CFO SERVING AS BOARD SECRETARY AND ENTERPRISE SUSTAINABLE DEVELOPMENT PERFORMANCE

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This study utilizes data from Chinese A-share listed companies from 2010 to 2020 as research samples to explore the impact of CFOs serving as board secretary on the quality of information disclosure, financing constraints, and enterprise sustainable development performance. The empirical results indicate that CFOs holding the additional role of secretary of the board significantly enhance the financial performance and environmental and social responsibility performance of companies. The quality of information disclosure and financing constraints act as mediators between the dual role of the CFO and sustainable development performance. Heterogeneity analysis finds that in non-state-owned enterprises and small and medium-sized enterprises, the effects of CFOs serving concurrently as secretaries of the board on improving financial performance, environmental social responsibility performance, information disclosure quality, and alleviating financing constraints are more pronounced. The findings of this study delve into the impact of the dual role of CFOs on sustainable development performance, enrich the literature in the relevant field, and provide valuable theoretical basis and practical guidance for the selection and appointment of corporate executives, tailored for journal publication requirements.

Keywords: CFO; board secretary; information disclosure quality; financing constraints; sustainable development performance
Introduction

The "2020 Government Work Report" explicitly states: "Ensuring the sustained, stable, and healthy development of the national economy and achieving higher quality and more sustainable development is one of the core objectives of economic and social development during the 'Fourteenth Five-Year Plan' period".

As an important part of the national economy, enterprises bear the heavy responsibility of achieving sustainable development. Information disclosure is one of the ways for enterprises to communicate signals to the outside world, and the quality of information disclosure significantly impacts the sustainable development of enterprises (Xie et al., 2017). High-quality information disclosure can enhance market trust and improve the decision-making efficiency of investors and relevant stakeholders (Outa & Waweru, 2016); meanwhile, financing constraints, as another key factor affecting the sustainable development of enterprises, have a non-negligible impact on enterprises' resource allocation (Lu et al., 2018), technological innovation, and market expansion capabilities (Wei et al., 2019).

A healthy capital structure is crucial for reducing financing costs, optimizing resource allocation, and ultimately achieving sustainable development goals. The financing situation and quality of information disclosure by enterprises are significantly influenced by senior management, especially the CFO (Chief Financial Officer) and the secretary of the board of directors (the company secretary).

The concurrent role of CFO serving as board secretary can achieve an organic integration of both functions, significantly impacting the capital market's efficiency and the company's overall performance (Peng & Zheng, 2018).

From the perspective of signal transmission, the CFO, as the financial strategy maker and executor of the company, plays a core role in understanding and controlling the company's financial status (Geiger & North, 2006), while the company secretary, as a senior manager of listed companies, primarily responsible for information disclosure and investor relations management, acts as the key link between the company and the external world (Bu, 2022).

When the CFO serves concurrently as the company secretary, this dual role brings unique advantages to the accurate disclosure of corporate information and the transparency of financial decisions (Wang et al., 2023).

In this role, the CFO serving as company secretary can not only provide detailed financial data but also deeply explain the economic implications behind these data, improving the transparency of information and the understanding and acceptance of investors. At the same time, financing constraints, as a key factor affecting the sustainable development of enterprises, are particularly significant for those with limited resources or unfavorable market conditions. In financing activities, the role of the CFO serving as company secretary allows them to directly influence the enterprise's financing strategy and conditions (Du et al., 2019), while also improving the financing environment and enhancing the likelihood and conditions of obtaining funds (Wang et al., 2020).

Therefore, studying the role of CFOs serving as company secretaries in information disclosure and financing constraints and how these factors collectively impact the sustainable development performance of enterprises is of significant importance for understanding and promoting the long-term stable development of enterprises.
This article uses companies listed on the Shanghai and Shenzhen A-shares markets from 2010 to 2020 as samples to explore the impact of CFOs serving concurrently as secretaries of the board on corporate sustainable development performance, as well as the role of two mediating variables: information disclosure quality and financing constraints.

The contributions of this study are threefold:

First, it identifies the significant impact of CFOs serving concurrently as secretaries of the board on corporate sustainable development performance, providing a valuable addition to the literature on the roles of CFOs and corporate sustainable development performance.

Second, it confirms the mediating role of information disclosure quality and financing constraints between the dual role of CFOs and corporate sustainable development performance, further enriching the literature on information disclosure quality and financing constraints.

Third, through examining the nature of ownership and company size, it finds that the impact of CFOs serving concurrently as secretaries of the board on financial performance, environmental and social responsibility performance, information disclosure quality, and financing constraints is more significant in non-state-owned and small and medium-sized enterprises.

Moreover, this study provides valuable insights for the selection and appointment of executives in listed companies, the optimization of financing strategies, and for regulatory authorities and the government in designing more effective regulatory policies to promote the long-term healthy development of enterprises and the prosperity of China's capital market.

**Theoretical analysis and research hypotheses**

*The Impact of the CFO Serving as Board Secretary on Sustainable Development Performance*

The upper echelons theory emphasizes how the personal characteristics and backgrounds of corporate executives significantly influence their decision-making behaviors and corporate performance (Hambrick & Mason, 1984).

