

Innovation effect of common prosperity within enterprises: empirical evidence from the panel data of Chinese A-share listed companies

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Abstract. This paper discusses the impact of the internal implementation of common prosperity strategy on the innovation effect, aiming to reveal how the fair wealth distribution and opportunity sharing can promote the innovation ability of enterprises. Taking the panel data of a-share listed companies in Shanghai and Shenzhen from 2008 to 2022 as the original sample, this paper empirically tests the influence effect and action mechanism of internal common prosperity on enterprise innovation. The study found that common prosperity within enterprises can significantly increase the innovation output, that is, a significant increase in the number of patent applications. This conclusion remains under a series of robustness tests. Heterogeneity discussions found that the effect of private enterprises and labor-intensive enterprises was more influential. Further mechanism analysis shows that the common prosperity of enterprises alleviates their own financing constraints and information asymmetry degree, and then promotes the improvement of innovation output. Under the background of the in-depth development of the concept of common prosperity, this paper reveals that the common prosperity within enterprises is not only an important way to achieve social equity, but also a key factor to promote the continuous innovation and long-term success of enterprises.

Keywords: common prosperity, enterprise innovation, financing constraints, information asymmetry.

1. Introduction

Since the 18th National Congress of the Communist Party of China, General Secretary Xi Jinping has put forward a series of important conclusions on achieving common prosperity, and promoting common prosperity has become an important focus of development. The report to the 19th CPC National Congress stated that by the middle of the 21st century, "common prosperity for all the people will be basically realized". The party's 20th annual report points out that "Chinese-style modernization is the modernization of common prosperity for all the people", and "to build a supporting system of primary distribution, redistribution and coordinated distribution of the third distribution". Enterprise internal common prosperity, is not only the important link of optimizing initial labor income distribution, and the important factors affecting the development of enterprise innovation upgrade quality (horse, 2023) internal common prosperity as a kind of management idea, emphasis is not only is the economic interests of the enterprise, pay more attention to the welfare of employees, fair distribution and sustainable development. In today's fierce competition and rapidly changing business environment, common prosperity within enterprises has been regarded by more and more enterprises as an important way to enhance competitiveness and promote innovation (Hu Xiahe Jie, 2022). Innovation is an important driving force and competitive advantage for the high-quality development of enterprises. As one of the most important resources in enterprises, the creativity, potential and enthusiasm of employees directly affect the innovation ability of enterprises.

In this context, the proposal and practice of the concept of common prosperity within the enterprise provides new ideas and methods for stimulating the innovative vitality of employees. By establishing a fair salary system, providing a good working environment, and encouraging employees to participate in decision-making and sharing results, common prosperity provides employees with more motivation and opportunities to realize self-value and innovative development (Li Chuntao et al.,

2020). In addition, common prosperity within enterprises can also promote the sharing and dissemination of knowledge. Under the concept of common prosperity, employees are more willing to share their knowledge and experience, and learn and grow together with their colleagues, thus promoting the flow of knowledge and innovation within the enterprise (Liang Xiaocheng et al., 2023). This knowledge sharing can not only improve the overall quality and ability of employees, but also help to solve problems, meet challenges, and promote the innovation and development of enterprises. At the same time, the concept of common prosperity can also shape a positive culture of innovation. By paying attention to the welfare and growth of employees, the company has created an open, inclusive and courageous cultural atmosphere, encouraging employees to dare to innovate and try new ideas and methods. This positive innovation culture can not only attract more outstanding talents to join the enterprise, but also improve the innovation awareness and innovation ability of employees, so as to promote the continuous innovation of the enterprise (Pei Xuan et al., 2023).

In order to explore the impact of common prosperity on innovation, this paper takes the panel data of A-share listed companies in Shanghai and Shenzhen as A sample to test the impact and mechanism of common prosperity on enterprise innovation. The study found that the common prosperity within enterprises can significantly improve the innovation output of enterprises. This conclusion remains under a series of robustness tests. The heterogeneity discussion found that the effect of private enterprises and labor-intensive enterprises is more influential, and in addition, the regional heterogeneity also shows that the common prosperity behavior of enterprises has stronger innovation-driven effects in the central and eastern regions. Finally, the mechanism analysis of this paper shows that the common prosperity of enterprises alleviates their own financing constraints and information asymmetry degree, and then promotes the improvement of innovation output.

