights enterprises [6]. Besides, Pan and Wang (2024) proposed that digital transformation reduces managers' excess perks consumption [7]. Thereinto, this restraint role is effective through internal governance, which is much more pronounced in those firms which are with a CEO tenure. In other words, digital transformation can make remuneration assessment much more transparent and fair. In addition to these, taking into consideration the different entity characteristics related to the nature of property rights (SOEs and Non-SOEs) and CEO power, the role of CEO Duality (CEO-Board Chair Duality) and the nature of property rights between digital transformation and RS should be addressed.

Prior research had paid great attention to both the nature of property rights and CEO Duality's effects on RS. On the one hand, in terms of the nature of property rights, remuneration adjustments in SOEs are not only influenced by purely market-driven factors (He & Qian, 2020) [8]. This results in relatively slower remuneration adjustments compared to non-SOEs. Huang and Wu (2019) also suggested that SOE employees experience less wage flexibility [9]. However, non-SOEs, operating in a more competitive environment, tend to exhibit greater wage flexibility according to executive performance (Liu & Xu, 2022) [10]. This flexibility is crucial for maintaining a motivated workforce and adapting to changing economic conditions (Yang & Zhang, 2020) [11].

On the other hand, in terms of CEO duality, research indicates that CEO duality can exacerbate RS. When CEOs hold both the CEO and Board Chairman roles, they may have significant influence over their own remuneration decisions, reducing the likelihood of adjustments in response to weak firm performance or changing market conditions (Gomez-Mejia et al., 1987) [12]. CEO duality often results in less rigorous performance-based pay structures, as the CEO's combined role can weaken the board's ability to enforce remuneration adjustments based on performance metrics (Daily & Dalton, 1994) [13]. In contrast, firms without CEO duality, where the CEO and Chairman roles are separated, generally demonstrate more dynamic remuneration adjustment practices. The separation of these roles typically leads to better board independence and more stringent performance evaluations, resulting in more responsive and performance-based remuneration structures (Adams & Ferreira, 2007) [14]. These firms are more likely to adjust executive pay in line with performance, reflecting a stronger link between remuneration and company performance.

In short, taking into consideration the research between digital transformation and remuneration stickiness, the hypotheses in this study are proposed in section 2.3 with underpinning theory support.

2.3 Underpinning theory and hypothesis development

Digital transformation has become a crucial strategy for organisations aiming to enhance operational efficiency and adaptability. One of the less discussed, yet significant impacts of digital transformation is its role in mitigating remuneration stickiness, particularly within the context of information asymmetry theory.

Information Asymmetry Theory posits that in economic transactions, one party often possesses more or better information than the other, leading to an imbalance in decision-making power. In the context of

remuneration, information asymmetry occurs between stakeholders and executives. Executives typically have better insights into the company's financial status and performance metrics, whereas stakeholders may have limited visibility into these factors. This imbalance can lead to suboptimal remuneration decisions and hinder the effectiveness of remuneration systems.

Digital transformation can significantly mitigate the issues associated with remuneration stickiness by addressing information asymmetry through several key mechanisms, including Data Analytics, Communication Channels, Dynamic Compensation Models, and Predictive Analytics. Thus, digital transformation plays a role in addressing remuneration stickiness within the framework of information asymmetry theory. By alleviating information asymmetry, digital transformation helps bridge the information gap between stakeholders and executives. This alignment enables more responsive and effective adjustments to remuneration, ultimately fostering a more dynamic and equitable remuneration system.

Based on the above analysis, Hypothesis 1 (H1) in this study is proposed.

H1: There is a negative relationship between digital transformation and remuneration stickiness.

Besides, due to the different attributes among the nature of different enterprises (Stated-owned enterprises/Non-stated owned enterprises), and the governance structure of different entities (CEO-Board Chair-Duality enterprises and Non-CEO-Board Chair-Duality enterprises), the effect between digital transformation and remuneration stickiness can be different among them. By addressing these differences can provide precise and specific corporate governance suggestions according to the research findings to different enterprises.

Thus, Hypothesis 2 (H2) and Hypothesis 3 (H3) in this study are proposed.

H2: CEO Duality moderates the association between digital transformation and remuneration stickiness.

H3: The nature of Property Rights moderates the association between digital transformation and remuneration stickiness.

III. RESEARCH METHODOLOGY

3.1 Data Collection

In this study, a quantitative research approach is adopted to test the three hypotheses proposed. To collect the research sample, the CSMAR dataset is utilised for data collection. To eliminate the abnormal data influence, Special Treatment (ST) firms, finance sector firms, and incomplete data firms are excluded from the sample selection process. Finally, there are 15,178 observations are collected from 2011 to 2020 from Chinese A-share public enterprises.