In listed companies, CFOs and secretaries of the board play crucial roles, with CFOs primarily responsible for financial management and strategic planning, while secretaries of the board handle corporate governance, information disclosure, and investor relations management. In recent years, the practice of CFOs serving concurrently as secretaries of the board has become increasingly common among Chinese-listed companies, highlighting the broad recognition of the CFO's core role within the enterprise. Studies have shown that CFOs serving in this dual capacity can significantly enhance a company's financial and operational performance, demonstrating the positive effects of this role integration on corporate performance. In particular, when CFOs also hold the position of secretary of the board, they can create synergies in the production and release of information, significantly affecting the efficiency of the capital market and the company's overall performance.

This merger of roles not only helps CFOs to fully understand the operations of the enterprise but also encourages them to pay more attention to the goals of sustainable development. For example, the arrangement of CFOs serving concurrently as secretaries of the board has a positive effect on mitigating company stock price crash risk and improving the efficiency of the capital market (Peng & Zheng, 2018). Therefore, this role integration strategy not only optimizes a company's information disclosure and investor relations
management but also enhances corporate value by promoting a robust investment style and effective capital allocation (Jiang et al., 2016; Zhang & Li, 2019).

From the perspective of performance, executives have a profound impact on a company's performance in environmental and social responsibility responsibilities. Research indicates that the executive team's environmental emphasis on environmental protection directly drives progress in green technology innovation within the company (Zou et al., 2019).

Moreover, the impact of executives' public service experience on corporate environmental performance varies by the nature of the enterprise, especially in private enterprises, where such experience may negatively affect environmental performance (Wang et al., 2021).

The gender of executives is also an important factor, with studies finding that female executives are more likely to focus on corporate ethics and social responsibility, thereby positively influencing corporate environmental performance (Qiu & Zhang, 2018; Wu & Huang, 2013).

Extending the theory of executives' impact on corporate environmental social responsibility performance to the context of CFOs serving concurrently as secretaries of the board, we believe that the combination of CFO and secretary of the board roles can have a significant positive impact on a company's environmental social responsibility performance. The CFO's expertise in financial management and deep understanding of corporate operations, combined with the secretary's capabilities in information disclosure and investor relations management, can provide a strong impetus for the company's performance in environmental protection. This role integration helps the CFO serving as secretary of the board to more comprehensively understand and advance the company's environmental strategy, thereby significantly enhancing the company's performance in this area.

Based on the above analysis, this paper proposes the following hypotheses:

Hypothesis 1a: CFOs serving concurrently as secretaries of the board can significantly improve corporate financial performance.

Hypothesis 1b: CFOs serving concurrently as secretaries of the board can significantly enhance corporate environmental and social responsibility performance.

The mediating role of information disclosure quality

Information asymmetry is a common barrier between enterprises and investors, but this issue can be effectively mitigated by improving the quality of information disclosure. When the market recognizes a company's profitability, investors are often willing to pay a higher price for its stocks, thereby enhancing the company's market value (Paul & Krishna, 2001). Moreover, enhancing the quality of information disclosure helps to reduce investors' compensation demands for risk, further decreasing the company's capital costs (Zeng & Lu, 2006).

A high level of information disclosure not only enables creditors to more accurately assess a company's financial situation and control operating costs, but it also boosts equity investors' confidence, attracts more capital investment, and promotes the development of the enterprise (Han & Wang, 2016; Tao, 2018).

Therefore, the quality of information disclosure has a direct impact on a company's ability to obtain financial support and its long-term sustainable development.
In the current market environment, CFOs and secretaries of the board play a crucial role in enhancing the quality of corporate information disclosure. Research shows that CFOs and secretaries of the board play a key role in ensuring the authenticity of accounting information and reporting to various stakeholders (Gupta et al., 2020).

Particularly when CFOs serve concurrently as secretaries of the board, their combined role is especially important for the comparability, timeliness, and accuracy of information disclosure. Studies have pointed out that this integration of roles helps to streamline internal communication processes, enhance risk avoidance awareness, and thereby improve the quality of information disclosure.

Based on the above analysis, this paper proposes the following hypotheses:

Hypothesis 2a: The quality of information disclosure mediates the relationship between CFOs serving concurrently as secretaries of the board and corporate financial performance.

Hypothesis 2b: The quality of information disclosure mediates the relationship between CFOs serving concurrently as secretaries of the board and corporate environmental and social responsibility performance.

**The mediating role of financing constraints**

Financing constraints, as a phenomenon of excessively high external financing costs caused by market imperfections, have been widely regarded as a significant factor limiting corporate investment from reaching its optimal level. In China, the issue of financing constraints has become one of the key barriers affecting economic transformation, upgrading, and corporate development (Deng & Zeng, 2014).

Financing constraints limit the efficiency of investment in state-owned enterprises (Li & Xie, 2018), weaken the positive impact of currency appreciation and R&D expenditure (Wang & Lu, 2018), reduce foreign direct investment, and significantly inhibit enterprises' import behavior, innovation investment, and R&D intensity (Yang et al., 2021), thereby potentially affecting the investment in sustainable development projects and, consequently, their sustainable development performance.

