The Impact of Couple Shareholding on Corporate ESG Rating

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Abstract. ESG rating is the key evaluation standard for the sustainable development of enterprises, and the governance model of couple shareholding is an material driving force for enterprises to increase ESG rating. Based on the perspective of corporate governance and business risk, this paper uses the sample interval of ESG rating of A-share listed family enterprises in China from 2010 to 2021 to research the relationship between husband and wife 's joint shareholding and ESG rating. The study found that the joint shareholding of husband and wife is positively related to the ESG same time, compared with high capital-intensive enterprises, in low capital-intensive enterprises, the relationship between joint ownership of husband and wife and ESG rating is more significant. Further research finds that the capital accumulation rate can enhance the positive correlation between the ESG rating of the enterprise and the joint ownership of the husband and wife to a certain extent. Finally, couple's joint holdings can reduce the company 's operating risk, thereby enhancing the company 's ESG rating. The research in this paper has theoretical value and reference meanings for the corporate governance of family enterprises.

Keywords: Couple Shareholding, ESG Rating, Operating Risk, Corporate Governance.

1. Introduction

The private economy is a new force for promoting Chinese-style modernization, an important foundation for China's high-quality development, and an important force for building China into a great modern socialist country in all respects and achieving the second centenary Goal. Under the background of increasing downward pressure on the domestic economy, private enterprises are becoming an important source of China's economic resilience. As an important organizational form of the private economy [1], family enterprises, combined with the "double carbon" strategy written into the government work report in recent years, realize sustainable development of family enterprises, not only related to their own long-term development, but also the requirements and responsibilities of The Times.

At the 2020 Entrepreneurship Symposium, President Xi pointed out that "enterprises have both economic and legal responsibilities, as well as social and moral responsibilities.". Therefore, the ESG rating of enterprises, which integrates the environment, society, and governance into the enterprise evaluation system, has emerged and received increasing attention from enterprises. A good ESG rating result helps to enhance a company's reputation, and conducting ESG ratings can effectively force companies to strengthen their response measures in environmental, social, and governance aspects, and improve their ESG management level. At present, the academic community has conducted some research on the joint ownership of spouses, mostly focusing on the relationship between joint ownership of spouses and internal governance or corporate social responsibility. BELENZON S (2016) [2] and Xiao Jinli (2018) [3] studied the impact of the joint ownership model of spouses on corporate financial risk preferences, using the conservative personality traits of women as a starting point. They believed that joint ownership of spouses would lead to a clear tendency towards conservatism; Zhang Xuezhi (2022) [4] and others studied the impact of the governance model of joint ownership by spouses on the fulfillment of corporate social responsibility; Xu Yupeng (2021) [5] and others integrated agency theory, social emotional wealth theory, and other related theories to point out that the common goals and division of labor cooperation of jointly owned enterprises by spouses are conducive to stimulating enterprise innovation. In terms of corporate ESG rating, the academic community has paid attention to various influencing factors of corporate ESG rating. Scholars have studied the relationship between external factors such as environmental protection fees and taxes [6] and corporate ESG ratings, while others have studied the relationship between internal control factors such as state-owned stock participation [7], controlling shareholder equity pledge, financing constraints [8], and corporate ESG ratings. However, few studies have approached this issue from the perspective of family-owned enterprises, and there has been little attention paid to joint ownership by spouses.

In recent years, with the in-depth analysis of the internal governance structure of family businesses by the academic community, more and more researchers have noticed that the goals of family members are not completely consistent [9], and different combinations of family members may lead to new changes in the decision-making of family businesses. As a common family governance model, married family businesses, combined with the ESG rating of enterprises that are gradually entering the investor's view, have become the main research question of this article on how joint ownership of spouses affects the ESG rating of family businesses.

