Financial Distress of Multi-Finance Companies in Emerging Markets

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ABSTRACT

Financial distress is when the company cannot pay what has been agreed upon when it is due. This paper discusses financial difficulties in multi-finance companies from 2010 to 2023. Forecasting financial difficulties uses the Merton Model method, adapted from the Black-Scholes Model for option prices. The method used to predict financial difficulties for multi-finance companies uses the Merton Method, as described previously, which is an adaptation of the Black-Scholes method. His research found that multi-finance companies still have negative interest margins. Increasing the credit disbursed also needs to receive attention from company management. The company's marketing costs also appear minor and can be imitated by other institutions. The probability of financial distress for multi-finance companies is very high and cannot be separated from the business characteristics of multi-finance companies. Multifinance companies still have negative interest margins. Increasing the credit disbursed also needs to receive attention from company management; the company's marketing costs also appear minor and can be imitated by other institutions; the probability of financial distress for multi-finance companies is very high and cannot be separated from the business characteristics of multi-finance companies.

1. INTRODUCTION

Multi-finance companies are companies or institutions the government assigns to help banks channel funds to help the community boost their economy. Financial Services Authority Regulation (POJK) No.29/2014 states that a finance company is a business entity that carries out financing activities for procuring goods and services. The existence of financing institutions is stated in Article 1, paragraph 9 of Law N0 21 of 2011 concerning the Financial Services Authority. This company has contributed much to the people's economy, directly and indirectly.

This financing institution assists banks in distributing funds collected through deposits, savings and accounts. The data in Figure 1 show the development of the financing industry since 2000. Figure 1 shows several indicators of multi-finance companies, such as equity, receivables, loans, assets and profits. The company's equity had minimal growth from 2000 to 2020. This growth in company equity was due to growth in net profit, new companies being established, and net profit losses. Company loans have grown since 2000 but have fluctuated in the last five years. Loan growth is not striking, as shown in Figure 1. Fluctuations in loans can cause financial distress for multi-finance companies.

For instance, the COVID-19 pandemic, which began in early 2020, had a severe impact on the financial health of many companies across various sectors, including multi-finance institutions. With the onset of the pandemic, loan defaults surged, and multi-finance companies witnessed a decline in credit demand as consumers and businesses struggled with financial uncertainty. The net profit of multi-finance companies sharply decreased during the pandemic, with many institutions reporting significant losses. This financial distress has been compounded by high operational costs, interest margin pressures, and volatile credit distribution, all of which highlight the vulnerability of these companies in the face of external shocks.

Recent statistics show a troubling trend in the financial health of multi-finance companies. According to industry data, from 2020 to 2022, many companies experienced fluctuating loan growth rates,

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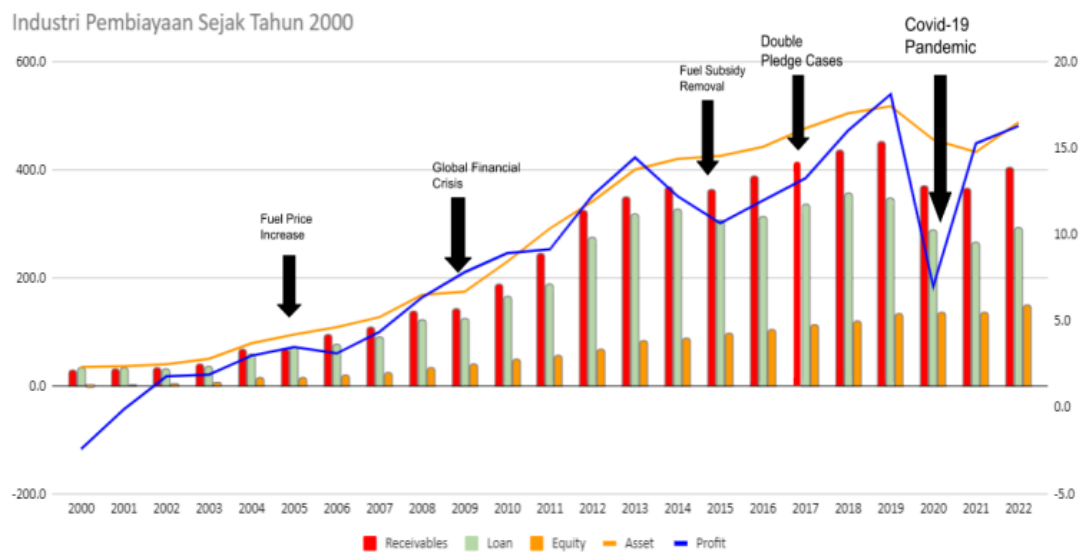E-mail: dharmaasatriadii@gmail.com (Dharma Satriadi)

Figure 1. Graph of development of the financing industry since 2000

with some institutions seeing loan portfolios shrink by as much as 30%. Additionally, non-performing loan (NPL) ratios increased, indicating rising financial distress across the sector. For example, in 2021, the average NPL ratio for multi-finance companies in Indonesia increased to 4.7%, up from 2.9% in 2020, reflecting the financial strain brought on by the pandemic and economic disruptions.

Research on the multi-finance sector is minimal because this sector is a supporting sector for banking. Sukarno and Fardiansyah (2009) discuss the valuation of multi-finance companies. Rina et al. (2019) discusses financial performance regarding market reactions of multi-finance companies. Nasri et al. (2020) discusses analysing factors influencing consumers in choosing multi-finance products. Ariani and Danarsari (2021) discuss the determinants of efficiency in multi-finance companies in Indonesia. Istiqomah and Rohim (2020) discuss credit distribution to multi-finance companies. Utami and Purnamasari (2023) discuss the influence of financial ratios and EVA on multi-finance companies. The research could be more diverse, as seen from the research carried out since 2009, due to little attention to the multi-finance financial sector. Pangaribuan and Purba (2023) discuss modeling multi-finance companies' failure probability. The limited research on this topic, combined with the significant financial challenges in the sector, underscores the importance of investigating the factors contributing to financial distress in multi-finance companies, especially in emerging markets like Indonesia.

This study aims to fill this gap by utilizing the Merton Model to predict the probability of financial distress in multi-finance companies from 2010 to 2023, considering both internal factors (e.g., credit distribution, operational costs, and interest margins) and external factors (e.g., economic growth, oil price fluctuations, and interest rates). The results of this study will provide valuable insights for policymakers, financial managers, and other stakeholders to better understand and mitigate the risks of financial distress in this crucial sector of the economy.