CFOs serving concurrently as secretaries of the board play an important role in finding suitable financing channels and negotiating financing conditions. By optimizing the financing structure and improving the cost of capital, CFOs serving in this dual capacity provide a more favorable financing environment for enterprises, enabling them to respond more flexibly to market changes and investment opportunities, thereby enhancing financial performance. At the same time, by alleviating financing pressures, enterprises can allocate more resources to environmental protection and social responsibility projects, thus improving their environmental and social responsibility performance.

Therefore, by mitigating financing constraints, CFOs serving concurrently as secretaries of the board not only promote the improvement of corporate financial performance but also strengthen the enterprise's performance in environmental and social responsibilities, having a positive impact on corporate sustainable development performance. Based on this, the following hypotheses are proposed:

Hypothesis 3a: Financing constraints mediate the relationship between CFOs serving concurrently as secretaries of the board and corporate financial performance.

Hypothesis 3b: Financing constraints mediate the relationship between CFOs serving concurrently as secretaries of the board and corporate environmental and social responsibility performance.
In summary, the research framework of this paper is shown in Fig. 1.

Data selection, model design, and variable definition

Data Selection
The research data for this paper were sourced from three major databases: WIND, CSMAR, and Hexun. The study focuses on companies listed on the A-share market from 2010 to 2020. A rigorous screening of the sample data was conducted, primarily excluding:
1. companies designated as ST in the year of observation;
2. financial enterprises; and
3. samples with missing data for any year.
After the screening process, 21,980 annual observations across 3,605 companies were obtained, and a winsorization process was applied to continuous variables at the 0.1% and 99.9% percentiles.
Due to a significant reduction in the coverage of Hexun's data in 2021 and 2022, which only released environmental social responsibility performance data for a few hundred listed companies - a substantial decrease compared to earlier periods - to avoid the impact of incomplete data on the accuracy and reliability of the research findings, data from 2021 and 2022 were excluded. The data were processed using Stata 17.0, in accordance with academic journal requirements.

Model design
(1) Hypotheses 1a and 1b suggest that the CFO serving concurrently as secretary of the board can significantly enhance a firm's financial performance and environmental social responsibility performance. In the model, CFO_BS represents the CFO serving concurrently as secretary of the board, ROA represents financial performance, and ENVI represents environmental and social responsibility performance. μ denotes firm-specific fixed effects, and εi,t represents the random error term. The models are specified as follows:
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\[ ROAi,t = \alpha_0 + \alpha_1 \text{CFO}_B Si,t + \alpha_2 \text{Size}_i,t + \alpha_3 \text{Levi}_t + \alpha_4 \text{Indep}_i,t + \alpha_5 \text{ROSi},t + \mu_i + \epsilon_i,t \]  
\[ \text{(1a)} \]

\[ \text{Envi},t = \alpha_0 + \alpha_1 \text{CFO}_B Si,t + \alpha_2 \text{Size}_i,t + \alpha_3 \text{Levi}_t + \alpha_4 \text{Indep}_i,t + \alpha_5 \text{ROSi},t + \mu_i + \epsilon_i,t \]  
\[ \text{(1b)} \]

(2) Hypotheses 2a and 2b propose that the CFO serving concurrently as secretary of the board can significantly improve the quality of information disclosure and alleviate financing constraints. In the model, evaluation represents the quality of information disclosure, and SA represents financing constraints. The models are specified as follows:

\[ \text{Evaluation}_i,t = \alpha_0 + \alpha_1 \text{CFO}_B Si,t + \alpha_2 \text{Size}_i,t + \alpha_3 \text{Levi}_t + \alpha_4 \text{Indep}_i,t + \alpha_5 \text{ROSi},t + \mu_i + \epsilon_i,t \]  
\[ \text{(2a)} \]

\[ \text{SA}_i,t = \alpha_0 + \alpha_1 \text{CFO}_B Si,t + \alpha_2 \text{Size}_i,t + \alpha_3 \text{Levi}_t + \alpha_4 \text{Indep}_i,t + \alpha_5 \text{ROSi},t + \mu_i + \epsilon_i,t \]  
\[ \text{(2b)} \]

(3) Hypotheses 3a and 3b suggest that the quality of information disclosure and financing constraints play mediating roles between the CFO serving concurrently as secretary of the board and both financial performance and environmental and social responsibility. Based on models (1a) and (1b), mediating variables for the quality of information disclosure and financing constraints are added to test their mediating effects. The models are specified as follows:

\[ \text{ROAi},t = \alpha_0 + \alpha_1 \text{CFO}_B Si,t + \alpha_2 \text{Evaluation}_i,t + \alpha_3 \text{SA}_i,t + \alpha_4 \text{Size}_i,t + \alpha_5 \text{Levi}_t + \alpha_6 \text{Indep}_i,t + \alpha_7 \text{Growth}_i,t + \alpha_8 \text{ROSi},t + \mu_i + \epsilon_i,t \]  
\[ \text{(3a)} \]

\[ \text{Envi},t = \alpha_0 + \alpha_1 \text{CFO}_B Si,t + \alpha_2 \text{Evaluation}_i,t + \alpha_3 \text{SA}_i,t + \alpha_4 \text{Size}_i,t + \alpha_5 \text{Levi}_t + \alpha_6 \text{Indep}_i,t + \alpha_7 \text{Growth}_i,t + \alpha_8 \text{ROSi},t + \mu_i + \epsilon_i,t \]  
\[ \text{(3b)} \]

**Variable Definition**

(1) The synergistic development of financial performance and environmental social responsibility performance is a crucial factor in assessing corporate sustainability. It focuses not only on a company's ability to generate optimal financial performance in the market but also emphasizes its performance in reducing environmental burdens or even producing environmental benefits. This paper divides corporate sustainable development performance into two key dimensions: financial performance and environmental and social responsibility performance. The return on total assets (ROA) is used as a representative indicator of financial performance, while the overall score of environmental social responsibility published by Hexun is used as a representative indicator of environmental social responsibility performance (Xie, 2021).