The marginal contribution of this article lies in: firstly, it innovatively establishes a connection between marital joint shareholding and corporate ESG rating, and studies the relationship between the two, expanding the scope of academic research; Secondly, this article groups listed family businesses according to capital intensity and studies the heterogeneity characteristics in capital intensity between joint ownership by spouses and ESG ratings of the company. In addition, the capital accumulation rate was used as a moderating variable to investigate the moderating effect of capital accumulation rate on the ESG rating process of companies under the influence of joint ownership by spouses. More importantly, this article uses corporate operational risk as a mechanism variable to reveal the transmission channel between marital joint ownership and corporate ESG rating. Thirdly, this study has enlightening significance for the internal governance of family businesses and the improvement of ESG ratings, providing important references for enhancing the sustainable development capabilities of family businesses.

2. Theoretical analysis and research hypothesis

ESG rating is the evaluation of non-financial indicators of enterprises. When a company jointly held by a couple faces an ESG rating, its impact may be manifested at multiple levels.

First of all, the couple 's co-shareholding may improve the ESG rating by reducing agency costs. The theory of gender role socialization holds that women will be more concerned about the well-being of others and more sensitive to moral and ethical issues. The higher moral standards of female actual controllers make the company 's production and operation more standardized, and reduce the behavior of encroaching on the interests of small and medium shareholders and other stakeholders[10].At the same time, from the perspective of agency theory, due to the concentration of proprietorship and management rights in a family, the agency cost under the joint control of husband and wife is relatively low, and the internal agency problem is easier to solve. The corporate governance ability of the family firm can alleviate or even eliminate the damage to the operating efficiency, performance and even existential crisis of the business caused by the characteristics of family favoritism and weak risk-taking, showing good internal governance performance of the company[11].It also helps to alleviate agency conflicts, prevent and curb opportunistic behaviors of major shareholders who abuse power for personal gain and infringe on the interests of creditors, staffs and other stakeholders, so as to improve the performance of corporate social responsibility[12]. Enterprises with less agency problems and higher pursuit of corporate value have better internal control quality. Effective internal control can improve the level of corporate governance [13], thus improving the ESG rating.

Secondly, the joint holdings of a couple may reduce the company’s risk-taking level and operational risk, thereby enhancing the company’s ESG rating.In general, the wife is more conservative and the husband is more radical. The level of risk in family decision-making may be a compromise between the two. Therefore, when the husband and wife jointly hold shares and make corporate risk decisions together, the wife is more likely to supervise the husband. The conservative tendency of the wife may lead to more cautious decision-making by the company. At the same time, the stronger the male chauvinism tendency, the stronger the entrepreneur 's personality, the more confident, the more radical the behavior, and the more risk appetite when managing the enterprise.[14]In the family firms that are jointly owned by husband and wife, the husband who is willing to share with his wife has a lower male chauvinism tendency, a significantly higher level of cash holdings, and the wife 's shareholding will significantly increase the probability of the company’s hiring female executives. These factors make the risk-taking level of the company that is jointly owned by the husband and wife significantly lower. In addition, the degree of trust between husband and wife is high, the communication efficiency is strong, the information sharing degree is high, the stable relationship between husband and wife has a strong sense of risk aversion, and it is easier to form a tacit understanding in the face of problems, and to resist risks together. This stable state can also improve the overall judgment, decision-making and execution, and reduce the uncertainty of business operations [15], thus improving the ESG rating.

In addition, companies under the joint shareholding of husband and wife may pay attention to improving the company’s ESG rating for the company’s sustainable development.Reputation theory shows that the founding family will place their emotions, resources and ideals for the future on the development of family businesses, and are more concerned about the family's reputation and tend to establish and protect the family's reputation[16].The theory of social emotional wealth holds that family owners are mainly concerned with protecting the value of enterprises from non-economic goals, such as family harmony and long-term sustainable development of enterprises.Therefore, husband and wife tend to assume more social responsibility[17],may pay more attention to the enterprise's ESG performance, promote the company to make positive changes in ESG, so as to ensure that the enterprise's decision-making in line with social expectations and ethical standards, this positive shareholder behavior helps to improve the enterprise 's ESG rating.

