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Research article

# Does the CFO serving as the secretary of the board affect the financial statement comparability?—evidence from China

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#### ABSTRACT

One person serving as both CFO and board secretary is a unique institutional feature in China. Individuals in this senior executive role are responsible for not only the preparation of financial statements but also the coordination of information disclosure. We investigate the relation between a CFO serving as board secretary and financial statement comparability. We find that a CFO serving as board secretary improves the comparability of a firm's financial statements in additional analysis. This positive effect is more significant when the CFO is female or middle-aged, or has a Bachelor's degree or higher or a financial background. This paper enriches the theoretical research on CFO's employment characteristics and the quality of financial reports, and provides reference value for improving the quality of financial reports.

# 1. Introduction

Information disclosure of listed companies is essentially a process of information transmission [1]. In the whole process, there are many factors that affect the effect of information transmission, such as the quality of the communication intermediary, the cognition of the receiver, the market environment, etc [2]. Among them, the performance of the information communicator (the discloser) has a direct and key role in the quality of information disclosure [3]. In China, the secretary of the board of directors (hereinafter referred to as "the secretary of the board of directors"), as the "spokesman", plays an important role as the information disceminator in the process of information disclosure of listed companies [4]. As the starting point of the information discension process, the performance of his duties directly affects the quality of information disclosure of the company from the source [5].

A board secretary post is set up to coordinate information disclosure and board meetings according to the Company Law of the People's Republic of China since 2006. The rules published in 2008 to govern the Listing of Stocks on Shanghai Stock Exchange and Shenzhen Stock Exchange encourage executives with real power to serve as board secretaries. As a bridge between listed companies and investors, board secretaries who cannot fully understand the company's operations have difficulty conveying useful information to the capital market [6]. Therefore, to enhance the information disclosure function of the board secretary, executives with real power concurrently serve as the CFO and board secretary in many listed companies. As the producers of financial reports in listed companies, CFOs affect the quality of financial statements [7]. Thus, CFOs directly affect the financial statement comparability of listed companies.

The capital market is a market for trading and allocating capital resources, which provides enterprises with channels and mechanisms for capital raising, structural adjustment and optimization, as well as a reference for enterprise value evaluation, and a convenient trading mechanism for price discovery and value realization [8]. The capital market is an important part of the financial

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market. The financial market, financial institutions, financial products, financial infrastructure and market participants together constitute a huge and complex financial system. In the historical process of building a modern economic system in China, accelerating the development of the capital market has important practical significance and unique role. With the gradual improvement of the capital market, market participants' requirements for information quality are also increasing. Due to the financial acceleration effect of accounting information quality, low quality accounting information may act as a catalyst and further cause turbulence in the financial market in the context of the current global epidemic situation, uncertainty of economic and trade situation and many other adverse factors. As an important means for enterprises to cope with major changes in the external market, the quality of information disclosure of financial report content has attracted more and more attention from all walks of life [9].

As one of the important quality features of financial information, the comparability of financial report information plays an important role in the process of information disclosure of listed companies [10-13]. External investors can further judge or adjust their own investment decisions by understanding relevant financial information [14]. The existing research also shows that related companies that experience similar economic activities will release extremely similar financial report results and accounting information [15], and the improvement of the comparability of financial report information can enhance the usefulness of financial report information [16-18], providing more decision-making reference information for analysts and external investors [19].

Financial statement comparability is an important feature of quality accounting information which repels financial statement users to recognize similarities and differences between economic phenomena and enhances the utility of financial information. Simmons (1967) states that financial statement comparability is the equivalent measurement and reporting of similar economic conditions [20].

In China's capital market, a popular trend involves CFOs who also serve as board secretaries. According to the China Stock Market and Accounting Research (CSMAR) database, <sup>1756%</sup> of listed companies had a CFO also serving as board secretary in 2007, and this proportion rose to 11.32% in 2019. CFOs produce financial reports, and board secretaries act as bridges that transmit information between listed companies and investors [21]. A CFO serving as board secretary enhances the efficiency of communication between a company and outsiders, and managers can take advantage of this to issue better financial statements. However, the literature does not consider the effect of a CFO serving as board secretary on financial statement comparability. Therefore, we investigate the relation between a CFO serving as board secretary and financial statement comparability.

This paper analyzes the relationship among the comparability of financial reports and CFO serves as the secretary of the board of directors. The study found that listed companies with CFO serving as the secretary of the board of directors are conducive to improving the comparability of financial reports. This is mainly because CFO serving as the secretary of the board of directors can fully understand the information demand of the capital market, effectively reduce the degree of information asymmetry, improve the efficiency of information transmission, better grasp the scale and timing of information disclosure, and safeguard the owner's equity. In further research, we found that CFOs were grouped according to their personal characteristics (gender, age, academic experience and financial background) to deeply explore the heterogeneous impact of CFOs with different gender, age, academic experience or financial background on the comparability of financial reports.

The possible marginal contributions of this paper are as follows: First, it analyzes the relationship between CFO's job characteristics and comparability of financial reports. Second, it gives important reference and practical value to the theoretical research on the financial statement comparability and the characteristics of senior executives. Third, through the study of the impact of CFO serving as the Secretary of the Board of Directors on the comparability of financial statements, it also provides incremental evidence for the study of the Secretary of the Board of Directors.

This paper has six chapters: the first chapter serves as the introduction, the second chapter presents the theoretical basis and research hypotheses of the study, the third chapter describes the design of the research, the fourth chapter presents the empirical results and analysis, the fifth chapter offers additional analysis, and the sixth chapter presents the research conclusion.

# 2. Literature review

#### 2.1. CFO serves as secretary of the board of directors

The literature on CFOs serving as board secretary focuses on the economic consequences.

