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Research on the Accounts Receivable Management Problems and Countermeasures of Gree Electric Appliances Co., Ltd.

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Abstract

This study analyzes Gree Electric's accounts receivable (AR) management from 2019 to 2023 through financial data and industry benchmarking. Results indicate a surge in AR balances from CNY 8.44 billion to CNY 16.099 billion, with annual growth rates exceeding revenue expansion. The AR-to-revenue ratio rose from 4.26% to 7.89%, while receivables aged over three years increased to 14.34%, signaling deteriorating collection efficiency and elevated bad debt risks. Despite outperforming peers (e.g., Midea, Haier) in AR turnover ratios, Gree experienced a consistent decline from 24.44 to 13.19 times, highlighting liquidity strain. Key drivers include overdependence on credit sales for market share growth, inflexible recovery methods, outdated credit evaluation systems, and inadequate risk governance. Proposed solutions involve instituting credit sales caps, dynamic credit scoring models, tiered collection strategies, aging structure optimization (e.g., reducing >3-year receivables to industry-average 5.03%), and automated risk alerts. These measures aim to reconcile sales growth with financial stability, mitigate liquidity risks, and enhance operational resilience. The findings offer actionable frameworks for improving AR management in the home appliance sector, emphasizing data-driven credit policies and proactive risk mitigation.

Keywords: Gree Electric; Accounts Receivable Management; Credit Policy

1. Introduction

Accounts receivable management remains a critical determinant of financial health for manufacturing enterprises, particularly in competitive sectors like home appliances where extended credit terms are commonplace. While prior research has established clear correlations between receivables turnover efficiency and corporate performance (Brown & Lee, 2017), there exists a notable gap in empirical studies examining firm-specific structural deficiencies among industry leaders. This study addresses this research void through a comprehensive investigation of Gree Electric Appliances' accounts receivable management system during the 2019–2023 period, which coincided with significant market disruptions including global supply chain realignments and post-pandemic economic adjustments.

To establish robust analytical foundations, this research integrates multiple methodological approaches. Financial trend analysis forms the primary investigative lens, systematically tracking audited annual statements to monitor the evolution of key indicators including absolute receivables balances, turnover ratios, aging structures, and bad debt provisioning patterns. These internal metrics are further contextualized through comparative industry benchmarking against major competitors Midea Group and Haier Smart Home, as well as sector-wide averages published by the China Household Electrical Appliances Association. This dual-axis examination enables identification of performance deviations that might otherwise remain obscured when viewing internal metrics in isolation.

Building upon this diagnostic foundation, the analytical framework incorporates causal analysis to establish linkages between operational practices and financial outcomes. Through detailed process mapping and policy documentation review, we trace how credit policy adjustments influence aging structures, how collection mechanisms impact Days Sales Outstanding, and how risk governance protocols correlate with bad debt accumulation. This multidimensional approach reveals that Gree's accounts receivable balance surged from CNY 8.44 billion to CNY 16.099 billion during the study period, while concurrently, receivables exceeding three years reached 14.34% of total AR—nearly triple the industry benchmark of 5.03% (Li, 2022).

This deterioration presents a compelling paradox: despite maintaining superior turnover ratios relative to peers (13.19× versus Midea's 12.17× and the industry's 9.92× in 2023), Gree exhibits accelerating fundamental vulnerabilities in its receivables portfolio. Such divergence suggests that conventional turnover-centric assessment models may insufficiently capture systemic risks in enterprise credit management. The implications extend beyond Gree's operational context, offering broader insights for capital-intensive manufacturing sectors where liquidity pressures have intensified amid recent economic volatility.

The subsequent sections of this paper develop these findings into actionable frameworks. Theoretically, this research contributes an integrated risk assessment model that reconciles liquidity metrics with solvency indicators. Practically, it identifies specific operational leakage points in credit lifecycle management while proposing dynamic monitoring systems responsive to industry cyclicality. For peer enterprises navigating similar market conditions, the diagnostic protocols established herein provide replicable methodologies for balancing sales expansion with financial resilience.

2. Analysis of Accounts Receivable Issues at Gree Electric Appliances

2.1. Current Status of Accounts Receivable

2.1.1. Analysis of Accounts Receivable Scale

Gree Electric Appliances' key financial metrics for accounts receivable from 2019 to 2023 are illustrated in Figure 1. By the end of 2023, the company reported operating revenue of CNY 202.079 billion (Table 1), with overall revenue stability observed across the period. While revenue declined in 2020 due to pandemic impacts, it rebounded from 2021 to 2023, reaching

levels comparable to 2019. The revenue growth rate turned negative in 2020 but resumed positive trends thereafter, indicating stable revenue streams and robust cash flow. These metrics collectively underscore Gree's position as a large-scale enterprise.