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

H1: Couple's joint holdings will improve ESG rating.

3. Research design

3.1. Sample selection and data sources

This article selects family businesses listed on the Shanghai and Shenzhen A-shares of China from 2010 to 2021 as the research object. The data screening steps are as follows: (1) excluding companies in the insurance, banking, and other financial industries; 2) Exclude companies with ST and * ST; [16]3) Remove observations with missing data. In addition, to eliminate the impact of extreme values, all continuous variables were subjected to 1% and 99% quantile truncation. Finally, the sample contains 12006 observations from 1738 listed family businesses. All ESG ratings and control variable data in the samples of this article are sourced from the CSMAR database, while the actual controller and their spouse data are sourced from the CNRDS family business database's "Explanation of the Actual Controller's Kinship Relationship" data, which is manually collected and supplemented through IPO prospectuses, Baidu search, and other means.

3.2. Description of variables

3.2.1 Dependent variable

The dependent variable is ESG rating (ESG), and this article selects the Huazheng ESG rating index for measurement. The Huazheng ESG rating is divided into nine levels from low to high, namely C-AAA. In order to conduct better research, this article assigns ESG ratings of 1-9 based on C-AAA.

3.2.2 Independent Variable

The independent variable is couple shareholding (Co_share), which is a 0-1 variable. If both the actual controller and spouse of a listed family business hold shares in the company, there is $\text{Co\_share} = 1$; otherwise, there is $\text{Co\_share} = 0$.

3.2.3 Control variables

Referring to the approach of Su Jun and Xue Lin (2024) etal. [16], the control variables selected in this article mainly include enterprise size (Size), the proportion of the largest shareholder's shareholding (Top1), the proportion of independent directors (Indep), the return on assets (ROA), the proportion of fixed assets (FIXED), the growth rate of operating income (Growth), the book to market ratio (BM), the auditing unit (Big4), the combination of two positions (Dual), and the asset liability ratio (Lev). This article also controls for fixed effects of Year and Industry.
The specific variable definitions are shown in Table 1.

Table.1. Variable definition

Variable type	Symbols	Definition
Dependent variable	ESG	According to the rating of Huazheng ESG, it is divided into nine levels and assigned a value of 1-9.
Independent Variable	Co_share	If the actual controller and spouse of a listed family business both hold shares in the company, assign a value of 1; otherwise assign a value of 0.
Control variables	Size	Natural logarithm of total assets
	Top1	The ratio of the number of shares held by the largest shareholder to the total number of shares in the company.
	Indep	The proportion of independent directors in the board of directors
	ROA	The ratio of pre-tax profit to average total assets
	FIXED	The proportion of fixed assets in total assets
	Growth	(Current operating income-beginning of year operating income) /beginning of year operating income
	BM	The ratio of market price per share to net assets per share
	Big4	Is it audited by the four major accounting firms? If yes, take 1; otherwise, take 0
	Dual	When the chairman and general manager are held by the same person, take 1; otherwise,take 0
	Lev	The percentage of total liabilities in total assets
	Year	Year dummy variable
	Industry	Industry dummy variable

3.3. Model construction

In order to test whether the joint ownership of spouses has an impact on the ESG rating of enterprises, this article constructs a regression model (1).

$$ESG_{i,t} = \alpha_0 + \alpha_1 * Co\_share_{i,t} + \alpha_i \sum Controls_{i,t} + Year + Industry + \varepsilon_{i,t} \quad (1)$$

In Model (1), $\text{ESG}_{\text{i,t}}$ is the Huazheng ESG rating of the first listed family business company in, $\text{Co\_share}_{\text{i,t}}$ is the joint shareholding of the husband and wife of the first listed family business company in, $\text{Controls}_{\text{i,t}}$ is a series of control variables of the first listed family business company in, Year is the year dummy variable, Industry is the industry dummy variable, and $\varepsilon_{\text{i,t}}$ is the residual term.