Wang (2014) document that a vice president serving as board secretary can improve the quality of corporate information disclosure, whereas a board secretary serving as director has no significant effect on information disclosure [22]. North DS and Geiger MA (2006) find that discretionary accruals decreased significantly following the appointment of a new CFO [21]. Simionescu et al. (2021) provide evidence for a positive influence of women on corporate boards on both measures of company performance, except for the percentage of female executives in the case of return on assets [23]. Srinidhi (2011) indicate that accounting aggressiveness is affected by the proportion of women on the board of directors as well as on the audit committee [24]. Custodio et al. (2014) analyzed CEO-firm matching based on financial experience, we find that financial expert CEOs tend to be hired by more mature firms [25]. Mao et al. (2013) find that the earnings per share of listed companies is strongly correlated with having a CFO also serving as board secretary; such companies have less drift after an earnings announcement, and investors are less prone to mispricing earnings composition information [5]. According to the information asymmetry and principal-agent theories, Wang and Wang (2019) demonstrate that a CFO also serving as board secretary weakens the internal supervision of the company and facilitates earnings

<sup>&</sup>lt;sup>1</sup> A database commonly used by Chinese scholars for research.

manipulation, leading to a decline in the quality of the company's financial statements [26].

The literature provides no consensus on the quality of financial statements made by firms with a CFO serving as board secretary in China's capital market. We extend the literature about powerful executives serving as board secretaries by providing evidence that a CFO serving in this role enhances financial statement comparability.

#### 2.2. Financial statement comparability

At present, the research on the comparability of financial reports has also formed some important and enlightening achievements, mainly including the research on the impact of corporate executives, corporate shareholding, capital markets and other aspects on the comparability of financial reports. There are also many researches on the economic consequences of financial statement comparability.

The literature on the factors influencing financial statement comparability focuses on the effects of the convergence of international accounting standards on financial statement comparability between firms from various countries [10,17]. De Franco et al. (2011) develop a method to measure financial statement comparability at the firm level based on an earnings–income regression model [16]. Watanabe et al. (2014) show that audit style can improve financial statement comparability at the firm level, and this effect is more obvious among clients of the international Big 4 accounting firms [27]. The financial statement comparability of companies with auditor turnover is weaker than that of companies without auditor turnover, and the longer the former auditor's tenure, the more obvious the negative effect [28]. In addition to the coordination and convergence of accounting standards, the understanding and implementation of accounting standards also have an important effect on financial statement comparability [29,30]. Barth ME (2013) explore the impact of the mandatory adoption of IFRS on financial statement comparability and believe that the key factor affecting comparability is the degree to which company management implements the standards [31]. Zhang (2017) demonstrates that a change of CEO leads to a decrease in a company's financial statement comparability [32].

The literature on the economic consequences of financial statement comparability mainly has three perspectives. First, from the perspective of senior executives, we studied the impact of CEO tenure [33], CEO change [34], CFO experience [33], etc. Through their research, they found that the tenure or experience of CEO or CFO has an impact on the comparability of financial reports.

Second, from the perspective of enterprise shareholding status, the impact of enterprise equity concentration [13], institutional investors' cross shareholding [19], and equity incentives on the comparability of financial reports was studied [35]. The research shows that the higher the equity concentration of listed companies, the lower the comparability of accounting information; The impact of management equity incentive on the comparability of accounting information presents an inverted U-shaped relationship; The more institutional investors cross hold block equity of the focus company, the higher the comparability of accounting information of the focus company. The more other companies hold block equity, the higher the comparability of accounting information of the focus company.

The third is to study the impact on the comparability of financial reports from the aspects of capital market opening [8], stock mispricing [36], and stock price synchronization [37]. The research shows that the higher the comparability of accounting information, the lower the degree of stock mispricing; The implementation of the "Shanghai Hong Kong Stock Connect" policy has significantly improved the comparability of accounting information of listed companies. When the comparability of accounting information is at different levels, it has a heterogeneous impact on the synchronization of stock prices. Only when the comparability of accounting information is at the middle and high levels, it will inhibit the synchronization of stock prices.

# 3. Theoretical analysis and research hypothesis

#### 3.1. CFO serves as director secretary and financial statement comparability

Based on the agency theory, because the ownership of a company is separated from the management right, the managers with the management right will be more inclined to make profits for themselves during the performance of their duties, and will even damage the interests of the shareholders of the company. Therefore, there are many studies on the supervision of managers to improve the interests of shareholders and owners. As the senior manager of the company, the CFO is the most important person in charge of the company's financial and accounting work. Whether it is to formulate the company's financial system or manage the company's financial work, the CFO participates in and decides. The secretary of the board of directors (hereinafter referred to as "the secretary of the board of directors") is a senior manager of the listed company, who is appointed by the board of directors and responsible for the board of directors, is the designated contact between the listed company and the stock exchange, and is responsible for the company's information disclosure and investor relations management externally; Internally responsible for equity affairs management, corporate governance, equity investment, preparation for the Board of Directors and the General Meeting of Shareholders, and ensuring the standardized operation of the Company, it can be seen that the Secretary of the Board of Directors is an important person connecting the internal and external of the Company.

According to the theory of information asymmetry, the secretary of the board of directors concurrently serves as the CFO to enhance the transparency of the company's financial information. The CFO can fully grasp the company's operating and financial conditions, and can more effectively transmit timely, accurate and high-quality information to the capital market. The CFO concurrently serves as the director secretary can reduce the communication links of internal information, avoid information errors that may occur in the communication process, and improve the efficiency of information transmission.

According to the theory of limited concern, people have limitations in their ability and energy when dealing with a large amount of information. With their rich financial experience, CFOs can fully understand the information needs of the capital market, better grasp

the time and scale of information disclosure, and maximize the efficiency of information transmission. Based on this, this study proposed the following research hypotheses.

H1. CFO serving as board secretary improves financial statement comparability.

# 3.2. The gender of a CFO serving as board secretary

Psychologists have found that men and women have different attitudes toward corporate risk because of biological differences. Men tend to take more risks and accept more challenges [38]. Women are more cautious about taking risks. Female CFOs are more conservative in their financial reporting [39]. In addition, female executives exhibit different characteristics in terms of communication and independence. Female managers often better communicate with investors and deliver information more effectively. This further affects the quality of information disclosure and firms' accounting and market-based performance. For example, female directors can better supervise management and improve the quality of information disclosure [24]. Simionescu et al. (2021) demonstrate that a positive influence of women on corporate boards company performance [23]. Therefore, we investigate the role of gender in the effect of a CFO serving as board secretary on financial statement comparability. We propose the following hypothesis.