Credit distributed by multi-finance companies is a driving force for developing the multi-finance company concerned. A multi-finance company's specific factor lies in the disbursed credit. Istiqomah and Rohim (2020) discuss credit distribution to multi-finance companies. Fatriani et al. (2021) discuss the analysis of bad credit for multi-finance companies. Suwandi and Dewi (2023) discuss the design and how to build credit analysis in multi-finance companies. This variable is an intermediate variable in this study. The limitations of this research are one of the factors why this research was conducted.

A country's economic growth is an indicator of the movement of all businesses that occur. This research will use economic growth as an independent variable influencing credit and financial difficulties companies face. Tipri and Manurung (2020) discuss the influence of credit on economic growth. Tan and Floros (2012) researched the effect of economic growth on bank profitability in China. The economic growth used is the economic growth of the following year. If economic growth in the following year experiences a sharp increase, the credit disbursed will increase, and the possibility of experiencing bankruptcy will be smaller.

Oil is an essential driver in industrial performance, especially macroeconomic discussions in many countries, especially those dependent on oil trade. Oil prices fluctuated wildly from 2010 to the end of 2023, fluctuating from US$90 per barrel to around US$80 per barrel at the end of 2023.

Fluctuations in oil prices will affect the entire economy of a country, including banks, which are one of the economic sectors. Oil prices are one of the factors considered in bank performance (Manurung et al., 2020). Oil prices tend to impact the economy through direct and indirect channels, also mentioned by Poghosyan and Hesse (2009): (1) as a direct channel, movements or fluctuations in oil prices can affect bank profitability directly through oil-related loans, business activities or excess liquidity in the banking sector. Then (2) as an indirect channel, oil revenues may be an essential part of external and government revenues in these countries; thus, the outlook for oil revenues can then influence fiscal spending, which affects corporate and bank profitability through lending to the private sector.

The prevailing interest rate is an essential indicator of the economy, especially in the financial sector. An increase or decrease in interest rates is a driving factor and an obstacle to the multi-finance company sector. If interest rates continue to rise, it could make disbursing credit difficult and cause multi-finance companies to experience financial difficulties. This variable is the independent variable in this research.

The previous description discussed external company factors influencing the credit disbursed and the probability of difficulties for multi-finance companies. Internal factors are also essential to explore influencing the credit disbursed and the probability of financial difficulties. Important internal factors influence the dependent variables of disbursed credit and the probability of financial difficulties, namely interest margin, operational expenses and marketing costs.

Margin (often called interest margin) is essential in multi-finance companies. The interest margin, which is the difference between the interest income earned from loans and the interest paid on debt, serves as an important indicator of financial health. A high interest margin suggests that a company is effectively managing its loan portfolio and generating sufficient revenue to cover operational expenses. In contrast, a low or negative interest margin can indicate financial distress, as seen in the decline in margins during the 2020 economic downturn.

The greater the interest margin, the higher the company's going concern. However, the higher the interest margin, the smaller the credit distribution. Hasan et al. (2020) found that interest margin positively affects ROA and ROE. Manurung et al. (2020) also stated that NIM positively affects bank performance measured by RAROC. Widyastuti et al. (2017) also stated that interest margins positively affect bank profitability in Indonesia. Therefore, interest margin is an independent variable in this dissertation research.

Financial institutions' operational costs are essential for carrying out their operations. The company will experience problems and possibly financial difficulties if the operational burden is enormous. Ariani and Danarsari (2021) discuss the determinants of efficiency in multi-finance companies in Indonesia. This dissertation tries to make this variable an independent variable.

Marketing costs are a company's variable costs in running its business. This variable has a positive relationship with disbursed credit. Hasan (2013) and Swastha (2007) state that marketing costs need to be managed by the company to achieve better profits. Research on marketing costs on credit disbursed and the probability of financial difficulties is minimal. This variable is used as an independent variable in this dissertation research.

Multi-finance companies are companies that distribute funds to those in need. This company operates to obtain funding sources from its funds, parent company (banking) and collaboration with other banks. This company is known because it has strength with its funds and branding, including the parent company. Generally, banks, as institutions that support these companies in operating, have even offered bonds to the public. The role of the parent is also a variable in this research. Johan et al. (2012, 2013) discuss the parent company's influence on subsidiary companies' operations.

This research period will use the period from 2010 to 2023. During this period, we found a period known as the COVID-19 pandemic, which in Indonesia started in March 2020 and until the end of 2022. Negative news about the COVID-19 incident spread quickly. It greatly impacted various industries and businesses, causing a sharp price decline in the investment market and negatively impacting stock performance and returns (Rakshit & Neog, 2022). Therefore, the COVID-19 pandemic variable is used as a dummy variable in this dissertation research. Sullivan and Widoatmodjo (2021) discuss this pandemic period in the financial sector, especially banks.

Literature Review

The probability of bankruptcy is an event in a company where the company cannot pay its debts and interest due. This inability means the company owner must be willing to declare the company closed.

Hull (2006) also stated the concept of bankruptcy probability, which is the probability of bankruptcy of a company, which can be estimated from the price of bonds issued by the company and traded on the stock exchange. Discussion of bankruptcy probability in other forms (excluding Hull 2006) and some are based on the Merton model (1974), where this Merton model is inseparable from the Black-Scholes Model (1972). The Black-Scholes model introduces the price of an option because options have been traded on the market, but there is no reference for assessing the price of an option. The Black Scholes model for Call Options is as follows:

$$c = S_0 N(d_1) - X e^{-r*T} N(d_2)$$

Where,

$$d_1 = \frac{Ln(S_0/X) + (r + \sigma^2/2)*T}{\sigma\sqrt{T}} \text{ and } d_2 = d_1 - \sigma\sqrt{T}$$

Then, Merton (1973, 1974) made improvements and adjustments to the Black - Scholes model to estimate the probability of failure, known as the Merton Model. The Merton Model is as follows:

$$E_{i,t} = V_{i,t} * N(d_1) - D_{i,t} * e^{-r*t} * N(d_2)$$

Where,

$$d_1 = \frac{\ln(V_A/X) + (r + \frac{\sigma^2}{2})*T}{\sigma\sqrt{T}}$$
$$d_2 = d_1 - \sigma\sqrt{T}$$

Where,

VA = Asset Value, D = Debt, E = Equity, T = time, r = risk-free interest rate

Today's debt value is the difference between asset and equity values. The probability of failure is calculated as follows:

$$s = -\frac{1}{T} \log\left[N(d_2) + \frac{V_0}{D} Exp(r*T) * N(-d_1) \right]$$

If today's Asset value (V0) is less than today's debt value, the company is deemed to have failed at the end of the year. The failure distance (Default Distance, DD) can be calculated as follows:

$$DD_T = \frac{Log\left[\frac{V_0}{D}\right] + \left(r - \frac{\sigma^2}{2}\right)*T}{\sigma\sqrt{T}}$$

The value of N(-DD) is the probability of failure.

