

Article

The “Supply-Side Reform Policy” and the Share of Labor Income in Enterprises

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Abstract: This article takes the supply-side structural reform launched in 2016 as a quasi-natural experiment and uses the “DID” method to analyze the relationship between the policy effects of supply-side reform and the labor income share. Firstly, the basic conclusion is that the “supply-side reform policy” can reduce the labor income share of enterprises in the “six major industries”. The correctness of the benchmark regression results was verified through a series of robustness tests. The results of the main regression were validated based on three different heterogeneity analysis perspectives: firm ownership, firm region, and government intervention. Secondly, two mediation mechanisms were examined, and the results showed that increasing operating income can positively enhance the “supply-side structural reform” in reducing the labor share of income in all enterprises, while increasing R&D investment can negatively enhance the effect of the “supply-side structural reform” on the reduction of the labor share of income in all enterprises. The heterogeneity of the two intermediary effects indicates that state-owned enterprises and private enterprises have different performances. The research results of this article indicate that the “supply-side reform policy” can effectively reduce the labor income share of target enterprises, reduce the proportion of excess employees, and enhance the vitality of target enterprises. The policy suggestion is to continue promoting supply-side structural reform, a policy which is in line with the requirements of the high-quality and sustainable development of Chinese enterprises.

Keywords: supply-side reform policy; zombie enterprises; labor income share; sustainable development



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1. Introduction

After more than 40 years of rapid development, China’s economy has achieved remarkable results, but over the long term, it has also accumulated some structural and systemic contradictions and problems, which are mainly reflected in the decline in the economic growth rate, the decline in industrial product prices, the decline in the profits of physical enterprises, and the increase in the probability of economic risks. These problems are not cyclical, but mainly structural (Propaganda Department of the Communist Party of China Central Committee, 2016, https://www.gov.cn/xinwen/2016-03/19/content_5055520.htm, accessed on 16 June 2024). In order to solve the deep-seated structural problems of China’s economy and prevent economic risks, General Secretary Xi proposed to, for the first time, strengthen the “supply-side structural reform” at the “deep restructuring meeting” of November 2015. Many academic papers, both domestically and internationally, have regarded “supply-side structural reform” as a quasi-natural experiment and published a series of research analyses.

The “supply-side structural reform” has, in order to lead the “new normal” of the economy, established five major tasks: reducing production capacity, reducing inventory, deleveraging, reducing costs, and addressing weaknesses. The development model of investment-driven economic growth is no longer sustainable under the new normal, and the overcapacity caused by large-scale investment in the past has become one of the main

risks facing China's economic development [1,2]. At the same time, the contributions of industrial upgrading and technological innovation to economic growth have always been relatively small [3]. Therefore, to maintain sustained economic growth in China, it is necessary to shift from investment-driven growth to innovation-driven growth. As the main task of "supply-side structural reform", reducing production capacity is the top priority of this reform.

The smooth completion of capacity reduction directly affects the progress of the other four major tasks. More importantly, supply-side structural reform should not only focus on achieving capacity reduction itself, but also promote innovation-driven development and improve resource allocation efficiency while reducing capacity [3]. Therefore, supply-side structural reform is the main method for transforming the current mode of economic development, and its key lies in enhancing the driving force of innovation for sustained economic growth and achieving the transformation of old and new driving forces [4].

In fact, before the implementation of supply-side structural reform in China, the situation of overcapacity in some industries was very severe. After the outbreak of the global financial crisis in 2008, the external conditions for China's economic growth underwent profound changes. At the same time, China's economic development had entered a new normal, and the speed of economic growth had gradually shifted from high-speed to medium high-speed. The economic structure and growth momentum have undergone profound changes, and the transformation of the economic structure has promoted the transformation of economic growth momentum. The data show that at the end of 2012, the production capacity utilization rates of China's six major industries, namely, coal, steel, cement, electrolytic aluminum, flat glass, and shipbuilding, were only 68.25%, 72%, 73.7%, 71.9%, 73.1%, and 75%, respectively, significantly lower than the international standard level. From international experience, some European and American countries believe that the normal value of capacity utilization should be between 79% and 82%, with overcapacity occurring below 79%, while Japan believes that the normal value of capacity utilization should be between 83% and 86%. In 2015, when General Secretary Xi proposed the "supply-side structural reform", the capacity utilization rate of most industries in China reached a historic low, with steel, cement, electrolytic aluminum, and flat glass capacity utilization rates of 66.99%, 67%, 78%, and 68%, respectively (data source: National Bureau of Statistics) [5].

Since the reform and opening-up, China has experienced a long-term period of high-speed economic growth and a large-scale labor force transfer and employment, as well as continuous declines in the labor share of initial distribution and in the consumption rate relative to GDP. To some extent, these characteristics have affected the sustainable growth of the Chinese economy. We need to conduct an in-depth analysis of the trend of changes in China's labor share and the key forces that affect the changes in labor share. The changes in consumption rate relative to GDP, and even the sustainability of economic growth, must be considered in light of the fundamental driving force behind China's economic growth—the large-scale transfer of labor from agriculture to employment in non-agricultural sectors. We believe that the decline in China's labor share is not an isolated event, and that changes in labor share should be observed and analyzed in this environment in order to discover the underlying mechanisms of the changes in labor share. We should also note that there is an inherent connection between an increase in investment rate and a decrease in labor share. A decrease in labor share means an increase in capital returns, which in turn promotes an increase in investment rate; in the context of wage discrimination in the labor market, an increase in investment rate means more capital formation, further suppressing the labor share. The common driving factor for both is the transfer of labor from agriculture to the non-agricultural sector. As surplus labor decreases and capital accumulates, the return on capital continues to decline, which in turn leads to a decline in investment rates and an increase in labor share, ultimately achieving a balanced growth path for the economy.

In summary, based on the above statements, it can be concluded that coal, steel, cement, electrolytic aluminum, flat glass, and shipping are the six major industries with severe

overcapacity, continuous declines in product prices, rising inventory, declining profits, and even serious losses. Firstly, these companies have many similarities with Japan's past "zombie companies", so their governance methods are also very similar. Below, some governance methods are mentioned, among which the most direct method is to reduce production capacity. Secondly, the problem of overcapacity can lead to the aggregation of economic and financial risks, as well as the concentrated outbreak of various problems such as bank credit and local debt, posing a risk of a "hard landing" for the economy, and even triggering the outbreak of systemic economic and financial crises, making it difficult to maintain the bottom line of not experiencing systemic risks. Thirdly, the "capacity reduction" policy can eliminate the outdated production capacity of enterprises, while also optimizing personnel structure and quantity, which is in line with the research theme of this article. Fourthly, the "six major industries" are located in the middle and upper reaches of the Chinese economy, with large enterprise scale, high employment absorption rate, and many supporting industries. Many single enterprises are the largest pillar enterprises in their respective cities. Therefore, these enterprises can reduce their heavy burdens of human resources and play a crucial role in the high-quality and sustainable development of the national economy.

2. Literature Review and Research Hypothesis

For the purposes of this article, the author believes that the literature review should include three parts: 1. Supply-side structural reform; 2. The labor income share; and 3. Zombie enterprises. The themes of the first two types of literature are the two key words of the article's theme, and the supplementation of the third type of literature is considered very important by the author. The reasons are as follows: 1. The "six major industries" in the article generally have the characteristics of "zombie enterprises", and research results identifying "zombie enterprises" have been presented in many existing articles, so this article will not elaborate further. 2. The research topic and subsequent mechanism analysis of this article have also been elaborated in many foreign articles on the governance of "zombie enterprises". This article is a study on a similar topic in the context of China. In summary, the author believes that the literature review should include the above three parts.

