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# Research on the Performance of Zhongding Group's Acquisition of German AMK Under Strategic Transformation Objectives

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**Abstract:** People's demand for cars has been increasing in recent years, in response to the country's call to save non-renewable resources. The sustainable development goals promote the rapid development of the new energy automobile industry, which provides new opportunities for the auto parts industry. Chinese parts and components enterprises have insufficient competitiveness in the high-end product market, high labour costs in the low-end product market, weak strength and insufficient research and development capabilities, so to take a place in the competition of different product markets and gain a larger market share, mergers and acquisitions (M&A) are an important way to learn about advanced productivity, market competitiveness and brand advantages. In this context, we evaluate the performance of the strategic behaviours of Zhongding's M&A of AMK in Germany, hoping that it can provide overseas M&A experience for domestic companies in the same industry. In this paper, we take the M&A of AMK as the research object, collate relevant literature at home and abroad, analyse the development trend of China's auto parts on the basis of the actual situation of both parties to the merger and acquisition, briefly analyse the motivation of the merger and acquisition and the process of the merger and acquisition, and combine the company's part of the financial indicators before and after the merger and acquisition, and use the method of financial and non-financial indicators to carry out a comprehensive analysis of the performance of M&A. Finally, the study concludes that the M&A has enlarged the operation scale of Zhongding, which has given the company a new growth point in revenue and further promoted the company's concept of diversified operation. However, the company's profitability did not reach the expected improvement, and the operating income and gross profit margin of air suspension system continued to decline. Due to the high production cost of air suspension system, it is unable to enter the low-end market and its service life is not long, which leads to the unstable development ability of the company. In this regard, it is proposed to reduce the production cost, popularise the middle and low-end automobile market, and prolong the service life, so as to enable the company to develop in a sustainable manner. It is a reference for other enterprises in the industry to carry out M&A.

**Keywords:** vertical mergers and acquisitions; financial indicators; merger and acquisition performance

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## 1. Introduction

### 1.1. Research Background

The Chinese automotive industry has been developing at an increasingly rapid pace, simultaneously driving the auto parts sector to flourish, emerging as one of the most profitable countries in the industry globally as early as 2010. However, this achievement does not signify that China's auto parts sector possesses the world's most advanced production technologies. The industry in China primarily competes on "quantity," boasting large-scale production but lagging in core technologies. Given the lack of core technologies and intensifying competition within the sector, China's auto parts industry faces both internal and external challenges, becoming a stumbling block hindering the development of the automotive industry.

Against the backdrop of economic globalization, the auto parts industry is undergoing transformation, and Zhongding Sealing Parts Co., Ltd. (hereinafter referred to as 'Zhongding') has capitalized on this trend by achieving rapid development through overseas M&A to acquire technology. By adopting a strategy of global acquisitions and domestic integration, the company has inherited the core technological advantages of acquired firms, significantly enhancing its independent R&D and production capabilities. This approach has also facilitated the development of overseas-acquired companies in the Chinese market, expanding the company's growth space. The weakness of China's automotive industry lies in the significant foreign presence in the parts market and the lack of core technologies. While China's auto parts sector holds a quantitative advantage globally, with substantial export volumes, these products are largely labor-intensive, low-tech, and low-value-added, such as hubs, wheels, and steering knuckles, positioning them at the lower end of the global procurement chain. As traditional fuel vehicles are gradually replaced by new energy vehicles, the value structure of automobiles has undergone significant changes, presenting new opportunities for business growth in the auto parts industry. Leveraging keen market insight, Zhongding seized this opportunity, treating M&A as a strategic tool to rapidly expand scale, increase market share, strengthen competitiveness, and reduce costs. However, M&A activities also entail certain risks and challenges. In many cases, despite post-transaction growth in corporate scale, performance fails to improve substantially, and some even encounter more severe issues.

Therefore, this paper selects Zhongding's acquisition of Germany's AMK as the research subject, employing financial and non-financial indicators alongside theories of strategic management, diversified operations, market power, and synergy effects to analyze Zhongding's post-M&A performance, thereby providing a comprehensive understanding of its overall changes post-acquisition. The findings aim to offer insights for Chinese auto parts companies seeking breakthroughs through M&A.

### 1.2. Research Objectives and Significance

#### 1.2.1. Research Objectives

With the increasing market share of new energy vehicles (NEVs), the development of the auto parts industry has become urgent. Traditional fuel-powered vehicles do not impose high demands on chassis stability, whereas NEVs require the opposite. Air suspension systems can effectively meet this heightened demand and are gradually becoming a standard configuration for NEVs. However, China's lack of core production technologies has significantly hindered the progress of its auto parts industry. Therefore, this paper selects Zhongding Sealing Parts Co., Ltd.'s cross-border acquisition of Germany's AMK as the research subject, analyzing the company's pre- and post-acquisition performance to determine whether the merger brought positive development. It also examines the reasons behind performance fluctuations during the acquisition process, offering insights for the auto parts industry to reconsider development strategies and derive lessons for future growth.

### 1.2.2. Research Significance

#### 1) Theoretical Significance

Amid intensifying industry competition, many enterprises adopt M&A as a strategic means to expand scale, diversify operations, and enhance profitability. However, the success of M&A transactions significantly impacts corporate performance, making research on post-M&A performance highly relevant. This paper takes Zhongding's acquisition of AMK as a case study, outlining the motives and characteristics of the merger based on Zhongding's developmental context. By analyzing key financial indicators, challenges during the acquisition, and strategies to improve financial performance, This study enriches theoretical research on M&A performance under strategic transformation objectives.

#### 2) Practical Significance

Given the domestic auto parts industry's deficiency in core technologies for high-end products, overseas acquisitions offer a faster, lower-cost method to obtain such technologies and diversify business operations, while also reducing R&D difficulties. However, cross-border M&A entails risks, necessitating case analyses to summarize experiences and lessons. These findings provide valuable references for other enterprises pursuing overseas acquisitions, underscoring the importance of such research.

Zhongding is a multinational private enterprise group primarily engaged in manufacturing mechanical components and auto parts. Its expansion through M&A serves as a model for other Chinese auto parts manufacturers. Germany's AMK ranks among the top three in its sector, maintaining a stable market share in Europe. Thus, Zhongding's acquisition of AMK is a highly representative case. This paper evaluates whether the merger positively impacted Zhongding by analyzing performance changes, with the findings offering theoretical guidance for other firms in the auto parts industry.

### 1.3. Literature Review

The study of merger and acquisition (M&A) performance emerged alongside corporate M&A activities, fundamentally driven by the goal of enhancing corporate performance and generating greater socioeconomic benefits. However, scholars from different countries and regions have reached divergent conclusions when evaluating M&A performance.

#### 1) Research on M&A Motivations

In recent years, the wave of M&A has continued unabated, with motivations varying across countries and industries. Scholars worldwide have approached the subject from different perspectives, yielding diverse findings.

Due to the early onset and prolonged duration of M&A activities in developed economies, foreign scholars have conducted extensive research on M&A motivations. Ansoff, the father of strategic management in the U.S., argued that post-merger performance should exceed the simple sum of individual firms' standalone operations. Successful M&As can achieve cost synergies and operational efficiency through resource integration, thereby enhancing corporate growth—essentially realizing a "2+2>4" effect [1]. Mathews posited that developing countries, constrained by limited technology and managerial expertise, could acquire intangible assets like advanced technologies from developed economies through cross-border M&As to bolster their competitiveness [2]. Glaister studied U.K. firms engaging in overseas M&As and found that such transactions enable faster market entry, improved expansion efficiency, increased global market share, and enhanced competitive advantages [3]. Florio emphasized M&A as a critical strategic tool, noting that while firms face uncertainties and risks during the process, they can leverage external forces to achieve greater development [4]. Blouin, Fich, Rice, et al. demonstrated that the surge in corporate M&A activities was influenced by U.S. domestic tax cuts on production [5].

## 2) Research on M&A Performance

Foreign scholars have primarily focused on whether M&As positively impact the performance of acquiring firms and how such activities create value. Some researchers argue that M&As effectively enhance corporate performance. Adam examined the short-term and long-term market effects of M&As and found that most transactions generated immediate returns for acquirers, with these benefits persisting over time [6]. T. Sathishkumar and P.N. Assai Tamby analyzed the financial performance of post-M&A firms, revealing significant improvements in most cases [7]. Conversely, other scholars contend that M&As fail to boost performance. Fuller studied U.S. M&As between 1990–2000 and observed diminishing wealth effects for serial acquirers [8]. Gordon Walker focused on cross-border M&As involving U.S. firms and identified post-transaction performance declines [9]. Akhtar and Nosheen analyzed bank-fintech M&A, concluding that such deals negatively affected banks' long-term market performance [10]. A third perspective suggests context-dependent outcomes. Borodin, Sayabek, and Islyam evaluated 138 M&A deals and found that while most firms remained profitable post-M&A, quantitative analysis revealed no statistically significant link between M&As and financial metrics, indicating heterogeneous effects [11].