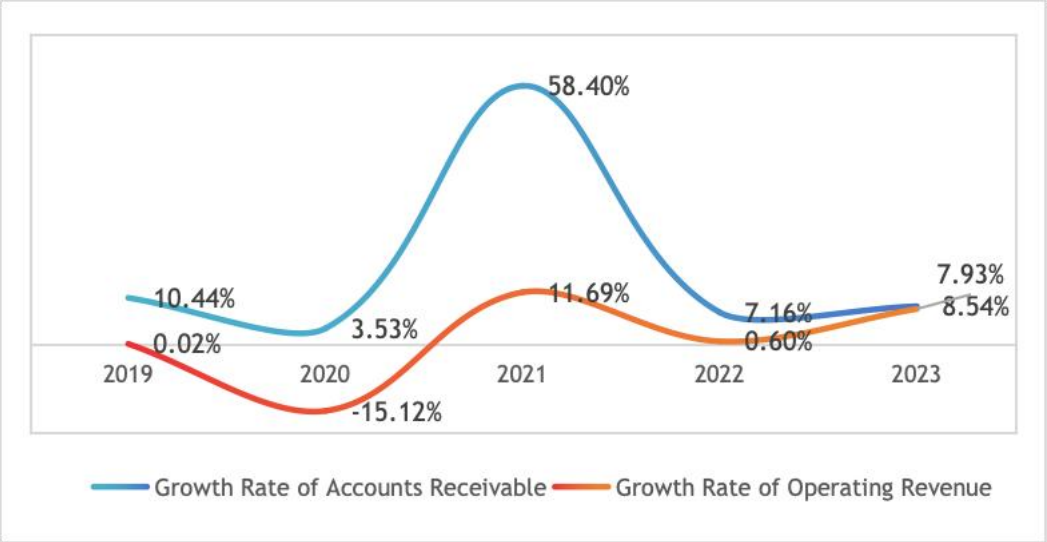

Figure 1. Comparison of Accounts Receivable to Revenue Growth Rates for Gree Electric (2019-2023)

Table 1. Analysis of Accounts Receivable Financial Metrics for Gree Electric Appliances, Inc. (2019-2023)

	2019	2020	2021	2022	2023
Operating Revenue	1981.53	1681.99	1878.69	1889.88	2039.79
Operating Revenue Growth Rate (%)	0.02%	-15.12%	11.69%	0.60%	7.93%
Accounts Receivable Balance	84.4	87.38	138.41	148.32	160.99
Accounts Receivable as Percentage of Operating Revenue	4.26%	5.20%	7.37%	7.85%	7.89%
Accounts Receivable as Percentage of Current Assets	3.96%	4.09%	6.13%	5.81%	7.06%
Accounts Receivable Growth Rate (%)	10.44%	3.53%	58.40%	7.16%	8.54%
Closing Current Assets	2133.64	2136.33	2258.5	2551.4	2281.41

Notably, Gree's accounts receivable balance surged from CNY 8.44 billion in 2019 to CNY 16.099 billion in 2023, nearly doubling over five years. A significant spike occurred in 2021, with receivables reaching CNY 13.841 billion, marking a 58.4% year-on-year increase from CNY 8.738 billion in 2020. This escalation highlights heightened bad debt risks. The ratio of accounts receivable to operating revenue stabilized at approximately 7.7%, suggesting overly lenient credit policies. Such practices expose the company to liquidity risks if debtor financial conditions deteriorate, potentially jeopardizing long-term financial health.

Compared to revenue growth, accounts receivable growth outpaced operating revenue expansion, particularly in 2021. This discrepancy implies that Gree prioritized sales recovery and market consolidation post-pandemic, potentially adopting aggressive credit strategies to stimulate demand.

Gree's total current assets exhibited gradual growth from 2019 to 2022, reflecting efficient asset turnover and strong short-term solvency. Rapid turnover rates minimized idle capital, enhancing profitability through optimized liquidity management. However, in 2023, current assets declined by CNY 27 billion (a 10.6% reduction), signaling slower turnover rates, diminished capital efficiency, and potential erosion of short-term solvency. This trend may adversely affect future profitability if unaddressed.

2.1.2. Comparative Analysis of Accounts Receivable Growth Rates: Gree vs. Industry Peers

As a leading enterprise in the home appliance industry, Gree Electric Appliances holds significant market share. However, maintaining sustainable growth requires continuous monitoring of market dynamics and benchmarking against competitors to identify deficiencies and improvement opportunities.

By investigating accounts receivable growth trends of Midea and Haier from 2019 to 2023, the following observations emerge (Table 2, Figure 2):

(1) 2019–2020: During the pandemic, Midea and Haier experienced substantial increases in accounts receivable growth in 2020, whereas Gree's growth rate remained lower, indicating comparatively fewer bad debt risks during this period.

(2) 2021–2022: Gree's accounts receivable growth significantly surpassed both peers, with a sharp spike in 2021, reflecting aggressive credit policies to drive sales recovery.