2.1. Supply-Side Structural Reform

In recent years, more and more scholars have begun to pay attention to and study the issues related to the "capacity reduction" policy in China's supply-side structural reform. Most existing research efforts on China's "overcapacity" problem focus on the measurement of China's "overcapacity" and the reasons for it. As for the measurement of China's "overcapacity", the principal works include the following: Korea Advanced (2011) [6] measured China's manufacturing overcapacity; Zhang Shaohua and Jiang Weijie (2017) [7] measured the degree of overcapacity in China and discussed industrial distribution. On the analysis of the causes of China's "overcapacity", the representative studies mainly include Zhou Li'an (2004) [8], Lin Yifu (2007) [9], Lin Yifu et al. (2010) [10], Wang Wenfu et al. (2014) [11], Qian Chunhui et al. (2015) [12], Xi Penghui et al. (2017) [13], Hou Fangyu and Yang Ruilong (2018) [14], and Li Yan and Yang Rudai (2018) et al. [15]. In addition, some scholars have conducted a series of studies on China's "supply-side structural reform" in recent years. For example, Mi Mi and Liu Bingfang (2017) [16] explained the Chinese-style overcapacity from the perspective of a dual market and demonstrated why supply-side structural reform is the only way. It was pointed out that China's overcapacity is an excess in saturated demand superimposed on the dual market of commodities and housing. There is a "saturated demand trap" in China's general commodity market and an "investment preference trap" in the housing market. Zhou Mi et al. (2018) [17] further analyzed the conditions and motivations for the implementation of supply-side structural reform.

The essence of overcapacity is that the potential output is greater than the potential demand, which will inevitably lead to the decline of product prices, the decline of corporate

profits, and even the bankruptcy of enterprises and vicious competition in the industry (Lin Yifu et al., 2010) [10]. For example, in the recent past, enterprises in traditional industries such as steel and iron have illegally expanded production capacity on a large scale regardless of the fact that they had excess capacity, resulting in losses within the whole industry (Fan Linkai et al., 2015) [18]. Supply-side structural reform policies encourage the withdrawal of excess capacity and change the current situation of distorted resource allocation, which will have a positive impact on enterprise performance (Ding Zhiguo et al., 2012) [19]. Zheng Jingjing et al. (2016) [20] believe that the excess capacity of enterprises is mostly associated with projects with low technology content or low production efficiency, and that the problem of excess capacity will lead to the decline of enterprise performance and hinder industrial upgrading and technological progress. The withdrawal of enterprises' excess capacity can effectively alleviate the distortion of factor allocation, promote the rational allocation of factor resources such as capital and labor, and improve total-factor productivity, and thus improve enterprise performance and realize industrial upgrading and technological progress (Cheng Junjie, 2015) [21]. Overcapacity caused by the imbalance between supply and demand can lead to reform policies to guide the withdrawal of excess capacity and increase product prices, and the price increases will eventually translate into corporate profits. In addition, when enterprises withdraw from a condition of excess production capacity, they will also reduce the number of excess employees, reduce labor costs, and improve corporate benefits. Xue Yunkui and Baiyun Xia (2008) [22] found that an increase in the number of excess employees did not increase the labor cost of enterprises, but significantly reduced the average salary of enterprise employees, thus reducing the incentive effect of salary on enterprise performance, and ultimately leading to the decline of enterprise performance (Ding Zhiguo et al., 2018) [19]. The supply-side structural reform can reduce the number of excess employees and give play to the incentive effect of enterprise compensation by withdrawing excess capacity and resettling shunted employees, thus contributing to the improvement of enterprise operation efficiency and thus improving enterprise performance (Ding Zhiguo et al., 2016) [23].

The effects of supply-side structural reform policies will also vary according to the characteristics of enterprises and regional characteristics. First of all, government intervention was mainly adopted in the early stage of the reform, and the government's intervention abilities for different ownership enterprises are significantly different, so the effect of the reform policy may be different. Different from private enterprises, state-owned enterprises are actually controlled by governments at all levels and have strong political connections. State-owned enterprises can obtain more financial resources and government support (Ma Hongqi et al., 2018) [24] to maintain enterprise production, which may weaken the motivation of state-owned enterprises to reduce capacity (Liu Bin and Zhang Like, 2018) [1]. The more inefficient state-owned enterprises are, the more difficult it is for excess capacity to exit the market (Li Yan and Yang Rudai, 2018) [15]. Due to their relatively weak political connections, private enterprises do not have an advantage in obtaining financial resources, but it is easier for them to actively respond to changes in the market environment (Lu Zhengfei et al., 2015) [25]. When faced with the dilemma of overcapacity, private enterprises, driven by the profit-seeking motive, can adjust their production strategies and business models more quickly to solve the problem of overcapacity, so they have a higher capacity utilization level and resource allocation efficiency (Lian Lishuai et al., 2016) [26]. Obviously, the problem of overcapacity in state-owned enterprises may be more serious than that in private enterprises, and because the government has a stronger ability to intervene in state-owned enterprises, the supply-side structural reform may have a more obvious effect on the "capacity reduction" and performance improvement of state-owned enterprises when resolving the problem of enterprise overcapacity. In addition, the policy effects of reforms in different regions with different levels of government intervention may also be different. For regions with strong government intervention, policy implementation is strong, and the effects of "capacity reduction" and performance improvement are more obvious. In addition, there are significant differences in economic development levels,

institutional environments, and resource factors in different regions (Ding Zhiguo et al., 2011) [27], and the impacts of supply-side structural reforms on different regions may also vary. On the one hand, after more than 40 years of economic development through reform and opening-up, the eastern region is ahead of the central and western regions in terms of the market environment and institutional environment (Yu Binbin and Chen Lu, 2019) [28]. Its stronger competitive pressure and market environment give the eastern region a higher capacity-utilization level (Dong Minjie et al., 2015 [29]; Jia Runsong and Hu Qiuyang, 2016 [30]), and the overcapacity problem in the western and central regions may be more serious. Compared with the central and western regions, the degree of government intervention in the eastern provinces is relatively weak, and the supply-side structural reform may have a weaker impact on the “capacity reduction” in the eastern region.

2.2. The Labor Income Share

The labor income share is also known as the labor income ratio. At the macro level, it refers to the proportion of labor income in GDP in the distribution of national income, and at the micro level, it refers to the proportion of labor-factor remuneration in all-factor income. In view of the important impact of labor income share on the quality of economic development, many scholars have conducted extensive research on the determinants of labor income share changes in recent years. Income distribution is a prominent issue in the process of China’s current economic development. Labor income share not only reflects the fairness of income distribution, but also has a profound impact on long-term social stability and sustainable economic development (Quegis, 2006) [31].