## 3) Research on M&A Performance Evaluation Methods

Multiple methodologies exist for assessing M&A performance, including financial indicators and event studies. Neelamm Rani applied financial indicators to 300+ U.S. firms using DuPont analysis, demonstrating enhanced operational capabilities post-M&A [12]. C. Liu and D.O. Statistics studied 30+ renewable energy firms, identifying solvency, profitability, growth potential, and their interrelationships as key performance determinants [13]. Papageorgiou combined event studies with financial indicators for U.S. M&As, noting that event studies only explain performance at the transaction point but fail to predict sustained changes [14]. Manoj Panda et al. employed event studies for 137 Indian cross-border M&As, documenting positive abnormal returns around announcement dates.

### 1.4. Research Content

This study examines the case of Zhongding Sealing Parts Co., Ltd.'s acquisition of Germany's AMK company, conducting a multidimensional performance evaluation to summarize experiences and propose reasonable suggestions, thereby providing reference for other domestic auto parts enterprises considering M&A activities. The main research contents are as follows:

Chapter One serves as the introduction, presenting the research background, objectives and significance, reviewing domestic and international M&A-related studies, and introducing the content of M&A performance research, methodologies employed, and the technical roadmap.

Chapter Two covers relevant concepts and theoretical foundations, primarily including M&A, cross-border M&A, and financial performance evaluation of M&A, while elaborating on strategic management, diversified operations, market power, and synergy theories, which provide the theoretical basis for this study.

Chapter Three details the case of Zhongding's acquisition of AMK, introducing the basic profiles of both companies, analyzing the M&A motivations, and reviewing the acquisition process.

Chapter Four presents the M&A performance analysis, combining financial indicators to evaluate Zhongding's profitability, operational efficiency, solvency and growth capability before and after the acquisition, while employing non-financial indicators to conduct a more comprehensive analysis of customer retention, overseas market expansion and innovation capability.

Chapter Five analyzes the reasons for performance issues in Zhongding's cross-border M&A and proposes countermeasures, identifying causes through examination of financial performance changes and suggesting corresponding solutions.

Chapter Six concludes the study with findings and future research prospects.

### *1.5. Methodology and Framework*

#### *1.5.1. Research Methods*

##### *1) Literature Review Method*

Utilizing university library resources and electronic database searches, this study references existing scholarly research to identify M&A-related theories and compile relevant literature. By systematically reviewing established performance evaluation methodologies in M&A studies, the research framework for analyzing Zhongding's acquisition performance is developed, providing critical theoretical foundations and analytical perspectives.

##### *2) Case Study Method*

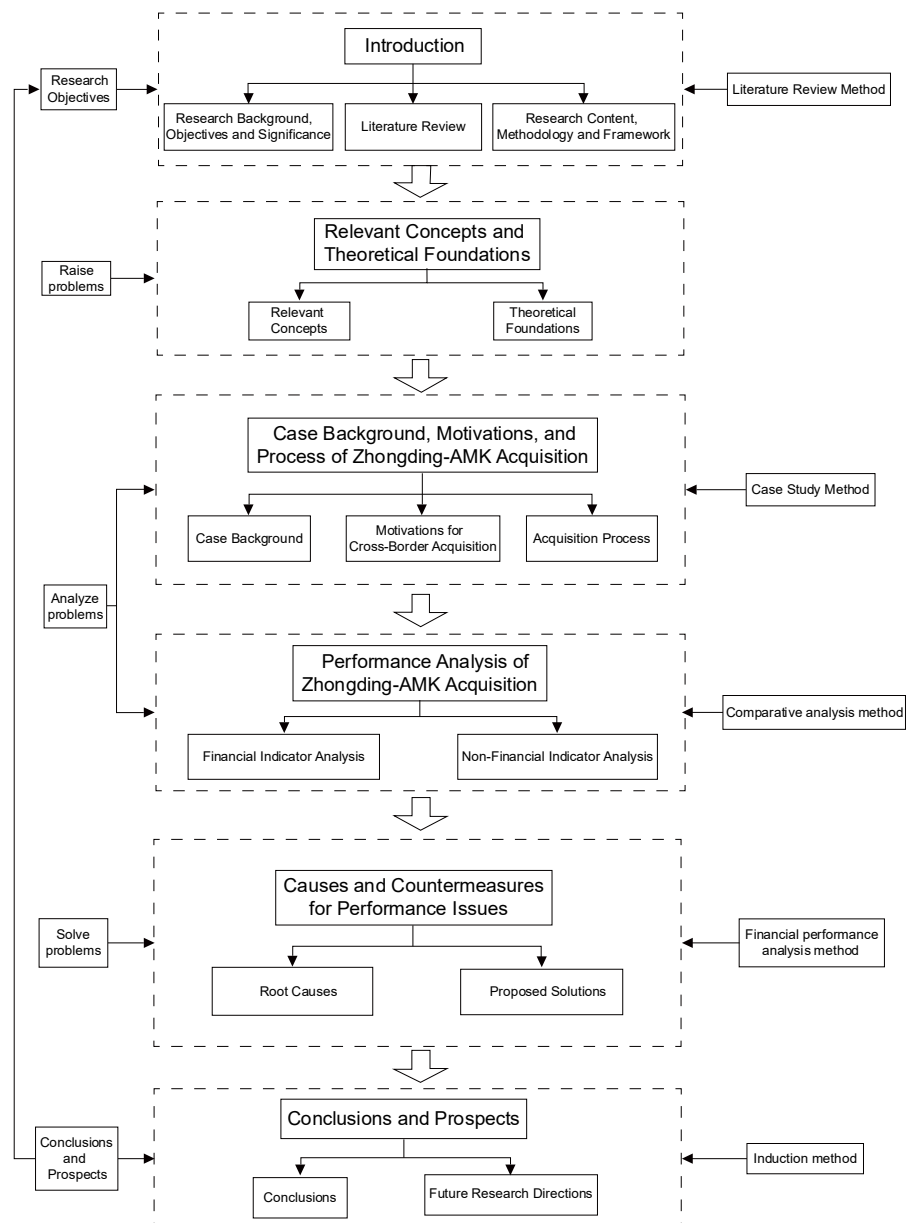
Focusing on Zhongding's acquisition of Germany's AMK, this research examines the evolutionary trajectory of China's auto parts industry while investigating the strategic motivations and distinctive characteristics of this cross-border transaction. Through comparative financial indicator analysis pre- and post-acquisition, the study evaluates performance impacts, identifies operational challenges, proposes optimization strategies, and offers implementable references for industry peers considering similar M&A activities.

##### *3) Financial Indicator Method*

The study conducts horizontal comparative analyses of corporate profitability, operational efficiency, solvency, and growth capacity using audited financial metrics. By integrating non-financial indicators, it comprehensively assesses how M&A strategies influence financial performance, ultimately generating actionable insights for auto parts enterprises to capitalize on market opportunities and refine strategic development plans.

#### *1.5.2. Technical Roadmap*

Through a series of theoretical studies and data indicator analyses in this paper, the proposed solution to be addressed is how to find an effective method for significantly improving the M&A performance of Zhongding Sealing Parts Co., Ltd., enabling the company to recover quickly, overcome difficulties, and seek long-term development. The technical roadmap is as follows (Figure 1)



**Figure 1.** Technical Roadmap.

## 2. Relevant Concepts and Theoretical Foundations

### 2.1. Relevant Concepts

#### 2.1.1. Mergers and Acquisitions (M&A)

M&A refer precisely to the processes of merger and acquisition. A merger involves the transfer of property rights through transactions that integrate another enterprise under one entity, with the merged enterprise losing its legal person status. An acquisition refers to purchasing the shares or assets of the target company through transactions, obtaining usage rights and control over those assets. In practical economic activities, M&A are often difficult to distinguish clearly. Therefore, in Western economic management theories, these two concepts are commonly combined and collectively referred to as "M&A."

#### 2.1.2. Cross-Border M&A

M&A can be categorized based on whether the participating parties are from the same region into domestic M&A and cross-border M&A. Domestic M&A occurs when



both the acquiring and target companies are from the same country. Cross-border M&A, where the acquiring and target companies are based in different countries, represents a form of direct investment. Cross-border M&A can be further divided into "inbound" and "outbound" types. The "inbound" type refers to overseas enterprises acquiring domestic companies, while the "outbound" type refers to domestic enterprises actively acquiring overseas companies in response to national policies. This study focuses on the latter, the "outbound" type of cross-border M&A.