(2) Independent variable: In the governance structure of listed companies, the arrangement of a CFO serving concurrently as the secretary of the board is becoming an increasingly common executive position. The CFO, or Chief Financial Officer, is typically the highest position responsible for financial management within a company. This role may appear under different titles in various companies, such as Finance Director or Chief Accountant, but its core functions are similar, encompassing comprehensive responsibilities for the company's financial planning, management, and reporting. When the CFO and the secretary of the board are the same person in a listed company, the value is assigned as 1; otherwise, it is assigned as 0 (Wang, 2019).

(3) Mediator variables: Information Disclosure Quality: The evaluation results of the quality of information disclosure for listed companies by the Shanghai and Shenzhen stock exchanges, ranging from A to D, represent "excellent, good, qualified," and "unqualified," respectively. For more convenient quantitative analysis, this paper converts these ratings into scores, assigning A = 4 points, B = 3 points, C = 2 points, and D = 1 point. (Bu, 2022). Financing Constraints: The SA index is used to measure the degree of financing constraints
faced by a company, where size represents the natural logarithm of the total assets of the company and age represents the number of years the company has been in operation.

In this paper, the SA values are all negative, with a larger SA indicating fewer financing constraints faced by the company (Ju, 2013).

\[ S_{Ai,t} = -0.737 \times \text{Size}_{i,t} + 0.043 \times (\text{Size}_{i,t})^2 - 0.040 \times \text{age}_{i,t} \]

(4) Control variables: These include company size, financial leverage, growth potential, the proportion of independent directors, and the profit margin on sales. The detailed descriptions of these variables are as follows (Tab. 1).

Table 1 - Variable definitions and data sources
(compiled by the author)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Dimension</th>
<th>Measurement Method</th>
<th>Literature Source</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable</td>
<td>Financial Performance (ROA)</td>
<td>Return on Assets: Net income divided by total assets</td>
<td>(Xie, 2021)</td>
<td>Wind</td>
</tr>
<tr>
<td></td>
<td>Environmental social responsibility Performance (Envi)</td>
<td>Overall score of listed companies' environmental and social responsibility</td>
<td></td>
<td>Hexun</td>
</tr>
<tr>
<td>Independant variable</td>
<td>CFO Serving as Board Secretary (CFO_BS)</td>
<td>Coded as 1 if the CFO and board secretary are the same person, otherwise 0</td>
<td>(Wang, 2019)</td>
<td>Csmar</td>
</tr>
<tr>
<td>Mediator variable</td>
<td>Quality of Information Disclosure (Evaluation)</td>
<td>Shanghai and Shenzhen stock exchanges' quality of information disclosure evaluation: A=4, B=3, C=2, D=1</td>
<td>(Bu, 2022)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FinancingConstraints (SA)</td>
<td>refer to Model (4)</td>
<td>(Ju, 2013)</td>
<td></td>
</tr>
<tr>
<td>Control variable</td>
<td>Company Size (Size)</td>
<td>Natural logarithm of total assets</td>
<td>(Bu, 2022)</td>
<td>Wind</td>
</tr>
<tr>
<td></td>
<td>Financial Leverage (Lev)</td>
<td>Natural logarithm of total assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proportion of Independent Directors (Indep)</td>
<td>Number of independent directors divided by the total number of board members</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Growth Potential (Growth)</td>
<td>Year-on-year growth rate of operating income</td>
<td>(Liu, 2023)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Profit Margin on Sales (ROS)</td>
<td>Net income divided by sales revenue</td>
<td>(Dong, 2017)</td>
<td></td>
</tr>
</tbody>
</table>

**Empirical analysis**

**Descriptive statistics and correlation analysis**

From Tab. 2, the mean value for CFOs serving concurrently as secretaries of the board is 0.134, indicating that in the sample companies, 13.4% have CFOs serving in this dual capacity.

Regarding the quality of information disclosure, the mean value is 3.033, with a maximum of 4 and a minimum of 1, suggesting that there is some variability in the information quality across different companies, yet the overall average level is satisfactory. The maximum financial performance is 0.821, and the minimum is -0.825, while the maximum value for environmental social responsibility performance is 90.87, and the
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minimum is -18.45, indicating significant differences in financial and environmental social responsibility performance among listed companies.

The average value for financing constraints (SA) is -3.776, indicating that companies generally face financing pressure during the sample period, with the minimum and maximum values being -5.600 and -2.113, respectively.

This shows that all companies face varying degrees of financing constraints, and overall, the financing pressure is significant. The median is -3.776, close to the mean value, suggesting that the financing constraint levels for most samples are concentrated around the mean value.