(3) 2023: Gree's accounts receivable growth reverted to levels below those of Midea and Haier, suggesting tightened credit controls.

Compared to the industry average, Midea demonstrated stable accounts receivable growth rates over the five-year period, closely aligning with sector norms. In contrast, Gree and Haier exhibited pronounced volatility, particularly Gree, with maximum annual fluctuations exceeding 50%. Such instability implies heightened risks of delayed collections and liquidity constraints.

Table 2.Comparative Analysis of Accounts Receivable Growth Rates: Gree Electric Appliances, Inc. vs. Peer Companies (2019-2023 Fiscal Years)

	2019	2020	2021	2022	2023
Gree Electric Appliances, Inc.	10.44%	3.53%	58.40%	7.16%	8.54%
Midea Group Co., Ltd.	-3.74%	23.11%	7.22%	14.62%	16.46%
Haier Smart Home Co., Ltd.	4.59%	44.61%	-8.19%	8.63%	27.58%
Industry Average	3.76%	23.75%	19.14%	10.14%	17.52%

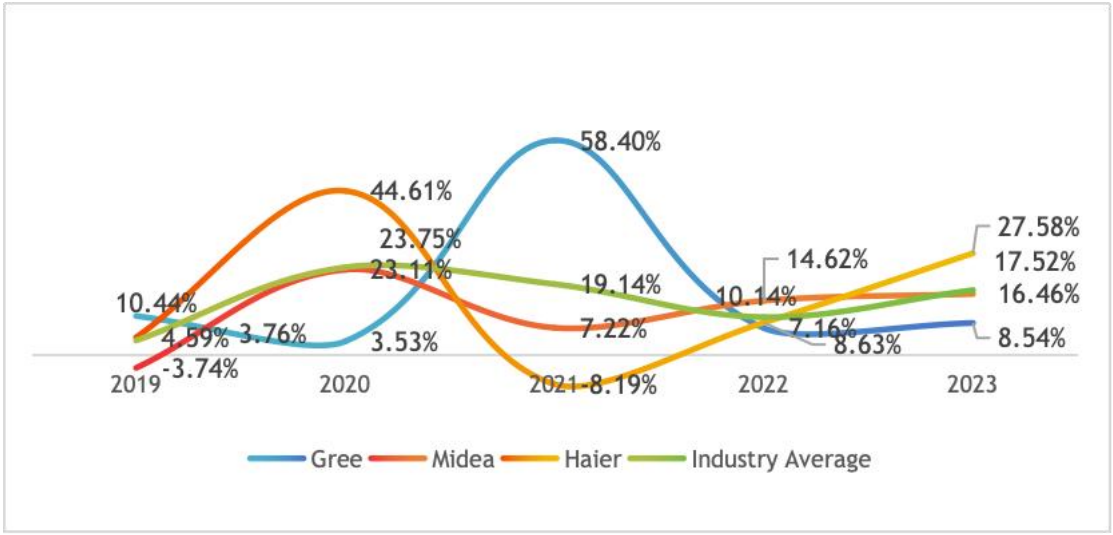

Figure 2. Comparison of Accounts Receivable Growth Rates Among Industry Peers (2019-2023)

2.1.3. Ratio of Accounts Receivable to Operating Revenue

A comparative analysis of the ratio of accounts receivable to operating revenue among Gree, Midea, and Haier reveals distinct trends over the past five years. As shown in Table 3 and Figure 3, Gree's ratio exhibited a consistent upward trajectory, rising from 4.26% in 2019 to 7.89%in 2023. Notably, during 2019–2020, Gree's ratio remained significantly lower than both Midea and Haier, as well as the industry average. However, beginning in 2021, the ratio surged sharply, doubling by 2021 and maintaining elevated levels through 2023.

In contrast, Haier demonstrated a declining trend in this ratio, aligning closely with industry averages and reflecting stricter credit management practices. This divergence underscores that Haier's accounts receivable balance is comparatively smaller than Gree's, indicating superior liquidity management.

Table 3.Proportion of Accounts Receivable to Operating Revenue: Industry Comparison (2019-2023)

	2019	2020	2021	2022	2023
Gree Electric Appliances, Inc.	4.26%	5.20%	7.37%	7.58%	7.89%
Midea Group Co., Ltd.	6.68%	8.04%	7.17%	8.17%	8.80%
Haier Smart Home Co., Ltd.	7.75%	6.52%	6.44%	7.60%	5.49%
Industry Average	6.23%	6.59%	6.99%	7.78%	7.39%