### 2.1.3. Financial Performance Evaluation of M&A

M&A performance refers to the changes in performance exhibited by both parties involved in the M&A activity across various aspects, which can be evaluated based on profitability, solvency, and other dimensions. Generally, M&A performance can be classified into two types: short-term performance, which measures the impact of M&A activities on shareholder wealth and corporate value, and long-term performance, which is assessed based on operational income over five years post-merger. The latter differs significantly from short-term performance. M&A performance evaluation involves analyzing whether the M&A was successful, whether the intended goals and synergies were achieved, and whether it contributed to corporate development. Financial performance evaluation entails comparing and analyzing financial indicators over a specific period to determine whether post-M&A performance met expectations and identify areas for improvement. Additionally, during the M&A process, companies often use pre- and post-M&A financial data to directly assess the impact of the transaction on operational outcomes and evaluate the true effectiveness of capital investments.

## 2.2. *Relevant Theory*

### 2.2.1. Strategic Management Theory

Strategic management represents a managerial approach focused on formulating and implementing long-term organizational objectives while effectively responding to internal and external environmental changes. It emphasizes aligning resource allocation with organizational mission and vision to achieve competitive advantage and sustainable development. The fundamental principles encompass defining organizational mission and vision, analyzing external environments and internal resources, establishing strategic objectives and plans, implementing and monitoring strategic execution, and continuously learning and adjusting strategies. In corporate management, strategic management theory finds extensive application in strategic planning, market positioning, business development, and performance management.

### 2.2.2. Diversification Theory

Given uncertainties in external business environments, diversification enables enterprises to mitigate operational risks. Diversification strategy refers to corporate expansion into different product lines or business sectors to reduce reliance on single operations and enhance risk resilience. Particularly when listed companies encounter developmental bottlenecks or transformation pressures, they often adopt diversification strategies to enter new business domains, thereby achieving industrial structure upgrading. Through M&A, firms can rapidly access new sectors, overcoming industry barriers more efficiently than through organic growth. By acquiring targets' technologies and expertise, companies secure new profit growth points while effectively reducing operational risks.

### 2.2.3. Market Power Theory

The market power theory posits that enterprises primarily pursue M&A to expand market dominance. This expansion manifests through two mechanisms: first, by reducing industry competition to strengthen monopolistic control and market share, thereby secur-

ing long-term profitability and dominant positions; second, by enhancing competitive advantages through acquisitions. As an economic phenomenon and organizational behavior, M&A not only elevates acquirers' competitiveness but also improves combined entities' overall competitive capabilities through resource integration.

#### 2.2.4. Synergy Effect Theory

Synergy effect theory conceptualizes corporate mergers as achieving "1+1>2" outcomes. Through mergers or acquisitions, companies leverage complementary strengths to offset weaknesses, realizing synergies across three dimensions: financial synergies improve post-merger fiscal health; operational synergies enhance business efficiency through cost reduction and revenue growth; managerial synergies elevate administrative efficiency, exemplified by shared management costs lowering product overhead expenses.

### 3. Case Background, Motivations, and Process of Zhongding-AMK Acquisition

#### 3.1. Case Background

##### 3.1.1. Profile of Acquirer: Zhongding Group

Anhui Zhongding Sealing Parts Co., Ltd. (hereinafter referred to as Zhongding) is headquartered in Ningguo City, Anhui Province. Originally established in 1980 as Ningguo Sealing Parts Factory, it was formerly known as Anhui Feicai Vehicles Co., Ltd. The shares of Anhui Feicai Vehicles Co., Ltd. were listed on the Shenzhen Stock Exchange on December 3, 1998. On December 13, 2006, the company received the share transfer registration confirmation, with its controlling shareholder changing from Anhui Feicai (Group) Co., Ltd. to Anhui Zhongding Holding (Group) Co., Ltd. On January 18, 2007, the company was renamed Anhui Zhongding Sealing Parts Co., Ltd. In 2009, it was jointly awarded the title of Innovative Enterprise by the Ministry of Science and Technology, the State-owned Assets Supervision and Administration Commission of the State Council, and the All-China Federation of Trade Unions. After more than 40 years of development, the company has established a strategic pattern of focusing on the domestic market while expanding into global markets.

According to Zhongding's announcements, as of September 30, 2023, the top ten shareholders of Zhongding are shown in Table 1. Except for Anhui Zhongding Holding (Group) Co., Ltd., no other shareholder holds more than 5% of the shares, with the combined shareholding ratio being only 9.18%. According to the 2022 annual report, the company's major shareholders collectively held 40.46% of the total shares during the reporting period.

**Table 1.** Top Ten Shareholders of Zhongding.

Rank	Shareholder Name	Shareholding Percentage (%)
1	Anhui Zhongding Holding (Group) Co., Ltd.	40.4600
2	Hong Kong Securities Clearing Company Limited	2.2600
3	National Social Security Fund 102 Portfolio	1.4400
4	Dajia Life Insurance Co., Ltd.	1.0300
5	Abu Dhabi Investment Authority	0.9800
6	Miao Su	0.7800
7	China Life Insurance Company Limited	0.7700
8	Ping An Bank Co., Ltd.	0.75
9	Shanghai Pudong Development Bank Co., Ltd.	0.62
10	Industrial and Commercial Bank of China Limited	0.55

Data source: Company announcements.



### 3.1.2. Profile of Acquiree: German AMK

AMK Holding GmbH & Co. KG (hereinafter referred to as AMK) is headquartered in Kirchheim, Germany, and was established in 1963. As a leading supplier of motor battery control systems, driving assistance, and chassis electronic control systems, its business operations are primarily divided into two sectors: automotive and drive control technology. The automotive segment constitutes the larger portion at approximately 70%, with products mainly sold in the European market. The major shareholders and their respective shareholdings are as follows: EM Holding GmbH owns 50.95%, Karin Müller Bauer owns 24.525%, and Sabine Bosch owns 24.525%. The company has over 50 years of history.

## 3.2. Motivations for Cross-Border Acquisition

### 3.2.1. Obtaining Core Technology for Diversification

Amid the rapid development of the automotive industry, China's auto parts sector has experienced significant growth. The global shortage of non-renewable energy resources has accelerated the advancement of new energy vehicles (NEVs), prompting the auto parts industry to expand toward electrification, intelligence, and lightweight solutions. Energy-efficient and environmentally friendly vehicles represent the future trend of the industry, driven by increasing global emphasis on environmental issues and supported by various policies promoting NEVs. Consequently, the NEV market has gradually become a preferred choice for many consumers. The auto parts industry has shifted toward new directions, particularly in battery, motor, and electronic control systems. However, most Chinese auto parts manufacturers focus on labor-intensive, low-technology, and low-value-added products, with insufficient investment in research and development. Therefore, M&A have become an effective route for Chinese auto parts companies to achieve growth and form large-scale conglomerates.

Originally specializing in sealing products, Zhongding expanded into rubber vibration damping in 2005 while continuing to develop its existing business. By increasing technological investment and pursuing cross-border acquisitions, the company introduced advanced foreign technologies to China, achieving localization in air suspension systems, lightweight chassis systems, and fluid pipeline systems. Through the acquisition of Germany's AMK, Zhongding expanded its air suspension business and leveraged reverse technology spillover effects to absorb the acquired company's advanced core technologies. This strategy enhanced the company's competitive edge, allowing it to secure a leading market position and establish a new pattern of diversified development.

### 3.2.2. Expanding Overseas Market Share

The company initiated its overseas market expansion strategy in 2003 by establishing logistics centers to strengthen global supply chain stability. In 2008, it commenced cross-border acquisitions to penetrate international markets, simultaneously consolidating core businesses while venturing into emerging electric and intelligent sectors, ultimately achieving globalized operations for its key business segments. In 2016, the company executed a 130-million-euro acquisition to obtain core air suspension system technologies from Germany's AMK, an industry top-three player whose primary clientele includes premium European automakers such as Volvo, Mercedes-Benz, and BMW, maintaining stable European market presence. Leveraging AMK's industry influence and leadership, the company has continuously expanded its overseas client network.