Macroeconomic research mainly includes works on economic structure (Luo Changchang, Zhang Jun, 2009 [32] and Bai Chongen, Qian Zhenjie, 2010 [33]), economic globalization (Shao Min, Huang Jioli, 2010 [34]), the nature of ownership (Zhou Minghai et al., 2010 [35]), the policy effects of macro policies on the governance of income distribution (Shi Zhixin et al., 2019 [36] and Du Pengcheng et al., 2021 [37]), economic development stages (Li Daokui et al., 2009 [38] and Young, 2010 [39]), technological progress (Acemoglu, 2003 [40]; Huang Xianhai and Xu Sheng, 2009 [41]; Chen Yufeng et al., 2013 [42]; and Zheng Jianghuai and Jing Jing, 2021 [43]), structural transformation (Guo Kaiming, 2019 [44]), and economic opening (Wang Xiongyuan and Huang Yujing, 2017 [45]); in addition, other macro perspectives have been investigated. Microeconomic research is mainly explained from the perspective of small enterprises, including the factor of technology bias (Karabarbounis and Neiman, 2013 [46]), financing constraints (Luo Changchang, Chen Lin, 2012 [47]), labor negotiations (Wei Xiahai et al., 2013 [48]), the impact of market competition on labor income share (Blanchard and Giavazzi, 2003 [49]; Bai Chongen et al., 2008 [50]; Wen Yanbing, Lu Xueqin, 2018 [51]; Autor et al., 2020 [52]; Barkai, 2020 [53]; and Xiao Tu-sheng et al., 2023 [54]), the micro-decision mechanism of labor income share (Wu Shanlin, 2011 [55]), the reason why enterprise risk affects the decline of labor income share (Jia Shen and Shen Guangjun, 2016 [56]), and the adjustment of human capital structure (Xiao Tu-sheng et al., 2022 [57]).

Increasing the share of labor income is an important goal of China’s economic regulation for the future, one which plays an important role in the fairness of income distribution (Xiao Tu-sheng et al., 2022 [57]) and in improving the pattern of income distribution and promoting balanced development (Zhang Mingang et al., 2021 [58]). According to the characteristics of economic growth revealed by Kaldor (1957) [59], the proportion of labor income in national income should remain unchanged, which is the “Kaldor fact”. However, a large number of studies show that China’s rapid economic development has not driven growth in the labor income share, and that the change of the labor income share is not synchronized with the GDP growth rate. Since 1995, China’s labor income share has continued to decline, and although it began to rebound in 2011, it is still hovering at a low level (Chen Yufeng et al., 2013 [42] and Zheng Jianghuai and Jing Jing, 2021 [43]). The change trend of the enterprise labor income share is basically consistent with the results of macro data measurement, but the change range is more moderate (Wen Yanbing and

Lu Xueqin, 2018 [50] and Luo Mingjin and Tie Ying, 2021 [60]). The labor income share is dominated by the bargaining power of both parties to the labor relationship (McDonald and Solow, 1981 [61]), while the bargaining power is influenced by the labor market and institutional environment (Bai Peiwen and Yang Zhicai, 2019) [62].

2.3. *Zombie Enterprises*

With the gradual disappearance of the demographic dividend, improving the efficiency of labor resource allocation is crucial to the high-quality development of China's economy. Based on the perspective of inter-firm labor resource flow, this paper examines, through theoretical and empirical analysis, the effect of zombie enterprises on labor resource allocation and the efficiency loss caused by zombie enterprises.

Cleaning up zombie enterprises is an important starting point for the supply-side structural reform in its policy to reduce capacity. Supply-side structural reform is the focus of economic structural adjustment at this stage, and the disposal of zombie enterprises is an important part of the supply-side capacity reduction. On 8 August 2018, the National Development and Reform Commission and five other departments jointly issued the "Key Points for Reducing Enterprise Leverage Ratio in 2018", which clearly accelerated the disposal of zombie enterprises' debt and reduced ineffective leverage. In the new era of deepening supply-side structural reform and promoting high-quality economic development, the correct disposal of zombie enterprises is also an urgent and key factor in effectively resolving overcapacity and breaking ineffective supply mechanisms. The effective disposal of zombie enterprises, especially by means of bankruptcy liquidation to make them withdraw from the market, will inevitably encounter many obstacles, among which the proper placement of employees is the primary problem faced in the process of governance. Because "employment is the foundation of people's livelihood", the 2018 government work report also clearly emphasized that the bankruptcy and restructuring of zombie enterprises should be "done well in the placement of employees and debt disposal".

Domestic and foreign scholars have conducted studies on how to manage zombie enterprises. Fukuda and Nakamura (2011) [63] used Japanese enterprise data for empirical analysis and found that corporate structural adjustment (including streamlining of employees, sale of fixed assets, and reduction of executive bonuses) and leverage reduction can promote the revival of zombie enterprises. Subsequently, Chinese scholar Yu Xiaoxiang et al. (2020) [64] also drew a similar conclusion based on the data of Chinese industrial enterprises. The empirical evidence shows that fixed asset liquidation and personnel streamlining can help zombie enterprises, to a certain extent, to recover activity and deepen R&D (Luan Fugui and Tang Jiying, 2018 [65]) and equity structure (Fang Mingyue and Sun Kunpeng, 2018 [66]). The checks and balances associated with boards of directors (Ma Xinxiao et al., 2021 [67]), in addition to other financial characteristics of enterprises, as well as governance mechanism optimization, can help reduce the tendency towards zombies. For example, Jiang Lingdu and Lu Yi (2017) [68] tested the impact of the implementation of a minimum wage system on zombie enterprises. The empirical results showed that the minimum wage system can significantly reduce the probability of enterprise rigidity by promoting the downsizing of employees. Jiang Lingdu et al. (2018) [69] studied the disposal of zombie enterprises from the perspective of the market mechanism of foreign capital liberalization, and believed that the policy of foreign capital deregulation could help zombie enterprises to revive and thus reduce the proportion of zombie enterprises in the industry. The external institutional environment, such as banking competition (Liu Chong et al., 2020) [70], also has an important impact on the disposal of zombie enterprises. It is generally believed that promoting the improvement of laws and regulations, accelerating debt restructuring, actively resolving overcapacity, and improving the social security system are effective means for achieving governance of zombie enterprises (Nie Huihua et al., 2016 [71]; Zhu Shunnan and Chen Chen, 2016 [72]; and Sheng Lei, 2018 [73]). Zhang Feng and Ding Siqi (2019) [74] explored the inhibitory effect of market reform on zombie enterprises, and the results showed that market reform could significantly reduce

the proportion of “zombies” in a certain province. Peng Yang et al. (2019) [75] conducted an empirical analysis using the quasi-natural experiment of “setting up districts by eliminating counties”, and the results showed that weakening government intervention in the market and strengthening market competition could significantly inhibit the formation of zombie enterprises. Yang Longjian et al. (2020) [76] conducted a quasi-natural experiment by using the change of social security collection institutions to test the impact of social security fee reduction on zombie enterprises and found that social security fee reduction can effectively alleviate the financing constraints caused by the distortion of the financial market, thereby helping zombie enterprises to recover their activities. Sun Wenhao et al. (2021) [77] also came to a similar conclusion, arguing that tax reduction for zombie enterprises in high-tech industries can help enterprises improve their innovation abilities.

The reality is that enterprises in the “six major industries” respond to the call of the state and transfer and divert a large part of their employees when streamlining employees, so Hypothesis 1 is proposed.

Hypothesis 1: *The “capacity reduction” policy can reduce the labor income share of enterprises in the “six major industries”.*

According to Wang Haijian et al. (2022) [78], the target enterprises of the “overcapacity reduction” policy mostly belong to cyclical industries, and the total-factor productivity of cyclical industries is greatly affected by business income. Business income can significantly improve the total-factor productivity of “capacity reduction” enterprises. The impact of the “capacity reduction” policy on the operating income of the target enterprises is first decreased and then increased, which creates a mutually offset relationship in value. One possible explanation is that “capacity reduction” enterprises need to eliminate backward production capacity which is below the technical standard, reducing the corresponding operating income from the backward production capacity, and it is difficult for enterprises to adjust the production structure in a short period of time to significantly increase the middle and high-end production capacity. The increase in operating income from middle and high-end production capacity cannot fully offset the loss of operating income of low-end production capacity, resulting in a decline in overall operating income. With the gradual withdrawal of backward production capacity, and medium and high-end production capacity used as a substitute for low-end production capacity, market demand increase accordingly. At the same time, the adjustment of enterprise capacity structure is also relatively perfect, the market supply capacity is improved, and the operating income is increased, so Hypotheses 2, 2a, and 2b are proposed.