Table 2 - Descriptive statistics and correlation analysis of the main variables
(Compiled by the author)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std.Dev</th>
<th>Min</th>
<th>Max</th>
<th>CFO_BS</th>
<th>Evaluation</th>
<th>SA</th>
<th>Envi</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFO_BS</td>
<td>0.134</td>
<td>0.340</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td>3.033</td>
<td>0.617</td>
<td>-1</td>
<td>4</td>
<td>0.047***</td>
<td>0.067***</td>
<td>0.080***</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>-3.776</td>
<td>0.265</td>
<td>-5.600</td>
<td>-2.113</td>
<td>0.067***</td>
<td>0.080***</td>
<td>0.099***</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Envi</td>
<td>22.16</td>
<td>13.45</td>
<td>-18.45</td>
<td>90.87</td>
<td>0.017**</td>
<td>0.308***</td>
<td>0.099***</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.059</td>
<td>0.082</td>
<td>-0.825</td>
<td>0.821</td>
<td>0.045***</td>
<td>0.312***</td>
<td>0.083***</td>
<td>0.481***</td>
<td>1</td>
</tr>
</tbody>
</table>

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

According to Tab. 2, the independent variable of CFOs serving concurrently as secretaries of the board is positively correlated with the dependent variables ROA and ENVI at the 1% level, preliminary proving that CFOs serving in this dual capacity have a positive impact on corporate sustainable development performance.

The independent variable of CFOs serving concurrently as secretaries of the board is significantly related to the mediating variables Evaluation and SA at the 1% level, preliminary proving the correlation between the independent variable and the mediating variables. Simultaneously, the mediating variables Evaluation and SA are significantly related to the dependent variables ROA and ENVI at the 1% level, proving the correlation between the mediating variables and the dependent variables.

The analysis of empirical results

Tab. 3 examines the impact of CFOs serving concurrently as secretaries of the board on financial performance (ROA), environmental social responsibility performance (Envi), quality of information disclosure (Evaluation), and financing constraints (SA), and tests the mediating roles of information disclosure quality and financing constraints.

Columns (1) and (2) in Tab. 2 report the impact coefficients of CFOs serving concurrently as secretaries of the board on the dependent variables of financial performance and environmental social responsibility performance as 0.0052 (t = 2.6988, p<0.01) and 0.8356 (t = 2.5992, p<0.01), respectively.

These findings suggest that CFOs serving in this dual capacity contribute to the enhancement of corporate financial performance and environmental and social responsibility performance, thereby validating Hypotheses H1a and H1b.
Table 3 - Regression Test of the CFO Serving as board secretary on enterprise sustainable development performance (compiled by the author)

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFO_BS</td>
<td>0.0052***</td>
<td>0.8356***</td>
<td>0.0530***</td>
<td>0.0059***</td>
<td>0.0034*</td>
<td>0.5587*</td>
</tr>
<tr>
<td></td>
<td>(2.6988)</td>
<td>(2.5992)</td>
<td>(3.5179)</td>
<td>(2.0414)</td>
<td>(1.8158)</td>
<td>(1.7929)</td>
</tr>
<tr>
<td>Evaluation</td>
<td>0.0209***</td>
<td>2.7248***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(22.6753)</td>
<td>(17.7864)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>0.1208***</td>
<td>22.3282***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(25.2931)</td>
<td>(28.1669)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Individual Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Constant</td>
<td>0.1414***</td>
<td>41.4271***</td>
<td>2.9011***</td>
<td>-2.2697***</td>
<td>0.3549***</td>
<td>84.1997***</td>
</tr>
<tr>
<td></td>
<td>(17.0238)</td>
<td>(30.0885)</td>
<td>(45.0057)</td>
<td>(-182.19)</td>
<td>(25.4829)</td>
<td>(36.4276)</td>
</tr>
<tr>
<td>N</td>
<td>21980</td>
<td>21980</td>
<td>21980</td>
<td>21980</td>
<td>21980</td>
<td>21980</td>
</tr>
<tr>
<td>R2</td>
<td>0.1852</td>
<td>0.0549</td>
<td>0.1711</td>
<td>0.5370</td>
<td>0.2373</td>
<td>0.1128</td>
</tr>
</tbody>
</table>

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

Columns (3) and (4) examine the relationship between CFOs serving concurrently as secretaries of the board and their impact on the quality of information disclosure and financing constraints. The results show that the impact coefficients of CFOs serving in this dual capacity on the quality of information disclosure and financing constraints are 0.0530 (t = 3.5179, p<0.01) and 0.0059 (t = 2.0414, p<0.05), respectively, indicating that CFOs serving concurrently as secretaries of the board help improve the quality of information disclosure and alleviate corporate financing constraints, thus validating Hypotheses H2a and H2b.

Column (5), after incorporating the two mediating variables of information disclosure quality and financing constraints, shows that the impact coefficient of CFOs serving concurrently as secretaries of the board on financial performance is 0.0034, which is a decrease from before but still significant at the 10% level.

Simultaneously, the impact coefficients of information disclosure quality and financing constraints on financial performance are 0.0209 (t = 22.6753, p<0.01) and 0.1208 (t = 25.2931, p<0.01), respectively, significant at the 1% level, indicating that information disclosure quality and financing constraints partially mediate the relationship between CFOs serving concurrently as secretaries of the board and financial performance, thereby validating Hypothesis H3a.