The NEV revolution has intensified competition in auto components, prompting Zhongding to enhance profitability and market share through global acquisitions since 2008. By collaborating with overseas partners, the company has refined strategic objectives, capitalized on China's engineering talent advantages, and accelerated technology absorption and innovation. While sustaining steady growth in traditional operations, it

has systematically cultivated emerging business lines, with overseas revenues increasingly contributing to overall income. AMK possesses full air suspension system supply capabilities, ranking among the global top three in air supply units with entrenched European market positions. The acquisition enables Zhongding to inherit and integrate AMK's premium client resources, circumventing market entry barriers faced by new competitors while boosting market penetration. Through this transnational acquisition, Zhongding achieves product localization and expanded market share, laying foundations for sustainable development.

### 3.2.3. Localizing Production to Reduce Costs

At the current stage, vigorously promoting corporate business development through M&A has proven to be an effective pathway for achieving rapid growth. By acquiring AMK, Zhongding strategically positioned itself in air suspension systems and related businesses. This move shortened the development cycle in new sectors while reducing expansion costs and operational risks, simultaneously enhancing corporate development efficiency. In 2018, the establishment of Anhui AMK, a Chinese subsidiary, accelerated the localization of air suspension business and secured orders from major automakers including NIO and Dongfeng. The domestic production of air suspension systems lowered manufacturing costs and, with the strategic objective of penetrating the domestic market, leveraged technological advantages to generate additional business growth.

### 3.3. Acquisition Process

Zhongding issued the "Announcement on Suspension of Trading Due to Significant Matters," disclosing plans to acquire targets in Europe's automotive electronics sector. In accordance with Shenzhen Stock Exchange regulations, the company's shares (Stock Code: 000887, Stock Abbreviation: Zhongding) were suspended from trading starting Wednesday, May 11, 2016, with a requirement to disclose relevant details and resume trading within ten business days or proceed with significant asset restructuring procedures. The "Progress Announcement on Suspension of Trading Due to Significant Matters" released on May 18, 2016, indicated ongoing negotiations between the company and relevant transaction parties. Due to uncertainties surrounding the matter and to prevent abnormal stock price fluctuations while protecting investor interests, the trading suspension was extended. On May 25, 2016, the "Pre-disclosure Announcement Regarding the Acquisition and Resumption of Trading" provided preliminary acquisition details, with trading resuming on Wednesday, May 25, 2016, at market opening. On June 6, 2016, the company convened its 15th meeting of the 6th Board of Directors, reviewing and approving the "Proposal Regarding Zhongding Europe's Equity Acquisition." Following the meeting, the "Announcement on Zhongding Europe's Equity Acquisition" was released on June 8, 2016. Zhongding Europe, a wholly-owned subsidiary of Zhongding, signed the "Equity Transfer Agreement" with shareholders of AMK Holding GmbH & Co. KG, acquiring 100% equity of AMK for 130 million euros. Through this transaction, Zhongding obtained complete operational assets of the German company.

## 4. Performance Analysis of Zhongding-AMK Acquisition

The analysis relying solely on financial indicators to assess the impact of this acquisition on Zhongding Sealing Parts Co., Ltd. proves insufficiently comprehensive. Therefore, this study incorporates non-financial indicators to conduct a multidimensional evaluation of the M&A performance. Through this acquisition, Zhongding obtained core air suspension technologies, achieved operational performance improvements, and expanded its overseas market presence. However, financial indicator analysis reveals certain metrics exhibiting decelerating growth rates or declining trends.

#### 4.1. Financial Indicator Analysis

##### 4.1.1. Declined Profitability

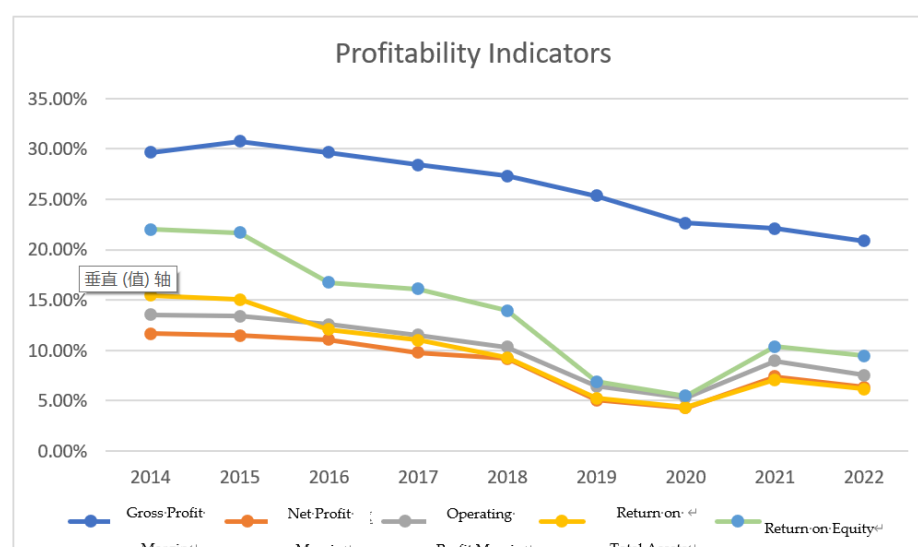
Profitability reflects the operational outcomes of an enterprise during a given period. This study employs five key indicators listed in Table 2 to evaluate the impact of the acquisition on Zhongding Sealing Parts Co., Ltd.'s profitability.

**Table 2.** Profitability Indicators of Zhongding Sealing Parts Co., Ltd., 2014-2022.

Year	Profitability Indicators				
	Gross Profit Margin(%)	Net Profit Margin(%)	Operating Profit Margin(%)	Return on Total Assets(%)	Return on Equity(%)
2014	29.67	11.66	13.53	15.47	22
2015	30.76	11.46	13.39	15.06	21.69
2016	29.65	11.08	12.56	12.08	16.75
2017	28.4	9.8	11.52	11.05	16.1
2018	27.35	9.19	10.34	9.3	13.98
2019	25.34	5.06	6.47	5.27	6.91
2020	22.65	4.3	5.31	4.36	5.49
2021	22.11	7.4	8.95	7.08	10.4
2022	20.87	6.37	7.55	6.15	9.47

Data source: Company annual reports.

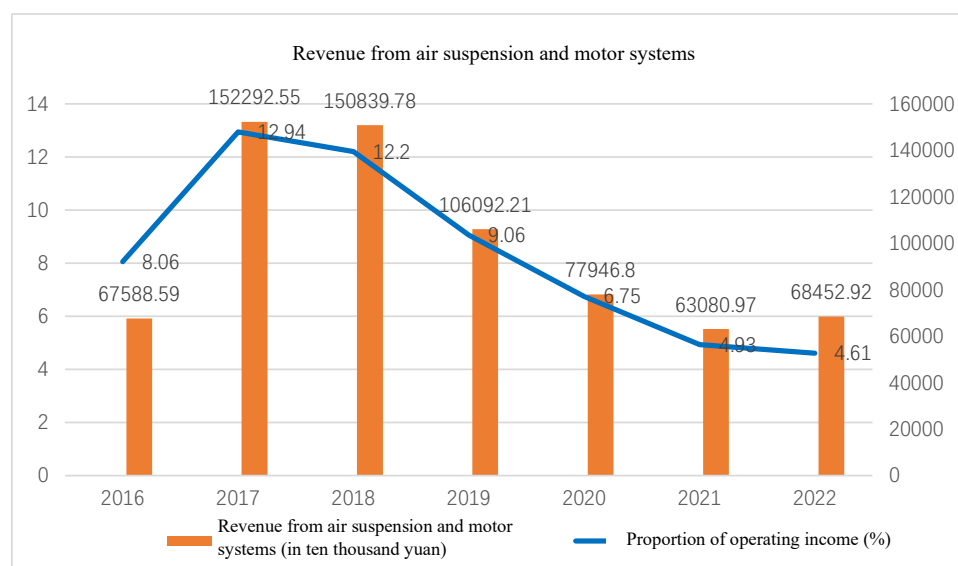
The data from Table 2 and Figure 2 demonstrate that Zhongding maintained relative stability with minor fluctuations during the pre-acquisition period (2014-2015). However, following the 2016 acquisition, the gross profit margin has shown a continuous declining trend without signs of recovery, indicating substantial acquisition-induced impacts on profitability. The other four indicators similarly exhibited post-acquisition declines, with particularly precipitous drops in 2019 and the most significant annual deterioration occurring in 2020. This decline was partially attributable to industry-wide disruptions caused by the COVID-19 pandemic outbreak in 2019. Although indicators began rebounding in 2021, the 2022 data revealed renewed declines, suggesting unstable recovery trends and substantial performance gaps compared to pre-acquisition levels. These findings collectively indicate deteriorating profitability for Zhongding following the acquisition.