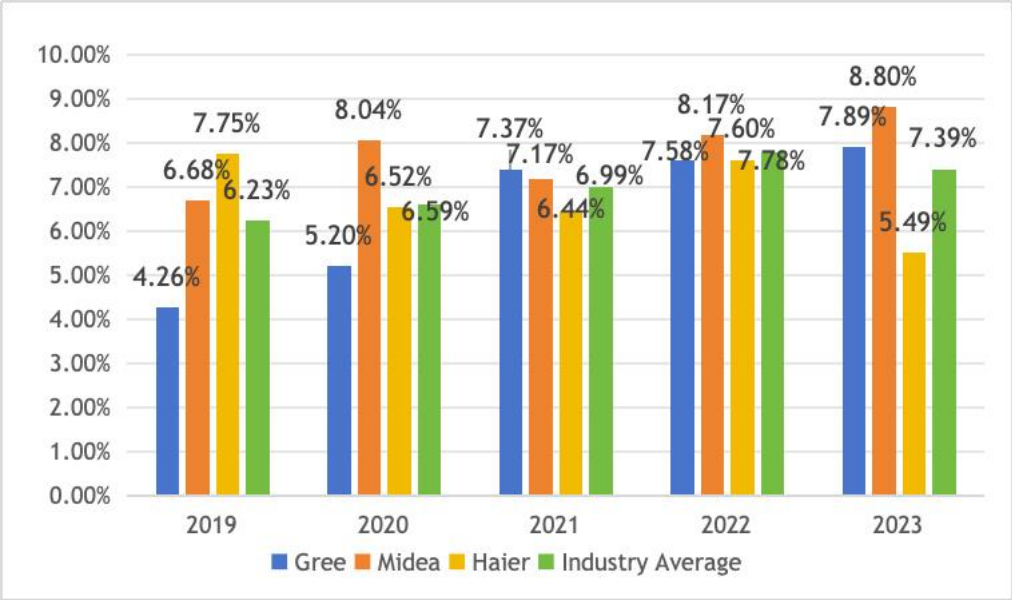

Figure 3. Comparison of Accounts Receivable as a Percentage of Revenue Among Industry Peers (2019-2023)

2.2. Analysis of Accounts Receivable Liquidity

2.2.1. Ratio of Accounts Receivable to Current Assets

A comparative analysis of the ratio of accounts receivable to current assets among Gree, Midea, and Haier reveals distinct liquidity profiles. As illustrated in Figure 4 and Table 4, Gree's ratio of accounts receivable to current assets remains the lowest among the three firms but has exhibited a gradual upward trend over the past five years. In contrast, Midea's ratio closely aligns with the industry average, while Haier consistently reports the highest ratio, indicating divergent liquidity management strategies.

This means Midea The alignment with industry averages suggests sufficient working capital to meet operational needs, ensuring smooth cash flow cycles; Haier Persistently high ratios imply potential working capital shortages, which may strain liquidity and hinder operational flexibility.

And Gree Despite maintaining the lowest ratio, the upward trajectory signals a need to curb accounts receivable growth to preserve capital chain stability and mitigate liquidity risks.

Table 4. Proportion of Accounts Receivable to Current Assets: Industry Comparison (2019-2023)

	2019	2020	2021	2022	2023
Gree Electric Appliances, Inc.	3.96%	4.09%	6.13%	5.81%	7.16%
Midea Group Co., Ltd.	11.69%	10.82%	9.90%	9.51%	8.62%
Haier Smart Home Co., Ltd.	15.28%	12.18%	11.80%	13.94%	10.96%
Industry Average	10.31%	9.03%	9.28%	9.75%	8.91%

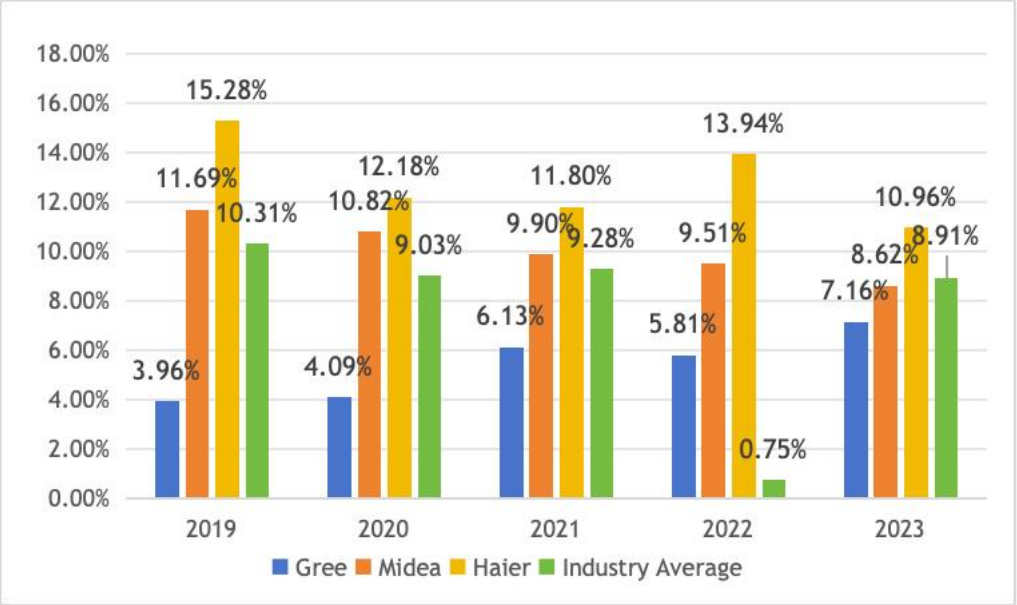

Figure 4. Comparison of Accounts Receivable to Current Liabilities Ratios Among Industry Peers (2019-2023)