H2. A female CFO who is also serving as board secretary improves financial statement comparability.

#### 3.3. The age of a CFO serving as board secretary

According to their age, managers have different historical backgrounds and social capital, which affect their decision-making behavior. Senior managers have a lower appetite for risk [40], they are generally more risk averse and value the quality of information disclosure. Guo et al. (2018) document that the average age of the senior management team is positively correlated with the quality of accounting information [41]. Classified by age group, we argue that CFOs under the age of 40 years are energetic and adventurous. CFOs in their 40s and 50s are at the peak of their careers and adopt prudent accounting policies to maintain that momentum. CFOs over 50, who are nearing retirement age, are more risk averse. We therefore expect that a middle-aged CFO who also serves as board secretary improves a firm's financial statement comparability, and we propose H3 as follows.

H3. A middle-aged CFO who is also serving as board secretary improves a firm's financial statement comparability.

#### 3.4. The education level of a CFO serving as board secretary

A person's education level reflects their cognitive ability and skills, and is associated with a high capacity for information processing and the ability to discriminate among a variety of stimuli [2,42]. An individual's educational level reflects their learning ability, cognitive ability, and decision-making ability. People with higher education are better able to access and process information and are more likely to take on cross-functional roles. Highly educated executives are more in line with today's requirements for compound talents. Therefore, we propose H4 as follows.

H4. A CFO with higher education who is also serving as board secretary improves a firm's financial statement comparability.

# 3.5. The financial background of a CFO serving as board secretary

The literature documents that financial-expert CEOs actively manage financial policies [25]. Managers with financial experience are better able to understand financial information and capital market operations [43]. A CFO with experience in investment banking who is also serving as board secretary understands how capital operates and can communicate effectively with outsiders. In addition, a CFO with a financial background who is also serving as board secretary has a deeper understanding of the company's future development and can accurately communicate to investors the economic implications of economic policies or financial statements. Therefore, we propose H5 as follows.

H5. A CFO with a financial background who is also serving as board secretary improves a firm's financial statement comparability.

#### 4. Research design

# 4.1. Sample selection and data processing

Our sample period is from 2007 to 2021. We collect data on CFO characteristics from biographical information in the CSMAR database for all listed firms on the Main Boards of the Shenzhen and Shanghai stock exchanges. We obtain annual financial statement comparability data from the CSMAR database. We delete financial services firms from the sample because of the special nature of the industry. In addition, we eliminate observations with missing financial data or missing information about CFOs who are also board secretaries.

After merging the financial statement comparability data with the data on CFOs who are also board secretaries, the final data sample contains 17,868 firm-year observations. All of the continuous variables are winsorized at the 1% and 99% levels. Robust standard errors are used in this paper. Table 1 summarizes the definitions of the variables.

Table 1 Variable definitions.

Variable Names	Definition
CompAcct	Calculated following De Franco et al. (2011). Average of the four highest CompAccti, i, t for firm i.
CFO_BS	Equal to 1 if CFO serving as board secretary, otherwise it is 0.
LEVERAGE	Leverage computed as total liabilities divided by total assets.
SIZE	Firm size computed as the log of total assets at the end of the fiscal year.
AEM	The absolute of discretionary accruals estimated by using the modified Jones model of Dechow et al. (1995).
TOP1	The shareholding ratio of the largest shareholder at the end of the firm $i$ in year $t$ .
GROWTH	The average growth rate of revenue of firm <i>i</i> over the past three years.
BOARD	The natural logarithm of the number of directors of firm <i>i</i> in year <i>t</i> .
INSTITUTION	Share ownership percentage of institutional investors at the end of the firm <i>i</i> in year <i>t</i> .
BIG4	An indicator variable for auditor quality. It equals 1 if firm <i>i</i> audited by one of the international Big 4 audit firms and 0 otherwise.
SOE	Equal to 1 if the firm <i>i</i> is controlled by the state-owned, and 0 otherwise.

#### 4.2. Variable setting

# (1) Explained variable

De Franco et al. (2011) points out that accounting systems translate economic events into financial statements [16]. Accounting comparability can thus be described as the similarity in the accounting function between firms. First, equation (1) is constructed to value each firm-year's accounting function using data for the 16 previous quarters:

$$Earning_{i,t} = \alpha_i + \beta_i Return_{i,t} + \varepsilon_{i,t}$$
(1)

Earning<sub>i,t</sub> is the proportion of quarterly net income before extraordinary items to the beginning-of-period market value of equity of firm i in period t, and Return<sub>i,t</sub> is the stock return of firm i in period t. The coefficients  $\alpha$  i and  $\beta$  i represent the estimated accounting function of firm i. Similarly, the accounting function for firm j is measured by  $\alpha$  j and  $\beta$ . We use the estimated accounting functions of firms i and j to predict their earnings, assuming they had the same return (i.e., they experienced the same economic events, Return<sub>i,t</sub>).