Column (6), after adding the two mediating variables, shows that the impact coefficient of CFOs serving concurrently as secretaries of the board on environmental social responsibility performance (Envi) is 0.5587, which has decreased from before but remains significant at the 10% level.

Simultaneously, the impact coefficients of information disclosure quality and financing constraints on environmental social responsibility performance are 2.7248 (t = 17.7864, p<0.01) and 22.3282 (t = 28.1669, p<0.01), respectively, significant at the 1% level, indicating that information disclosure quality and financing constraints partially mediate the relationship between CFOs serving concurrently as secretaries of the board and environmental social responsibility performance, thereby validating Hypothesis H3b.
Heterogeneity analysis

Ownership property heterogeneity

State-owned and non-state-owned enterprises exhibit fundamental differences in ownership structure and policy orientation, which may significantly influence the impact of management roles on corporate finance, social responsibility, information disclosure, and financing activities.

Differentiating between state-owned and non-state-owned enterprises to study the role of CFOs serving concurrently as secretaries of the board can provide us with a more comprehensive and detailed perspective on corporate governance diversity and performance impact.

Empirical results, as shown in Tab. 5, reveal that in non-state-owned enterprises, CFOs serving in this dual capacity have a positive and significant impact on financial performance, environmental social responsibility performance, quality of information disclosure, and financing constraints.

Non-state-owned enterprises tend to be more flexible and market-oriented in pursuing financial performance and market competitiveness. CFOs serving concurrently as secretaries of the board can enhance decision-making efficiency, strengthen financial control, and optimize information disclosure processes, thereby improving corporate performance. Specifically, in terms of financial performance, CFOs serving in this dual role may facilitate rapid response and execution of financial decisions, which is particularly important for non-state-owned enterprises sensitive to market changes.

The positive impact of CFOs serving concurrently as secretaries of the board on environmental and social responsibility performance in non-state-owned enterprises may stem from an emphasis on corporate reputation and brand value, an asset that cannot be overlooked in long-term competition. In terms of information disclosure quality, the merger of CFO and secretary of the board roles may enhance the consistency and coordination of information strategies, improve the quality and timeliness of information disclosure, and increase the market transparency of corporate activities. In financing constraints, CFOs serving concurrently as secretaries of the board may improve the communication efficiency of non-state-owned enterprises with capital markets and reduce information asymmetry issues, thereby facilitating better financing conditions and broader financing channels.

Columns (5) to (8) indicate that in state-owned enterprises, CFOs serving concurrently as secretaries of the board have no significant impact on financial performance, environmental and social responsibility performance, or quality of information disclosure but have a negative and significant effect on financing constraints.

This may be due to the unique policy orientation and social responsibilities of state-owned enterprises, which require a balance between financial performance and state-designated socio-economic objectives. CFOs serving in this dual capacity may not significantly enhance the financial performance of these enterprises due to their financial decisions being heavily influenced by external policy factors.

Regarding environmental and social responsibility performance, state-owned enterprises may already be guided by policies requiring more resources and attention in this area; hence, CFOs serving concurrently as secretaries of the board may not bring additional significant improvements.
As for the quality of information disclosure, state-owned enterprises are already subject to strict regulatory requirements, and CFOs serving in this dual capacity may not significantly impact the existing information disclosure processes. The negative impact on financing constraints may be because, in state-owned enterprises, CFOs serving concurrently as secretaries of the board could lead to overly centralized management power, potentially affecting internal oversight and checks and balances on financing decisions. When one individual holds two key positions related to finance and information disclosure, it may increase potential conflicts of interest, decrease the transparency of decisions, and thereby affect the confidence of external investors and financing institutions in the enterprise's financing capabilities.

Furthermore, if a CFO cannot effectively manage the independence and expertise required for both roles after serving concurrently as secretary of the board, this may impact the formulation and execution of corporate financial strategies, leading to reduced financing efficiency and increased financing constraints.

Table 4 - Test of ownership heterogeneity
(compiled by the author)

<table>
<thead>
<tr>
<th></th>
<th>Non-State-Owned Enterprises</th>
<th>State-Owned Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFO_BS</td>
<td>0.0070***</td>
<td>0.0493***</td>
</tr>
<tr>
<td></td>
<td>(3.0165)</td>
<td>(-1.5292)</td>
</tr>
<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Individual Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Constant</td>
<td>0.1417***</td>
<td>0.9600***</td>
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<tr>
<td></td>
<td>(14.2053)</td>
<td>(7.1754)</td>
</tr>
<tr>
<td>R2</td>
<td>0.2300</td>
<td>0.2438</td>
</tr>
</tbody>
</table>

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

Firm size heterogeneity

Enterprises of different sizes exhibit significant disparities in resource acquisition, market influence, decision-making processes, and management structures. Large enterprises may have more extensive channels for resource acquisition, stronger market influence, and more mature decision-making and management structures, while small enterprises might be more flexible, innovative, and capable of responding more quickly to market changes.

These fundamental differences could lead to significant variations in the role and impact of CFOs serving concurrently as secretaries of the board across enterprises of different sizes. Through group analysis, the influence of enterprise size on management effectiveness can be more accurately assessed, thereby enhancing the precision and interpretability of the model.

