

The Impact of Dual-Class Share Structure on Financial Performance: A Case Study of Ninebot Limited

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Abstract. In recent years, the global wave of technological innovation has accelerated, and emerging high-tech enterprises generally face the core contradiction between “stable control” and “external financing needs” in their development process. These enterprises often rely on the strategic judgment and technological leadership of the founding team, and an increasing number of emerging high-tech enterprises are choosing to adopt a dual-class structure. This equity governance structure has been widely recognized abroad, while there is relatively little research and practice on the dual-class structure in China. This article takes Ninebot Limited as the research object. During the research process, the financial data of Ninebot Limited for the years preceding and following its listing served as the core, and the data of Emma Technology and Yadi Holdings for the same period were synchronously matched. From the three dimensions of debt paying ability, operating ability, and profitability, through horizontal and vertical comparative analysis, the role of dual-class structure in safeguarding founder control, supporting R&D expenditure, optimizing decision-making efficiency, and ultimately its impact on corporate financial performance was systematically explored. This study fills the gap in empirical research on dual-class structures in China and aims to provide practical references for local high-tech enterprises planning to adopt this structure in the future. At the same time, providing data support for the improvement of special equity structure regulatory policies in the capital market, and helping domestic technology innovation enterprises find a balanced path between “stable control” and “high-quality development”.

Keywords: Dual-class; financial performance; control voting rights.

1. Introduction

The Chinese capital market has long adhered to the principle of “equal shares, equal rights”. To maintain control and decision-making power over the enterprise, some high-tech companies often choose to list and raise funds in overseas capital markets, which has led to the loss of a large number of high-quality company resources in China and prevented domestic investors from sharing the dividends brought by the rapid development of high-tech enterprises. To change this situation, the Hong Kong stock market issued new regulations in 2018, allowing dual-class structured companies to go public. Xiaomi, which went public in Hong Kong, China, in 2018, issued two types of stocks simultaneously. One Class A stock had ten voting rights, while one Class B stock had one voting right. Founder Lei Jun, who contributed only 31.4%, obtained 55.7% of the voting rights through the design of both Class A and Class B stocks, achieving absolute control over Xiaomi. This marks a milestone event, reflecting a more inclusive and open attitude of the Hong Kong capital market towards emerging high-tech enterprises and Internet enterprises. In 2019, the Science and Technology Innovation Board of the Shanghai Stock Exchange officially introduced a dual-class structure with differentiated voting rights, which is a further recognition of the dual-class structure by the domestic capital market. To maintain stable corporate governance while continuing to expand financing scale, the dual-class structure provides an important equity structure choice for science and technology innovation enterprises.

According to contract theory, enterprises are a series of interconnected contracts with incompleteness, which highlights the importance of control arrangements. Corporate governance

practice has long focused on corporate control allocation, forming two orientations: maximizing shareholder interests and stakeholder interests [1]. From the agency theory perspective, dual-class structures involve dual agency problems: unequal ownership causing conflicts between external investors and founders, and separation of ownership and management rights when founders hold management roles [2]. Previous literature notes three core motivations for tech firms to adopt dual-class structures: preventing malicious takeovers via management control, promoting long-term development, and seeking control benefits; firms with dual-class structures also have higher executive compensation [3]. For tech firms, a key advantage is maintaining founders' control over key decisions, enabling unobstructed R&D and investment strategies-this attracts many tech enterprises [4]. The structure's rationality lies in the market environment, corporate characteristics, and decision-making entities, driven by stable control, founder position security, and long-term strategy [5].

Previous literature has mostly focused on the single impact of dual-class structure on corporate innovation performance or control allocation, with little consideration given to the combination of red chip structure and CDR scenarios. There is also a lack of case studies on dual equity and red chip parallel operations, such as Ninebot Limited. This article fills this gap by taking Ninebot Limited as the research object, using case study and comparative analysis methods, and analyzing the impact mechanism of dual-class structure on financial performance through financial data from 2017 to 2023. The conclusion is drawn that dual class structure can improve debt paying ability and profitability by stabilizing control rights, but has a limited impact on operational ability. Theoretically, it enriches the financial performance research of dual-class structure under the red chip structure, and provides reference for equity design of similar scientific and technological innovation enterprises in practice, and provides data support for regulatory authorities to improve the listing rules of red chip enterprises. Ninebot Limited has achieved the return of red chip enterprises to the A-share market by issuing Chinese depositary receipts, which has reference significance for other unicorn companies registered overseas. Compared with other financing methods for listing, CDR issuance has the characteristics of relatively simple operation and low cost, and is suitable for high-tech and innovative enterprises that meet the requirements of national pilot industries [6].