4. Empirical analysis

4.1. Descriptive statistics

The descriptive statistical results on the main variables are shown in Table 2. From the table, we can see that the maximum value of the couple 's joint shareholding is 1, the minimum value is 0, the mean value is 0.502, and the standard deviation is 0.500, indicating that 50.2 % of China 's A-share listed family businesses are actually controlled by the couple 's joint shareholding. The maximum value of ESG rating is 8, the minimum value is 1, the mean value is 4.086, and the standard deviation is 1.104, signifying that the ESG rating of the sample enterprises is quite different.

Table.2. Descriptive statistics

Variable	N	Mean	SD	Min	p50	Max
ESG	12,006	4.086	1.104	1	4	8
Co share	12,006	0.502	0.500	0	1	1
Size	12,006	21.88	1.106	19.59	21.73	26.45
Top1	12,006	34.27	13.89	8.087	32.39	75.84
Indep	12,006	37.91	5.266	27.27	36.36	60
ROA	12,006	0.061	0.074	-0.365	0.060	0.286
FIXED	12,006	0.192	0.129	0.002	0.174	0.736
Growth	12,006	0.200	0.422	-0.658	0.134	4.024
BM	12,006	0.589	0.224	0.064	0.594	1.246
Big4	12,006	0.027	0.161	0	0	1
Dual	12,006	0.394	0.489	0	0	1
Lev	12,006	0.379	0.195	0.027	0.367	0.908

4.2. Basic regression analysis

Table 3 reports the benchmark regression results of the couple's joint shareholding and ESG rating. The regression coefficient between the couple's joint holdings and the ESG rating is 0.1158, which is significant at the 1% level, indicating that the couple's joint holdings is positively correlated with the ESG rating, and the couple's joint holdings will improve the ESG rating results, verifying the hypothesis.

Table.3. Basic regression results

	(1)
VARIABLES	ESG
Co_share	0.1158***
	(3.11)
Size	0.2019***
	(9.06)
Top1	0.0058***
	(4.35)
Indep	0.0070***
	(2.62)
ROA	1.3070***
	(7.02)
FIXED	-0.0921
	(-0.70)
Growth	-0.0490**
	(-2.14)
BM	0.0131
	(0.17)
Big4	0.0445
	(0.43)
Dual	-0.0080
	(-0.27)
Lev	-0.9822***
	(-10.05)
Constant	-0.7221
	(-1.24)
Observations	12,006
Number of StockCode	1,738
R^2	0.1321
Year	YES
Industry	YES

4.3. Robustness check

4.3.1 Poisson model

The table 4 reports the regression results of the Poisson model of the husband and wife 's joint shareholding and ESG rating. As shown in the following table, the regression coefficient of the couple's joint holdings and ESG rating is 0.0243, and significant at the level of 1 %, indicating that the couple's joint holdings are positively correlated with ESG rating. The joint ownership of husband and wife can improve the ESG rating results, and the results of benchmark regression are verified.

4.3.2 Adding control variables

Considering the variables that may be missing in this paper, on the basis of the previous research, this part controls the variables such as Liquid ratio (Liquid), capital accumulation rate (RCA), the proportion of the second largest shareholder divided by the proportion of the first largest shareholder (Balance 1), and re-regression. As shown in the following table, the regression coefficient of the joint ownership of husband and wife and ESG rating is 0.1123, and significant at the level of 1 %, indicating that the joint ownership of husband and wife is direct correlation with ESG rating, the results of the baseline regression are further verified.

4.3.3 Increase the fixed effect

On the basis of the original, the interaction term of industry fixed effect and year fixed effect is further added to control the unobservable differences over time at the industry level. The regression results are shown in the following table. The coefficient is 0.0960, and significant at the level of 1 %, which is consistent with the benchmark regression results.