Compared with the existing literature, the possible innovation and marginal contributions of this paper have the following three points: First, this paper enriches the existing research on the driving factors of enterprise innovation from the perspective of internal profit distribution of enterprise organizations, and enriches the motivation behind enterprise innovation activities. Secondly, this paper also provides an important supplement to the economic consequences of the internal income distribution and common prosperity. It shows the importance of common prosperity from the perspective of innovation. Thirdly, this paper systematically analyzes and verifies the mechanism path of internal common prosperity driving innovation, and deepens the academic understanding of this problem.

The following structure of this paper is as follows: the second part is the discussion of the relevant literature and the proposal of the theoretical hypothesis; the third part introduces the data structure and research design of the paper; the fourth part is the basic empirical results; the fifth part is further mechanism discussion; and finally the concluding review and policy implications.

2. Literature review and theoretical hypotheses

(1) Common prosperity within the enterprise

Common prosperity is the ultimate living standard of adequate food and clothing through hard work and mutual help, that is, the general prosperity on the basis of the elimination of polarization and poverty. Common prosperity within an enterprise is an important management concept, which aims to improve the happiness, cohesion and productivity of employees by realizing the fair distribution and sharing of benefits within the enterprise, so as to realize the sustainable development of the enterprise (Liu & Gao, 2024). The concept of common prosperity within an enterprise comes from the socialist core values, emphasizing that enterprises should create more value for employees and share the fruits of enterprise development with employees. In theory, common prosperity within enterprises is a change in the traditional production relations and one of the important ways for enterprises to achieve social responsibility and sustainable development (Wang & Liu, 2024).

Socialist core values are the soul of common prosperity within the enterprise. Core socialist values emphasize all-round human development, social fairness and justice, and common prosperity. As a

part of the society, the enterprise should uphold this concept, pay attention to the material and spiritual needs of the employees, and realize the fairness and justice within the enterprise. Corporate social responsibility is the inherent requirement of internal common prosperity. Corporate social responsibility requires enterprises to pay attention to the protection of the rights and interests of employees while pursuing economic benefits, so that employees can share the development fruits of the enterprise. This is not only the core of common prosperity within the enterprise, but also the key to the sustainable development of the enterprise (Pauline Day and Sakhier, 2024). The change of production relations is the path exploration of common prosperity within enterprises. Common prosperity within an enterprise is a change of the traditional production relations, which requires the enterprise to break the original pattern of profit distribution, innovate the distribution mode, and realize the common growth of employees and the enterprise. This is not only the practical requirement of common prosperity within the enterprise, but also provides a strong guarantee for the sustainable development of the enterprise.

There are various ways to implement common prosperity within the enterprise, including but not limited to improving employee salary and welfare treatment, distributing employee equity, establishing employee incentive mechanism, carrying out employee training and career development, etc. Different enterprises choose the common prosperity system suitable for enterprise development according to their own development stage, industry characteristics and cultural background. The implementation of the internal common prosperity policy can improve the work enthusiasm and happiness of employees, promote the improvement of team cohesion and innovation ability, and facilitate the formation of a good internal cooperation atmosphere and a stable staff team, which can then improve the innovative production efficiency and economic benefits of the enterprise (Feng Xianbin et al., 2023).

(2) Enterprise innovation

Enterprise innovation plays a vital role in the contemporary economic development. It is not only the key driving force to promote the growth of enterprises, enhance their competitiveness and adapt to the market changes, but also an important factor to promote social and economic progress and sustainable development. Enterprise innovation refers to the process in which enterprises introduce new ideas, new methods, new technologies, as well as unique organization and management modes in products, services, technology, management, marketing, etc as to continuously improve their competitiveness and value creation ability.

The influencing factors of enterprise innovation include internal factors and external factors. Internal factors include enterprise scale, financial strength, technical strength, management level and so on. External factors include market demand, industrial policy, competitive environment, technological progress and so on. These factors interact with each other to jointly affect the innovation ability and innovation performance of enterprises (Hou Jingru and Li Wenjing, 2017).

As an important factor to promote economic growth and enhance competitiveness, enterprise innovation is of great significance to the development of enterprises. Through in-depth discussion of the concepts, driving factors, influencing factors, practical strategies and future development trends of enterprise innovation, it can help enterprises to better understand and grasp the opportunities and challenges of innovation, promote enterprises to continuously improve their innovation ability, and achieve sustainable development (He Chuantian et al., 2024).

(3) The impact of common prosperity on enterprise innovation

The common prosperity within an enterprise has an important impact on income distribution. By establishing fair salary distribution, welfare promotion and career development opportunities, the enterprise enhances their sense of fairness and satisfaction and stimulates their creativity. When employees feel that their contributions are recognized and valued, employees who are satisfied and happy are more likely to participate in innovation activities. This positive attitude promotes the creativity of employees and provides rich ideological and creative resources for enterprise innovation (Shao & Wang, 2023).