2. Case Introduction

2.1. Introduction to Ninebot Limited

Ninebot Limited was born from the strategic merger of Segway and Ninebot in 2015. The company focuses on balancing vehicles, electric scooters, and Ebikes, driving cutting-edge innovation, and is a global leader in electric personal mobility products, powersports, and home robots. After continuous development and growth, Ninebot Limited now owns over 5000 intellectual property rights worldwide. On October 29, 2020, Ninebot Limited successfully listed on the Science and Technology Innovation Board (stock abbreviation: Ninebot Limited, code: 689009). As an emerging science and technology innovation company, Ninebot Limited has certain representativeness in the industry. Therefore, this article chooses Ninebot Limited as the research object.

As a benchmark enterprise in power sports and home robots, Ninebot Limited has secured angel to C-round equity financing since 2012. In July 2013, it received a 12 million RMB angel round, obtaining initial development capital. In 2014, Series A financing from Xiaomi, Sequoia Capital, and Shunwei Capital supported its market expansion into China and Southeast Asia. From 2016 to 2017, Series B and C financing-backed by Guotou Innovation and China Mobile Innovation Industry Fund-boosted its production capacity. In 2020, it was listed on the Science and Technology Innovation Board, achieving a capital breakthrough.

2.2. Dual-Class Structure Design of Ninebot Limited

Ninebot Limited is one of the first companies to implement a dual share structure listing on the Science and Technology Innovation Board, with its shares divided into Class A common shares and Class B common shares. Each share of Class B common stock has 5 voting rights, and each share of

Class A common stock has 1 voting right. This design ensures that the founding team of the company can still hold the dominant position in the company even with a low shareholding ratio, avoiding dilution of control of the company's core team caused by equity financing. This design is in line with the governance needs of science and technology innovation companies, ensuring the stability of the company's long-term development strategy, enhancing the coherence of the enterprise's long-term development, and laying the foundation for better market expansion and technological research and development.

However, the company has certain constraints on the rights of Class B shareholders. Except for the difference in voting rights, the shareholder rights of the two types of shares are largely consistent, including rights to dividends and residual assets as specified in Ninebot Limited's articles of association. When the company exercises voting rights on specific matters such as amending the company's articles of association, company merger or dissolution, the number of voting rights enjoyed by each Class B ordinary share is the same as the number of voting rights enjoyed by each Class A ordinary share. Meanwhile, because Ninebot Limited is registered in the Cayman Islands through a red chip structure, its Class B shares are held by overseas entities, while domestic investors indirectly hold Class A shares through CDRs. Therefore, Ninebot Limited's dual-class structure not only meets the requirements of domestic regulators for investor rights protection but also retains the flexibility of the overseas red chip structure.

3. Financial Performance Analysis

First, compare the selection of companies. To explore the impact of Dual-Class Share Structure on the financial performance of Ninebot Limited, this paper selects two companies that belong to the transportation equipment industry with a market value of about 35 billion yuan and do not use the Dual-Class Share Structure as a comparative sample. They are Aima Technology Group Co., Ltd. and Yadea Group Holdings Ltd. These three enterprises are well-known electric bicycle brands in China, with similar market value scale and product structure, to achieve the effect of controlling variables and reduce the interference of uncertain factors. The financial performance data of the three enterprises are compared and analyzed to explore the impact of the implementation of Dual-Class Share Structure on enterprises from multiple dimensions [7].

Second, solvency. As shown in Fig. 1, the asset liability ratio of Ninebot Limited decreased significantly in 2019, from 187.56% to 35.95%, mainly because the company converted a large number of preferred shares into common shares. After listing in the Dual-Class Share Structure in 2020, the asset liability ratio has been stable between 40% and 50%. For most enterprises, the reasonable range of asset liability ratio is 40%-60%, while the asset liability ratio of Aima Technology Group Co., Ltd. and Yadea Group Holdings Ltd. is higher than the upper limit of this range. It can be seen that the implementation of the Dual-Class Share Structure has stabilized the asset liability structure of Ninebot Limited and improved the solvency of Ninebot Limited.