Hypothesis 2. *Increasing operating income can positively enhance the “supply-side structural reform” in reducing the labor share of income in all enterprises.*

Hypothesis 2a. *Increasing operating income can negatively enhance the efforts of state-owned enterprises to reduce their labor share of income through the “supply-side structural reform”.*

Hypothesis 2b. *Increasing operating income can positively enhance the power of private enterprises to reduce their labor share of income through the “supply-side structural reform”.*

According to Wang Haijian et al. (2022) [78], R&D investment is an important factor affecting enterprise innovation. At the same time, important policy goals of the “capacity reduction” policy include expanding the profit space of enterprises, and then promoting their research and development and improving their innovation ability and market competitiveness, so Hypotheses 3a and 3b are proposed.

Hypothesis 3a. *Increasing R&D investment can negatively enhance the effect of the “supply-side structural reform” on the reduction of the labor share of income in all enterprises.*

Hypothesis 3b. *Increasing R&D investment can negatively enhance the effect of the “supply-side structural reform” on the reduction of the labor share of income in private enterprises.*

Compared with existing research, the potential marginal contribution of this article, in terms of research content, firstly lies in enriching the research on the impact of the “supply-side structural reform” policy on the labor income share of enterprises in the “six major industries” at the micro level. This is also the first article to study the impact of the “supply-side structural reform” policy on the labor income share of enterprises in the “six major industries”, providing a micro empirical basis for effectively promoting the “supply-side structural reform” and accelerating the transformation of the mode of economic development. Secondly, in terms of research methods, the following study on the impact of the “supply-side structural reform” policy on the labor income share of enterprises in the “six major industries” was conducted. Through heterogeneity analyses of three different attributes and two different mechanisms, the internal mechanisms of the impact of the “supply-side structural reform” policy on the labor income share of enterprises in the “six major industries” was analyzed, enriching the relevant research on labor resource allocation. Thirdly, this work provides a theoretical basis and decision-making reference for further achieving high-quality employment and promoting the optimal allocation of labor resources, as well as new ideas and references for achieving the transformation of old and new driving forces and deepening the market-oriented reform allocation of factors in the context of high-quality development. The limitation of this article is that it only studies the impact of “supply-side reform” policies on the share of labor income in enterprises, as key data are difficult to obtain, and cannot be further analyzed at a deeper level. This is also a field that similar research can expand in the future. Therefore, this quasi-natural experimental study can only be used to study the impact of various factors on the share of labor income in enterprises. The decline in the share of labor income in enterprises means that they are getting rid of the heavy burden of manpower and developing in higher quality and more sustainable directions.

3. Research Design

3.1. Sample Selection and Data Source

On 10 November 2015, General Secretary Xi delivered an important speech at the 11th meeting of the Central Leading Group for Financial and Economic Affairs, emphasizing the need to strengthen supply-side structural reform. The “supply-side structural reform” has deployed the five major tasks of reducing overcapacity, destocking, deleveraging, reducing costs, and strengthening weak links, of which reducing overcapacity is the top priority of this reform. This paper takes 2016 as the year of supply-side policy implementation and constructs a model to test the causal relationship between the supply-side reforms and labor income share. In this paper, China’s A-share listed companies from 2013 to 2021 are taken as research samples, and sample screening is carried out according to the following steps: (1) Companies whose listing age is less than 1 year are excluded; (2) Financial industry members are removed from the sample; (3) ST companies are removed from the sample; and (4) Missing values of variables are removed. In the end, a total of 17,694 annual reports of companies were obtained. All the data used in this paper are from the National Tai’an database (CSMAR) and RESSET database. This research used Stata16 software for empirical analysis.

3.2. Model and Variable Definition

In order to test the impact of overcapacity reduction policies on the labor income share of enterprises, this paper constructs the following model:

$$LS_{it} = \beta_0 + \beta_1 DID_{it} + \beta_2 Control_{it} + Firm\ FE + Year\ FE + Province\ FE + Industry\ FE + \varepsilon_{it} \quad (1)$$

$$DID_{it} = Time_{it} \times Treat_{it} \quad (2)$$

LS_{it} represents the labor share of the enterprise. Referring to the research of Xiao Tusheng et al. (2022), this article measures the share of labor income (LS) by dividing the current cash paid to employees by the total operating income [79]. Time is a dummy

variable; the supply-side policy was introduced in 2016, so it was in 2016 that this policy began to have an impact. It is 1 for 2016–2021 and 0 for other years. With reference to Wang Haijian et al. (2022) [78], this paper takes the listed enterprises in the industries affected by the “capacity reduction” policy of the supply-side structural reform as the experimental group, involving 152 enterprises in six industries. Among them, 46 are in the steel industry, 36 are in the coal industry, 21 are in the cement industry, 26 are in the electrolytic aluminum industry, 16 are in the flat glass industry and 7 are in the shipping industry. Because there is no matching electrolytic aluminum industry in the database industry classification, it is replaced by the aluminum industry, There is no fully matched flat glass industry, so this is replaced by the glass industry.

$Treat_{it}$ is a dummy variable indicating whether the listed companies in the above six industries are affected by the “capacity reduction” policy, and the affected companies are assigned a value of 1; otherwise, we use 0. DID_{it} is the policy variable, which is the interaction term between the time dummy variable and the treat group dummy variable. It is used to estimate the effect of “overcapacity reduction” policies. Drawing on previous research literature (Shi Xinxia et al., 2019 [36] and Liu Qiren and Zhao Can, 2020 [80]), this paper includes a series of control variables in the model. It includes company size (Size), equity concentration (Top10), return on total assets (ROA), capital structure (Lev), capital–output ratio (PPE), capital intensity (Capital), cash flow from operating activities (CFO), company age (Age), and property nature (SOE) at the enterprise level. Regional level of economic development (GDP), industrial structure (IndStr), and higher education (Edu) are also defined. The specific variables are defined in Table 1.

Table 1. Description of main variables.

Variable Type	Variable Name	Variable Symbol	Variable Declaration
Explained variable	Labor share	LS	Cash paid to employees in the current period divided by total operating income
Explanatory variable	Company size	Size	The natural logarithm of a company’s total assets
	Ownership concentration	Top10	The proportion of the top ten shareholders in the company
	Return on assets	ROA	Company net profit divided by total assets
	Capital structure	Lev	Total company liabilities divided by total assets
	Capital–output ratio	PPE	Net fixed assets of the company divided by total revenue
	Capital intensity	Capital	Total company assets divided by total revenue
	Cash flow from operating activities	CFO	Ratio of current net cash flow from operating activities to total assets
Control variable	Company age	Age	The natural logarithm of the difference between the current year and the year of establishment of the enterprise
	Property right nature	SOE	If the actual controller of the company is state-owned, the value is 1; otherwise, it is 0
	Level of economic development	GDP	Natural logarithm of per capita GDP (thousand RMB/person) of the province where the company is registered
	Industrial structure	IndStr	The proportion of secondary industry in GDP of the province where the company is registered
	State of higher education	Edu	The natural logarithm of the number of university students in the province where the company is registered

Firm FE controls the fixed impacts of each company, excluding heterogeneous impacts from different companies. Year FE controls for fixed impacts in each year, excluding heterogeneous impacts from different years. Province FE controls for fixed effects in provinces, excluding heterogeneous impacts from different provinces. Industry FE controls the fixed effects of three-level industry classification, excluding the impact of industry development characteristics on enterprise efficiency and R&D investment. The subscript i represents the enterprise and the subscript t represents the time. ε represents the random disturbance term.