Enterprise internal common prosperity also has a significant impact on the organizational structure, the traditional organizational structure is usually hierarchical, hierarchical, decision-making power and resources often in the hands of senior managers, common prosperity concept advocate flat organizational structure, encourage employees to participate in the decision-making and resource allocation, to improve the flexibility and strain capacity, can stimulate the internal motivation, enhance employees' sense of responsibility and enterprise consciousness, employees are more likely to take risk and involved in innovation activities, encourage employees to try and innovative thinking (Su et al., 2023).

Common prosperity within the enterprise has a profound impact on the corporate culture. Common prosperity within the enterprise emphasizes the values of teamwork, mutual assistance, mutual trust and win-win cooperation, thus creating a positive, open and inclusive working atmosphere. In such a cultural atmosphere, employees are more willing to share their knowledge and experience, learn from them and support each other, thus promoting sustainable innovation in enterprises (Siyong Peng & Ying, 2023).

Based on the above analysis, this paper proposes the hypothesis:

H: Common prosperity within an enterprise can promote enterprise innovation.

3. Sample selection and the empirical design

(1) Sample selection and data source

To test the theoretical hypothesis proposed above and consider the availability and sample representativeness of various indicators, the original sample of this paper adopts the panel data of A-share listed companies in Shanghai and Shenzhen in 2008 and 2022. The original sample data of listed companies are all from tai'an CSR MR database, and are manually combined. The detailed screening process of samples is as follows: First, since the financial statements of the financial industry are different from other enterprises, this paper removes the financial industry samples according to the CSRC industry code of 2012; second, to eliminate the ST samples during the research period, the samples with the asset-liability ratio greater than 1; finally, to eliminate the influence of extreme values on the empirical analysis, the tail analysis is 1% for all continuous variables. After processing, the study sample totaled 35735 observations.

(2) Common prosperity within the enterprise

According to the existing literature practices (Fang Mingyue, et al., 2022; New Deal, et al., 2019), this paper uses the labor income share to measure the total income and income distribution of employees in the enterprise. Among them, the "cash paid to the employees and paid for the employees" in the cash flow statement accounts for the laborshare share of labor income calculated by the total operating revenue of the enterprise in the current year.

(3) Enterprise innovation

Considering that patents are the most important output of innovation activities, this paper uses the output scale of innovation activities of listed companies and the sum of $\ln patent_{it}$ (natural log plus 1 form) to measure the output scale of listed companies.

(4) research design

To verify the theoretical hypothesis proposed above, this paper plans to build a two-way fixed effect model to discuss the impact of internal common prosperity on enterprise innovation activities. The specific empirical analysis model is shown in Equation (1):

$$\ln patent_{it} = \beta_0 + \beta_1 laborshare_{it} + \beta_2 X_{it} + YEAR_FE + Industry_FE + \varepsilon_{it} \quad (1)$$

The subscripts i and t indicate the enterprise and the year, respectively. The core explanatory variable of this paper, $laborshare_{it}$, is the share of labor income of the listed company i in the year $\ln patent_{it}$ is the explanatory variable of this paper, measuring the innovation situation of enterprises. Therefore, β_1 is the core parameter in this paper, and the previous theory assumes that the expected β_1 is significantly positive. Moreover, to control the macroscopic external environmental shocks,

the year fixed effect $YEAR_FE$. Considering the interference of the industry potential individual effects on the causal inference in this paper, this paper also controls the fixed effects of the enterprise industry $Industry_FE$. Finally, ε_{ict} is the perturbation term of the model. Moreover, to prevent heteroscedastic problems from affecting the reliability of the empirical results in this paper, all statistical inferences in this paper are discussed based on heteroscedastic robust criterion error.

(5) Control variable setting

In terms of control variables, considering the influence of other factors and drawing on the practices of the existing literature, the enterprise-level control variables in this paper include the management and governance characteristics of various enterprise dimensions. Table 1 shows the definitions and symbolic representations of the different variables, and Table 2 shows the descriptive statistical characteristics of each variable in detail.