Later, KMV introduced its model based on stock prices, shown in Chart 5.1. Oldrich Vasicek and Stephen Kealhofer modified and developed the Merton model, now the VK model (Crosbie & Bohn, 2003). This model states that the company's equity value is a perpetual option value with a default point that absorbs the barrier to the value of the company's assets. When an asset hits the default point, the company is assumed to be in default.

The VK model developed by KMV is known as the KMV model. This model calculates the Expected Default Frequency (EDF), namely the probability of failure for the company whose shares are traded over the coming years or years. The EDF value requires equity prices and specific items on the company's financial statements as calculation input. KMV has created software called Credit Monitor (CM) where the EDF value can be calculated for the first year to the fifth year and users can see the structure of the EDF value. Figure 2 explains KMV graphically based on share prices.
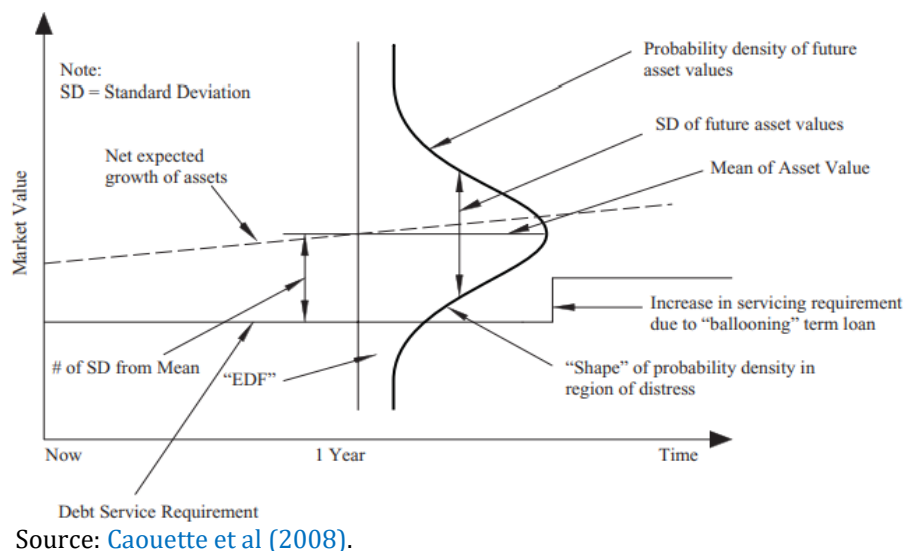
Source: Caouette et al (2008).

Figure 2. KMV with various information

This paper will begin by explaining the behavior of the determinant data for the probability of financial difficulties using the Merton method. Data regarding the dependent variables in this research have been obtained based on these results. This calculation is needed to obtain a model that will be estimated with several factors or variables.

2. METHODS

As explained previously, this paper wants to study the behavior of financial difficulties in multi-finance companies in Indonesia. Calculation of financial difficulties as described previously. The method used to predict financial difficulties for multi-finance companies uses the Merton Method, as described previously, which is an adaptation of the Black-Scholes method. This method calculates the default distance limit using the company's share price and debt value variables. Stock price data for daily data is obtained via www.finance.yahoo.com, and Company debt data is obtained through financial reports published by the Company, both reported to the stock exchange and via the Company's website.

Furthermore, this paper will also present the behavioral data used to examine variables that influence financial difficulties using the Panel data model (Setiadi, 2024). The behavior of this data will be explained in the discussion sub-chapter at the beginning.

3. RESULTS AND DISCUSSIONS

Results

Furthermore, this paper will also present the behavioral data used to examine variables that influence financial difficulties using the Panel data model (Setiadi, 2024). The behavior of this data will be explained in the discussion sub-chapter at the beginning.

Table 1. Several financial ratios and external company variables

	Credit Channeled	Margins Flower	Operational Cost	Marketing Costs	Risk	Economic Growth	Oil Price	Interest
Minimum	210,475	-18,060	17,275	35	0.02364	-0.02070	37.13000	0.03500
Maximum	29,914,952	7,329,792	5,730,595	768,918	1.54372	0.06100	98.83000	0.07750
Average	6,167,172	1,224,375	958,062	45,992	0.50532	0.04724	69.54000	0.05732
Standard of Deviation	7077401.57	1,609,263	1,330,966	127,817	0.25442	0.02045	20.80000	0.01367
Skewness	1.81159	1.72569	2.21976	4.08057	1.07464	-3.21745	0.04905	5.26736
Kurtosis	2.57043	2.46038	4.46794	17.11225	1.95887	11.14443	-1.42420	-0.93131
Jarque Bera	85.41822	78.30401	140.29502	1705.29130	36.59634	691.32924	125.65893	811.29578

Source: Researcher's Processed Results

Table 1 shows the minimum value of Rp disbursed credit: 210 billion, the maximum value: 29.9 trillion, the average: 6.17 trillion, and the standard deviation: IDR. 7 trillion. The Jarque Bera value is 85.42. The data disclosed shows that the credit disbursed varies greatly and follows a normal distribution.

The table also shows the minimum value of the Interest Margin amounting to a loss of IDR. 18 billion, maximum value of Rp. 7.33 trillion and an average of Rp. 1.22 trillion and a standard deviation of IDR. 1.33 trillion and a Jarque Bera value of 78.304. The data disclosed shows that the interest margin obtained by multi-finance companies varies greatly, and the interest margin follows a normal distribution.