3.3. Descriptive Statistics

Table 2 reports descriptive statistical data for the main variables. For the explanatory variable of the labor income share, the average value is 0.134, the minimum value is 0.00146, the maximum value is 5.145, and the variance is 0.109, indicating that the fluctuation of labor income share in Chinese listed companies is relatively gentle. The distribution characteristics of other variables are basically similar to those described in previous studies and will not be elaborated further.

Table 2. Descriptive statistics of main variables.

Variable	N	Mean	sd	min	max
LS	17,694	0.134	0.109	0.00146	5.145
SOE	17,694	0.413	0.492	0	1
Size	17,694	22.53	1.344	18.93	28.64
Lev	17,694	0.435	0.199	0.00797	1.592
ROA	17,694	0.0377	0.0683	−0.931	0.675
Capital	17,694	2.606	4.066	0.0808	184.4
CFO	17,694	0.0490	0.0705	−0.744	0.876
Top10	17,694	56.23	15.13	1.310	101.2
Age	17,694	2.956	0.312	0.386	4.007
PPE	17,694	0.505	0.851	0.000111	65.27
IndStr	17,694	1.541	1.008	0.572	5.297
GDP	17,694	9.670	0.542	8.647	10.78
Edu	17,694	0.0208	0.00465	0.00888	0.0425

4. Results

4.1. Baseline Regression Results

In order to eliminate the influences of individual effects, year effects, industry effects, and province effects on the regression results of listed companies, this paper uses an individual-year industry province fixed-effects model to study the impact of supply-side reform policies on the labor income share of listed companies in six industries with overcapacity. The explanatory variable is a policy variable, and the dependent variable is the share of labor income of listed companies in the six industries with overcapacity.

Table 3 reports the baseline regression results of the “supply-side reform policy” variables and explanatory variables. Regression results were determined between policy variables in models (1)–(2) as to the performance of listed companies in six industries with overcapacity. The results indicate that the test is significantly negative, with values of −0.029 and −0.020, respectively, confirming Hypothesis 1: the “supply-side reform policy” will reduce the labor income share of enterprises in the “six major industries”.

Table 3. Baseline regression results.

Dependent Variable: LS	(1)	(2)
did	−0.029 *** (0.004)	−0.020 *** (0.003)
Soe		0.007 *** (0.003)
Size		−0.021 *** (0.001)
Lev		−0.007 * (0.004)
Roa		−0.120 *** (0.007)
Capital		0.015 *** (0.000)
Cfo		−0.038 *** (0.006)
Top10		−0.000 * (0.000)
Age		0.002 (0.007)
PPE		−0.002 *** (0.001)
IndStr		0.003 (0.002)
GDP		0.027 *** (0.005)
EDU		−0.316 (0.338)
Constant	0.135 *** (0.001)	0.312 *** (0.055)
Firm FE	No Control	Control
Year FE	No Control	Control
Province FE	No Control	Control
Industry FE	No Control	Control
N	17,694.000	17,694.000
r2	0.002	0.861

Standard errors in parentheses; * $p < 0.1$, *** $p < 0.01$.

4.2. Robustness Test

4.2.1. Parallel Trend Test

In the benchmark regression, the causal effect of the overcapacity policy on the labor income share of listed companies in the six industries with overcapacity was verified. However, the DID model requires the experimental group and the control group to satisfy the assumption of parallel trends before the policy shock, so it is necessary to test whether the model satisfies parallel trends. This article takes 2016 as the year of policy implementation; the year before policy implementation is recorded as Before1, the year after policy implementation is recorded as After1, and so on. Figure 1 shows the results of the parallel trend test, for which the regression results were close to zero and not significant before policy implementation, while after policy implementation, the regression results showed a gradually decreasing trend with significance, meeting the assumption of the same trend before policy implementation.

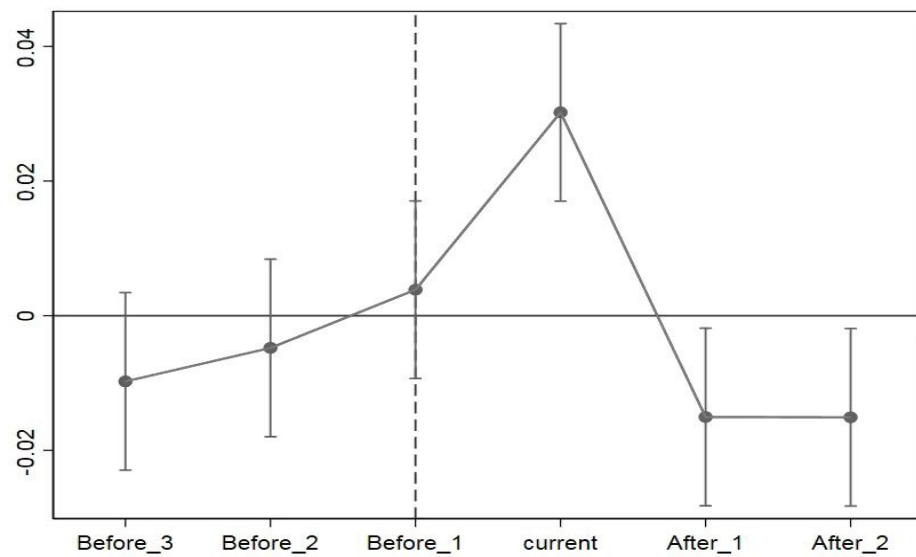


Figure 1. Results of parallel trend testing.

4.2.2. Placebo Test

Drawing on the research of Guo Jingguang and Wang Hongli [81], this study conducted a placebo test by randomly selecting the treatment group and the control group. A total of 500 regression simulations were repeated based on the benchmark model, and a kernel density map drawn. As shown in Figure 2, the estimated coefficients of the impact of the capacity reduction policy on the share of labor income of Enterprises generally exhibited a normal distribution with zero as the mean, and all were greater than the corresponding true estimate of -0.020 in the benchmark regression. This means that almost no coefficients fall to the left of the true estimate, indicating that the benchmark regression results are robust.