2.2.2. Accounts Receivable Turnover Ratio

The accounts receivable turnover ratio serves as a crucial indicator for measuring the collection speed and management efficiency of receivables, reflecting the frequency at which accounts receivable are converted into cash during a given period.

As evidenced in Table 5, Gree Electric Appliances has exhibited a declining trend in its accounts receivable turnover ratio. Impacted by the three-year pandemic, the company's turnover ratio decreased from 24 times in 2019 to 13 times in 2023. This decline indicates a slowdown in collection efficiency and a corresponding reduction in asset turnover over the past five years.

Concurrently, Gree's days sales outstanding (DSO) has shown a consistent increase, rising from 14 days in 2019 to 27 days in 2023. This prolonged collection period reflects growing credit sales exposure and deteriorating receivables management, which significantly elevates the risks of delinquent accounts and bad debts. Such developments pose substantial threats to the company's sustainable operations and financial stability.

Table 5. Accounts Receivable Turnover Rate and Turnover Days for Gree Company from 2019-2023

	Year Accounts Receivable Turnover Rate (Times per Year)	Turnover Days (Days)
2019	24.44	14.73
2020	19.5	18.46
2021	16.64	21.63
2022	13.18	27.3
2023	13.19	27.69

As shown in Figure 5, a comparison with the other two industry-leading companies reveals that although Gree Electric's accounts receivable turnover ratio has consistently exceeded that of its peers and remained above the average over the past five years, it has exhibited an overall declining trend. In contrast, Midea Group demonstrated relative stability, remaining close to the average with a slight downward trend, maintaining its accounts receivable turnover ratio at approximately 13 times. Similarly, Haier Group also showed stability, albeit below the average, with its turnover ratio hovering around 4.5 times. Notably, all three companies experienced a decline in their accounts receivable turnover ratios starting in 2020, coinciding with the onset of the COVID-19 pandemic.

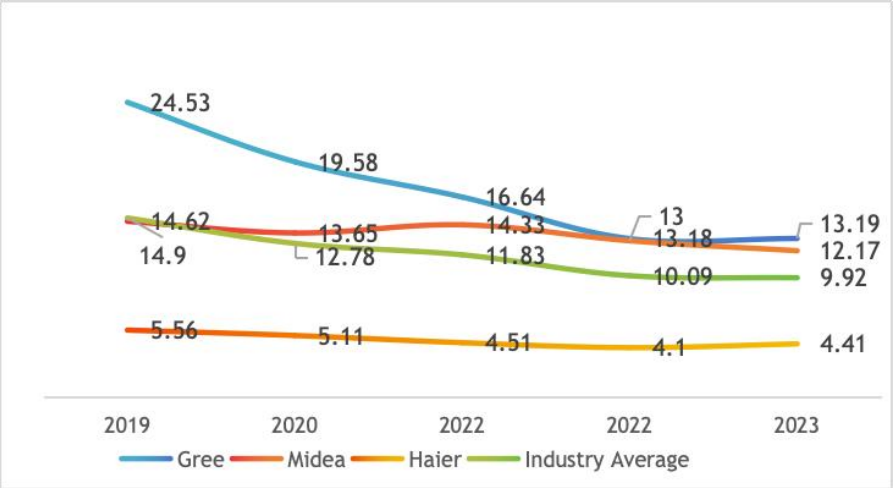

Figure 5. Accounts Receivable Turnover Trends Among Industry Peers (2019-2023)

Table 6. Accounts Receivable Turnover: Industry Comparison (2019-2023)

	2019	2020	2021	2022	2023
Gree Electric Appliances, Inc.	24.53	19.58	16.64	13.18	13.19
Midea Group Co., Ltd.	14.62	13.65	14.33	13.00	12.17
Haier Smart Home Co., Ltd.	5.56	5.11	4.51	4.10	4.41
Industry Average	14.90	12.78	11.83	10.09	9.92

A comparison of the accounts receivable turnover ratios among the three companies indicates that although Gree Electric's ratio has been declining, it remains industry-leading, reflecting faster collection efficiency and higher capital liquidity. However, its competitive advantage has gradually narrowed, raising the possibility of being overtaken by Midea. Midea follows closely, maintaining a stable turnover ratio in line with the industry average, suggesting normal collection efficiency. In contrast, Haier demonstrates weaker receivables management compared to Gree and Midea, increasing its risk of bad debts and posing potential challenges to sustainable operations.