Then. As described previously, Bank operating costs are also included as an independent variable. Operating costs have a minimum value of a loss of IDR. 17.2 billion, maximum value of Rp. 5.73 trillion and an average of Rp. 958.06 billion and a standard deviation of Rp. 1.61 trillion and a Jarque Bera value of 140.295. The data disclosed shows that the interest margins obtained by multi-finance companies vary greatly, and operational costs follow a normal distribution.

The marketing costs for multi-finance companies as an independent variable have a minimum value of IDR. 35 million, the maximum value of Rp. 768 billion, and an average of Rp. 45.99 billion and a standard deviation of Rp. 127.8 billion, and Jarque Bera's value is 1705.29. The data disclosed shows that marketing costs obtained by multi-finance companies vary greatly, and marketing costs follow a normal distribution.

This research uses macro variables as external variables, namely economic growth, oil prices and interest rates. Economic growth as an external factor in the model has a minimum value of -2.07%, a maximum value of 6.1%, an average of 4.72%, a standard deviation of 2.04% and a Jarque Bera value of 691.3. The data disclosed shows that the economic growth variable obtained by multi-finance companies does not vary as previously described, and this economic growth variable follows a normal distribution.

The oil price variable as an external variable which is included as an independent variable in this model, has a minimum value of US$ 37.13 per barrel; the maximum value is US$ 98.83 per barrel, and the average is US$ 69.54 per barrel, and the standard deviation is US$ 20.80, and the Jarque Bera value is 125.65. The data disclosed shows that the oil price variable obtained by multi-finance companies does not vary very much, and this oil price variable follows a normal distribution.

The interest rate variable, an external variable included as an independent variable in this model, has a minimum value of 3.5%, a maximum value of 7.75%, an average of 5.73%, and a standard deviation of 1. 37%. Jarque Bera's value is 811.29. The data disclosed shows that the interest rate variable obtained by multi-finance companies varies very little and follows a normal distribution.

The multi-finance company risk variables as independent and moderating variables included in this study have a minimum value of 2.4%, a maximum value of 154.37%, an average of 50.53% and a standard deviation of 25.44%, and Jarque Bera's value is 36.6. The data disclosed shows that the risk variables obtained by multi-finance companies vary greatly, and these risk variables follow a normal distribution.

The following explanation will discuss the calculation of multi-finance companies experiencing financial difficulties and the factors influencing this.

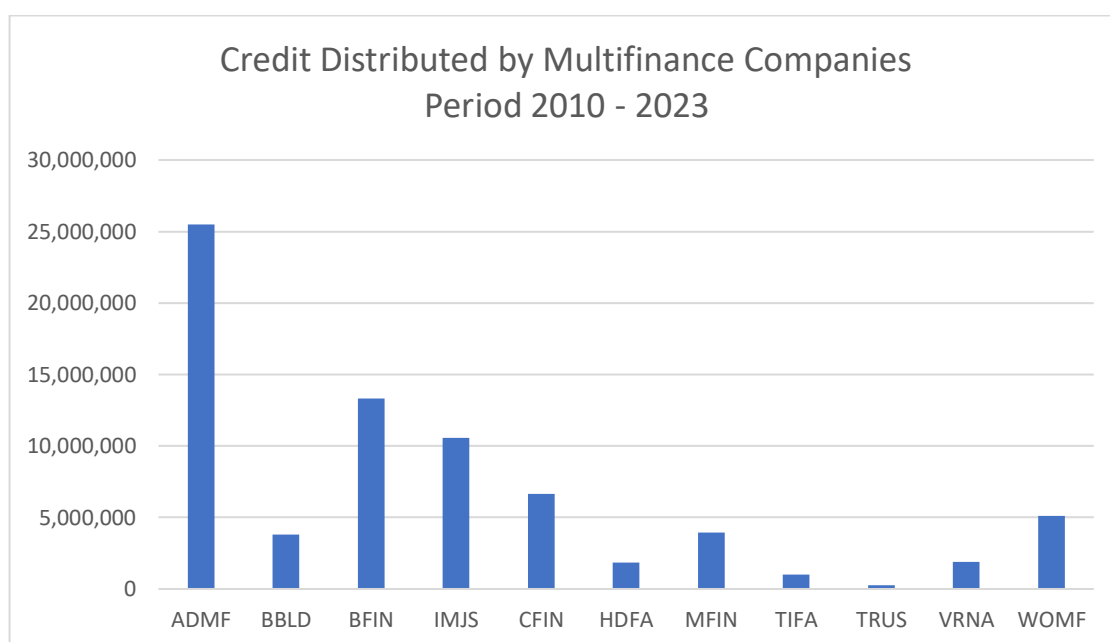The data described can also be explained in graphic form as below.

Figure 3. Credit Distributed by Multifinance Companies Period 2010 - 2023

Figure 3 illustrates the yearly fluctuations in credit distribution among multi-finance companies, highlighting periods of rapid credit growth and the subsequent slowdown. A significant decline in credit distribution during the COVID-19 pandemic period is evident, correlating with the increased financial distress observed in the industry. The fluctuation is particularly concerning for companies with high credit exposure during unstable periods, as indicated by the rise in default probability in 2020.

TRUS disbursed the lowest amount of credit, followed by TIFA, HDFA and BBLD. Meanwhile, ADMF disbursed the highest amount of credit, followed by BFIN, IMJS and CFIN. This pattern also indicates the risks faced by multi-finance companies.