**Figure 2.** Zhongding Sealing Parts Co., Ltd. Profitability Indicator Trends. Data source: Company annual reports.

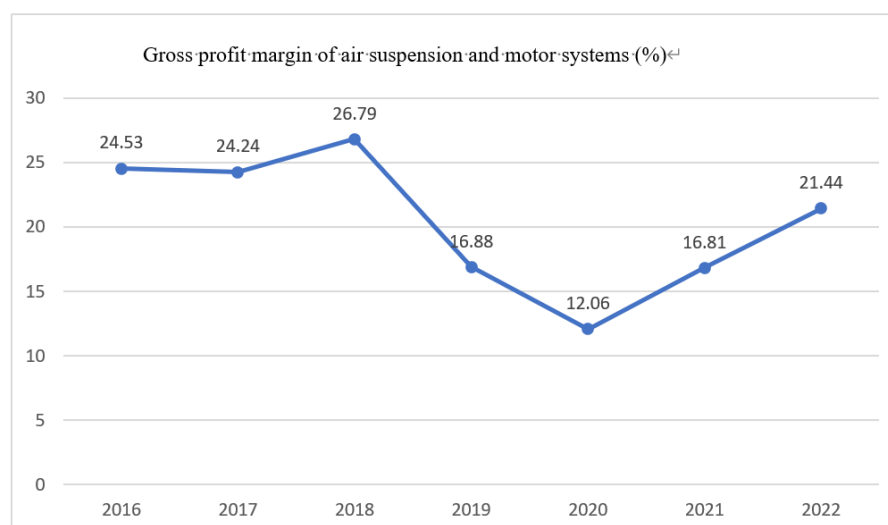
Through its 2016 acquisition, Zhongding obtained core technologies for AMK's automotive air suspension systems (with complete assembly supply capabilities) and motor control systems, subsequently implementing these technologies through methodical medium-to-long-term strategic planning.

As illustrated in Figure 3, while post-acquisition revenue growth was rapid, its sustainability proved limited, reflecting reduced impact on corporate profitability. The proportion of total operating revenue progressively declined from 12.2% in 2018 to 4.61% in 2022, representing a severe contraction. Although exhibiting a minor rebound in 2022, the overall revenue trajectory remained downward. Accounting for merely 4.61% of Zhongding's four primary business segments, air suspension and motor systems constituted the smallest revenue contributor. As a strategic growth area, the declining operating revenue underscores significant untapped potential for profitability enhancement.



**Figure 3.** Revenue Indicators for Air Suspension and Motor Systems. Data source: Company annual reports.

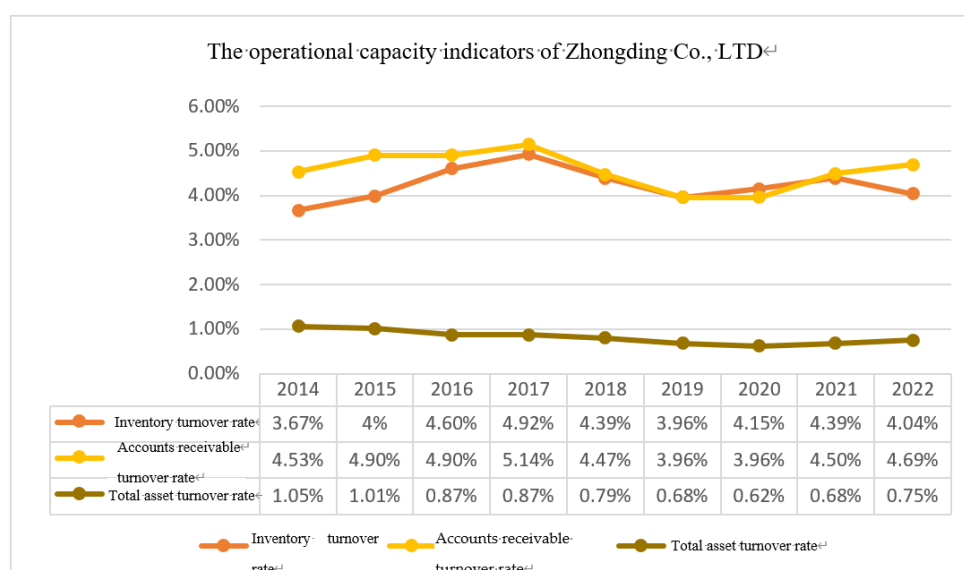
Figure 4 indicates that gross margins remained above 24% during the initial three post-acquisition years before experiencing a precipitous decline in 2019, with profitability plunging by 9.91 percentage points two years post-acquisition. The gross margin bottomed at 12.06% in 2020, marking the lowest post-acquisition level. During 2018–2020, Zhongding's air suspension systems exhibited persistent margin erosion, primarily attributable to prohibitively high production costs. Although gradual recovery commenced in 2021, substantial opportunities remain for margin optimization.



**Figure 4.** Gross Margin Indicators for Air Suspension and Motor Systems. NData source: Company annual reports.

#### 4.1.2. Slightly Weakened Operational Capacity

Operational capacity reflects the efficiency of capital turnover and demonstrates an enterprise's effectiveness in managing and utilizing economic resources. This study evaluates the impact of Zhongding's acquisition on operational capacity through three turnover ratios presented in Figure 5.



**Figure 5.** Operational Indicator Trends of Zhongding Sealing Parts Co., Ltd. Data source: Company annual reports.

As shown in Figure 5, Zhongding's inventory turnover ratio exhibited an upward trend from 2014 to 2017, indicating temporary post-acquisition improvement. However, it began declining in 2018, with minor rebounds during 2020–2021 before dropping to 4.04% in 2022, remaining consistently below pre-acquisition levels. The declining inventory turnover ratio suggests prolonged inventory cycles and reduced liquidity. The acquisition temporarily weakened receivable management, though recovery began in 2021 with gradual strengthening of conversion capability, remaining inferior to pre-acquisition benchmarks. A higher accounts receivable turnover ratio indicates stronger receivable conversion capability. Zhongding's ratio showed an increasing trend from 2014 to 2017 but experienced significant decline during 2018–2020, revealing that while the initial merger year

enhanced receivable turnover, incomplete financial synergies emerged during integration. The acquisition temporarily weakened receivable management, though recovery began in 2021 with gradual strengthening of conversion capability, yet remaining inferior to pre-acquisition benchmarks. The total asset turnover ratio displayed a persistent downward trend, with moderate pre-acquisition decline accelerating substantially in the acquisition year and reaching its lowest point (0.62%) in 2020. Despite partial recovery since 2021, the ratio consistently underperforms pre-acquisition levels, collectively indicating Zhongding's deteriorating asset conversion efficiency.

#### 4.1.3. Suboptimal Solvency

For long-term stable development, enterprises need to comprehensively consider various aspects, among which solvency is particularly crucial. By analyzing solvency, one can assess an enterprise's ability to sustain operations, identify potential risks, and predict future performance. The solvency indicators of Zhongding Shares from 2014 to 2022 are presented in Table 3.

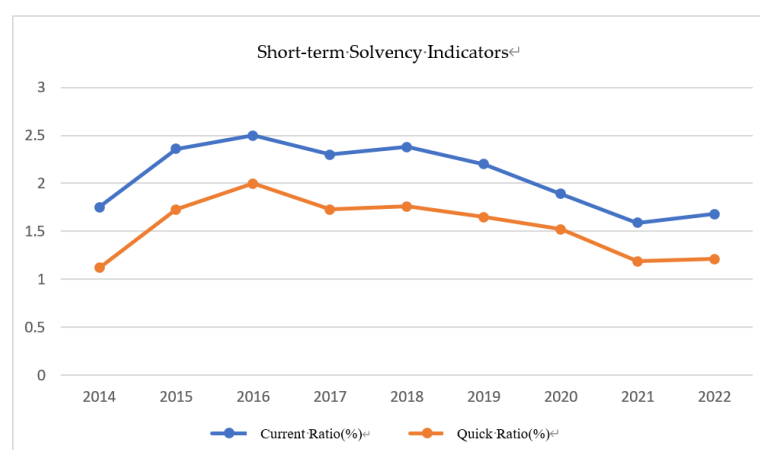
**Table 3.** Solvency Indicators of Zhongding Shares (2014-2022).

Year	Solvency Indicators			
	Current Ratio(%)	Quick Ratio(%)	Asset-Liability Ratio(%)	Equity Ratio(%)
2014	1.75	1.12	43.35	80.25
2015	2.36	1.73	49.13	100
2016	2.50	2.00	44.16	81.14
2017	2.30	1.73	49.40	99.70
2018	2.38	1.76	47.56	92.16
2019	2.20	1.65	50.59	105
2020	1.89	1.52	52.51	113
2021	1.59	1.19	49.69	101
2022	1.68	1.21	46.97	88.84

Data Source: Company Annual Reports

This study employs the current ratio and quick ratio to measure short-term solvency, while the asset-liability ratio and equity ratio are used to evaluate long-term solvency.