2.3. Analysis of Accounts Receivable Aging Structure

2.3.1. Accounts Receivable Aging Data Analysis

An analysis of Gree Electric’s accounts receivable aging from 2019 to 2023 reveals that receivables aged within one year accounted for over 60% of the total during this period, peaking at 83.26% in 2019. The proportion of receivables aged 1–2 years fluctuated but stabilized around 7%, indicating that the majority of Gree’s receivables were recovered within one year.

However, while the absolute amount of receivables collected within one year increased, their proportional share gradually declined from 83.26% in 2019 to 62.82% in 2023. Concurrently, the proportion of receivables aged 2–3 years and over three years exhibited a steady annual increase, rising from 3.85% in 2019 to 14.34% in 2023. Notably, receivables aged over three years saw a significant surge between 2021 and 2023, with their proportion climbing from 2.87% in 2019 to 13.24% in 2021 and stabilizing at approximately 14% thereafter, reflecting rapid growth (Table 7). This trend suggests a decline in the recovery of funds within the first two years of the reporting period.

These findings indicate that the aging of Gree Electric’s accounts receivable has lengthened significantly, likely due to the impact of the COVID-19 pandemic. The extended collection cycles highlight growing challenges in capital recovery and an elevated risk of bad debts, posing potential threats to the company’s financial stability.

Table 7.Age Distribution of Accounts Receivable for Gree Group (2019-2023)

	2019		2020		2021		2022		2023	
	Amount	（%）	Amount	（%）	Amount	（%）	Amount	（%）	Amount	（%）
Within 1 Year	769741.72	83.26	793368.23	83.59	1222331.19	75.89	1274620.33	72.35	1396908.03	0.00
1 to 2 Year	92639.18	10.02	60372.53	6.36	109713.01	6.81	141614.79	8.04	139979.62	6.50
2 to 3 Year	35571.77	3.85	51580.32	5.43	65471.9	4.06	87754.8	4.98	308953.73	14.34
Above 3Years	26549.75	2.90	43813.72	4.62	213132.8	13.24	257787.26	14.63	308953.73	14.34
Total	924502.42	100	949134.8	100	1610648.9	100	1761777.18	100	2154795.11	100

2.3.2. Comparative Analysis of Accounts Receivable Aging Within the Industry

A comparative analysis of the accounts receivable aging data for the three companies in 2023, as shown in Table 8, reveals that the majority of receivables across all firms were recoverable within one year. Midea Group achieved the highest recovery rate at 95.7%, significantly reducing its bad debt risk. In contrast, Gree Electric reported a rate of 64.83%, merely approaching the industry average, while Haier recorded 43.99%, falling below the average (Table 8). These figures indicate prolonged accounts receivable periods for Gree and Haier, reflecting heightened bad debt risks and potential challenges in liquidity management.

An analysis of accounts receivable aging across the three companies reveals distinct patterns in capital recovery efficiency. As shown in the 1–2 year aging category, Gree Electric and Midea Group accounted for minimal proportions at 2.85% and 6.5%, respectively, suggesting limited capital recovery during this period, which may constrain short-term operational liquidity. In contrast, Haier Group held a significantly higher share of 23.25%, indicating robust cash flow to support its current production demands.

For receivables aged 2–3 years, Midea Group maintained an exceptionally low proportion of less than 1%, reflecting near-complete capital recovery within the first two years. Haier Group continued to demonstrate substantial liquidity, with its proportion increasing further during this period. Gree Electric, however, exhibited a rising share in this category, signaling delayed recoveries but improved capital inflows compared to earlier periods.

Table 8. Accounts Receivable Age Comparison Among Industry Peers (2023)

	Project	Within 1 Year	1 to 2 Year	2 to 3 Year	Above 3 Years	Total
Gree Electric Appliances, Inc.	Customer deliberately defaults on payment	1396908.03	139979.62	308953.73	308953.73	2154795.11
	（%）	64.83%	6.50%	14.34%	14.34%	100.00%
Midea Group Co., Ltd.	Customer deliberately defaults on payment	3175857	94533	21058	24746	3316194
	（%）	95.77%	2.85%	0.64%	0.75%	100.00%
Haier Smart Home Co., Ltd.	Customer deliberately defaults on payment	715238098.9	378071982.8	532467268.9	0	1625777351
	（%）	43.99%	23.25%	32.75%	0.00%	100.00%
Industry Average	Customer deliberately defaults on payment	239936954.6	126102165.1	177599093.6	111233.2433	543749446.6
	（%）	68.20%	10.87%	15.91%	5.03%	100.00%

Notably, in the over-three-year aging category, Midea Group retained less than 1% of unrecovered funds, highlighting its stringent credit management. Haier Group reported no receivables in this category, confirming full capital recovery within three years. Conversely, Gree Electric's proportion in this segment remained consistent with the 2–3 year category, reflecting persistent challenges in recovering long-term receivables, which may impede operational flexibility.