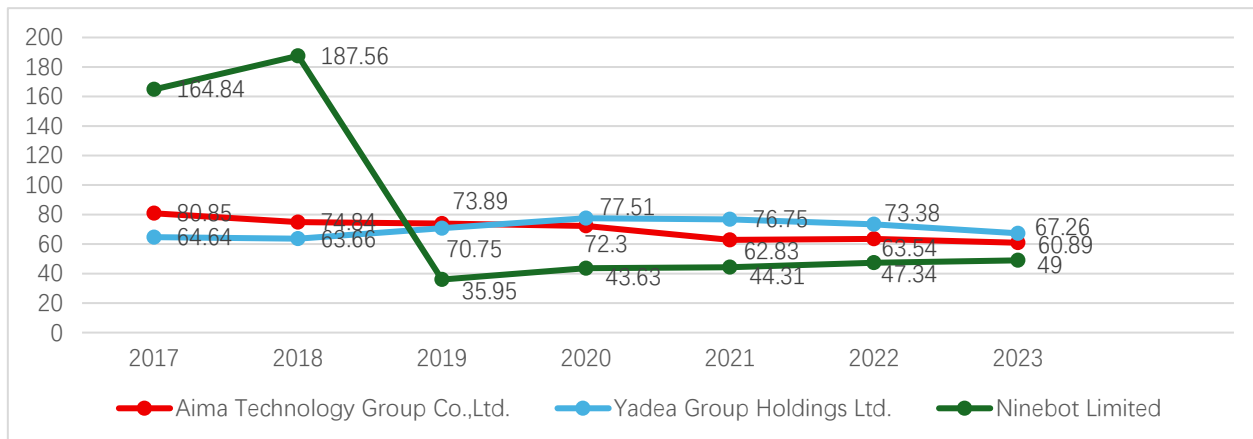


Fig. 1 Comparison of asset liability ratio from 2017 to 2023

Third, operational capacity. As shown in Fig. 2, from 2017 to 2023, the overall fluctuation of the total asset turnover rate of Ninebot Limited was relatively stable. Although the sales scale of the enterprise is steadily increasing, the enterprise also needs to integrate a large number of resources after it is listed in the dual-class structure in 2020. The rapid integration of resources has led to the growth of asset scale higher than the growth of sales revenue, so the total asset turnover rate has not significantly increased. In 2021, Ninebot Limited further improved its cooperation with famous large enterprises such as Xiaomi Corporation, resulting in a slight increase in the turnover rate of total assets. But in general, the implementation of the Dual-Class Share Structure has no obvious impact on the operating capacity of enterprises.