Table 1. Detailed definitions of the different variables

type of variable	variable and letters	Variable definition description
explained variable	lnpatent	Ln (1+The number of patents applied for by the listed companies in that year)
Core explanatory variables	laborshare	Cash paid to employees and paid for employees / total operating income of the enterprise
Enterprise control variables	Size	Ln (The total assets of the enterprise at the end of the current year)
	Leverage	Enterprise listing years
	Age	ln(Enterprise listing years)
	ROA	Enterprise return on assets of the year
	GROWTH	Growth rate of the enterprise's total assets
	FATA	The proportion of fixed assets in the total assets of the current year
	SOE	Virtual variable: if the enterprise belongs to a state-owned enterprise, assign 1, otherwise take 0
	Boardsize	The shareholding ratio of the board of directors
	SHRCR1	Enterprise in that year the largest shareholder shareholding ratio

Table 2. Descriptive statistics for the different variables

	capacity	mean value	variance	minimum	median	maximum
lnpatent	35735	1.719	1.688	0	1.609	9.577
laborshare	35735	0.136	0.098	0.012	0.113	0.57
Size	35735	22.18	1.292	19.649	22.002	26.158
Leverage	35735	0.434	0.205	0.05	0.428	0.899
Age	35735	2.191	0.764	0	2.303	3.332
ROA	35735	0.035	0.063	-0.244	0.035	0.205
GROWTH	35735	0.157	0.311	-0.31	0.088	2.017
FATA	35735	0.216	0.162	0.002	0.184	0.701
SOE	35735	0.381	0.486	0	0	1
Boardsize	35735	0.122	0.186	0	0.002	0.674
SHRCR1	35735	0.34	0.148	0.086	0.317	0.743

Table 3. Test of the correlation coefficient between the variables

	laborshare	Size	Leverage	Age	ROA	GROWTH	FATA	SOE	Boardsize	SHRCR1
laborshare	1									
Size	-0.27*	1								
Leverage	-0.26*	0.45*	1							
Age	-0.11*	0.37*	0.35*	1						
ROA	-0.14*	0.03*	-0.35*	-0.18*	1					
GROWTH	-0.09*	0.10*	0.05*	-0.11*	0.25*	1				
FATA	-0.07*	0.08*	0.09*	0.09*	-0.07*	-0.11*	1			
SOE	-0.10*	0.32*	0.28*	0.43*	-0.07*	-0.06*	0.19*	1		
Boardsize	0.12*	-0.29*	-0.31*	-0.55*	0.13*	0.07*	-0.16*	-0.49*	1	
SHRCR1	-0.10*	0.20*	0.05*	-0.08*	0.14*	0.04*	0.08*	0.21*	-0.09*	1

Furthermore, the correlations between the main study variables should be discussed before the empirical regression analysis to prevent the problem of complete collinearity. The correlation coefficient matrices for the core explanatory variables and control variables are shown in Table 3. As can be seen from the correlation coefficient matrix in Table 3, the correlation coefficient between each control variable and the core explanatory variable laborshare is not large, so there will be no systematic bias due to the statistical inference caused by the high collinear problem.

4. Empirical results

(1) Basic empirical results

Table 4. Benchmark stepwise regression results

	(1)	(2)
VARIABLES	lnpatent	lnpatent
laborshare	1.451*** (0.091)	1.330*** (0.091)
Size	0.409*** (0.010)	0.412*** (0.009)
Leverage	-0.342*** (0.050)	0.031 (0.047)
Age	-0.497*** (0.015)	-0.370*** (0.013)
ROA	2.158*** (0.147)	2.491*** (0.136)
GROWTH	-0.247*** (0.027)	-0.265*** (0.025)
FATA	0.114** (0.054)	-0.238*** (0.057)
SOE	-0.083*** (0.021)	0.135*** (0.019)
Boardsize	0.840*** (0.055)	0.464*** (0.050)
SHRCR1	-0.542*** (0.063)	-0.101* (0.055)
Constant	-6.248*** (0.199)	-6.875*** (0.194)
Industry FE	No	Yes
Year FE	No	Yes
Observations	35,735	35,735
R-squared	0.123	0.339

Note: The observed value is at the enterprise level.***, **, * Is significant at 1%, 5%, and 10%, respectively. Numerical heteroscedasticity of robust standard error in parentheses."Yes" controls for this fixed effect and "No" for this fixed effect.

Table 4 shows the benchmark stepwise regression results of formula (1) of this paper. The explained variables are the output of the enterprise innovation, which is expressed as the natural logarithm of the number of patents applied by the enterprise in the current year. Among them, column (1) does not control any variables; column (2) further adds the bidirectional fixed effect of industry and year. The benchmark regression results from Table 4 indicate that for the core explanatory variables in all columns, the $\ln\text{patent}$ estimated coefficient is significantly positive at the statistical level of 1%. This result shows that the common prosperity within the enterprise significantly promotes the enterprise innovation. This conclusion is highly robust under the control of various dimensions.