This also helps to test the applicability of higher-order theories and signaling theory in different economic entities, providing a more comprehensive analysis for theoretical research and practical management.

Following existing research (Shenget et al., 2021), enterprises are divided into large and small-medium enterprises based on the median size for analysis. Empirical results, as shown in Table 5, indicate that in small-medium enterprises, CFOs serving concurrently as
secretaries of the board have a significant positive impact on financial performance, environmental and social responsibility performance, the quality of information disclosure, and financing constraints.

This may be because small-medium enterprises typically face limitations in financial and human resources, where CFOs serving in this dual role play a core role in effective financial planning, decision-making efficiency, internal control, and risk management. With their extensive professional knowledge and management capabilities, they effectively enhance the operational efficiency and strengthen the risk control of the enterprise, significantly improving its sustainable development performance.

Results from columns (5) to (8) show that in large enterprises, CFOs serving concurrently as secretaries of the board have no significant impact on financial performance, environmental and social responsibility performance, or financing constraints, but significantly improve the quality of information disclosure at the 5% level.

This may be due to large enterprises possessing abundant resources and a strong market position, granting them more choices and flexibility in financing and financial management, thus potentially diluting the impact of CFOs serving in this dual capacity by market conditions, corporate strategy, and capital structure, among other factors.

In the realm of environmental and social responsibility performance, the performance of large enterprises is also influenced by a variety of factors, such as corporate culture, external policies, and market pressures, possibly leading to a relatively minor role for CFOs serving concurrently as secretaries of the board.

Meanwhile, large enterprises place special emphasis on high-quality information disclosure to maintain a good market reputation and solid investor relations. In this area, CFOs serving in this dual capacity play a crucial role, committed to enhancing the accuracy and transparency of information disclosure, thereby boosting market trust and corporate reputation.

Therefore, although the impact of CFOs serving in this dual capacity might be overshadowed by other factors in some aspects, their importance and direct contribution to corporate reputation in the realm of information disclosure remain prominent.

### Table 5 - Test of size heterogeneity
(compiled by the author)

<table>
<thead>
<tr>
<th></th>
<th>Small and Medium-Sized Enterprises</th>
<th>Large Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>CFO_BS</td>
<td>Model (1a)</td>
<td>Model (1b)</td>
</tr>
<tr>
<td></td>
<td>0.0063***</td>
<td>1.1145***</td>
</tr>
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<td></td>
<td>(2.1923)</td>
<td>(3.6072)</td>
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<td>Yes</td>
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<tr>
<td>Individual Fixed Effects</td>
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<td>Yes</td>
</tr>
<tr>
<td>Constant</td>
<td>0.2189***</td>
<td>30.6039***</td>
</tr>
<tr>
<td></td>
<td>(13.5011)</td>
<td>(17.5444)</td>
</tr>
<tr>
<td>N</td>
<td>10990</td>
<td>10990</td>
</tr>
<tr>
<td>R²</td>
<td>0.2133</td>
<td>0.0713</td>
</tr>
</tbody>
</table>

Note:***p <0.01. **p <0.05. *p <0.1
Robustness test: substitution of variables and expansion of the sample range

To further validate the reliability of the research findings, this study conducted robustness tests by replacing indicators and expanding the sample range. The financial performance indicator ROA was replaced with Tobin's Q value, and the environmental social responsibility performance data provided by Hexun was replaced with the comprehensive environmental social responsibility score from China Securities Index Co., Ltd. Given that the China Securities database offers comprehensive data from 2009 to 2022, this robustness test expanded the sample timeframe from the original 2010–2020 to 2009–2022, increasing the sample size from 21,980 to 29,840.

This modification not only enhanced the breadth and depth of the study but also compensated for the limitations that may arise from the original data's time range restrictions, making the results of the robustness tests more comprehensive and reliable. Additionally, controlling for year-fixed effects, regression results show that CFOs serving concurrently as secretaries of the board have a significantly positive impact on financial performance, environmental and social responsibility performance, the quality of information disclosure, and financing constraints.

Furthermore, the mediating effects of information disclosure quality and financing constraints are confirmed, with robustness test results consistent with the earlier findings of the paper.

Table 6 - Robustness tests: replacing core variables and expanding the sample range
(compiled by the author)

<table>
<thead>
<tr>
<th>Variables</th>
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<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model (1a)</td>
<td>Model (1b)</td>
<td>Model (2a)</td>
<td>Model (2b)</td>
<td>Model (3a)</td>
<td>Model (3b)</td>
<td></td>
</tr>
<tr>
<td>CFO_BS</td>
<td>0.1057***</td>
<td>0.4263***</td>
<td>0.0507***</td>
<td>0.0090*</td>
<td>0.0931*</td>
<td>0.3134***</td>
</tr>
<tr>
<td></td>
<td>(2.1200)</td>
<td>(3.6513)</td>
<td>(3.0825)</td>
<td>(1.7239)</td>
<td>(1.8800)</td>
<td>(2.8050)</td>
</tr>
<tr>
<td>Evaluation</td>
<td>0.0906***</td>
<td>1.3158***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.1358)</td>
<td>(20.6685)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>0.8923***</td>
<td>5.1566***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7.0238)</td>
<td>(15.2951)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Controls</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Individual/Time</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Fixed Effects</td>
<td>Constant</td>
<td>9.1949***</td>
<td>71.3119***</td>
<td>2.7022***</td>
<td>-2.2788***</td>
<td>10.9833***</td>
</tr>
<tr>
<td></td>
<td>(30.8340)</td>
<td>(111.8715)</td>
<td>(32.8661)</td>
<td>(48.9331)</td>
<td>(27.3089)</td>
<td>(81.8360)</td>
</tr>
<tr>
<td>Observation Value</td>
<td>29840</td>
<td>29840</td>
<td>29840</td>
<td>29840</td>
<td>29840</td>
<td>29840</td>
</tr>
<tr>
<td>R²</td>
<td>0.1173</td>
<td>0.0171</td>
<td>0.0303</td>
<td>0.4956</td>
<td>0.1229</td>
<td>0.0675</td>
</tr>
</tbody>
</table>