Then, the interest margin obtained by multi-finance companies is shown in the graph below.
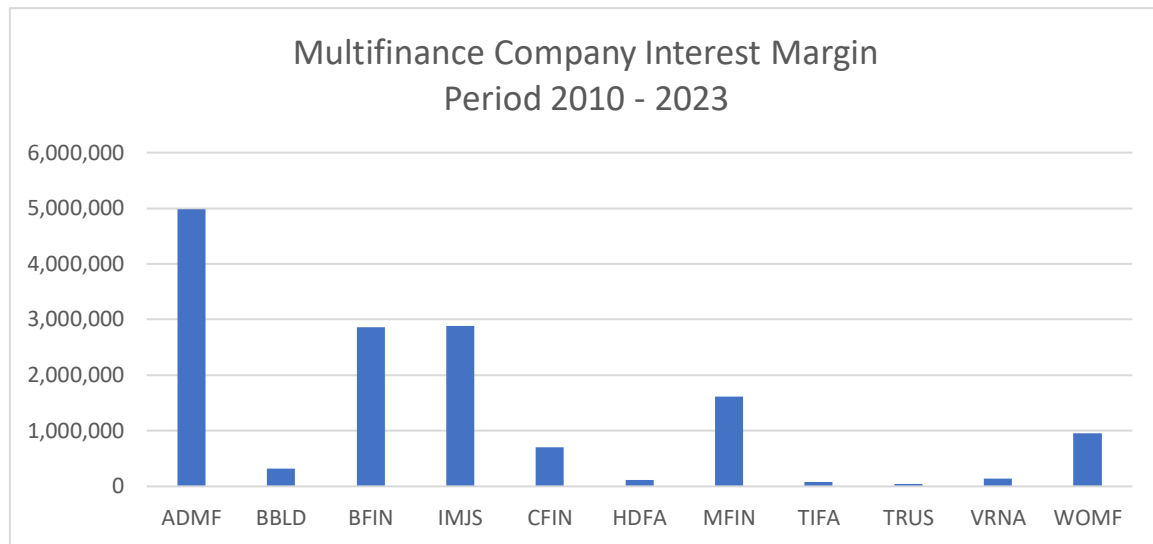

Figure 4. Multifinance Company Interest Margin Period 2010 - 2023

TRUS obtained the smallest interest margin, followed by TIFA, HDFA, VRNA and BBLD. The most significant interest margin obtained by ADMF, BFIN, and IMKS is the same amount and is followed by MFIN. This amount significantly influences the financial difficulties of Multinational companies.

Furthermore, the operational costs of multi-finance companies vary from year to year, as shown in the graph below.
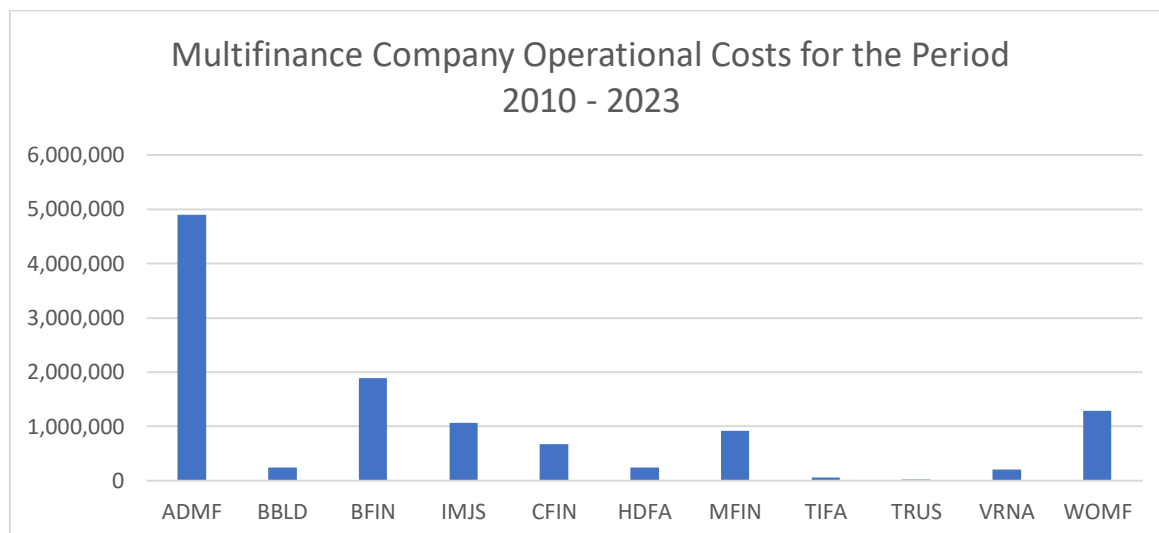

Figure 5. Multifinance Company Operational Costs for the Period 2010 - 2023

TRS obtained the lowest operational costs, followed by TIFA, VRNA, HDFA and BBLD. Meanwhile, ADMF incurred the highest operational costs, followed by BFIN, IMJS and MFIN. These results can also be used as an indicator of the financial difficulties that each company will face.

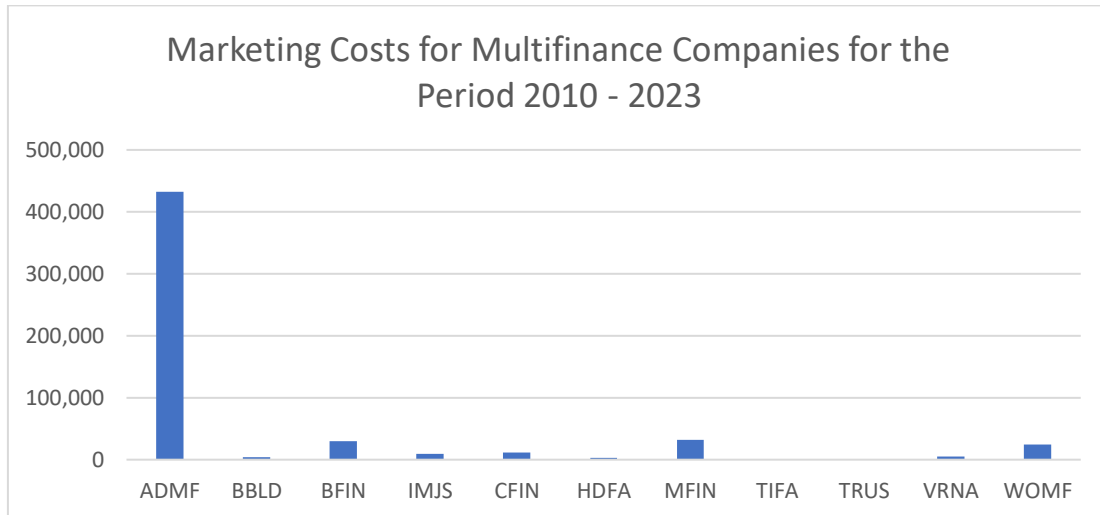The company also spends on marketing costs, as the graph below explains.

Figure 6. Marketing Costs for Multifinance Companies for the Period 2010 - 2023

TRUS and TIFA incurred the most minor marketing costs, followed by HDFA, VRNA and BBILD. Meanwhile, ADMF carries the highest marketing costs, followed by MFIN, FIN and WOMF. This graph can also show the situation of Multinational companies in terms of performance, possible financial difficulties, and credit disburses.