Specifically, we use the two assessed accounting functions for each firm with the economic events of a single firm. We calculate the following equations:

$$E\left(Earning\right)_{i,i,t} = \widehat{\alpha}_i + \widehat{\beta}_i Return_{it}$$
<sup>(2)</sup>

$$E\left(Earning\right)_{i,i,j} = \widehat{\alpha}_{i} + \widehat{\beta}_{i}Return_{ii} \tag{3}$$

In equation (2),  $E(\text{Earning})_{i,j,t}$  is the predicted earnings of firm i given the function of this firm and its return in period t. In equation (3),  $E(\text{Earning})_{i,j,t}$  is the predicted earnings of the corresponding firm j given its function and firm i's return in period t. Following De Franco et al. (2011), we define the accounting comparability between firms i and j (CompAcct<sub>i,j,t</sub>) as the negative value of the average absolute difference between predicted earnings using firm i's and firm j's functions [16], as follows:

$$CompAcct_{i,j,t} = -\frac{1}{16} \sum_{t}^{t=15} \left| E(Earning)_{i,j,t} - E(Earning)_{i,j,t} \right|$$
(4)

Financial statement comparability between two firms can be measured by computing the difference in predicted earnings between the two firms for the same set of economic events. In equation (4), greater values of  $CompAcct_{i,j,t}$  indicate smaller differences between the two firms and therefore greater accounting comparability. According to this method, we measure the accounting comparability for each firm *i*–*j* combination for J firms within the same industry. After estimating the accounting comparability for each firm i–j combination, we rank all of the J values of  $CompAcct_{i,j,t}$  for each firm i from highest to lowest. CompAcct is the average  $CompAcct_{i,j,t}$  of the ten firms with the highest comparability to firm i during period t.

# (2) Explanatory variable

CFO served as the secretary of the board of directors. If the CFO of the company concurrently serves as the secretary of the board of directors, the value is 1; otherwise, it is 0.

#### (3) Control variables

Because the financial reports comparability might have also been affected by corporate characteristics, corporate governance, and other factors, the following control variables were set up: in terms of corporate characteristics, the main ones were profitability ROA (measured by the return on total assets), corporate growth (measured by the growth rate of operating income), financial leverage (measured by the asset liability ratio), and enterprise size (measured by the natural logarithm of the enterprise's total assets). In terms of corporate governance, there were two main control variables: Top1 (measured by the shareholding ratio of the largest shareholder)

(5)

(6)

and dual (whether the general manager was also the chairman [yes = 1, no = 0). Virtual variables for both year and industry were controlled.

Specifically, this study used the following control variables: enterprise size (Size), age of the listed enterprise (Age), book\_to\_market (MB), audit opinion type (Audit), gross operating income growth rate (Growth), leverage ratio (Lev), shareholding ratio of the largest shareholder (Top1), equity concentration (Shrcr), annual stock turnover rate (VOL), net profit margin on total assets (Roa), return on net assets (Roe), institutional investor shareholding ratio (InsInvestor), board size (Board), whether auditors were from Big Four accounting firms (Big4), dual, and other variables. See Table 1 for an explanation of each variable.

#### 4.3. Research model

Based on the above analysis, in order to empirically test the impact of CFO concurrently serving as the director secretary of Shanghai and Shenzhen A-share listed companies on the comparability of financial reports, this study has constructed a multi-level regression model in three steps.

Step 1 was to analyse the relationships between CFO serves as the secretary of the board and the control variables and to establish the basic model of the study. Eq. (5) is as follows.

$$CompAcct_{i,t} = \lambda 0 + \lambda 1Size + \lambda 2Age + \lambda 3Mb + \lambda 4Growth + \lambda 5Lev + \lambda 6Shrcr + \lambda 7VOL + \lambda 8ROA + \lambda 9Inshold + \lambda 10Board + \lambda 11Dual + \lambda 12Big4 + \varepsilon it$$

In equation (5), i represents the enterprise, t represents the year, and  $\varepsilon_{it}$  represents the error term.

The second step is to verify the relationship between the CFO serving as the secretary of the board and the comparability of financial reports, without introducing control variables. Equation (6) for the regression model is as follows.

$$CompAcct_{i,t} = \alpha_0 + \alpha_1 CFO_BS_{i,t} + \epsilon_{i,t}$$

In equation (6), i represents the enterprise, t represents the year, and  $\varepsilon_{it}$  represents the error term.

The third step is to verify the relationship between the CFO serving as the Secretary of the Board and the comparability of financial reports, and introduce control variables. Equation (7) for regression model is as follows. If the coefficient a1 of CFO\_BS is significantly positive, indicating that research hypothesis 1 is supported. CFO serving as the secretary of the board can improve the comparability of financial reports in this situation.

Following the literature (De Franco et al., 2011), we use the following regressions to test our research questions:

$$CompAcct_{i,t} = \alpha_0 + \alpha_1 CFO_BS_{i,t} + \alpha_2 LEVERAGE_{i,t} + \alpha_3 SIZE_{i,t} + \alpha_4 AEM_{i,t} + \alpha_5 TOP1_{i,t} + \alpha_6 GROWTH_{i,t} + \alpha_7 BOARD_{i,t} + \alpha_8 INSTITUTION_{i,t} + \alpha_9 BIG4_{i,t} + \alpha_{10} SOE + Year effect + Industry effect + \varepsilon_{i,t}$$
(7)

where i indexes firm, and t indexes year. CompAccti,t measures financial statement comparability following De Franco et al. (2011). The explanatory variable of equation (7) is a firm's CFO serving as board secretary (CFO\_BS), which equals 1 when a firm's CFO serves as board secretary, and otherwise 0. As the position of CFO has different titles in different companies, CFO is defined in this paper as any of the following: chief financial officer, chief accountant, etc.

Following the literature, we control for various company characteristics that may affect financial statement comparability, including leverage, size, earnings management, shareholding ratio of the largest shareholder, company growth, and enterprise property [16,27,34]. In addition, we control for board size, the shareholding ratio of institutional investors, and whether the company is audited by a Big 4 or another accounting firm. Finally, we include industry and year fixed effects to control for unobservable factors that affect the comparability of accounting information of companies in different industries and years. To control for systematic differences between firm-years and facilitate the comparison of observations, we standardize financial statement comparability

Table 2

Descriptive statistics.

Variables	Ν	Mean	Median	STD	Max	Min
CompAcct	10,018	-0.005	-0.004	0.005	-0.001	-0.035
CFO_BS	10,018	0.099	0	0.299	1	0
LEVERAGE	10,018	0.488	0.495	0.197	0.903	0.078
SIZE	10,018	22.48	22.30	1.318	26.43	19.90
AEM	10,018	0.070	0.048	0.071	0.402	0.001
TOP1	10,018	0.348	0.330	0.148	0.733	0.081
GROWTH	10,018	0.472	0.134	1.327	9.853	-0.471
BOARD	10,018	2.276	2.303	0.179	2.773	1.792
INSTITUTION	10,018	0.484	0.499	0.224	0.924	0.008
BIG4	10,018	0.082	0	0.274	1	0
SOE	10,018	0.486	0	0.500	1	0

Note: This table exhibits the descriptive statistics for the variables used in regression model. All variables are as defined in Table 1.