4.3.4 Replace dependent variable

According to the level of rating, our class ESG data is divided into two groups, and the dummy variable (ESG1) is constructed. The company with a high rating is assigned a value of 1, and the company with a low rating is assigned a value of 0. We use the Logit model to test them. The results are shown in the following table 4. The results show us the joint shareholding of husband and wife is significant at the level of 5% and the coefficient is positive, this is consistent with the previous results.

Table.4. Robustness check results

	(1)Poisson model	(2)Adding control variables	(3)Increase the fixed effect	(4)Replace dependent variable
	ESG	ESG	ESG	ESG1
Co_share	0.0243***	0.1123***	0.0960***	0.0312**
	(2.58)	(3.03)	(4.88)	(2.04)
Constant	-0.4991	-0.9460	-0.9030***	-1.1024***
	(-0.88)	(-1.61)	(-3.36)	(-5.43)
Observations	12,006	12,006	11,887	12,006
R^2	/	0.067	0.183	0.002
Controls	YES	YES	YES	YES
Year	YES	YES	YES	YES
Industry	YES	YES	YES	YES
Year * Industry	NO	NO	YES	NO

4.3.5 PSM

The company jointly held by husband and wife is set as the treatment group, the rest is the control group. All control variables are used as matching variables. The matching variables have passed the balance test, and the regression is carried out according to the 1:3 nearest neighbor matching, kernel matching and local linear regression matching for regression. From the regression results table 5, we can see that the joint ownership of husband and wife is significantly positively correlated with ESG rating, it further verifies the robustness of the benchmark regression.

Table.5. PSM

	(1)1:3 nearest neighbor matching	(2)Kernel matching	(3)Local linear regression matching
	ESG	ESG	ESG
Co_share	0.1031***	0.1123***	0.130***
	(2.76)	(3.03)	(0.0203)
Constant	-0.4991	-0.7229	3.9776***
	(-0.88)	(-1.24)	(277.86)
Observations	10,898	11,994	12,006
R^2	/	/	0.003
Controls	YES	YES	YES
Year	YES	YES	YES
Industry	YES	YES	YES

5. Further study

5.1. Heterogeneity analysis

This article starts with the basic characteristics of the company and selects capital intensity (CAP) as the grouping variable. The higher the value CAP is, the more capital intensive the listed family business is. This article divides the sample into high capital-intensive family businesses and low capital-intensive family businesses based on the median value of CAP. The regression results are shown in Table 6 (1)(2). It can be seen from the regression results that in the sample of low capital-intensive enterprises, the positive correlation between enterprise ESG rating and marital joint shareholding is more significant, while in the sample of high capital-intensive enterprises, the positive correlation between enterprise ESG rating and marital joint shareholding is not significant.

5.2. Moderating effects

This article starts with the company's performance indicators and selects the capital accumulation rate (RCA) as the moderating variable. The specific calculation method is shown in (2).

$$\mathrm{RCA} = \frac{\text{total capital for this year} - \text{total capital for the previous year}}{\text{total capital for the previous year}} * 100\% \tag{2}$$

The higher the RCAvalue, the higher the total capital of the listed family enterprise this year, and the faster the capital accumulation speed. This article generates the interaction term $\mathrm{RCA} * \mathrm{Co\_share}$ between RCA and Co_share for moderation effect analysis. The regression results are shown in Table 6 (3). It can be seen from the regression results that the interaction term $\mathrm{RCA} * \mathrm{Co\_share}$ has a significant relationship with ESG at the 1% level, with a regression value of 0.0848. The relationship between marital co ownership and corporate ESG rating is significant at the 1% level, with a regression value of 0.1001, indicating that the capital accumulation rate can to some extent enhance the positive correlation between corporate ESG rating and marital co-ownership.