3.2 Measurements of Variables

Remuneration stickiness (RS) is the dependent variable in this study. To measure it, the residual value in Remuneration Stickiness Model is adopted as a proxy in equation 1 (Morse, 2011) [15].

$$RS = \sum \left(\frac{Comp_t - Comp_{t-1}}{Comp_{t-1}} / \frac{NP_t - NP_{t-1}}{NP_{t-1}} \right) / m - \sum \left(\frac{Comp_t - Comp_{t-1}}{Comp_{t-1}} / \frac{NP_t - NP_{t-1}}{NP_{t-1}} \right) / n \quad (1)$$

In equation 1, *Comp* refers to the total compensation of executives. *NP* refers to net profit. *m* represents the number of years in which net profit increased in the past five years, and *n* represents the number

of years in which net profit decreased in the past five years. It equals to the average annual rolling five-year net profit increase sensitivity (the ratio of salary change ratio to net profit growth) minus the net profit decline sensitivity (the ratio of salary change to net profit decline). The regression analysis considers the top three executives by salary rank.

Digital transformation is the independent variable in this study. It is measured by the times of digital keywords appearing in the annual report, including artificial intelligence technology, blockchain technology, cloud computing technology, big data technology, and digital technology applications (Zhai et al., 2022) [16].

Nature of Property Rights (SOE), and CEO Duality (Duality) are the moderator variables in this study. If a firm is a state-owned enterprise, SOE equals 1. Otherwise, it equals 0. Likewise, if the corporate governance structure of a firm is CEO Duality, Duality equals 1. Otherwise, it equals 0.

What is more, control variables include firm size, leverage, operating profit growth rate, board size, firm age, and the most major shareholder’s shareholding proportion in this study. Table 3.1 summarises the variable type, name, and measurement.

TABLE 3.1: Variable Definition

Variable type	Variable name	Definition
Dependent variable	RS	Model 3-1
Independent variable	DT	Ln (digital transformation keyword appearing times)
Moderator variable	SOE	If it is a state-owned enterprise equals 1, else is 0
Moderator variable	DUAL	If the firm is CEO duality equals 1, else is 0
Control variable	SIZE	Ln (total assets)
Control variable	LEV	Liabilities over assets
Control variable	GROWTH	Operating profit growth rate
Control variable	BOARD	Ln (the number of board members)
Control variable	AGE	Ln (firm age)
Control variable	TOP1	Proportion of the largest shareholding

3.3 Model Design

To test the hypotheses in this study, the following equation 2 is established.

$$RS = \alpha_0 + \alpha_1 DT + \alpha_2 Controls + \alpha_3 Year + \alpha_4 Ind + \mu_0 \quad (2)$$

Where *RS* represents the dependent variable (Remuneration Stickiness), *DT* represents the independent variable (Digital transformation), *Controls* is the control variables involve in this study, and *Year* as well as *Ind* represents the dummy variable year effect and industry effect. Meanwhile, the conceptual framework in this study is also proposed below in Fig. 3.1.



Fig 3.1 Conceptual Framework

IV. RESULTS AND DISCUSSIONS

In this study, STATA 16.0 software is adopted for statistics. In the beginning, Variance Inflation Factor (VIF) diagnosis is adopted to check the multicollinearity issue. The VIF result shows that the figure for the maximum VIF value is 1.45, and the figure for the mean VIF value is 1.18, which means there is no multicollinearity problem in this study.

4.1 Descriptive Statistics and Correlation Analysis

To gain an understanding of the impact of DT on RS among Chinese public enterprises, descriptive statistics and correlation analysis are conducted and its findings are summarised in Table 4.1 and Table 4.2, respectively. According to the result, it can be seen that there is a mean value of RS, 2.651, which indicates that RS is still relevant and contemporary in Chinese public enterprises.

Table 4.1 Descriptive statistics

Variables	Observation	Mean	SD.	Min	Max
RS	15,178	2.651	8.280	-9.713	61.748
DT	15,178	0.108	0.277	0.010	4.850
SOE	15,178	0.442	0.497	0	1
DUAL	15,178	0.216	0.411	0	1
SIZE	15,178	22.447	1.316	17.272	28.636
LEV	15,178	0.458	0.212	0.007	4.995
GROWTH	15,178	1.377	121.095	-0.992	14883.06
BOARD	15,178	2.145	0.208	1.099	2.996
AGE	15,178	2.907	0.327	1.386	3.829
TOP1	15,178	0.339	0.150	0.003	0.900