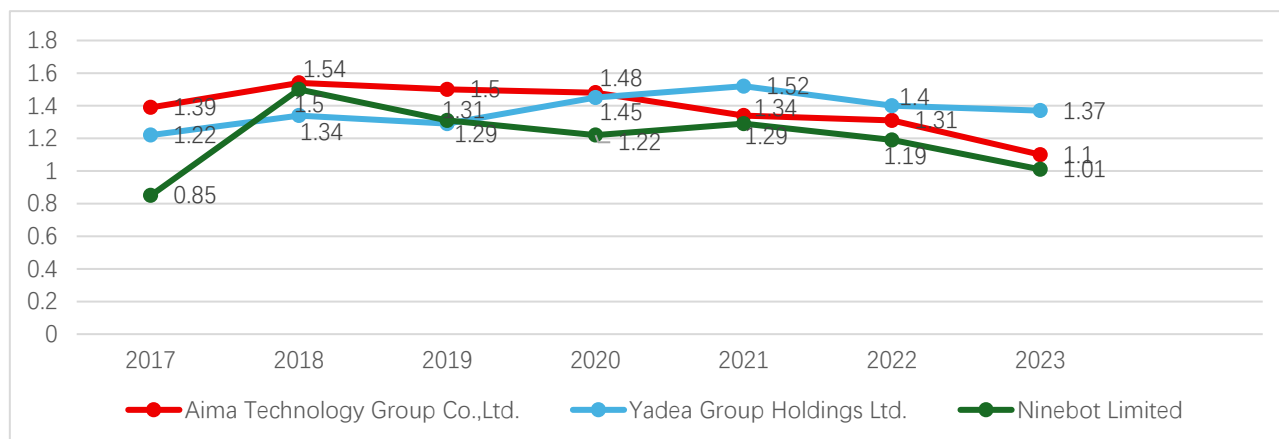


Fig. 2 Comparison of total asset turnover from 2017 to 2023

Fourth, profitability. As shown in Fig. 3, from 2017 to 2023, the net profit margin of Ninebot Limited showed a rising trend. From 2017 to 2019, the net profit margin of Ninebot Limited was negative because the company issued preferred shares measured at fair value and included them in the current profit and loss as financial liabilities [8]. After listing with a Dual-Class Share Structure in 2020, the preferred shares were converted into common shares, and the net profit margin changed from negative to positive. The founder team also had more stable control over the enterprise, paid more attention to the long-term development of the enterprise, maintained a high proportion of R&D expenditure, and actively explored overseas markets, so that the profitability of the enterprise was steadily enhanced.

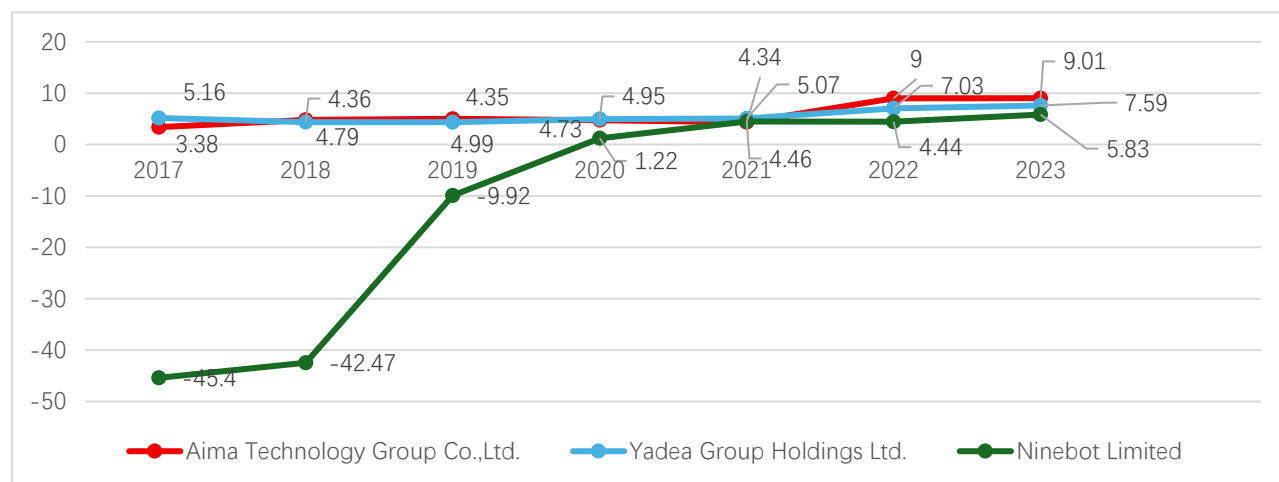


Fig. 3 Comparison of net profit margin of sales from 2017 to 2023

Fifth, develop capacity. As shown in Fig. 4, from 2017 to 2023, the growth rate of Ninebot Limited's operating revenue was positive. The continuous improvement of operating income indicates that the sales scale of enterprises is expanding and the market recognition of products is improving. At the same time, Ninebot Limited continues to explore overseas markets under the leadership of the founder team. By 2019, the market share of the electric scooters of Ninebot Limited

in Germany and Italy had been among the best, and its products had been highly competitive in the international market. Although the operating revenue growth rate fluctuated greatly in 2019, it soon recovered to a stable level after listing in 2020 with a Dual-Class Share Structure. In 2021, affected by the epidemic, people's preference for personal transportation increased, making the operating revenue growth rate steadily increase again. Although the growth rate of operating revenue slowed down after 2021, it still maintained a positive growth trend. It can be seen that the implementation of a Dual-Class Share Structure can promote the development ability of enterprises.