Table.6. The regression results of heterogeneity analysis and moderating effects

	(1)	(2)	(3)
VARIABLES	High capital intensity	Low capital intensity	moderating effect
Co_share	0.0657	0.1841***	0.1001***
	(1.57)	(4.50)	(3.26)
RCA	/	/	-0.1012***
	/	/	(-4.29)
Co_share*RCA	/	/	0.0848***
	/	/	(2.74)
Constant	-0.3509	-0.6481	-0.7806*
	(-0.62)	(-0.75)	(-1.81)
Observations	6,025	5,981	12,006
R^2	0.1456	0.1477	0.1339
Controls	YES	YES	YES
Year	YES	YES	YES
Industry	YES	YES	YES
P-value	0.010**		/

5.3. Mechanism analysis

The information sharing between husband and wife is high and the communication is smooth. The family business under the joint stock of husband and wife will consider the long-term benefit of the enterprise, reduce the short-sighted behavior, improve the overall judgment, decision-making ability and execution ability, and reduce unnecessary errors, so as to reduce business risks, ensure the legal and compliant operation of the enterprise, reduce the risk of environmental protection, litigation and social responsibility of the enterprise, reduce the possibility of business crisis or even bankruptcy, make it possible for the enterprise to actively practice ESG, improve its sustainable development ability, and thus improve the enterprise 's ESG rating.

To verify the above mechanism, this paper refers to the practice of Li Jianjun[16] and Zhang Yang[16], and uses the Z index and earnings volatility index to measure the business risk of the enterprise, so as to reveal the channels through which the joint holdings of a couple affects the ESG rating.

Table 7 reports the regression results of the joint holdings of a couple on the operating risk. The results show that the regression coefficient between joint holdings of a couple and the Z index is -0.2265, which is significant at the 1 % level, and the regression coefficient of the joint holdings of a couple and the profit volatility is also significantly negative at the 1 % level. This shows that the couple's joint holdings can reduce the operating risk of the company and thus improve the ESG rating.

Table.7. Mechanism analysis test results

	（1）	（2）
VARIABLES	Zscore	Risk
Co_share	-0.2265***	-0.0054***
	(-3.40)	(-2.95)
Constant	11.5674***	0.0223
	(10.53)	(0.80)
Observations	12006	9384
R^2	0.565	0.053
Controls	Yes	Yes
Year	Yes	Yes
Industry	Yes	Yes

6. Conclusions

In recent years, with the penetrating study of the internal governance structure of the family in the theoretical circle, more and more researchers have noticed the common family governance model of husband and wife. It has played a significant role in the progress of enterprises, especially how to affect the company's ESG rating. Based on the level of corporate governance, this paper adopts the sample interval of ESG rating of A-share listed family firms in China from 2010 to 2021. The sample contains 12006 observations of 1738 listed family firms and studies the relationship between husband and wife 's joint shareholding and ESG rating. The study found that: First, the joint shareholding of husband and wife is positively correlated with the ESG rating, and the joint shareholding of husband and wife will increase the ESG rating. Second, compared with high capital-intensive enterprises, in low capital-intensive enterprises, the relationship between joint ownership of husband and wife and ESG rating is more significant. Thirdly, the capital accumulation rate can enhance the direct correlation between the ESG rating of the enterprise and the joint shareholding of the husband and wife to a certain extent. Fourth, husband and wife co-holdings can reduce the company's operating risk, thereby enhancing the company's ESG rating.Based on the above conclusions, the article draws the following enlightenment:

Firstly, family businesses jointly owned by spouses should pay more attention to their respective positions and roles in the enterprise, forming a virtuous complementary to improve the ESG rating of the enterprise. The more attention should be paid to mutual cooperation, mutual inspection, and joint discussion of important strategic decisions in family businesses where spouses jointly hold shares.Secondly, family enterprises jointly owned by spouses should pay more attention to the operational risks of the enterprise, carry out effective division of labor and cooperation, and make rational and scientific joint decisions, so as to ensure the smooth operation of the enterprise, significantly reduce the operational risks of family enterprises, and improve the ESG rating of the enterprise.

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