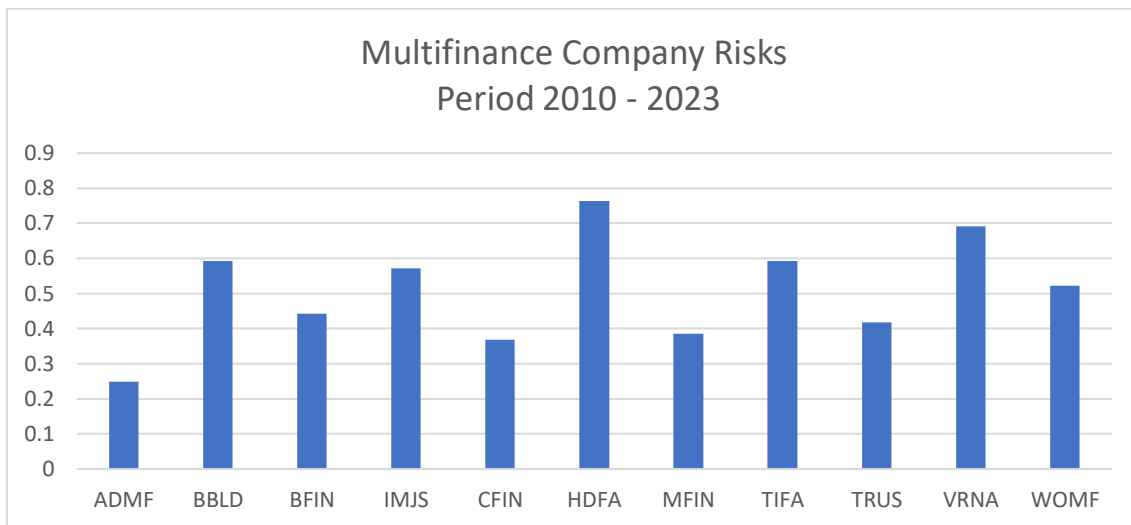Risk is essential for multi-finance companies, so the graph below will explain this risk.

Figure 7. Multifinance Company Risks Period 2010 - 2023

According to the graph above, ADMF is the multi-finance company with the lowest risk, followed by CFIN and MFIN. The most significant risks are HDFA and VRNA, BBLD, and TIFA. This graph also shows the risk of multi-finance companies associated with disbursed credit and financial difficulties.

Discussion

Financial Difficulties of Multifinance Companies

As explained in the previous description, the company forecasts financial difficulties from 2010 to 2024. Calculations for forecasting the company's financial difficulties use the Merton model method. The results of the forecasting calculations can be seen in Table 2.

Based on Table 2, the probability of financial distress for all multi-finance companies has the lowest value of 10.79%, and the maximum is 100%. The lowest probability value of 10.79% was owned by IMJS in 2018. The highest probability value of 100% was owned by Trus, starting from 2014 to 2023. The average probability was 84.954% for all multi-finance companies. The lowest average of the 11 multi-finance companies was 64.67% owned by the IMJS company.

The data in Table 2 on the probability of financial distress indicates a worrying trend, particularly for companies like TRUS, which has maintained a high probability of default over the past decade. This persistent risk of bankruptcy could affect investor confidence, leading to a potential decrease in investment or lending to such companies. Financial managers may need to adopt more conservative strategies to mitigate these risks, especially in volatile market conditions.

Table 2. Probability of Financial Difficulty for Multifinance Companies 2010 – 2023

	ADMF	BBLD	BFIN	IMJS	CFIN	HDFA	MFIN	TIFA	TRUS	VRNA	WOMF
2010	0.99999	1.00000	0.88479	0.80182	0.89967	0.99253	0.63308	0.70375	0.99830	0.72095	0.95760
2011	0.91453	0.77405	0.84209	0.82597	0.84758	0.68084	0.71343	0.88232	0.87153	0.62721	0.90000
2012	0.78874	0.73615	0.84342	0.72705	0.87662	0.72460	0.80235	0.88794	0.89751	0.62783	0.82883
2013	0.72621	0.76867	0.84144	0.64379	0.85704	0.71679	0.57721	0.80590	0.99930	0.62486	0.83704
2014	0.64257	0.75850	0.84257	0.67407	0.89201	0.77754	0.93353	0.95153	1.00000	0.66743	0.68132
2015	0.68500	0.86056	0.81231	0.65270	0.92018	0.83559	0.96833	0.99566	1.00000	0.66845	0.76780
2016	0.70172	0.82893	0.83045	0.67683	0.93999	0.90260	0.99701	0.99342	1.00000	0.70708	0.73852
2017	0.74732	0.71240	0.80297	0.55877	0.84952	0.94270	0.99994	0.96358	1.00000	0.89427	0.72325
2018	0.76930	0.68458	0.83296	0.10790	0.84556	0.94856	0.99833	0.98240	1.00000	0.73621	0.72144
2019	0.81985	0.70287	0.87187	0.61363	0.54651	0.99122	0.98885	0.99400	1.00000	0.83462	0.81959
2020	0.89147	0.81028	0.93690	0.67760	0.87638	0.99989	0.99735	0.99536	1.00000	0.81982	0.91382
2021	0.96211	0.92084	0.96565	0.55400	0.99088	0.97740	0.99891	0.99976	1.00000	0.87492	0.94975
2022	0.97980	0.86105	0.92655	0.57426	0.98824	0.89503	0.99907	0.99814	1.00000	0.90390	0.96330
2023	0.94978	0.77243	0.86699	0.64537	0.96122	0.72740	0.99959	0.89504	1.00000	0.88951	0.95609
Minimum	0.64257	0.68456	0.80297	0.10790	0.84556	0.68084	0.63306	0.70375	0.87153	0.62486	0.68132
Maximum	0.99999	1.00000	0.96565	0.82597	0.99088	0.99989	0.99994	0.99976	1.00000	0.90390	0.96330
Average	0.82703	0.79939	0.86592	0.54671	0.89939	0.85519	0.92193	0.93920	0.98333	0.75694	0.83988
Std ev	0.12078	0.08838	0.04882	0.16600	0.05257	0.11813	0.12125	0.08954	0.04217	0.10847	0.10097
Skewness	0.05619	0.89727	0.81353	-2.87082	0.68718	-035831	-1.58095	-1.79531	-2.35354	0.15676	-0.14231
Kurtosis	-1.51555	0.57945	-0.26119	10.00857	-0.90436	-1.61532	1.43915	2.79083	4.33566	-1.74005	-1.55453
Jarque Bera	11.90216	5.29534	7.74826	47.88369	9.99422	12.72525	7.25309	7.54620	14.07877	13.16373	12.14777

ADMF multi-finance companies have variations in bankruptcy from 0.6426 to 0.999, with an average of 0.82703 and a standard deviation of 0.1208. This value states that the financial distress value varies slightly and has a normal distribution.