(CompAcct) and the control variables to range from 0 to 1.

# 5. Empirical results and analysis

#### 5.1. Descriptive statistics

Table 2 presents descriptive statistics for the variables used in our empirical analyses. The minimum level of financial statement comparability (CompAcct) is -0.035, the maximum is -0.001, and the average is -0.005, indicating differences in the financial statement comparability of companies. The mean of a firm's CFO serving as board secretary (CFO\_BS) is 0.099, suggesting that around 9.9% of the firms in the sample have a CFO that is also board secretary.

#### 5.2. Univariate analysis

To directly observe the effect of a CFO serving as board secretary on financial statement comparability, we divide the sample into an experimental group (CFO\_BS = 1) and a control group (CFO\_BS = 0). The univariate test results in Table 3 show that financial statement comparability in the experimental group is significantly higher than that in the control group. In the control group (CFO\_BS = 0), the mean (median) of CompAcct is 0.0628 (0.323), whereas in the experimental group (CFO\_BS = 1), the mean (median) of CompAcct is 0.1610 (0.429). The mean (median) of the control group is less than that of the experimental group, and the difference is significant at the 1% level. These results show that the financial statements of listed companies with a CFO serving as board secretary are more comparable to the financial statements of other firms.

# 5.3. Correlation analysis

Table 4 reports the results for the correlation analysis. The correlation coefficient between CFO\_BS and CompAcct is 0.034, which is significant at the 1% level. This result preliminarily indicates a significantly positive relation between CFO\_BS and CompAcct. A CFO serving as board secretary enhances the financial statement comparability of listed companies.

#### 5.4. Regression analysis

We use annual data to examine the effects of a CFO serving as board secretary on financial statement comparability. The results are shown in Table 5. Column (1) of Table 5 reports the relation between a CFO serving as board secretary and financial statement comparability when no other variables are controlled. The coefficient of CFO\_BS is significantly positive at the 1% level (0.0982, t = 3.33), indicating that a CFO serving as board secretary is more likely to issue comparable financial statements. In Column (2) of Table 5, the year and industry dummy variables are added. The coefficient of CFO\_BS is significantly positive at the 5% level (0.0645, t = 2.22). Compared with Column (2), the results in Column (3) of Table 5 control for firm-specific factors and other determinants of financial statement comparability. The coefficient of CFO\_BS is significantly positive at the 5% level (0.0520, t = 1.98). A CFO serving as board secretary positively affects financial statement comparability. The empirical evidence suggests that a CFO who is also board secretary improves financial statement comparability, supporting H1.

#### 5.5. Robustness test

As shown in Table 6 and Table 7, the following robustness tests are used.

# (1) Explanatory variable replacement

We rank all of the J values of  $CompAcct_{i,j,t}$  for each firm i from highest to lowest. CompAcct is the average  $CompAcct_{i,j,t}$  of the four j firms with the highest comparability to firm i in period t. In this section, we use the average  $CompAcct_{i,j,t}$  of the 10 j firms with the highest comparability to firm i in period t. The untabulated results are consistent with our multivariate regression results and support H1.

#### Table 3

Univariate Test. Dependent variable is the average of the four highest CompAcct<sub>i,j,t</sub> for firm i following De Franco et al. (2011). Explanatory variable is firm's CFO serving as board secretary (CFO\_BS). CFO\_BS is equal to 1 when firm's CFO serving as a board secretary; otherwise, 0.

	$CFO_BS = 0$		$CFO_BS = 1$		Difference	
	Mean (1)	Median (2)	Mean (3)	Median (4)	Difference in mean (1)–(3)	Difference in median (2)–(4)
CompAcct Obs.	0.0628 9024	0.323	0.1610 994	0.429	-0.0982*** -	-0.106*** -

Notes: To control for systematic differences across firm-years and to facilitate comparison across observations, we standardize the comparability of financial statement (*CompAcct*) and control variables to range from 0 to 1. All variables are as defined in Table 1. p < 0.1, p < 0.05, p < 0.01.

Table 4

8

Correlations Between CFO\_BS and CompAcct. This table presents pairwise correlations between CFO serving as board secretary, financial statement comparability and other controls. All variables are as defined in Table 1.

	CompAcct	CFO_BS	LEVERAGE	SIZE	AEM	TOP1	GROWTH	INSTITUTION	BOARD	BIG4	SOE
CompAcct	1										
CFO_BS	0.034***	1									
LEVERAGE	$-0.312^{***}$	-0.037***	1								
SIZE	-0.219***	-0.026***	0.420***	1							
AEM	-0.099***	-0.021**	0.069***	-0.055***	1						
TOP1	-0.052***	0.037***	0.078***	0.263***	0.005	1					
GROWTH	-0.085***	-0.013	0.119***	0.021**	0.147***	0.050***	1				
INSTITUTION	$-0.113^{***}$	-0.002	0.181***	0.427***	0.018*	0.587***	0.039***	1			
BOARD	-0.071***	-0.009	0.139***	0.210***	-0.026***	0.015	-0.077***	0.205***	1		
BIG4	-0.094***	0.016	0.085***	0.391***	-0.039***	0.166***	-0.050***	0.279***	0.104***	1	
SOE	-0.134***	0.013	0.238***	0.237***	-0.025**	0.232***	-0.010	0.372***	0.241***	0.140***	1

Note: \*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

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#### Table 5

Multivariate Regression. Dependent variable is the average of the four highest CompAcct<sub>i,j,t</sub> for firm i following De Franco et al. (2011). Explanatory variable is firm's CFO serving as board secretary (CFO\_BS). CFO\_BS is equal to 1 when firm's CFO serving as board secretary; otherwise, 0.