Table 4.2 Correlation analysis

	RS	DT	DUAL	SOE	SIZE	LEV	GROWTH	BOARD	AGE	TOP1
RS	1.0000									
DT	-0.0071	1.0000								
DUAL	-0.0128	0.0806	1.0000							
SOE	0.0153	-0.1328	-0.2742	1.0000						
SIZE	0.0171	0.0047	-0.1451	0.2894	1.0000					
LEV	-0.0203	-0.0825	-0.0855	0.2260	0.4525	1.0000				
GROWTH							1.0000			
H	-0.0019	-0.0030	0.0164	-0.0082	0.0126	0.0170	0.0000			
BOARD	-0.0016	-0.0424	-0.1717	0.2359	0.2522	0.1335	-0.0011	1.0000		
AGE	0.0023	0.0100	-0.0837	0.1935	0.1935	0.1438	0.0077	0.0282	1.0000	
TOP1	0.0391	-0.1359	-0.0935	0.2900	0.2900	0.0924	-0.0053	0.0541	-0.0885	1.0000

4.2 Baseline regression

In the baseline regression in column (1) of Table 4.3, it is evident that prior to the inclusion of control variables, DT has a significantly negative impact on RS at a level of 1%. In column (2), furthermore, upon incorporating control variables influencing RS, it can be seen that DT has a significantly negative impact on RS at a 1% level. In other words, H1 is supported.

Table 4.3 Baseline regression

Variables	RS (1)	RS (2)
DT	-0.585***(0.191)	-0.649***(0.191)
SIZE	-	-0.227***(0.065)
LEV	-	-1.285***(0.343)
GROWTH	-	0.001**(0.001)
BOARD	-	-0.438(0.320)
AGE	-	-0.016(0.228)
TOP1	-	1.923***(0.495)
Industry	Control	Control
CONSTANT	4.400***(1.129)	0.203(1.857)
N	15178	15178
R²	0.021	0.024

4.3 Heterogeneity test

To testify H2 and H3, heterogeneity test is conducted in this section as shown in Table 4.4. According to the regression result, it can be seen that DT governance effect on RS is much more pronounced in non-CEO-duality enterprises and non-SOEs.

Table 4.4 Heterogeneity test

Variables	RS (DUAL=0)	RS (DUAL=1)	RS (SOE=0)	RS (SOE=1)
DT	-1.089***(0.231)	-0.152(0.358)	-0.843***(0.210)	-0.194(0.526)
SIZE	0.204***(0.074)	0.363***(0.125)	0.262***(0.083)	0.274***(0.106)
LEV	-1.388***(0.435)	-0.941*(0.495)	-1.062***(0.083)	-1.603**(0.640)
GROWTH	0.006(0.012)	0.001**(0.001)	0.001(0.001)	-0.005(0.003)
BOARD	-0.775**(0.365)	0.598(0.698)	0.838**(0.394)	-1.677***(0.541)
AGE	0.033(0.284)	-0.556(0.352)	0.229(0.262)	-0.868*(0.493)
TOP1	2.058***(0.574)	1.856**(0.911)	3.097***(0.675)	0.669(0.862)
Industry	Control	Control	Control	Control
CONSTANT	1.391(2.105)	-4.185(4.685)	-2.424(3.392)	3.748(2.757)
N	11901	3277	8474	6704
R²	0.029	0.101	0.037	0.061

4.4 Robustness check

To make research robust, the dependent variable is lagged in regression for robustness check. Table 4.5 shows the result of robustness check. It can be seen that there is a negative relationship between digital transformation and remuneration stickiness after controlling the industry and year effect.

Table 4.5 Robustness check

Variables	RS (1)	RS (2)
DT	-0.647***(0.208)	-0.406*(0.207)
SIZE	0.226***(0.064)	0.339***(0.066)
LEV	-1.280***(0.343)	-1.774***(0.349)
GROWTH	0.001**(0.001)	0.001***(0.001)
BOARD	-0.441(0.320)	-0.689**(0.323)
AGE	-0.013(0.228)	0.494**(0.243)
TOP1	1.929***(0.496)	1.638***(0.501)
Industry	Control	Control
Year	-	Control
CONSTANT	0.233(1.855)	-1.827(1.899)
N	15178	15178
R²	0.024	0.027

V. CONCLUSIONS

In this study, there are three research questions (RQ1, RQ2, and RQ3) are investigated. The findings show that 1) There is a negative relationship between digital transformation and remuneration stickiness. 2) CEO Duality negatively moderates the effect of digital transformation on remuneration stickiness. 3) The nature of property rights negatively moderates the effect of digital transformation on remuneration stickiness.

Based on the above findings, it provides a new technology for remuneration design and corporate governance. More specifically, on the one hand, in terms of theoretical contribution, it can provide accordance for those entities to govern remuneration stickiness issues. On the other hand, in terms of practical contribution, it can suggest policymakers for digital transformation and remuneration regulation for public enterprises for future agenda.

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