Comprehensive evaluation indicates divergent strategies: Midea Group concentrates 90% of receivables within one year, ensuring high liquidity; Haier Group achieves full recovery within three years through phased capital inflows; Geee Electric, however, faces dispersed aging profiles, recovering only 84% of receivables within three years, with a significant proportion of overdue accounts lingering beyond this period, underscoring systemic risks in its credit management framework.

2.4. Accounts Receivable Management Challenges at Gree Electric

2.4.1. Overemphasis on Sales over Collections

To stabilize market share amid declining revenues (CNY 168.199 billion in 2020) and pandemic pressures, Gree adopted aggressive credit sales strategies, offering lenient payment terms to clients. This approach drove a 58.4% surge in accounts receivable balances by 2021 and increased reported profits. Sales incentives tied to revenue targets further incentivized credit sales, leading to a modest 2.9% revenue growth (CNY 198.153 billion in 2019 to CNY 203.979 billion in 2023) while accounts receivable as a percentage of revenue rose sharply from 4.26% to 7.89%. Although credit sales boosted short-term income, they amplified operational risks, including delayed collections, potential bad debts, and disrupted capital cycles.

2.4.2. Ineffective Collection Mechanisms

Accounts receivable balances escalated from CNY 8.44 billion in 2019 to CNY 16.099 billion in 2023, reflecting systemic inefficiencies in debt recovery. Gree relies on non-coercive methods such as written reminders and credit term adjustments, lacking a dynamic framework to analyze client-specific delinquency causes or deploy tailored recovery strategies. This rigid approach has resulted in suboptimal collection rates, deteriorating liquidity stability, and heightened bad debt exposure, undermining accounts receivable management objectives.

2.4.3. Flawed Credit Risk Management

The pandemic exacerbated liquidity strains among Gree's clients, eroding their creditworthiness. However, Gree's static credit monitoring system—updated periodically rather than in real-time—fails to adapt swiftly to evolving client risks. The absence of a proactive credit evaluation mechanism leaves the company vulnerable to delayed adjustments in credit policies, increasing the likelihood of uncollectible receivables. Prolonged exposure to high-risk accounts threatens both financial health and brand reputation.

2.4.4. Declining Capital Turnover Efficiency

Despite outperforming peers like Midea and Haier, Gree's internal capital turnover rate has deteriorated, dropping from 24 days in 2019 to 13 days in 2023. Extended receivable aging, slower collections, and deteriorating receivable quality signal shrinking working capital reserves. This trend raises concerns about liquidity constraints, diminished debt-servicing capacity, and long-term solvency risks.

2.4.5. Managerial Oversight in Receivables Governance

Post-2020 revenue declines prompted Gree to prioritize top-line growth through credit sales, neglecting the accelerating growth and scale of accounts receivable. Management's insufficient focus on receivables governance—evidenced by inadequate risk assessment frameworks and reactive rather than preventive strategies—has exacerbated systemic vulnerabilities. Without strategic reforms, this oversight may further strain operational resilience.

Gree's reliance on credit-driven growth, coupled with outdated collection practices and fragmented risk management, has created a high-risk receivables profile. Addressing these challenges requires integrating dynamic credit monitoring, diversifying recovery tactics, and recalibrating managerial incentives to balance sales expansion with financial prudence.

3. Recommendations and Mitigation Strategies

3.1. Regulating Credit Sales Ratios

When formulating credit sales strategies, companies must conduct cost-benefit analyses to evaluate both the potential gains and the associated risks. A scientifically calibrated approach should include:

Establishing Credit Sales Ceilings:Set rational upper limits for credit sales ratios based on historical accounts receivable-to-revenue trends, sales targets, and market conditions. Risk assessments should quantify profitability and risk tolerance under varying credit sales scenarios, enabling iterative adjustments to balance sales growth with risk containment. For instance, if accounts receivable exceed 7% of revenue (industry average), credit sales ratios should be reduced; ratios above 10% warrant a complete suspension of credit sales. Concurrently, optimize sales strategies by enhancing product quality or service offerings to attract cash-paying customers or introducing incentives for upfront payments.

3.2. Dynamic Adjustment Mechanisms

Gree Electric should adopt flexibility in revising credit sales ceilings in response to market fluctuations, client demands, and internal financial health. Examples include:

Raising credit sales ratios during periods of strong market demand to capitalize on growth opportunities; Lowering ratios during market downturns to mitigate liquidity risks.

Strengthening Credit Approval Protocols: Implement rigorous vetting processes for credit applicants, including verification of client creditworthiness, explicit terms (credit limits, repayment schedules), and enforceable penalties for defaults (e.g., liquidated damages). Execute credit agreements only with pre-qualified clients to safeguard corporate interests.