(2) Robustness test

To verify the robustness of the core results, the robustness test is needed. Due to the significant differences between different types of invention patents and employee compensation, the variation factors of enterprise innovation patent types and the absolute value of employee compensation may be important missing variables under the analysis framework of this paper. Therefore, this paper further considers the patent types to reduce the endogenous bias caused by the problem of missing variables. This article has about the enterprise innovation patent level factors control include: invention patent (enterprise invention patent natural logarithmic form, $\ln\text{patentfm}$), utility model patent (enterprise utility model patent natural log form, $\ln\text{patentsy}$), design patent (enterprise design patent of natural logarithmic form, $\ln\text{patentwg}$), employee compensation ($\ln\text{saem}$), the above data are from the Tai'an CSMR database.

The results of Tables 5 and 6 show that, after considering the various developmental factors mentioned above, the core explanatory variable laborshare is also significantly positive at 1%, i. e., the results in this paper are very robust.

Table 5. Robustness test 1: Replace innovation measures

VARIABLES	(1) $\ln\text{patentfm}$	(2) $\ln\text{patentsy}$	(3) $\ln\text{patentwg}$
laborshare	1.121*** (0.076)	0.498*** (0.068)	0.925*** (0.052)
Size	0.289*** (0.008)	0.206*** (0.007)	0.133*** (0.006)
Leverage	0.057 (0.038)	0.238*** (0.037)	0.121*** (0.027)
Age	-0.267*** (0.011)	-0.257*** (0.011)	-0.048*** (0.008)
ROA	1.803*** (0.109)	1.405*** (0.108)	1.467*** (0.085)
GROWTH	-0.160*** (0.020)	-0.163*** (0.019)	-0.146*** (0.013)
FATA	-0.285*** (0.047)	0.001 (0.046)	-0.583*** (0.032)
SOE	0.189*** (0.016)	0.060*** (0.016)	-0.018 (0.012)
Boardsize	0.233*** (0.042)	0.301*** (0.043)	0.287*** (0.037)
SHRCR1	-0.254*** (0.047)	0.067 (0.046)	0.031 (0.035)
Constant	-4.963*** (0.169)	-3.298*** (0.158)	-2.586*** (0.120)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	35,735	35,735	35,735
R-squared	0.250	0.280	0.109

Table 6. Robustness test 2: Change the measure of common wealth

	(1)
VARIABLES	Inpatent
Insaem1	0.161***
	(0.016)
Insaem2	
Size	0.381***
	(0.009)
Leverage	-0.061
	(0.046)
Age	-0.373***
	(0.013)
ROA	2.102***
	(0.135)
GROWTH	-0.251***
	(0.025)
FATA	-0.133**
	(0.058)
SOE	0.126***
	(0.019)
Boardsize	0.467***
	(0.050)
SHRCR1	-0.112**
	(0.055)
Constant	-7.821***
	(0.249)
Industry FE	Yes
Year FE	Yes
Observations	35,656
R-squared	0.337

(3) Heterogeneity discussion

The discussion of heterogeneity includes the heterogeneity of enterprise property rights, heterogeneity of factor input, regional heterogeneity, and analyzes and grasps the regulating effect of the innovation effect of the common prosperity of enterprises.

The heterogeneity of enterprise property rights discussed in this paper refers to the difference in enterprise property rights structure (such as state-owned enterprises, private enterprises, etc.). Enterprises with different property rights structures have significant differences in resource acquisition, profit distribution, business strategies, etc. These differences may affect the ability and willingness of enterprises in promoting the common prosperity of employees.

Table 7 shows the regression results of the nature of enterprise property rights, which finds that labor income is more positive in the regression of private enterprises, but is relatively insignificant in the regression of state-owned enterprises, indicating that the enterprise innovation effect brought by the common prosperity of enterprises is more obvious in private enterprises. This is mainly because the distribution of labor income in private enterprises is more transparent and institutionalized.