Note:***p <0.01. **p <0.05. *p <0.1
Conclusion and discussion

**New findings and conclusions**

This study, from the perspectives of corporate governance and financial management, starts with the dual role of CFOs serving concurrently as secretaries of the board, leveraging theoretical foundations such as upper echelons theory and signaling theory to delve into the impact of CFOs serving in this capacity on corporate information disclosure quality, financing constraints, and sustainable development performance. The main findings of this paper are as follows:

First, the management model of CFOs serving concurrently as secretaries of the board significantly enhances the firm's financial performance and environmental and social responsibility performance. This result indicates that the integration of CFO and secretary of the board roles not only contributes to improving the financial health of the firm but also strengthens the commitment to social responsibility.

The study further explores the impact of CFOs serving concurrently as secretaries of the board on the quality of information disclosure and financing constraints. The results show that when CFOs also hold the position of secretary of the board, the quality of information disclosure is significantly improved, and financing constraints are effectively alleviated, indicating that the management model of CFOs serving concurrently as secretaries of the board not only optimizes the company's information transmission mechanism but also reduces the financing pressure of firms in the capital market.

Finally, by verifying the mediating effects of information disclosure quality and financing constraints, this study reveals the impact mechanism of CFOs serving concurrently as secretaries of the board on corporate sustainable development performance.

Second, ownership and size heterogeneity play a crucial role in the relationship between CFOs serving concurrently as secretaries of the board and corporate sustainable development performance. Empirical results indicate that in non-state-owned enterprises, CFOs serving in this dual capacity have a significant positive impact on the firm's financial performance, environmental and social responsibility performance, quality of information disclosure, and financing constraints.

In contrast, in state-owned enterprises, CFOs serving concurrently as secretaries of the board have a significant negative impact only on financing constraints. CFOs serving in this dual capacity in small and medium-sized enterprises have a positive and significant impact on financing constraints, information disclosure quality, financial performance, and ESG performance, while in large enterprises, CFOs serving concurrently as secretaries of the board are only significantly related to information disclosure quality at the 5% level.

**Managerial implications and contribution to practice**

The above findings have important managerial and practical implications, with the following implications:

First, it provides scientific reference standards for enterprise talent selection and appointment. Enterprises need to establish scientific and rigorous principles and standards for CFO selection, combining the company's own industry characteristics, ownership properties, size, and current strategy to decide whether to let the CFO concurrently serve as the secretary of the board. In conjunction with the individual background characteristics of the candidates, prioritize the selection of leaders who match the company's current financial condition and
strategic direction, improving the efficiency and quality of corporate decision-making and making the operation and development of the company more effective.

Second, it offers new references for regulatory bodies and governments to formulate more effective regulatory policies. Based on the research findings, regulatory bodies can set professional qualification requirements for the position of CFOs serving concurrently as secretaries of the board to ensure that these key positions are held by individuals with sufficient capability and experience, thereby enhancing the quality of corporate information disclosure and sustainable development performance.

Governments can also formulate strict laws, regulations, and punitive measures against potential earnings manipulation behaviors to protect the interests of investors, maintain the stability of the financial market, and promote social fairness and justice.

**Limitations and further development**

This study selected CFOs serving concurrently as secretaries of the board as our research subjects and used a binary variable for quantification.

However, this method of classification and quantification may not be sufficient to reveal the subtle differences between CFOs serving concurrently as secretaries of the board for varying lengths of tenure. The duration of serving concurrently as secretary of the board in a company may influence individual industry preferences, which could lead to variations in the decision-making impacts of CFOs serving in this dual role.

Future research could further optimize the measurement method, for instance, by introducing a continuous variable for the tenure of serving concurrently to more finely assess the impact of the length of time serving on the behavior of CFOs serving concurrently as secretaries of the board.

Additionally, for evaluating corporate sustainable development performance, future studies could explore more precise and comprehensive indicators, moving beyond the current measurement framework to discover new data and indicator systems, and forming a more comprehensive and accurate measurement method in line with the standards of academic journals.

**Acknowledgement**

The research was supported by the “Intelligent Financial Course Group” under grants from the Curriculum Office at Dongguan City College (Guang Dong Province, China).

**References:**


R&D TEAM TRUST ON INNOVATION PERFORMANCE


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*Paper submitted* 19 January 2024
*Paper accepted for publishing* 02 March 2024
*Paper revised* 11 March 2024
*Paper published online* 30 March 2024