A higher current ratio indicates stronger short-term solvency. As illustrated in Figure 6, Zhongding Shares exhibited an upward trend in its current ratio prior to the acquisition, reaching 2.50% in 2016. However, the ratio began to decline in the year of the acquisition. Although it experienced a marginal increase of 0.08% in 2018, the overall trend remained downward, with only a slight recovery by 2022. This demonstrates that the acquisition weakened the company's short-term solvency.

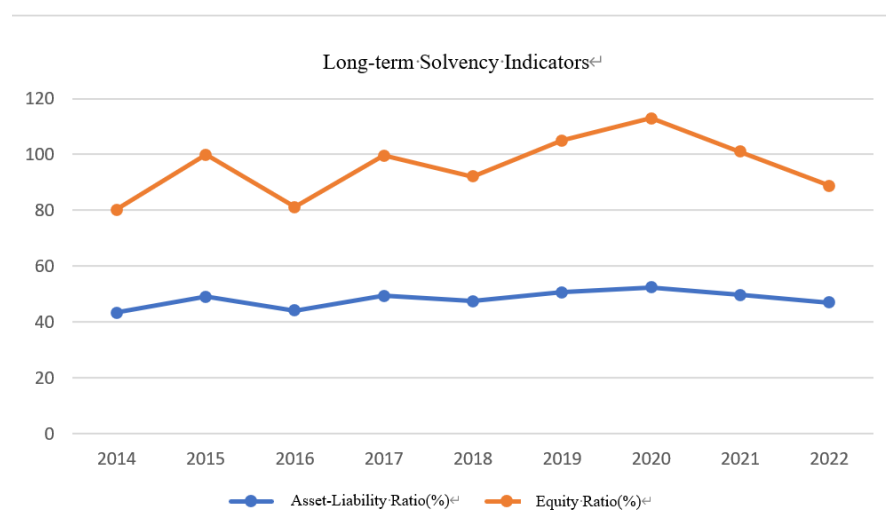


**Figure 6.** Short-Term Solvency Indicators of Zhongding Shares. Data Source: Company Annual Reports.



The quick ratio represents the proportion of quick assets to current liabilities. Figure 6 reveals that the trend of Zhongding Shares' quick ratio from 2014 to 2022 closely paralleled that of the current ratio. Since the acquisition, the quick ratio has predominantly followed a declining trajectory, further indicating that the acquisition adversely affected the company's solvency.

The asset-liability ratio is a double-edged sword. Its standard range typically falls between 40% and 60%. An excessively high ratio suggests unsustainable debt pressure, which may precipitate financial distress, while an excessively low ratio indicates underutilization of debt financing for sustainable growth opportunities. As depicted in Figure 7, Zhongding Shares' asset-liability ratio remained relatively stable with minimal fluctuations, reflecting sound financial health, stable cash flow, and the absence of significant financial risks. In contrast, the company's equity ratio exhibited more pronounced volatility, particularly in the post-acquisition years, where it consistently rose before declining slightly in 2022. A high equity ratio signifies a financial structure characterized by both elevated risk and potential returns, implying potentially lower long-term solvency and increased financial risk.

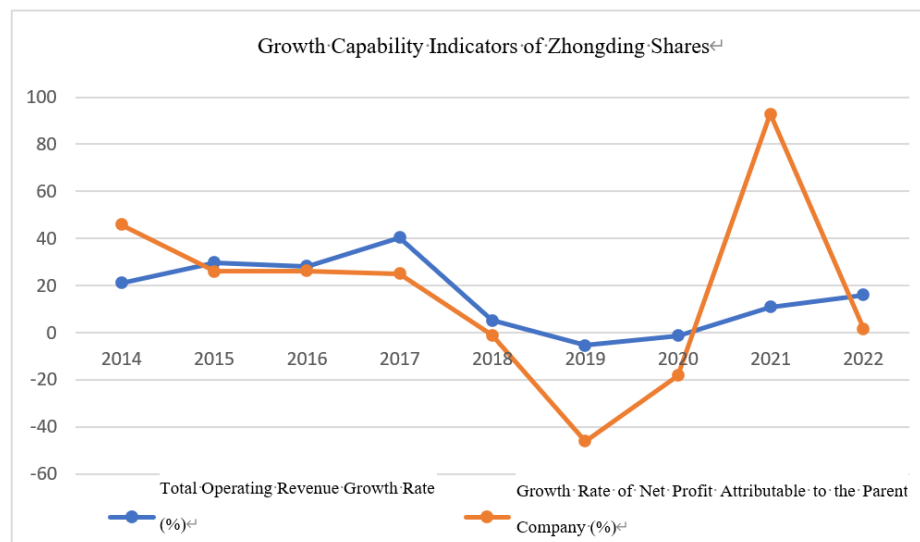


**Figure 7.** Long-Term Solvency Indicators of Zhongding Shares. Data Source: Company Annual Reports.

#### 4.1.4. Reduced Growth Potential

As shown in Figure 8, Zhongding Shares' total operating revenue growth rate exhibited continuous growth before the acquisition. In the first year following the acquisition, it increased by 40.39%, marking the most significant growth in recent years. However, the growth rate subsequently displayed a trend of slowing down or declining. In 2018, affected by the downturn in the automotive industry, the growth rate slowed to 5.13%. In 2019, the total operating revenue decreased by 5.40% compared to the previous year, and the decline continued in 2020. Growth resumed in 2021, and by 2022, the total operating revenue increased by 16.02%, partly due to the mass production of air suspension products and new orders from multiple automotive manufacturers. The total operating revenue rose from 8.3844 billion yuan in 2016 to 14.9 billion yuan in 2022, indicating revenue growth. However, the declining growth rate of total operating revenue suggests that the company experienced "digestive difficulties" following the acquisition. Figure 6 reveals that the growth rate of net profit attributable to the parent company was slow before the acquisition but exhibited significant fluctuations afterward, indicating unstable impacts from the acquisition, with substantial declines in growth rates. In 2018, the growth rate decreased by 1.07% year-on-year, while 2019 saw the most pronounced decline of 46.03% compared to the previous year, partly due to the pandemic's impact on the industry. The

downward trend continued in 2020, with an 18.18% decline, resulting in the lowest net profit attributable to the parent company in recent years at 492.6 million yuan. A rapid recovery occurred in 2021, with net profit attributable to the parent company reaching 949.5 million yuan, comparable to pre-acquisition levels. Growth remained slow in 2022.



**Figure 8.** Growth Capability Indicators of Zhongding Shares. Data Source: Company Annual Reports.

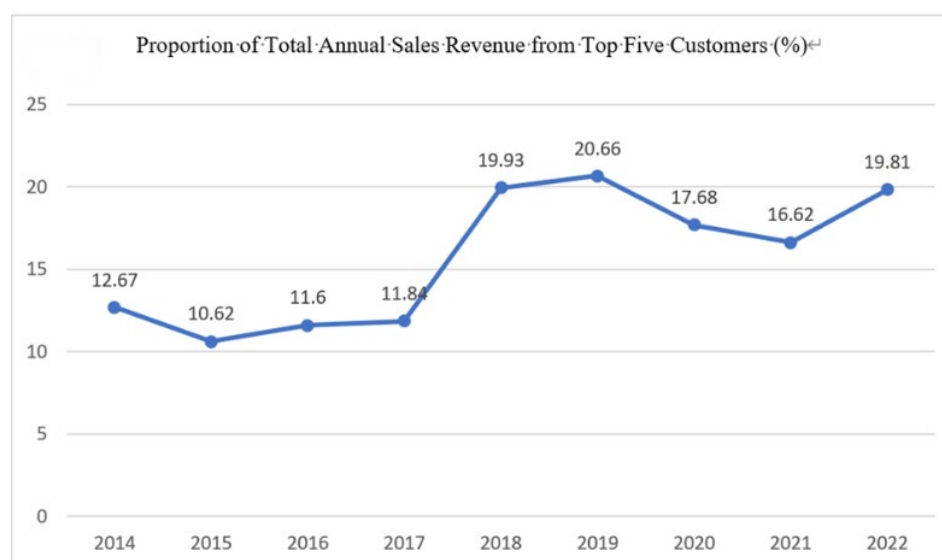
#### 4.2. Non-Financial Indicator Analysis

To comprehensively evaluate the performance of corporate M&A, relying solely on financial quantitative indicators is insufficient, as M&A impacts are multifaceted and market conditions complex. A more robust assessment of M&A performance can be achieved by integrating both financial and non-financial indicators. Given the substantial body of academic research in this field and considering Zhongding Shares' specific circumstances along with findings from the aforementioned studies, this paper selects the following non-financial indicators to analyze Zhongding Shares' acquisition of Germany's AMK company.