Table 7. Heterogeneity Discussion 1: heterogeneity of enterprise property rights

	(1)	(2)
VARIABLES	Inpatent	Inpatent
	state-owned enterprises	private enterprise
laborshare	0.069	2.011***
	(0.161)	(0.112)
Size	0.398***	0.423***
	(0.014)	(0.012)
Leverage	-0.375***	0.236***
	(0.079)	(0.058)
Age	-0.312***	-0.411***
	(0.024)	(0.016)
ROA	1.583***	2.877***
	(0.257)	(0.160)
GROWTH	-0.254***	-0.270***
	(0.042)	(0.030)
FATA	-0.233***	-0.225***
	(0.085)	(0.078)
Boardsize	-0.511	0.482***
	(0.374)	(0.052)
SHRCR1	-0.186**	-0.139**
	(0.091)	(0.069)
Constant	-6.413***	-7.046***
	(0.295)	(0.257)
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	13,612	22,122
R-squared	0.374	0.316

The different nature of factor input discussed in this paper mainly refers to the differences in human capital, material capital and technology input. The differences in the scale and efficiency of labor-intensive enterprises and capital-intensive enterprises in these factors affect their ability to create wealth and the possibility of improving the well-being of their employees.

Table 8 shows the regression results of enterprise factor input, which finds that labor income is more positive in the regression of labor-intensive enterprises, but not in the regression of capital-intensive enterprises, indicating that the enterprise innovation effect brought by the common prosperity of enterprises is more obvious in labor-intensive enterprises. This is mainly because labor-intensive enterprises pay more attention to the input of labor factors, and the distribution of labor income is more quantifiable, stimulating the innovation power of enterprise employees.

Table 8. Heterogeneity Discussion II: factor input heterogeneity

	(1)	(2)
VARIABLES	Inpatent	Inpatent
	Labor-intensive enterprises	capital intensive enterprise
laborshare	1.331***	0.308
	(0.128)	(0.259)
Size	0.248***	0.423***
	(0.012)	(0.019)
Leverage	-0.124**	-0.428***
	(0.063)	(0.109)
Age	-0.191***	-0.370***
	(0.020)	(0.030)
ROA	2.044***	1.178***
	(0.210)	(0.299)
GROWTH	-0.165***	-0.218***
	(0.032)	(0.051)
FATA	0.281***	0.045
	(0.086)	(0.115)
SOE	0.019	0.169***
	(0.024)	(0.046)
Boardsize	0.702***	0.361***
	(0.091)	(0.118)
SHRCR1	0.103	0.321***
	(0.074)	(0.124)
Constant	-4.282***	-7.254***
	(0.260)	(0.391)
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	12,807	6,614
R-squared	0.385	0.283

The regional heterogeneity discussed in this paper is divided into eastern region, central region, western region and northeast region, involving the differences in economic development level, market access, policy environment and so on. These differences not only affect the business environment of enterprises, but also affect the strategies and effects of enterprises to promote common prosperity.

Table 9 shows the regression results of different regions. This paper finds that labor income is more significantly positive in the regression of the eastern region, but relatively not significant in the regression of the central and western regions, indicating that the enterprise innovation effect brought by the common prosperity of enterprises is more obvious in the eastern region. This is mainly because, compared with the central and western regions, the eastern region has a high level of economic development, relatively rich market resources, related supporting facilities are more perfect, and many high-quality talents provide a more perfect basic conditions for enterprise innovation.

Table 9. Heterogeneity Discussion III: Regional heterogeneity

	(1)	(2)	(3)	(4)
VARIABLES	Inpatient	Inpatient	Inpatient	Inpatient
	east area	middle area	west area	Northeast area
laborshare	1.608*** (0.107)	1.738*** (0.289)	0.122 (0.247)	1.094** (0.449)
Size	0.404*** (0.011)	0.478*** (0.024)	0.402*** (0.023)	0.390*** (0.040)
Leverage	0.023 (0.057)	0.307** (0.138)	0.241** (0.114)	-1.071*** (0.222)
Age	-0.347*** (0.016)	-0.325*** (0.036)	-0.440*** (0.034)	-0.206*** (0.074)
ROA	2.652*** (0.165)	3.016*** (0.376)	1.457*** (0.343)	0.250 (0.628)
GROWTH	-0.256*** (0.031)	-0.298*** (0.063)	-0.281*** (0.060)	-0.196 (0.129)
FATA	0.066 (0.076)	-1.607*** (0.154)	-0.563*** (0.132)	0.340 (0.248)
SOE	0.070*** (0.024)	0.216*** (0.053)	0.467*** (0.046)	0.115 (0.084)
Boardsize	0.469*** (0.057)	0.363** (0.148)	0.405** (0.161)	0.190 (0.250)
SHRCR1	-0.285*** (0.067)	0.670*** (0.153)	-0.078 (0.145)	1.436*** (0.269)
Constant	-6.729*** (0.239)	-8.401*** (0.519)	-6.696*** (0.494)	-7.270*** (0.902)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	24,835	4,806	4,674	1,397
R-squared	0.346	0.364	0.331	0.382

5. mechanism analysis

This paper discusses the mechanism of common prosperity promotes the innovation of enterprises, which will be analyzed from two aspects: financing constraints and information asymmetry.