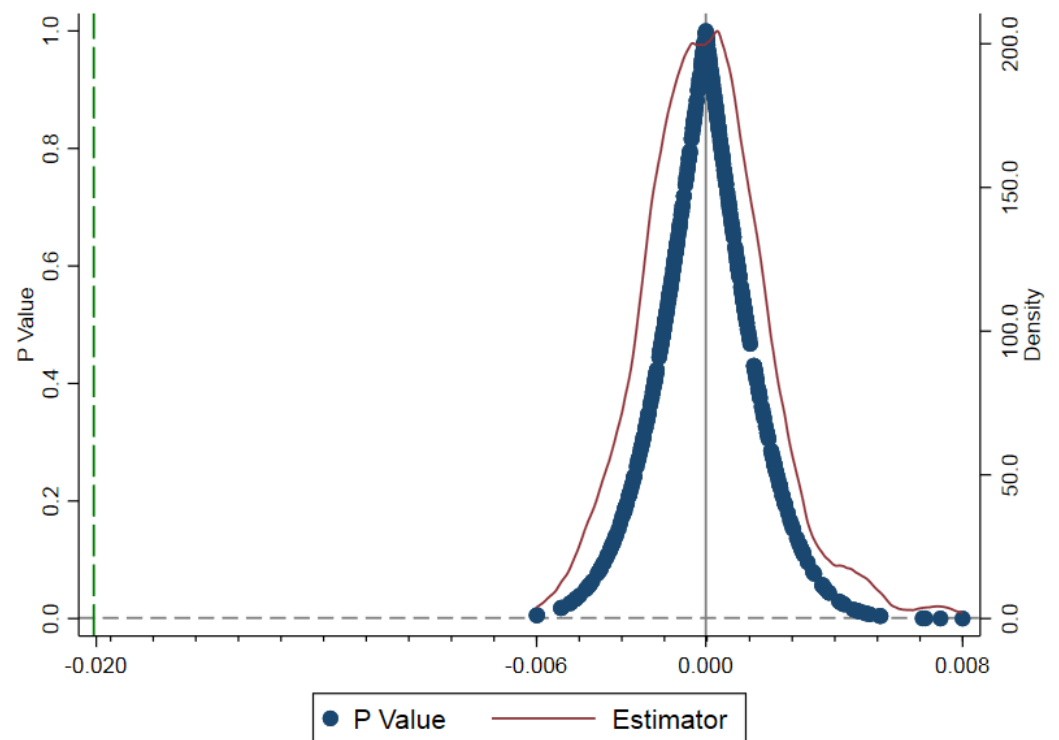


Figure 2. Placebo test.

4.2.3. Replace the Dependent Variable

To eliminate the influence of omitted variables or accidental factors on empirical results, a placebo trial was conducted on the baseline regression. The idea of the placebo test described in this article is to replace the original explanatory variable with variables related to the explanatory variable, and then run the replaced model for empirical analysis to determine whether the original model is robust.

LS2 reflects the article by Li Daokui et al. (2009) [38], LS3 reflects the article by Chang Jinxiong et al. (2011) [82], LS4 reflects the article by Wang Xiongyuan et al. (2017) [45], and LS5 reflects the calculation method of labor income share mentioned by Hu Yiming et al. (2013) [83]. This placebo trial replaced the dependent variables LS2, LS3, LS4, and LS5. The result is that the regression results from model (1) to model (4) are significantly negative, with values of -0.018 , -0.163 , -0.010 , and -0.013 , respectively. In summary, the impact of policy variables on substitute variables is consistent with the empirical results in Section 4.1.

4.2.4. High Dimensional Fixation

Although individual effects, time effects, province effects, and industry effects were controlled for in the benchmark regression model, the sample varied with province and industry characteristics, and the firm effect also varied, severally, with province, time, industry, province, industry, and province. In order to eliminate the influence of the above factors on the empirical results, the above factors were included in Equation (1) and controlled and clustered at the enterprise level, resulting in the results shown in column (5) of Table 4, with a value of -0.017 . It can be observed that after controlling for the potential influencing factors mentioned above, the “supply-side reform policy” still reduces the share of labor income for enterprises.

Table 4. Robustness test regression results.

Dependent Variable: LS	(1) ls2	(2) ls3	(3) ls4	(4) ls5	(5) High Dimensional Fixation	(6) Excluding “COVID-19”	(7) Tailing	(8) PSM-DID Inspection	(9) Policy Lag
did	-0.018^{***} (0.003)	-0.163^{***} (0.023)	-0.010^{***} (0.002)	-0.013^{***} (0.002)	-0.017^{***} (0.003)	-0.019^{***} (0.003)	-0.016^{***} (0.002)	-0.029^{***} (0.003)	-0.015^{***} (0.006)
Control variable	YES	YES	YES	YES	YES	YES	YES		YES
ID FE	YES	YES	YES	YES	YES	YES	YES		YES
Year FE	YES	YES	YES	YES	YES	YES	YES		YES
Industry FE	YES	YES	YES	YES	YES	YES	YES		YES
Province FE	YES	YES	YES	YES	YES	YES	YES		YES
ID*Year					YES				
ID*Industry					YES				
ID*Province					YES				
Industry*Year					YES				
Province*Year					YES				
Industry*Province					YES				
N	17,539	17,539	17,539	17,539	17,693	13,762	17,694	17,305.000	15,727.000
r2	0.880	0.895	0.872	0.887	0.862	0.876	0.878	0.005	0.712

Standard errors in parentheses; *** $p < 0.01$.

4.2.5. Eliminate the Interference of the “COVID-19” Year

Since the COVID-19 epidemic was an emergency, in order to keep the data of the “COVID-19” year occurring during the sample period from affecting the share of labor income of enterprises, the benchmark estimation results are biased. After excluding the data from 2020 and 2021, the remaining data were reintroduced into Equation (1), and the results are shown in column (6) of Table 3, with a value of -0.019 . The results indicate that after excluding data from 2020 and 2021, the “supply-side reform policy” still reduces the share of labor income for enterprises.

4.2.6. Tail Reduction Test

Considering the possible existence of extreme outliers in the sample, which may affect the robustness of the benchmark estimation results, all continuous variables were subjected to a 1% truncation treatment, and then re-estimated using Equation (1) to obtain the results shown in column (7) of Table 4, ultimately a value of -0.016 . Obviously, after excluding the influences of possible outliers, the “supply-side reform policy” still reduces the share of labor income of enterprises, verifying the robustness of the benchmark regression results.

4.2.7. PSM-DID Inspection

To eliminate potential endogeneity issues in the model, following the approach of Jiao Hao et al. (2023) [84], a propensity score-matching double-difference model was adopted, and the commonly used K-nearest neighbor matching method was used to solve the problem. The specific approach employed is to match the control group with samples that are equivalent to the experimental group in the benchmark regression model year by year, and then use the Logit model for matching to obtain the observed values after eliminating sample selection bias. Finally, Equation (1) is used to re-estimate, and the results are shown in column (8) of Table 4, as a value of -0.029 . It can be observed that the “supply-side reform policy” still reduces the share of labor income in enterprises, confirming the reliability of the benchmark regression results.

4.2.8. “Supply-Side Reform Policy” Lag Period Method

The lagged one-period method of the dependent variable was used to eliminate the interference of endogeneity with the empirical results. The main reason is that after the implementation of the “supply-side reform” policy, there is a certain execution period, which leads to the policy effect not being realized in the current period, and the current policy will not directly affect the share of labor income of enterprises until a later period. The explained variable of an enterprise’s new quality productivity lags behind by one period, and is re-estimated using Equation (1). The results are shown in column (9) of Table 4, with a value of -0.015 . It can be observed that when the labor income share of enterprises lags behind by one period, the “supply-side reform policy” still reduces the labor income share of enterprises, indicating a stable benchmark regression result.

4.3. Expanding Research: Testing the Differences in Policy Effectiveness

4.3.1. Research on the Differences in Policy Effectiveness Based on the Perspectives of Different Geographical Regions

The sample was divided into three groups: eastern region, central region, and western region. A double-difference regression model was applied to different groups of enterprises, and the results are shown in Table 5. According to the regression results in Table 5, models (2), (4), and (6) show that at the 1% statistical level, the values are -0.011 , -0.029 , and -0.037 , respectively, indicating a significant negative correlation between supply-side structural reform and decreases in labor income of enterprises in the eastern, central, and western regions. The results of analyzing different geographical regions also validated Hypothesis 1.