BBLD multi-finance companies have variations in bankruptcy from 0.6826 to 1.000, with an average of 0.79939 and a standard deviation of 0.0838. This value states that the financial distress value varies slightly, and the variation is more significant than in ADMF companies. The financial distress value is found to have a normal distribution.

Multifinance company BFIN has a bankruptcy variation from 0.80297 to 0.96565 with an average of 0.86592 and a standard deviation of 0.04882. This value states that the financial distress value has a smaller variation range than ADMF and BBLd shares and is generally close to financial distress. The standard deviation is slight, and the financial distress data follows a normal distribution.
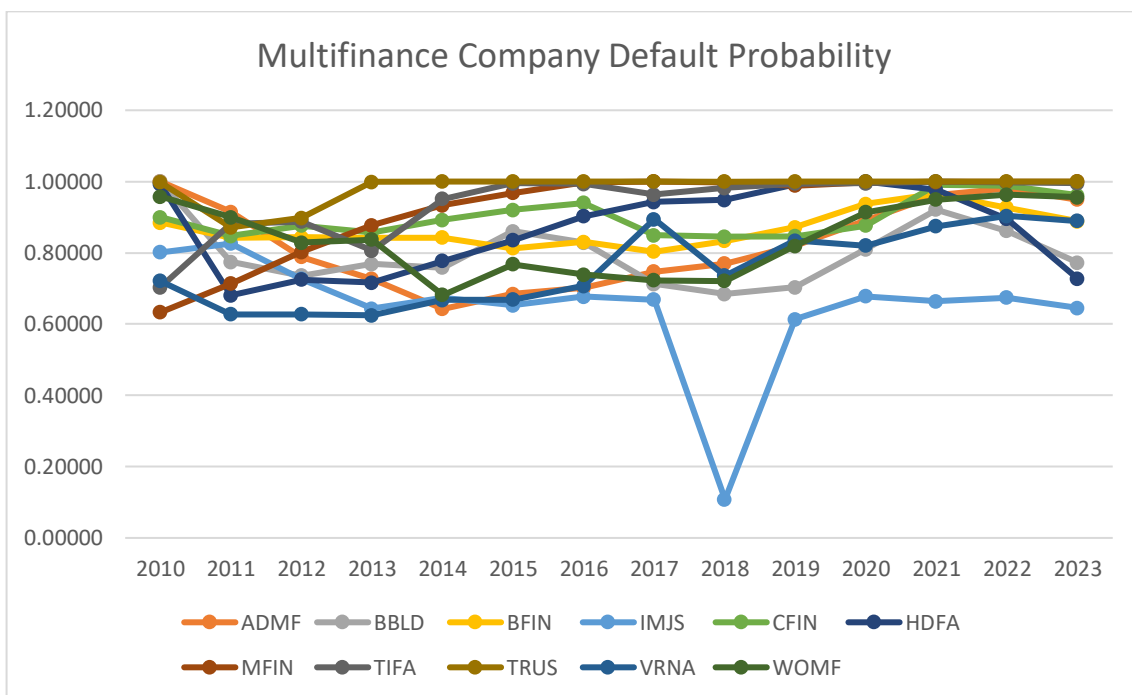

Figure 8. Multifinance Company Default Probability

IMJS multi-finance companies have variations in bankruptcy from 0.107906 to 0.82597, with an average of 0.64671 and a standard deviation of 0.16600. This value states that the financial distress value is quite varied, and the variation is more significant than that of ADMF, BBLD and BFIN companies. However, this company has the smallest financial distress value. Data on this company's financial distress value was found to be normally distributed.

CFIN multi-finance companies have variations in bankruptcy from 0.84556 to 0.999088, with an average of 0.89939 and a standard deviation of 0.05257. This value states that the financial distress value has a slight variation when compared with previous shares and is found to be normally distributed.

HDFA multi-finance companies have variations in bankruptcy from 0.68084 to 0.99989, with an average of 0.86519 and a standard deviation of 0.11813. This value states that the financial distress value is quite varied, and the variation is minor compared to ADMF companies. The financial distress value is found to have a normal distribution.

Multifinance company MFIN has a bankruptcy variation from 0.63308 to 0.99994, with an average of 0.92193 and a standard deviation of 0.12125. The standard deviation value indicates that the financial distress value varies slightly. The variation is greater compared to the previous company, and the financial distress value is found to have a normal distribution.

TIFA multi-finance companies have variations in bankruptcy from 0.70375 to 0.99976 with an average of 0.93920 and a standard deviation of 0.08954. This value states that the financial distress value varies slightly, where the average value is close to financial distress of 1. The variation is more minor compared to ADMF companies, and the financial distress value is found to have a normal distribution.

The TRUS multi-finance company has a bankruptcy variation from 0.87153 to 1.000, with an average of 0.983339 and a standard deviation of 0.04217. This value states that the financial distress value has relatively small variations and is close to the financial distress value of 1. The variation is more minor than that of ADMF companies, and this financial distress value is found to have a normal distribution.

The TRUS multi-finance company's bankruptcy variation ranges from 0.62486 to 0.90390, with an average of 0.75694 and a standard deviation of 0.10847. This value states that the financial distress value varies slightly. The variation is smaller than that of ADMF companies and more significant than that of other multi-finance companies, and the financial distress value is found to have a normal distribution.