(1) Financing constraints

Financing constraints refer to the restrictions and difficulties faced by enterprises or individuals when obtaining the necessary external funds (such as loans, equity investment, etc.) to support their operation and development. Promoting common prosperity within an enterprise can enhance the social image and credibility of the enterprise, attract more investment, reduce financing costs, to provide more financial support for innovative activities. At the same time, by improving the welfare and satisfaction of employees, the sense of belonging and innovation motivation of employees can be enhanced, to improve the innovation ability of the enterprise. Common prosperity within enterprises can effectively alleviate financing constraints and is conducive to the innovation output of enterprises. The larger the SAindex SAindex, the stronger the financing constraints of enterprises.

Table 10. Mechanism Analysis 1: Relief of financing constraints

VARIABLES	(1) SAindex	(2) lnpatent
SAindex		-0.206*** (0.043)
laborshare	-0.037*** (0.014)	1.322*** (0.091)
Size	-0.047*** (0.002)	0.403*** (0.009)
Leverage	0.045*** (0.008)	0.040 (0.047)
Age	0.158*** (0.002)	-0.338*** (0.014)
ROA	0.263*** (0.022)	2.545*** (0.136)
GROWTH	0.031*** (0.004)	-0.259*** (0.024)
FATA	-0.002 (0.008)	-0.238*** (0.057)
SOE	0.008*** (0.003)	0.136*** (0.019)
Boardsize	0.007 (0.008)	0.466*** (0.050)
SHRCR1	-0.074*** (0.009)	-0.116** (0.055)
Constant	4.483*** (0.035)	-5.953*** (0.228)
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	35,735	35,735
R-squared	0.404	0.339

(2) Information Asymmetry

Information asymmetry refers to the market transaction, negotiation or any form of economic activities, the parties involved in the transaction object or situation of the information and quality. This imbalance of information leads that one party may have more advantages or abilities than the other, affecting the fairness and efficiency of decision-making. Common prosperity within an enterprise can be seen as a positive signal, transmitting the healthy and stable development of the enterprise to the market and investors, reducing information asymmetry, promoting the confidence of investors and other stakeholders, and attracting more capital and resources for enterprise innovation activities. At the same time, common prosperity promotes the optimization of the internal governance structure of enterprises, enhances the transparency and efficiency of decision-making, contributes to the smooth implementation and management of innovation projects, and promotes enterprise innovation.

This paper refers to the practice of Wei et al. (2012), using the microstructure of financial market and detailed trading data of individual stocks to extract the first principal component of liquidity ratio (LR), illiquidity ratio (ILL) and yield reversal index (GAM) as the proxy variables of information asymmetry. Referring to Amihud et al. (1997) and Amihud (2002), the liquidity ratio and illiquidity ratio are:

$$LR_{it} = -\frac{1}{D_{it}} \sum_{k=1}^{D_{it}} \sqrt{\frac{V_{it}(k)}{|r_{it}(k)|}} \quad (2)$$

$$ILL_{it} = \frac{1}{D_{it}} \sum_{k=1}^{D_{it}} \sqrt{\frac{|r_{it}(k)|}{V_{it}(k)}} \quad (3)$$

Among them, $r_{it}(k)$ represents the stock yield of i enterprise in the k trading day of the t year, $V_{it}(k)$ is the total daily trading volume, and D_{it} is the trading days of i enterprise t year. Both liquidity ratios and imliquidity ratios identify liquidity through the interaction between the buy and sell order flow and stock prices. When the degree of information asymmetry is higher, the more serious the adverse selection problem, the lower the stock liquidity, and the greater the LR and ILL. Further referring to Pastor and Stambaugh (2003), the yield reversal index can be calculated from Equation (4):

$$r_{it}^e(k) = \theta_{it} + \varphi_{it}r_{it}(k-1) + \gamma_{it}V_{it}(k-1)\text{sign}[r_{it}^e(k-1)] + \varepsilon_{it}(k) \quad (4)$$

Among them, $r_{it}^e(k)$ is the excess yield, and the yield reversal index is $GAM_{it} = |\gamma_{it}|$. Similarly, the GAM index was larger with the higher degree of information asymmetry. The first main component of the three indicators is the information asymmetry index ASY. The larger the ASY, the greater the worse the information asymmetry faced by the enterprise.