Table 5. The impact of supply-side structural reform on different geographical regions.

Dependent Variable: LS	East		Central		West	
	(1)	(2)	(3)	(4)	(5)	(6)
did	-0.040^{***} (0.004)	-0.011^{***} (0.003)	-0.013^* (0.007)	-0.029^{***} (0.006)	-0.018 (0.011)	-0.037^{***} (0.009)
Control variable		Yes		Yes		Yes
Firm FE		Yes		Yes		Yes
Year FE		Yes		Yes		Yes
Industry FE		Yes		Yes		Yes
Province FE		Yes		Yes		Yes
N	12,367	12,367	3143	3143	2184	2184
r ²	0.003	0.873	0.001	0.878	0.001	0.870

Standard errors in parentheses; * $p < 0.1$, *** $p < 0.01$.

4.3.2. Research on the Differences in Policy Effectiveness from the Perspective of Enterprise Ownership

An empirical test was conducted on the policy effects of enterprises with different ownership systems, and the results are shown in Table 6. Among them, Model (1) and Model (3) are estimated results of the labor income share effect of supply-side structural reform enterprises, with values of -0.013 and -0.050 , respectively. According to the regression results of models (1) and (3), it can be seen that the dual-difference variable DID, between state-owned and private enterprises, is significantly negative at the 5% and 1% levels, respectively, indicating that supply-side structural reform has a significant impact on reducing the share of labor income in state-owned and private enterprises. Compared with the values of -0.027 in Model (2) and -0.006 in Model (4), the DID coefficient of the double-difference variable in state-owned enterprise groups is significantly negative, while the DID factor of private enterprise groups is not significant, indicating that supply-side structural reform can reduce the share of labor income for both state-owned and private enterprises, and the reduction has a more significant impact on state-owned enterprise groups. Therefore, whether it is state-owned enterprises or private enterprises, the supply-side structural reform has achieved the policy effect of reducing the share of enterprise labor income, and the policy effect of different ownership enterprises varies significantly. The policy results of analyzing enterprises with different ownership systems also validated Hypothesis 1.

Table 6. The impact of supply-side structural reform on enterprises of different ownership systems.

Dependent Variable: LS	State-Owned Enterprise		Private Enterprise	
	(1)	(2)	(3)	(4)
did	-0.013^{**} (0.005)	-0.027^{***} (0.004)	-0.050^{***} (0.004)	-0.006 (0.004)
Control variable		Yes		Yes
Firm FE		Yes		Yes
Year FE		Yes		Yes
Industry FE		Yes		Yes
Province FE		Yes		Yes
N	7302	7302	10,392	10,392
r ²	0.001	0.910	0.004	0.880

Standard errors in parentheses; $** p < 0.05$, $*** p < 0.01$.

4.3.3. Research on the Differences in Policy Effectiveness from the Perspective of Government Intervention Level

Drawing on the research methods of Chen Deqiu et al. (2013) [85] and Zhang Weidong et al. (2015) [86], this article uses the “Reduce Intervention in Enterprises” index compiled by Fan Gang et al. (2016) [87] to measure the degree of intervention by local governments. The larger the index, the weaker the degree of government intervention. This article selects government intervention index data from 2008 to match the sample, and then divides the sample into areas with weaker local government intervention and areas with stronger local government intervention, based on the median. On this basis, group testing is conducted. In Table 7, regression (1) to regression (4) show the impact of supply-side structural reform on the labor income share of enterprises in different levels of government intervention groups, with values of -0.024 , -0.032 , -0.033 , and -0.014 , respectively. The results indicate that for areas with strong government intervention (value -0.024) and areas with weak government intervention (value -0.033), the regression coefficient of the double-difference variable DID is significantly negative at the 1% level. After controlling for the characteristic variables of the enterprise, the regression coefficients of the double-difference variable DID were significantly negative at the 1% level, with values of -0.032 and -0.014 , respectively. This indicates that supply-side structural reform has a significant effect on reducing the share of labor income of enterprises in different government intervention

regions. The analysis of the policy effects of different levels of government intervention also validated Hypothesis 1.

Table 7. The impact of supply-side structural reform on the labor income share of enterprises with different levels of government intervention.

Dependent Variable: LS	Strong Government Intervention		Weak Government Intervention	
	(1)	(2)	(3)	(4)
did	−0.024 *** (0.007)	−0.032 *** (0.005)	−0.033 *** (0.004)	−0.014 *** (0.003)
Control variable		Yes		Yes
Firm FE		Yes		Yes
Year FE		Yes		Yes
Industry FE		Yes		Yes
Province FE		Yes		Yes
N	2554	2554	15,140	15,140
r2	0.003	0.867	0.002	0.870

Standard errors in parentheses; *** $p < 0.01$.

4.4. Mechanism Testing

The above empirical results indicate that supply-side reform policies have significantly reduced the labor income share of listed companies in the six industries with overcapacity. So, through which channels does the supply-side reform policy have an impact on the labor income share of listed companies in the six industries with overcapacity? Will heterogeneous companies have different reactions? In view of this, this article examines the impact mechanisms of supply-side reform policies on the labor income share of listed companies in six industries with overcapacity from two aspects: company revenue and R&D investment. This article adopts the mediation effect method to explore the internal mechanism of the impact of supply-side reform policies on the share of labor income of enterprises. The model settings are shown in Equations (3) and (4):

$$\text{MechY} = \beta_0 + \beta_1 \text{Treat} + \beta_2 \text{Post} + \beta_3 \text{Treat} \times \text{Post} + \beta_4 \text{Control}_{it} + \text{Firm FE} + \text{Year FE} + \text{Province FE} + \text{Industry FE} + \varepsilon_{it} \quad (3)$$

$$Y = \beta_0 + \beta_1 \text{Treat} + \beta_2 \text{Post} + \beta_3 \text{Treat} \times \text{Post} + \text{MechY} + \beta_4 \text{Control}_{it} + \text{Firm FE} + \text{Year FE} + \text{Province FE} + \text{Industry FE} + \varepsilon_{it} \quad (4)$$

In the above, MechY represents the mechanism variable of action. The basic logic of the mediation effect testing mechanism seeks to determine if MechY is one of the mechanisms through which the “supply-side reform policy” affects the share of labor income in enterprises. In this case, the “supply-side reform policy” will first have a significant impact on MechY in Equation (3). Then, MechY will significantly affect Y in Equation (4).

4.4.1. Company Revenue

Table 8 presents the test results of the labor income share intermediary mechanism for six listed companies in industries with overcapacity under the “supply-side reform policy”. The study found that the Revenue value in column (1) is −0.016 *** (0.001), indicating that the full sample regression results show that operating income can positively enhance the effect of the “supply-side reform policy” on reducing the share of labor income in enterprises, which verifies Hypothesis 2. Based on the heterogeneity of property rights, when comparing columns (2) and (3), the Revenue values for state-owned enterprises and private enterprises are 0.003 * (0.002) and −0.025 ** (0.002), respectively. We found that the operating incomes of state-owned enterprises can negatively enhance the effect of the “supply-side reform policy” on reducing the share of labor income in enterprises, which verifies Hypothesis 2a; The operating incomes of private enterprises can positively enhance the effect of the “supply-side reform policy” on reducing the share of labor income of enterprises, which verifies Hypothesis 2b. This indicates that the “capacity reduction”

policy can regulate the operating incomes of enterprises, thereby affecting the labor income share of listed companies in the six industries with overcapacity. However, the impact of the “supply-side reform policy” on reducing the share of labor income in state-owned and private enterprises is completely different. The possible reason is that state-owned enterprises bear more social responsibility, and increasing their operating income requires providing more compensation for the labor input of employees.