WOMF multi-finance companies have variations in bankruptcy from 0.68132 to 0.96330, with an average of 0.83988 and a standard deviation of 0.10097. This value states that the financial distress value is quite varied. The variation is minor compared to ADMF companies but more significant than several multi-finance companies, and the financial distress value is found to have a normal distribution.
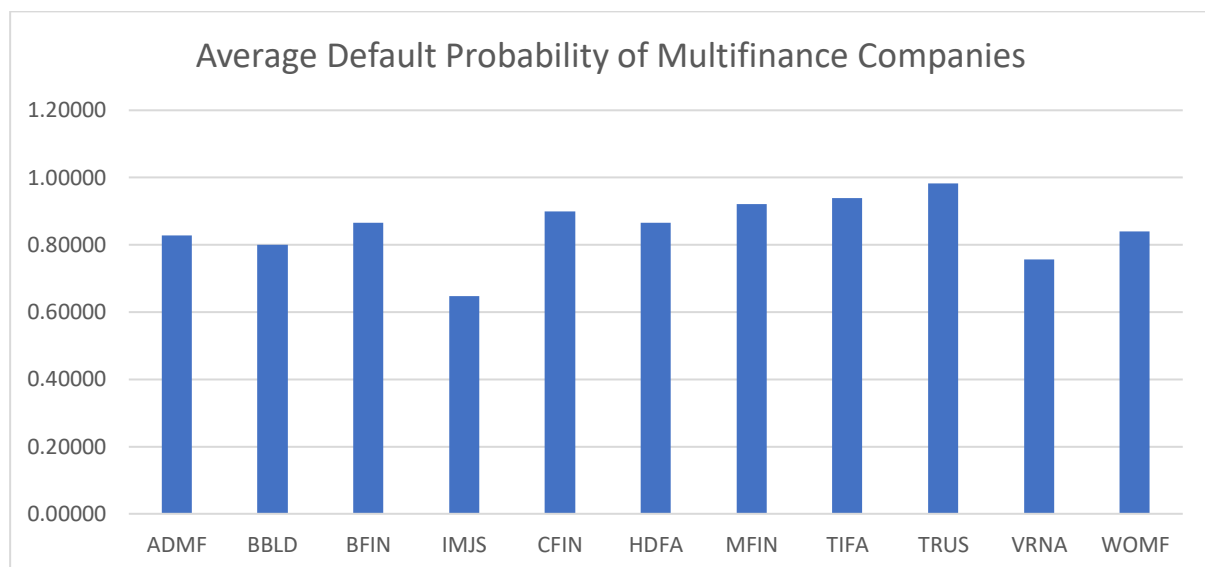

Figure 9. Average Default Probability of Multifinance Companies

If look at the average probability of default for 2010 – 2023, the TRUS Company has the highest and lowest values among the IJMS Companies. The small probability of IJMS's financial distress cannot be separated because the company has the most negligible probability in 2018 compared to other multi-finance companies.

Furthermore, the risks faced by multinational companies from 2010 to 2024 should be considered, as shown in Figure 10.
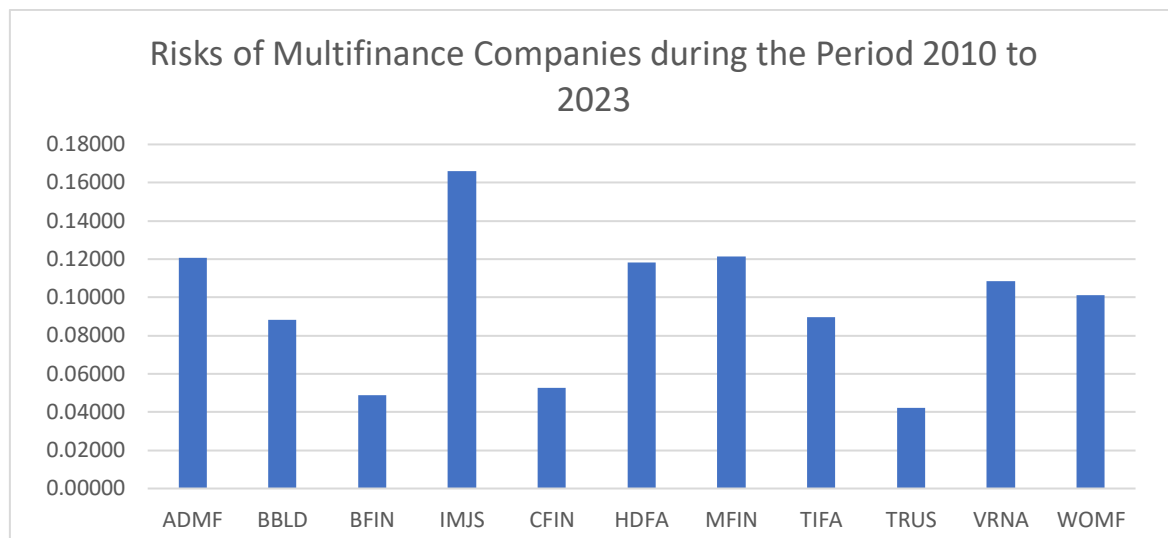

Figure 10. Risks of Multifinance Companies during the Period 2010 to 2023

In this chart, the TRUS Company has the most minor standard deviation (Risk) compared to other companies. IMJS has the highest standard deviation compared to other companies, even though the probability of financial stress is the most minor compared to other companies.

4. CONCLUSION

Based on the thorough analysis conducted in this study, the paper draws several important conclusions that shed light on the current financial and operational status of multifinance companies. First and foremost, it is evident that multifinance companies continue to grapple with negative interest margins. This situation underscores a persistent challenge in the sector where the cost of funds exceeds the income generated from those funds, suggesting a need for strategic financial management and possibly a reevaluation of pricing strategies and cost structures.

Furthermore, the study highlights a critical area for management attention—increasing the credit disbursed. This finding points to the potential for growth in loan volumes, which is crucial for the revenue streams of these companies. However, it also calls for careful risk assessment and credit management to ensure that the expansion of credit portfolios does not adversely affect the financial health of the institutions.

Lastly, the analysis reveals that the marketing costs incurred by the company are relatively minor and, notably, are at a level that could easily be replicated by competitors. This insight suggests that while current marketing expenditure is efficient, there is a vulnerability in that competitors could easily adopt similar strategies, potentially diluting any competitive edge. Therefore, it might be beneficial for the company to consider innovative marketing strategies that differentiate it from other players in the market, enhancing its competitive position and possibly improving its market share.

In summary, the paper concludes that while there are significant challenges, there are also distinct opportunities for multifinance companies to refine their financial strategies and enhance their operational approaches to secure a more robust and competitive stance in the financial sector.

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