	(1)	(2)	(3)
	CompAcct	CompAcct	CompAcct
CFO_BS LEVERAGE SIZE AEM TOP1 GROWTH INSTITUTION BOARD BIG4 SOE	0.0982*** (3.33)	0.0645** (2.22)	$0.0520^{**}(1.98)$ - $0.2285^{***}(-17.34)$ - $0.1184^{***}(-9.04)$ - $0.0719^{***}(-6.95)$ 0.0111 (1.09) - $0.0551^{***}(-4.52)$ 0.0109 (1.04) 0.0111 (1.23) - $0.0973^{***}(-2.70)$ - $0.0698^{***}(-3.72)$
Industry	No	Yes	Yes
Year	No	Yes	Yes
Constant	0.0628*** (6.85)	-0.3890*** (-4.42)	-0.3853*** (-4.62)
Ν	10,018	10,018	10,018
R-sq	0.0011	0.0457	0.1585
Adj. R-sq	0.0010	0.0430	0.1554

Notes: To control for systematic differences across firm-years and to facilitate comparison across observations, we standardize the comparability of financial statement (*CompAcct*) and control variables to range from 0 to 1.Column (2) shows the results of the regression model that includes industry and year fixed effect and Column (3) is the results of regression model that includes industry, year fixed effect and other control variables. All variables are as defined in Table 1 t statistics in parentheses. \*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

#### Table 6

Robust Tests 1. Dependent variable is the average of the ten highest CompAcct<sub>i,j,t</sub> for firm i following De Franco et al. (2011). Explanatory variable is firm's CFO serving as board secretary (CFO\_BS). CFO\_BS is equal to 1 when firm's CFO serving as board secretary; otherwise, 0.

	(1)	(2)	(3)
	CompAcct	CompAcct	CompAcct
CFO_BS LEVERAGE SIZE AEM TOP1 GROWTH INSTITUTION BOARD BIG4 SOE	0.0880***(3.05)	0.0579**(2.03)	$\begin{array}{c} 0.0447^{\star} (1.73) \\ -0.2346^{\star\star\star} (-17.53) \\ -0.1011^{\star\star\star} (-7.72) \\ -0.0749^{\star\star\star} (-7.05) \\ 0.0154 (1.48) \\ -0.0605^{\star\star\star} (-4.68) \\ 0.0089 (0.87) \\ 0.0118 (1.33) \\ -0.0762^{\star\star} (-2.16) \\ -0.0722^{\star\star\star} (-3.86) \end{array}$
Industry Year Constant N <i>R-s</i> q Adj. <i>R-s</i> q	No No 0.0671*** (7.42) 10,018 0.0009 0.0008	Yes Yes -0.2743*** (-2.98) 10,018 0.0360 0.0333	Yes Yes -0.2485*** (-2.89) 10,018 0.1486 0.1454

Notes: To control for systematic differences across firm-years and to facilitate comparison across observations, we standardize the comparability of financial statement (CompAcct) and control variables to range from 0 to 1.Column (2) shows the results of the regression model that includes industry and year fixed effect and Column (3) is the results of regression model that includes industry, year fixed effect and other control variables. All variables are as defined in Table 1 t statistics in parentheses. \*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

# (2) Tool variable method

To alleviate endogeneity problems, such as missing variables and reverse causality, we use the instrumental variable method to test the results. We select the average of CFO\_BS in the same province as the instrumental variable, namely CFO\_BS\_iv. The untabulated results are consistent with our multivariate regression results. Overall, our findings are robust to these additional tests.

# 6. Additional analysis

# 6.1. The gender of a CFO serving as board secretary

Table 8 presents the results for the effect of a female CFO who is also board secretary on financial statement comparability. The sample is divided into two groups according to gender (Gender = 0 for males and Gender = 1 for females). The results are shown in

#### Table 7

Robust Tests 2. In Column (1), dependent variable is CFO serving as board secretary (CFO\_BS). CFO\_BS is equal to 1 when firm's CFO serving as a board secretary; otherwise, 0. Explanatory variable is the average value of CFO\_SEC in the same province as the instrumental variable (CFO\_SEC\_iv). In Column (2), dependent variable is the average of the four highest CompAct<sub>i,j,t</sub> for firm i following De Franco et al. (2011). Explanatory variable is CFO serving as board secretary (CFO\_BS).

	(1)	(2)
	Logit	2SLS
	CFO_BS	CompAcct
CFO_BS_iv	8.6082*** (15.26)	
CFO_BS		0.5087** (2.40)
LEVERAGE	-0.0441 (-1.10)	-0.2259*** (-17.00)
SIZE	-0.0952* (-1.81)	-0.1145*** (-8.61)
AEM	-0.0477 (-1.23)	-0.0703*** (-6.69)
TOP1	0.2276*** (5.41)	0.0025 (0.23)
GROWTH	0.0784** (1.97)	-0.0569*** (-4.66)
INSTITUTION	-0.0828* (-1.76)	0.0140 (1.30)
BOARD	0.0103 (0.29)	0.0109 (1.20)
BIG4	0.3247** (2.43)	-0.1118*** (-2.99)
SOE	0.2235*** (2.89)	-0.0807*** (-4.07)
Industry	Yes	Yes
Year	Yes	Yes
Constant	-5.8559*** (-5.44)	-0.3816*** (-4.59)
N	10,001	10,001
R-sq		0.1340
Adj. R-sq		0.1309

Notes: To control for systematic differences across firm-years and to facilitate comparison across observations, we standardize the comparability of financial statement (*CompAcct*) and control variables to range from 0 to 1. All variables are as defined in Table 1 t statistics in parentheses. \*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

Table 8. In the male subsample, the coefficient of *CFO\_BS* is 0.0452, but it is not statistically significant. In the female subsample, the coefficient of *CFO\_BS* is 0.1034, and the correlation is significantly positive at the 10% level. These results show that compared with male CFOs, female CFOs who also serve as board secretaries improve financial statement comparability, supporting H2. Our result also provides additional support for the findings of Srinidhi et al. (2011), who suggest that female directors can better improve the quality of information disclosure.