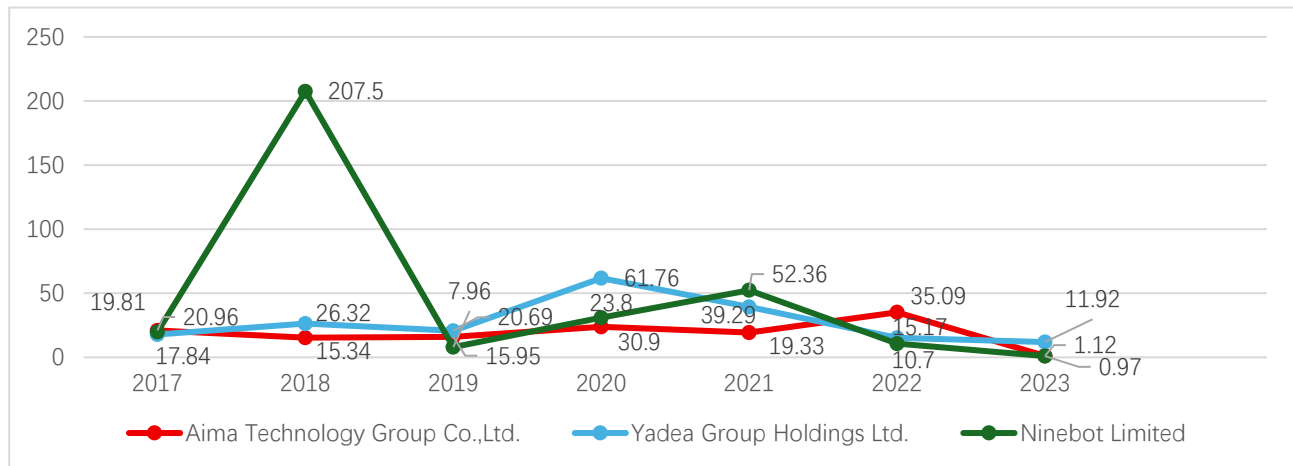


Fig. 4 Comparison of operating revenue growth rate from 2017 to 2023

Sixth, innovation ability. As shown in Fig. 5, Ninebot Limited's R&D expenditure-to-operating revenue ratio averaged 6%, 3 percentage points higher than Aima Technology and Yadea Holdings. In 2018, the ratio dropped to 2.89% due to rapid revenue growth, but recovered in 2019, peaking at 7.69% post-2020 listing. The 2021 decline stemmed from new product launches driving revenue growth. While Yadea's absolute R&D expenses exceed Ninebot's, its R&D ratio is far lower—largely reflecting Ninebot's focus on innovation. Under a dual-class structure, the founding team's stabilized control prioritizes innovation, reducing interference from other shareholders and short-term fluctuations to ensure long-term strategy consistency [9].