##### 4.2.1. Customer Retention Analysis

For any enterprise, the most critical factor is ensuring its manufactured products can be successfully sold to generate profits. In this context, customers become particularly important. This paper analyzes customer retention by examining the proportion of total annual sales revenue accounted for by Zhongding Shares' top five customers.

As shown in Figure 9, the proportion of total annual sales revenue accounted for by the company's top five customers increased significantly after the acquisition. Through the acquisition, the company gained technological advantages and expanded its market share in the air suspension sector. The proportion rose notably from 2017 to 2018, peaked in 2019, and then began to decline, though it remained higher than pre-acquisition levels. In 2022, the proportion increased again, far exceeding pre-acquisition figures. This indicates a heightened reliance on major customers. However, the distribution among the top five customers appears relatively balanced, with no signs of excessive dependence. Moreover, the proportion never exceeded 30%, suggesting the company maintains a diversified customer base and is not easily constrained.

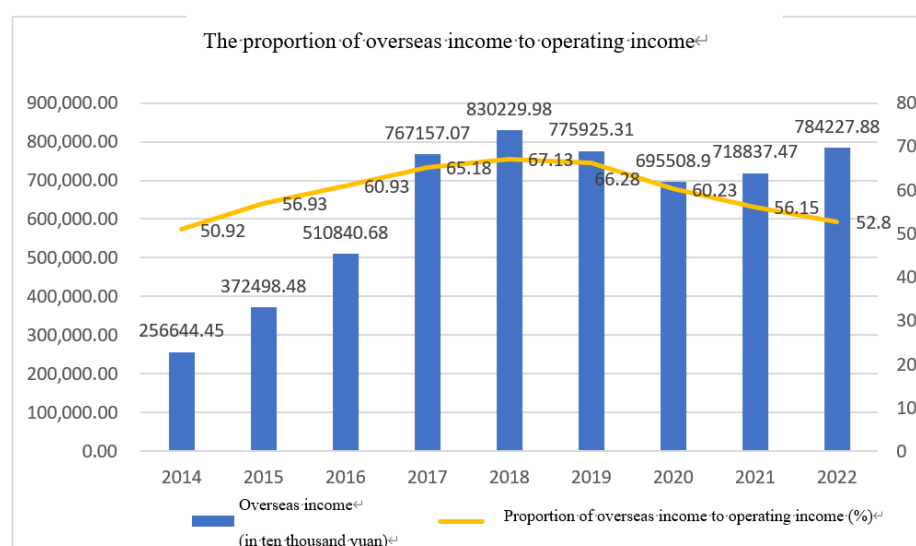


**Figure 9.** Proportion of Total Annual Sales Revenue from Top Five Customers. Data Source: Company Annual Reports.

#### 4.2.2. Overseas Market Expansion Analysis

By analyzing the company's annual reports, this study examines the proportion of overseas revenue to total operating revenue before and after the cross-border acquisition. Overall, post-acquisition overseas revenue performance surpassed pre-acquisition levels, fulfilling the strategic objective of expanding into international markets.

Figure 10 demonstrates that Zhongding Shares' proportion of overseas revenue to total operating revenue maintained an upward trajectory prior to the acquisition and continued to rise afterward, peaking at 67.13% in 2018 before declining. This indicates that the company successfully introduced core technologies through the acquisition, accelerating the localization process. Although overseas revenue has accounted for a significant proportion in recent years, as a prominent player in the industry, the company has actively expanded into high-end products to meet market demand, achieve localization of premium products, reduce production costs, and develop mid-to-low-end markets. These efforts aim to advance the development of China's rubber sealing industry, enhance international competitiveness, and promote the sector's growth.



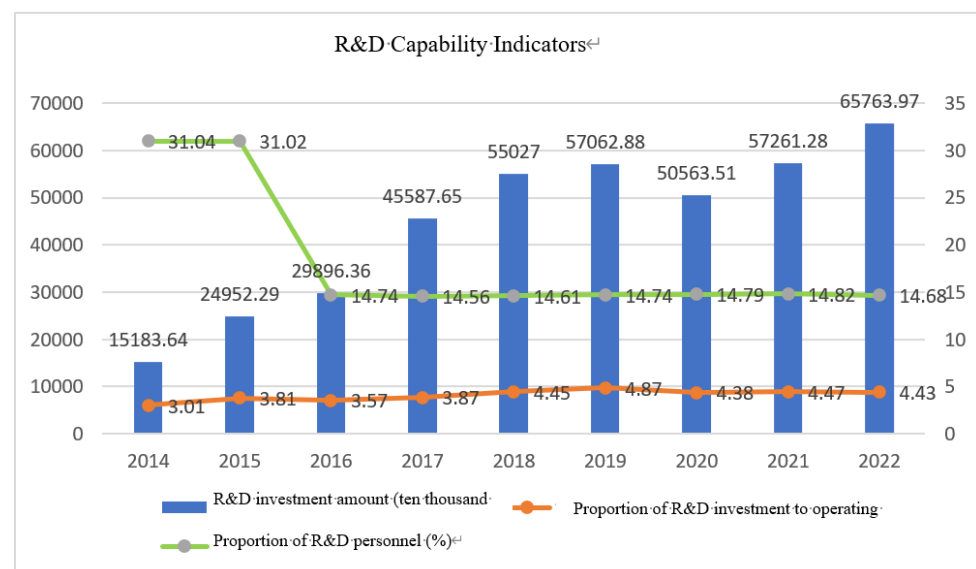
**Figure 10.** Proportion of Overseas Revenue to Total Operating Revenue. Data Source: Company Annual Reports.

#### 4.2.3. Innovation Capability Analysis

The company established an overseas logistics center in 2003 and initiated cross-border acquisitions in 2008 to expand its international market presence, accumulating extensive global management experience. Its synchronized global R&D capabilities have significantly improved, further advancing its global synergy strategy. In 2016, the company collaborated with Tsinghua University to establish an academic workstation. In 2018, it jointly founded the Rubber and Plastic Sealing Research Center with Tsinghua University to drive innovation and overcome technical challenges. The company's three-phase strategy of "Global Acquisition", "Local Implementation in China", and "International Operations Management" has been progressively implemented.

According to the company's 2022 annual report, it holds 1,011 independent intellectual property rights, including 313 foreign patents, 118 Chinese invention patents, 543 utility model patents, 10 design patents, and 27 software copyrights.

Figure 11 shows that the proportion of R&D investment to operating revenue remained relatively stable with an overall upward trend. The amount of R&D investment gradually increased, exhibiting minor fluctuations with limited impact. The proportion of R&D personnel remained steady both before and after the acquisition, but experienced a sharp decline in the acquisition year. This was primarily due to the exclusion of R&D support staff from the statistical scope in 2016. While the acquisition provided core technologies, significantly reducing the difficulty compared to independent R&D, the air suspension system's limited service life led to the loss of customers requiring longer durability. This situation necessitates intensified R&D efforts to accelerate product upgrades.



**Figure 11.** R&D Capability Indicators. Data Source: Company Annual Reports.

## 5. Causes and Countermeasures for Performance Issues

### 5.1. Root Causes

#### 5.1.1. High Production Costs Leading to Falling Gross Margins

Compared with traditional steel automotive suspension systems, air suspension systems allow adjustment of spring stiffness according to specific needs, providing both the comfort and stability of sedans and the handling performance of off-road vehicles. However, the production costs of air suspension systems are excessively high. The complete air suspension system costs approximately 12,000 yuan, with core components including

air springs (3,000-5,000 yuan per vehicle), air supply units (1,500-2,000 yuan per vehicle), shock absorbers (2,500 yuan per vehicle), and ECAS systems (1,500 yuan per vehicle). These components perform critical functions such as damping, stabilization, and control, contributing significantly to the overall high cost. The excessively high production costs have led to a continuous decline in the company's gross profit margin following the acquisition.