#### Table 8

The gender characteristic of CFO Serving as a Board Secretary. Dependent variable is the average of the four highest CompAcct<sub>i,j,t</sub> values for firm i following De Franco et al. (2011). Explanatory variable is firm's CFO serving as board secretary (CFO\_BS). CFO\_BS is equal to 1 when firm's CFO serving as board secretary; otherwise, 0.

	(1)	(2)
	Gender $= 0$	Gender = 1
	CompAcct	CompAcct
CFO_BS	0.0452 (1.45)	0.1034* (1.84)
LEVERAGE	-0.2476*** (-20.20)	-0.1820*** (-10.64)
SIZE	-0.1262*** (-8.74)	-0.0816*** (-3.75)
AEM	-0.0615*** (-6.06)	-0.0978*** (-6.66)
TOP1	0.0090 (0.72)	0.0197 (1.11)
GROWTH	-0.0397*** (-3.51)	-0.0884*** (-5.53)
INSTITUTION	0.0074 (0.53)	0.0241 (1.24)
BOARD	0.0207* (1.95)	-0.0110 (-0.72)
BIG4	-0.1146*** (-2.93)	-0.0874 (-1.45)
SOE	-0.0829*** (-3.72)	-0.0426 (-1.30)
Industry	Yes	Yes
Year	Yes	Yes
Constant	-0.3334*** (-3.07)	-0.4719*** (-3.22)
N	7043	2975
R-sq	0.1674	0.1516
Adj. R-sq	0.1630	0.1409

Notes: To control for systematic differences across firm-years and to facilitate comparison across observations, we standardize the comparability of financial statement (*CompAcct*) and control variables to range from 0 to 1. The gender in this table refers to the gender of the CFO. Gender equal to 0 is male; Gender equal to 1 is female. All variables are as defined in Table 1 t statistics in parentheses. \*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

#### Table 9

The age characteristic of CFO Serving as a Board Secretary. Dependent variable is the average of the four highest CompAcct<sub>i,j,t</sub> values for firm i following De Franco et al. (2011). Explanatory variable is firm's CFO serving as board secretary (CFO\_BS). CFO\_BS is equal to 1 when firm's CFO serving as board secretary; otherwise, 0.

	(1)	(2)	(3)
	Age = 0	Age = 1	Age = 2
	CompAcct	CompAcct	CompAcct
CFO_BS	0.0633 (1.00)	0.0545* (1.67)	0.0228 (0.32)
LEVERAGE	-0.2015*** (-8.59)	-0.2301*** (-18.17)	-0.2541*** (-11.17)
SIZE	-0.1673*** (-5.91)	-0.1017*** (-6.58)	-0.1214*** (-4.61)
AEM	-0.0375** (-1.99)	-0.0860*** (-8.14)	$-0.0572^{***}$ (-2.89)
TOP1	-0.0322 (-1.35)	0.0305** (2.35)	-0.0078 (-0.33)
GROWTH	-0.0399**	-0.0564***	-0.0766***
	(-2.12)	(-4.68)	(-3.34)
INSTITUTION	0.0383 (1.50)	-0.0048 (-0.34)	0.0388 (1.37)
BOARD	0.0202 (1.02)	0.0038 (0.34)	0.0146 (0.76)
BIG4	-0.2841*** (-3.34)	-0.0342 (-0.80)	-0.1369** (-2.04)
SOE	0.0695 (1.57)	$-0.0833^{***}$ (-3.55)	-0.1311*** (-3.10)
Industry	Yes	Yes	Yes
Year	Yes	Yes	Yes
Constant	-0.3443*	-0.2070*	-0.7766***
	(-1.81)	(-1.74)	(-4.15)
Ν	1718	6049	2251
R-sq	0.1800	0.1640	0.1691
Adj. R-sq	0.1624	0.1589	0.1552

Notes: To control for systematic differences across firm-years and to facilitate comparison across observations, we standardize the comparability of financial statement (*CompAcct*) and control variables to range from 0 to 1. The age refers to the age of the *CFO\_BS*. Age = 0 is the young group (under 40 years old); Age = 1 is the middle Age group (40–50 years old); Age = 2 is the old group (over 50 years old). All variables are as defined in Table 1 t statistics in parentheses. \*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

# 6.2. The age of a CFO serving as board secretary

In Table 9, we present the results for the association between the age of a CFO serving as board secretary and financial statement comparability. The sample is divided into three groups according to age: Age = 0 is the young group (CFOs under 40 years old), Age = 1 is the middle group (CFOs 40–50 years old), and Age = 2 is the old group (CFOs over 50 years old). As shown in Table 9, the coefficients of *CFO\_BS* in the young and old groups are 0.0633 and 0.0228, respectively, but they are not significant. In the middle group, the coefficient of *CFO\_BS* is 0.0545, which is significant at the 10% level. These results indicate that compared with young and old CFOs, a middle-aged CFO serving as board secretary improves financial statement comparability, supporting H3.

#### 6.3. The education level of a CFO serving as board secretary

Table 10 reports the test results for the effect of CFOs with different education levels who serve as board secretaries on financial statement comparability. The sample is divided into two groups according to education level: Degree = 0 is below undergraduate; Degree = 1 is undergraduate or above. The results are shown in Table 10. In the subsample without a degree (Degree = 0), the coefficient of *CFO\_BS* is 0.1197, but it is not significant. In the sample with a degree (Degree = 1), the coefficient of *CFO\_BS* is 0.0728, which is significant at the 5% level. This result suggests that CFOs with higher education who serve as board secretaries improve firms' financial statement comparability, supporting H4.