Table 8. Analysis of the companies’ revenue mechanisms.

	Full Sample	State-Owned Enterprise	Private Enterprise
Dependent Variable: LS	(1)	(2)	(3)
Revenue	−0.016 *** (0.001)	0.003 * (0.002)	−0.025 *** (0.002)
Control variable	YES	YES	YES
Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Province FE	YES	YES	YES
Industry FE	YES	YES	YES
N	17,694	7302	10,392
r ²	0.863	0.910	0.883

Standard errors in parentheses; * $p < 0.1$, *** $p < 0.01$.

4.4.2. R&D Investment

Table 9 reports the results of the analysis of R&D investment. From the test results of the entire sample, the rd values in column (1) are 0.005 *** (0.001), indicating that increasing R&D investment can significantly enhance the effect of the “supply-side structural reform” on reducing labor share of income in all enterprises, which validates Hypothesis 3a. The rd value in column (3) is 0.007 *** (0.001), indicating that increasing R&D investment can negatively enhance the effect of the “supply-side structural reform” on reducing labor share of income in private enterprises, which validates Hypothesis 3b. The rd value in column (2) is not significant, indicating that R&D investment has not had a significant effect on the policy effects of state-owned enterprises. One possible explanation is that state-owned enterprises have always attached great importance to research and development investment in their business operations, so there will be no significant intermediary effect, while private enterprises, on the contrary, have always been less focused on research and development investment, resulting in a significant intermediary effect.

Table 9. Analysis of the R&D investment mechanisms of the companies.

	Full Sample	State-Owned Enterprise	Private Enterprise
Dependent Variable: LS	(1)	(2)	(3)
rd	0.005 *** (0.001)	0.001 (0.001)	0.007 *** (0.001)
Control variable	YES	YES	YES
Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Province FE	YES	YES	YES
N	14,345	5115	9230
r ²	0.881	0.913	0.888

Standard errors in parentheses; *** $p < 0.01$.

In summary, for the entire sample, by studying the responses of operating income and R&D investment to the intermediary mechanism of reducing the labor income share of listed companies in six overcapacity industries under the “supply-side structural reform” policy, it can be concluded that increasing operating income can positively enhance the “supply-side structural reform” by reducing the labor share of income in all enterprises;

increasing R&D investment can negatively enhance the effect of the “supply-side structural reform” by reducing the labor share of income in all enterprises. Moreover, in terms of heterogeneity, state-owned enterprises and private enterprises show different levels of performance.

5. Conclusions and Recommendations

5.1. Conclusions

Against the backdrop of increasing downward pressure on the Chinese economy, continuing to deepen supply-side structural reform is an inevitable choice to ensure that the Chinese economy achieves rational growth in quantity and steadily improves in quality. After more than 6 years of policy advancement, it is urgent for the academic community to provide scientific judgment and a theoretical basis as to whether the supply-side structural reform has achieved the policy goals set at the beginning, how the policy has been effective, what new situations and characteristics have emerged, and where the focus of precise policy implementation is in the further deepening process.

This article takes the “supply-side structural reform” initiated in 2016 as a quasi-natural experiment and uses the “DID” method to analyze the relationship between the effectiveness of supply-side reform policies and the labor income share of 1966 listed companies in China’s A-share market from 2013 to 2021. The processing group consists of enterprises from the six major industries mentioned above, while other enterprises are the control group. The basic conclusion is that the “supply-side reform” policy can reduce the labor income share of enterprises in the “six major industries”. The correctness of the benchmark regression results was verified through a series of robustness tests. The research on differences in policy effectiveness based on the perspective of geographical region, policy effectiveness differences based on enterprise ownership perspective, and policy effectiveness differences based on government intervention degree perspective also verified the results of the main regression analysis from three different heterogeneity analysis perspectives. Secondly, two mediation mechanisms were examined, and the results showed that increasing operating income can positively enhance the “supply-side structural reform” by reducing the labor share of income for all enterprises, while increasing R&D investment can negatively enhance the effect of the “supply-side structural reform” on the reduction of the labor share of income in all enterprises. In terms of increasing corporate revenue, state-owned enterprises and private enterprises have different reactions. An enterprise being state-owned has a negative effect on the enhancement of the main regression result, that is, the status weakens the main regression result; and an enterprise being privately owned positively enhances the main regression results, that is, the status strengthens the main regression results. In terms of increasing R&D investment in enterprises, state-owned enterprises and private enterprises also have different reactions, with state-owned enterprises having less significant effects; and being privately owned negatively enhances the main regression result, which weakens the main regression result.

The research results of this article indicate that the “supply-side reform” policy can effectively reduce the labor income share of target enterprises, reduce the proportion of excess employees, and enhance the vitality of target enterprises. The decline in the share of labor income in enterprises means that they are getting rid of the heavy burden of human resources. The “six major industries” are located in the middle and upper reaches of the Chinese economy, with large enterprise scale, abundant employment opportunities, and many supporting industries. Many single enterprises are the largest pillar enterprises in their cities, so the high-quality and sustainable development of these enterprises plays a crucial role in the national economy.

5.2. Policy Recommendations

In terms of policy effectiveness, the following recommendations are made: 1. Although most of the policies in the early stages of supply-side structural reform adopted mandatory government intervention, and it suppressed the impulse of enterprises to increase produc-

tion capacity in the short term, achieving significant policy effects of “reducing production capacity” and improving performance, in the long run, the government’s mandatory intervention policies may once again distort resource allocation, trigger market supply-demand imbalance, lead to overcapacity and more severe vicious competition, and ultimately damage the quality of economic development. The implementation of supply-side structural reform policies should not and cannot mainly rely on government mandatory intervention, because utilizing the model of government mandatory intervention makes it fundamentally impossible to truly achieve “capacity reduction” and improve development quality and may instead lead to more serious economic consequences. 2. In the process of formulating and implementing reform policies, we must resolutely avoid a “one size fits all” approach and instead make targeted and differentiated choices to achieve targeted and precise policy implementation. In the process of continuing to deepen the supply-side structural reform, targeted solutions must be provided. We should not only focus on the efficiency of economic development, but also on the fairness of economic growth, aiming to prevent new regional economic imbalances and unreasonable wealth redistribution effects which may lead to the loss of focus in reform policies. In addition, targeted analyses of the effectiveness differences of the “supply-side structural reform” policies between state-owned enterprises and private enterprises, and between regions with different levels of government intervention, as well as scientific analyses of the differences in production capacity utilization caused by these differences, can ensure the determination of pertinent differences in policy formulation standards and implementation scales, and truly achieve customized and precise policies. 3. From the perspective of social equity, private enterprises should take on more social responsibilities and ensure that employees’ contributions to work match the income they receive. Meanwhile, compared to state-owned enterprises, private enterprises should also increase their investment in research and development.

In short, supply-side structural reform is inevitably a long-term and arduous task, one which is the foundation and guarantee for China’s economic transformation and upgrading. Continuing to make sustained efforts in supply-side structural reform is the key to adhering to the principles of quality first and efficiency priority, ensuring high-quality, sustained and healthy development of the Chinese economy, and achieving stability and long-term development in the context of increasing downward pressure on the Chinese economy and increasing external uncertainties.

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