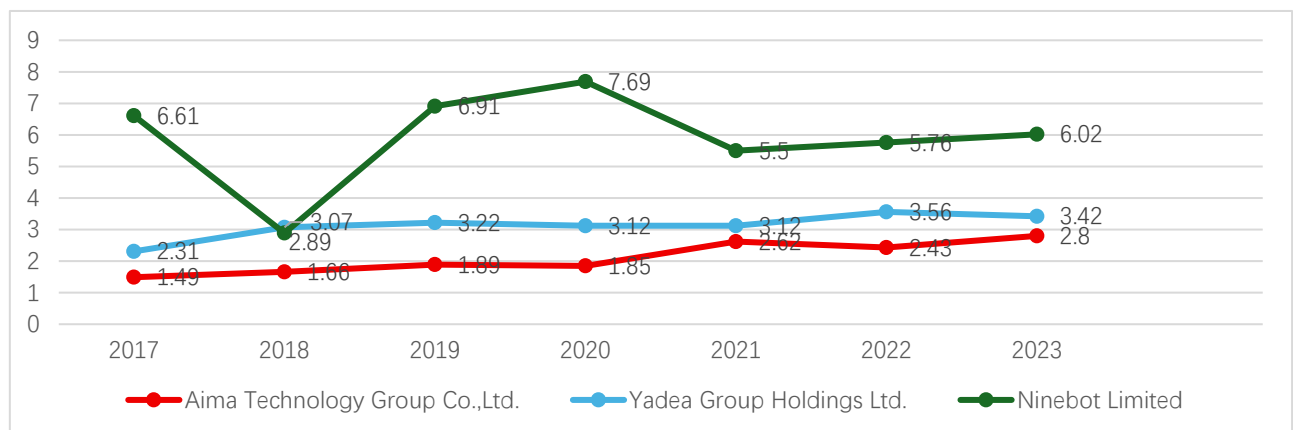


Fig. 5 Ratio of R&D expenditure to operating revenue from 2017 to 2023

4. Optimization Suggestions

The dual class structure brings benefits to Ninebot Limited, but it also inevitably leads to a series of problems, such as unequal distribution of benefits. This article suggests that optimization can be carried out in the following aspects. Firstly, under the dual-class structure, Class B shareholders hold decision-making power with their ultra-high voting rights, while small and medium-sized shareholders holding Class A shares are prone to erosion of their legitimate rights and interests in major voting matters due to the serious separation of voting rights and cash flow rights. In this regard,

it is necessary to establish a multi-level institutional guarantee system: on the one hand, a voting mechanism for class shareholders should be established. Matters that directly affect the interests of small and medium-sized shareholders, such as profit distribution, related party transactions, and equity dilution, must be voted on separately by ordinary shareholders and approved by more than two-thirds before they can take effect; On the other hand, the study will strengthen the targeted disclosure of information and regularly issue a special report on the protection of the rights and interests of small and medium-sized shareholders, explaining the adoption of their opinions in the decision-making process. At the same time, granting small and medium-sized shareholders the right to question and object to decisions that are suspected of damaging their rights and interests, ensuring that the demands of ordinary shareholders are not ignored [10].

Secondly, extending to high research and development fields is an important path to break through growth bottlenecks. Ninebot Limited should focus on high research and development tracks with high relevance such as new energy storage, intelligent service robots, and low altitude short distance transportation, increase resource allocation, and focus on core technologies such as solid-state batteries, autonomous navigation algorithms, and multimodal interaction; By jointly building research and development platforms with university laboratories and science and technology innovation institutions, the study can accelerate the transformation of technological achievements; Regularly disclose research and development progress, patent layout, and technology commercialization prospects to the market, using three-dimensional data of “R&D expenditure intensity + patent growth quantity + achievement conversion efficiency” to enhance investor confidence. At the same time, leveraging the growth stories brought by technological iteration to attract strategic investors and long-term capital, optimizing shareholder structure to obtain technical, financial, and resource support, and creating more development opportunities. Thirdly, establish a disclosure and balance mechanism for the exercise of differentiated voting rights. According to the theory of moderate incentives, Ninebot Limited can regularly disclose the voting status of its founding team, which is the B-share shareholders, on major decisions such as R&D expenditure and overseas expansion. It can also set a “sunset clause” for voting rights, which automatically reduces the proportion of B-share voting rights if the company’s R&D expenditure growth rate is lower than the industry average for three consecutive years, forming a rigid constraint [11]. At the same time, introduce 1-2 independent supervisors with backgrounds in the science and technology innovation industry to supervise whether differentiated voting rights deviate from the long-term interests of the enterprise and avoid abuse of control.

5. Conclusion

For Ninebot Limited’s future development, a dual-class structure is a suitable strategy, supported by its stabilized solvency and enhanced profitability. Firstly, the “dual-class structure + CDR + red chip structure” model meets domestic regulations while retaining red chip flexibility, expanding development possibilities. Secondly, it boosts risk resistance: asset liability ratio stabilizes at 40%-50%, and total asset turnover approaches industry benchmarks post-listing, narrowing the peer gap. Finally, profitability improves: net profit growth shifts from negative to explosive, net profit margin rises from -45.4% to 5.83%, first-year post-listing revenue growth outperforms the industry, and R&D investment remains positive.

As one of the first companies to list on the Science and Technology Innovation Board with a dual-class structure, Ninebot Limited has a certain representativeness in the industry. This article mainly analyzes the impact of dual-class structure on the performance of Ninebot Limited, providing ideas for setting equity structure for emerging science and technology innovation companies that are the same or similar to Ninebot Limited, to promote better innovation performance and development of science and technology innovation companies in the market. There are some shortcomings in the data aspect of this article, as Ninebot Limited went public relatively late, and some key financial data is still incomplete. At the same time, during the implementation of the dual-class structure, Ninebot

Limited did not have a significant impact on some data, such as operational capacity, which may also affect the conclusions of this article. It is recommended that future research focus on comprehensive data collection and conduct more in-depth research on the impact of dual-class structure on corporate performance.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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