#### 6.4. The financial background of a CFO serving as board secretary

We also examine whether and how CFOs with a financial background who also serve as board secretaries affect financial statement comparability, and we report our results in Table 11. The sample is divided into two groups according to financial background: FinBack = 0 means a CFO has no financial background and FinBack = 1 means a CFO has a financial background. The results are shown in Table 11. In the subsample without a financial background, the coefficient of *CFO\_BS* is 0.0329, but it is not significant. In the subsample with a financial background, the coefficient of *CFO\_BS* is 0.1721, significant at the 5% level. These results suggest that CFOs with a financial background who also serve as board secretaries improve firms' financial statement comparability, supporting H5.

## 7. Conclusion

Using the data of Chinese A-share listed firms from 2007 to 2021, this study investigates the effect of a CFO also serving as board secretary on financial statement comparability. The results show that a CFO who is also board secretary improves a firm's financial statement comparability. Given that managers' personal characteristics play a role in financial statement comparability, we investigate the effects of the personal characteristics of a CFO who also serves as board secretary on a firm's financial statement comparability. Our

#### Table 10

The degree characteristic of CFO Serving as a Board Secretary. Dependent variable is the average of the four highest  $CompAcct_{i,j,t}$  for firm i following De Franco et al. (2011). Explanatory variable is firm's CFO serving as board secretary (CFO\_BS). CFO\_BS is equal to 1 when firm's CFO serving as board secretary; otherwise, 0.

	(1)	(2)
	Degree = 0	Degree = 1
	CompAcct	CompAcct
CFO_BS	0.1197 (1.34)	0.0728** (2.23)
LEVERAGE	-0.2536*** (-9.19)	-0.1773*** (-13.31)
SIZE	-0.1030*** (-2.66)	-0.1525*** (-9.67)
AEM	-0.0756*** (-3.33)	-0.0518*** (-4.64)
TOP1	-0.0075 (-0.24)	0.0339*** (2.65)
GROWTH	-0.0599* (-1.91)	-0.0566*** (-4.45)
INSTITUTION	0.0244 (0.74)	-0.0161 (-1.16)
BOARD	-0.0369 (-1.41)	0.0351*** (3.21)
BIG4	0.2832* (1.89)	-0.1037** (-2.54)
SOE	0.0359 (0.66)	-0.0317 (-1.27)
Industry	Yes	Yes
Year	Yes	Yes
Constant	-0.1940 (-0.70)	-0.3533*** (-3.08)
Ν	1215	5541
R-sq	0.1845	0.1730
Adj. R-sq	0.1596	0.1674
<i>R-</i> sq Adj. <i>R-</i> sq	0.1845 0.1596	0.1730 0.1674

Notes: To control for systematic differences across firm-years and to facilitate comparison across observations, we standardize the comparability of financial statement (*CompAcct*) and control variables to range from 0 to 1. The degree in this table refers to the degree of the *CFO\_BS*. Degree equal to 0 is below the undergraduate; Degree equal to 1 is undergraduate or above. All variables are as defined in Table 1 t statistics in parentheses. \*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

# Table 11

The financial background of CFO Serving as a Board Secretary. Dependent variable is the average of the four highest CompAcct<sub>i,j,t</sub> for firm i following De Franco et al. (2011). Explanatory variable is firm's CFO serving as board secretary (CFO\_BS). CFO\_BS is equal to 1 when firm's CFO serving as board secretary; otherwise, 0.

	(1)	(2)
	FinBack = 0	FinBack = 1
	CompAcct	CompAcct
CFO_BS	0.0329 (1.15)	0.1721* (1.84)
SIZE	-0.1179*** (-8.62)	$-0.1024^{\circ}(-1.78)$ $-0.1219^{**}(-2.00)$
AEM	-0.0707*** (-6.41)	-0.1247** (-2.37)
TOP1	0.0037 (0.33)	0.1106*** (2.75)
GROWTH	-0.0611*** (-4.72)	-0.0226 (-0.49)
INSTITUTION	0.0132 (1.19)	-0.0798* (-1.87)
BOARD	0.0047 (0.50)	0.0561 (1.46)
BIG4	-0.1112*** (-2.87)	0.1554 (1.15)
SOE	-0.0571*** (-2.93)	-0.2215** (-2.49)
Industry	Yes	Yes
Year	Yes	Yes
Constant	-0.4129*** (-4.98)	0.2228 (1.56)
Ν	8871	659
R-sq	0.1652	0.1608
Adj. R-sq	0.1618	0.1164

Notes: To control for systematic differences across firm-years and to facilitate comparison across observations, we standardize the comparability of financial statement (*CompAcct*) and control variables to range from 0 to 1. FinBack = 0 means CFO has no financial background; Finback = 1 means CFO has a financial background. All variables are as defined in Table 1 t statistics in parentheses. \*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

results generally suggest that financial statement comparability is positively associated with a CFO who is female, is middle-aged, has a higher education level, and has a financial background. A CFO who serves as board secretary can shorten the information transmission chain within a firm, reducing information loss and improving financial statement comparability. This study provides evidence that a CFO serving as board secretary plays an important role in financial statement comparability. Listed firms should encourage CFOs to also serve as board secretaries, and appropriate consideration should be given to the selection of female middle-aged executives with higher education and a financial background for this role. In addition, investors should also consider a senior executive's personal

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characteristics to make the most appropriate decisions possible. This study contributes to the internal governance of listed companies, as well as to the hiring of a CFO with any kind of personal characteristics, giving more references and assistance to the company and more benefits to the comparability of financial reports. To the extent that it helps listed companies to establish a good image in the capital market.

This paper may have the following research limitations: firstly, regarding the research methodology, when empirically testing the personal characteristics of CFOs on financial reporting comparability, group tests and OLS methods are used, and there are other methods that can be used to test for personal characteristics, which may yield different conclusions. Secondly, regarding the scope of the research, the financial reporting quality include reliability, relevance and comparability, this paper only examines financial reporting comparability and there are other characteristics that can characterise financial reporting quality. All of the above could be the subject of future research work.

# Author contribution statement

Yueyun Wang: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper. Yihan Huang: Performed the experiments.

Chenhang Li: Contributed reagents, materials, analysis tools or data.

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Data will be made available on request.

# Declaration of interest's statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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