#### 5.1.2. Short Lifespan of Air Suspension Systems Causing Customer Loss

Traditional air suspension systems feature a complex structure, including components such as air compressors and sensors. During operation, sensors detect vehicle speed and road conditions, while the control system analyzes the data and adjusts the air compressor to regulate the inflation level of the air springs, thereby modifying suspension stiffness and height. The system comprises numerous parts and requires air piping, imposing stringent demands on component reliability and system sealing. Frequent adjustments to chassis height may lead to localized overheating of the compressor, shortening its service life. Typically, air suspension systems last 3-5 years. For vehicles in regular use on well-maintained roads, replacement every five years may suffice, whereas infrequently used vehicles or those operating on poor road conditions may require replacement every three years. The relatively short lifespan constitutes a major drawback of air suspension systems, contributing to the loss of potential customers.

#### 5.1.3. Undeveloped Mid-to-Low End Markets

Due to their superior performance and high production costs, air suspension systems have historically been limited to high-end vehicle models, primarily those priced above 600,000 yuan, while remaining uncommon in mid-to-low-end segments. This has constrained the company's market expansion. The inherent characteristics of air suspension systems have imposed limitations on their broader adoption. If the positioning of air suspension systems shifts from exclusively high-end markets to include mid-to-low-end vehicles, their adoption rate would significantly increase, enhancing market penetration and generating greater revenue.

### 5.2. Proposed Solutions

#### 5.2.1. Cost Reduction in Production

With the gradual expansion of new energy vehicles' market share, air suspension systems are expected to become standard configurations in these vehicles in the future, primarily due to the stringent stability requirements for chassis systems in new energy vehicles.

In July 2018, Anhui AMK Automotive E-Drive Co., Ltd. (referred to herein as Anhui AMK) completed its registration. By 2020, AMK's China-based motor production line was operational. In 2021, the local assembly line for air supply units of air suspension systems was completed and began supplying products. Since then, the company has progressively increased the production proportion of air suspension components to cover core clients. From 2021 to the present, the cumulative order value for the company's air suspension systems has reached 9.906 billion yuan. The localization of air suspension systems in China further reduces production costs, enhances gross profit margins, and expands market share.

#### 5.2.2. Enhanced R&D Efforts to Extend Service Life

In recent years, frequent accidents involving new energy vehicles have heightened consumer focus on automotive safety. To align with market demands, greater emphasis must be placed on product quality, with continuous upgrades to core technologies to extend the service life of air suspension systems. Intensifying R&D efforts can mitigate premature wear caused by usage frequency and road conditions. Strict quality control of

raw materials and ongoing product monitoring are essential. Where necessary, technical measures should be employed to maintain and service air suspension systems, optimizing performance and minimizing failure risks. Continuous advancements in core technologies will drive product iterations, strengthen industrial capabilities, and support steady progress toward strategic objectives.

### 5.2.3. Transition from Premium to Mass Market Adoption

The widespread adoption of air suspension systems, from premium to mid- and low-tier vehicle segments, will ultimately establish them as standard features, particularly in new energy vehicles. The rise of new energy vehicles has amplified market demand, while localization of air suspension systems has driven down the cost of equipping these vehicles with the technology. Air suspension systems significantly enhance ride comfort and driving stability while meeting lightweight requirements for electric vehicles, thereby increasing their adoption rate in automotive designs. These developments create favorable conditions for transitioning air suspension systems from niche luxury applications to broad market penetration.

## 6. Conclusions and Prospects

### 6.1. Conclusions

This study focuses on Zhongding Shares' acquisition of Germany's AMK company as the research subject. It outlines the basic profiles of both Zhongding Shares and AMK, as well as the acquisition process. Based on an understanding of the acquisition motives and employing both financial and non-financial indicator methods, a comprehensive analysis of the performance of Zhongding Shares' acquisition of AMK was conducted, leading to the following conclusions:

In 2016, Zhongding Shares completed the cross-border acquisition of Germany's AMK, and in 2018, it established Anhui AMK. According to the 2022 annual report, Anhui AMK remained unprofitable in 2022, with a net loss of 10.49 million yuan. The company's profitability declined post-acquisition, operational efficiency weakened, short-term solvency exhibited significant fluctuations, long-term solvency remained weak, and financial risks increased. Growth capability indicators showed substantial volatility without a sustained upward trend. From the perspective of non-financial performance indicators, the company's reliance on major customers increased, the proportion of overseas revenue to total operating revenue increased, and the localization process accelerated. Despite a reduction in R&D personnel, the increase in R&D expenditure reflects a shift toward more focused and effective innovation efforts.

### 6.2. Future Research Directions

This study examines the performance of Zhongding Shares' acquisition of AMK but does not entirely exclude the impact of industry downturns and external environmental factors on the company, resulting in certain limitations. Due to constraints in personal expertise, the analysis of acquisition performance may lack comprehensiveness, and the proposed measures for improving corporate acquisition performance may have inherent limitations. Given the prolonged integration period required for cross-border acquisitions like AMK, long-term post-acquisition research is necessary. However, this study is confined to a limited timeframe. Future research will continue to monitor the post-acquisition developments of AMK. It is hoped that, with improved knowledge and expertise, a more thorough and in-depth analysis can be conducted to ensure the accuracy of research findings, thereby providing valuable insights and references for other automotive component companies considering similar acquisitions.

## References



1. H. I. Ansoff, *Corporate Strategy: An Analytic Approach to Business Policy for Growth and Expansion*. New York: McGraw-Hill, 1965.
2. J. A. Mathews, "Dragon multinationals: New players in 21st century globalization," *Asia Pac. J. Manage.*, vol. 23, pp. 5–27, 2006, doi: 10.1007/s10490-006-6113-0.
3. M. Demirbag, E. Tatoglu, K. W. Glaister, and S. Zaim, "Measuring strategic decision making efficiency in different country contexts: A comparison of British and Turkish firms," *Omega*, vol. 38, no. 1–2, pp. 95–104, 2010, doi: 10.1016/j.omega.2009.05.001.
4. M. Florio, M. Ferraris, and D. Vandone, "Motives of mergers and acquisitions by state-owned enterprises: A taxonomy and international evidence," *Int. J. Public Sector Manage.*, vol. 31, no. 2, pp. 142–166, 2018, doi: 10.1108/IJPSM-02-2017-0050.
5. J. L. Blouin, E. M. Fich, E. M. Rice, and A. L. Tran, "Corporate tax cuts, merger activity, and shareholder wealth," *J. Account. Econ.*, vol. 71, no. 1, p. 101315, 2021, doi: 10.1016/j.jacceco.2020.101315.
6. A. Adam, "Integrating enhanced business reporting and economic value added: An applied pedagogical opportunity," *J. Bus. Educ. Leadersh.*, vol. 5, no. 1, pp. 18–27, 2016.
7. T. Sathishkumar and P. N. Tamby, "Effect of mergers and acquisitions on performance of enterprise value," *MUDRA: J. Finance Account.*, vol. 5, no. 2, pp. 60–69, 2018.
8. K. Fuller, J. Netter, and M. Stegemoller, "What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions," *J. Finance*, vol. 57, no. 4, pp. 1763–1793, 2002, doi: 10.1111/1540-6261.00477.
9. F. Xia and G. Walker, "How much does owner type matter for firm performance? Manufacturing firms in China 1998–2007," *Strateg. Manage. J.*, vol. 36, no. 4, pp. 576–585, 2015, doi: 10.1002/smj.2233.
10. Q. Akhtar and S. Nosheen, "The impact of fintech and banks M&A on acquirer's performance: A strategic win or loss?," *Borsa Istanbul Rev.*, vol. 22, no. 6, pp. 1195–1208, 2022, doi: 10.1016/j.bir.2022.08.007.
11. A. Borodin, Z. S. Sayabek, G. Islyam, and G. Panaedova, "Impact of mergers and acquisitions on companies' financial performance," *J. Int. Stud.*, vol. 13, no. 2, 2020, doi: 10.14254/2071-8330.2020/13-2/3.
12. Z. Wang, T. Jin, L. Yue, and H. He, "Research on the factors affecting the innovation performance of China's new energy type enterprises from the perspective of industrial policy," *J. Therm. Anal. Calorim.*, vol. 144, no. 5, 2021, doi: 10.1007/s10973-020-10394-7.
13. S. Papageorgiou, X. Xi, R. Morgan, and Y. So, "Developing and validating band levels and descriptors for reporting overall examinee performance," *Lang. Assess. Q.*, vol. 12, no. 2, pp. 153–177, 2015, doi: 10.1080/15434303.2015.1008480.
14. M. Panda and M. Joshipura, "Impact of cross-border mergers and acquisitions on short-term gain to shareholders of target firms in India—effect of the mode of payment and industry relatedness," *Afro-Asian J. Finance Account.*, vol. 12, no. 5, pp. 648–677, 2022, doi: 10.1504/AJFA.2022.126965.

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