Periodic Evaluations: Conduct regular audits of credit sales ratios to ensure compliance with predefined thresholds. Proactively adjust strategies if ratios exceed safe limits or exhibit risk vulnerabilities.

3.3. Restructuring Debt Recovery Tactics

Leverage a centralized credit database to tailor recovery approaches based on client credit tiers and delinquency durations (see Table 9):

Low-Risk Clients (Good Credit History): Deploy non-confrontational approaches for minor delays, such as intensified reminders via calls, emails, or in-person visits to facilitate timely repayments.

High-Risk Clients (Poor Credit, Malicious Defaults): Escalate to legal actions, including litigation or asset seizure, to enforce debt recovery.

Third-Party Collaboration: Engage specialized collection agencies for persistently unresolved accounts to enhance recovery efficiency through professional expertise.

Table 9. Methods for Collecting Outstanding Accounts

Reason for Overdue	Overdue Duration	Collection Method
Temporary financial difficulties of customer	Within 90 days	Extend repayment deadline, information-based collection
Customer deliberately defaults on payment	Within 15 days	Phone collection
	16-60 days	Phone and verification collection
	60-180 days	Collection by company personnel
	180-360 days	Collection by third-party agency
	Over 360 days	Legal proceedings

3.4. Establishing a Dynamic Credit Database

Constructing a Client Credit Evaluation Model: Develop a credit scoring system incorporating ten weighted metrics—such as industry standing, historical repayment rates, and debt-to-asset ratios—using AI-driven analytics and the Analytic Hierarchy Process (AHP) to assign dynamic weights. This model enables real-time adjustments to credit risk assessments and continuous monitoring of receivables.

Data Integration and Updates: Integrate enterprise resource planning (ERP) or SAP systems to automate credit term alerts and client data updates (e.g., financial health, repayment capacity). For manual accounting systems, periodically refresh the database using regional credit trends, transaction histories, and repayment timelines.

Risk-Adaptive Policies: Terminate partnerships or shift to cash-only transactions with clients exhibiting deteriorating creditworthiness to reduce receivable balances and bad debt exposure.

Conversely, incentivize high-credit clients with preferential terms, such as extended credit limits, prolonged warranties, or waived deposits, to encourage timely repayments.

3.5. Optimizing Accounts Receivable Aging Structure

Prioritize Short-Term Receivables: Increase the proportion of receivables aged under one year to meet or exceed the industry benchmark of 68.2%. Prioritize partnerships with clients capable of full repayment within one year.

Reduce Long-Term Exposure: Gradually lower receivables aged over three years from 14.34% to the industry average of 5.03%, setting phased reduction targets.

3.6. Implementing Proactive Risk Mitigation Mechanisms

Early Warning System: Deploy an automated risk control mechanism triggered at 60 days overdue, initiating preemptive reminders and escalating to litigation if unresolved. Analyze aging profiles and delinquency durations to flag high-risk accounts for prioritized follow-up.

Payment Diversification: Offer flexible payment options (e.g., prepayments, cash-on-delivery, installment plans) to redistribute long-term receivables Above 3Years into shorter cycles (e.g., 1–2 years), thereby mitigating concentration risk.

3.7. Enhancing Organizational Awareness of Receivables Management

Sales Teams: Conduct regular training sessions to enforce strict adherence to credit sales policies, prohibiting excessive reliance on credit-driven sales to meet targets.

Management: Acknowledge the operational impact of receivables volatility. Engage financial professionals to design structured receivables management frameworks, aligning credit strategies with liquidity preservation goals.

4. Conclusion

This study analyzes Gree Electric’s financial data from 2019-2023, identifying critical challenges in accounts receivable (AR) management, including excessive credit sales ratios and inefficient recovery processes. Proposed strategies emphasize regulating credit sales thresholds, establishing dynamic credit evaluation systems, and optimizing aging structures. Future research could further investigate the long-term financial health implications of AR management frameworks.

For Gree Electric, implementing a credit sales ceiling, coupled with AI and big data-driven real-time credit monitoring, offers a viable pathway to mitigate risks. A "credit scorecard" model tailored to manufacturing firms like Gree can automate risk controls, triggering alerts at 30 days overdue. Initial non-litigation recovery methods—such as on-site visits or formal written notices—should precede escalated actions. For persistent delinquencies, a "litigation-preservation + settlement negotiation" hybrid strategy, including asset freezes for malicious defaulters, is recommended. Additionally, adopting Midea Group’s "reverse factoring" model demonstrates how supply chain finance can enhance AR turnover ratios by 15%, supported by collaborative

digital financing platforms with core suppliers. Partnering with third-party agencies under performance-based commission structures may further streamline long-term receivable management.

In summary, Gree Electric can curb AR growth and reduce bad debt risks by integrating credit sales caps, restructuring aging profiles, deploying data-driven credit databases, and balancing proactive policies with diversified recovery tactics. These measures collectively strengthen liquidity resilience while aligning with industry best practices.

Author contributions:

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