Table 11. Mechanism analysis II: information asymmetry

VARIABLES	(1) ASY	(2) lnpatent
ASY		-0.205*** (0.025)
laborshare	-0.295*** (0.028)	1.277*** (0.091)
Size	-0.295*** (0.004)	0.353*** (0.011)
Leverage	0.350*** (0.014)	0.106** (0.047)
Age	-0.024*** (0.004)	-0.376*** (0.013)
ROA	-1.392*** (0.048)	2.204*** (0.140)
GROWTH	-0.005 (0.009)	-0.265*** (0.024)
FATA	0.166*** (0.018)	-0.212*** (0.057)
SOE	0.031*** (0.006)	0.142*** (0.019)
Boardsize	0.121*** (0.013)	0.489*** (0.050)
SHRCR1	0.566*** (0.018)	0.014 (0.056)
Constant	6.099*** (0.079)	-5.645*** (0.221)
Industry FE	Yes	Yes
Year FE	Yes	Yes
Observations	35,685	35,685
R-squared	0.488	0.341

6. Conclusion and suggestion

This paper discusses the influence of the common enrichment strategy on the innovation effect. Research shows that common prosperity is not only a socioeconomic goal, but also a key driver of corporate innovation and sustainable competitiveness. Through fair wealth distribution, providing equal development opportunities, establishing a comprehensive welfare system and promoting employee participation in decision-making, the enterprise can stimulate the innovation potential of employees, promote knowledge sharing, enhance teamwork, and thus enhance the overall innovation ability of the enterprise (Zhang Junmin et al., 2024). Common prosperity strategies can also help to

build a positive, supportive, and inclusive corporate culture that is a fertile ground for the sustainable development of innovation.

Based on the above research, this paper also puts forward the following suggestions for enterprises:

First, establish a fair and transparent salary distribution system to ensure that employees get reasonable returns according to their contributions, and provide a more comprehensive welfare plan to meet the diversified needs of employees. Enterprises can optimize the performance management system, evaluate the performance of employees through objective and quantitative indicators, and give corresponding compensation returns according to the evaluation results. At the same time, the compensation distribution system should be open to all employees and regularly evaluated and adjusted to ensure transparency and fairness. In addition to the compensation distribution system, a comprehensive welfare plan is also an important means to promote common prosperity within enterprises. The needs of employees are diversified, and enterprises should provide a series of rich and diversified benefits according to the needs of employees, which is also an important way to promote the common prosperity within the enterprise.

The second is to promote the sharing of opportunities within the enterprise, provide continuous learning and development opportunities for employees, establish a fair promotion mechanism, improve the career development plan of employees, and ensure that everyone has equal opportunities to participate in the competition and development. In today's rapidly changing business environment, opportunity sharing within companies has become the key to sustainable growth and employee personal growth. The common prosperity within an enterprise should not only pay attention to the external market competition, but also pay attention to the cultivation and development of internal employees. Promote enterprise internal opportunity sharing is also an important embodiment of common prosperity, for the development of the enterprise and the growth of employees is of great significance, through the establishment of fair competition environment, provide diversified learning and development opportunities and clear career development plan, enterprise can stimulate employee's potential and creativity, improve enterprise innovation output, promote the sustainable development of enterprise and innovation.

Third, encourage employees to participate in the decision-making process, enhance their sense of belonging and satisfaction, and give full play to the diverse perspective of employees to promote enterprise innovation. Participating employees in the decision-making process helps to enhance their sense of belonging and ownership. When employees feel their opinions and contributions are valued, they will be more engaged to work and have a stronger sense of responsibility. At the same time, the diversity perspective of employees is a valuable resource of the enterprise, and each employee has his own unique background, experience and perspective. These differences bring rich views and suggestions to the enterprise. When employees are encouraged to express their opinions and suggestions, the communication atmosphere within the enterprise will be more harmonious, and the relationship between employees will be more harmonious. This cultural atmosphere will also help to stimulate the creativity and innovative spirit of employees.

Fourth, actively create the innovative culture of the enterprise, to provide space for employees to experiment and explore new ideas. Enterprises can establish an open and transparent communication mechanism to encourage employees to communicate and cooperate, share their knowledge and experience, and give employees the opportunity to show their innovation results, and inspire other employees to innovate. In addition, enterprises can also set up special innovation funds to provide employees with necessary resources and financial support, to achieve excellent innovation results, and promote sustainable innovation of enterprises.

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