

FACTORS AFFECTING JKN PROGRAM FUNDING SUSTAINABILITY

Yurita Yuliddin

University of Indonesia, Indonesia

E-mail: yurita_y@yahoo.com

Abstract

At the beginning of the JKN program's launch, the funding experienced a deficit due to low revenue collected and high utilization of healthcare. The JKN program is the Indonesian government's MHI/SHI scheme to cover healthcare expenses for all Indonesians. MHI and SHI schemes may differ from one country to another because of many factors, especially in health policy and health financing systems. There is a lack of studies that compare different schemes and sources of financing in the MHI/SHI system that would determine financial sustainability. This study is intended to identify the predictor of financial distress in the JKN program and used net operating cash flows as a dummy variable. A secondary analysis of six years of data from JKN program funding in the period of 2016–2021 shows the financial ratio representing liquidity, as well as the claim ratio, the collectability ratio, and account receivable turn-over (RTO), and a binary logistic regression model is employed in predicting financial distress. The data demonstrated the importance of the claim ratio and collectability ratio. The liquidity ratio and RTO, on the other hand, have little predictive value for financial distress. The regression model's outcome demonstrates that the model is appropriate to be used. This study fills a gap in prior literature on the MHI/SHI financing side by examining financial and operational variables to predict financial distress and control financing structures such as health spending to manage the claim ratio, optimizing collectability of contributions to prevent the contributions' arrears, and utilizing liquid assets effectively.

Keywords: Social Health Insurance, Indonesian JKN Program, Financial Distress

Introduction

Liquidity issues have been raised since the beginning of the JKN program's implementation. This circumstance is the result of not being able to meet financial obligations in the immediate term. The JKN program had a deficit as a result of unevenly covering "the law of large numbers" requirements for participants, contributions, and the cost of benefits,

How to cite:	Yurita Yuliddin (2022) Factors Affecting JKN Program Funding Sustainability, (7) 10. Doi: 10.36418/syntax-literate.v7i10.13203
E-ISSN:	2548-1398
Published by:	Ridwan Institute

which was reflected in a rising claim ratio. In addition, the disobedience of participants in paying contributions and the impact of increasing receivables in arrears threaten the cash flow conditions of the JKN program and impact the net asset deficit of the JKN program. Those conditions could worsen the liquidity issue and lead to financial distress.

Due to this financial ability, numerous terms are used in the literature to characterize this financial situation, such as bankruptcy, financial distress, and default (Dichev, 1998). Financial difficulty typically occurs when there is not enough money coming in to cover daily operating costs or pay debts. But given its significance for businesses and other stakeholders, anticipating financial trouble is a crucial role. Financial distress has a significant effect and may result in business closure.

In order to operate the health fund in a condition of financial equilibrium, BPJS Kesehatan may need to keep a sufficient reserve to meet unforeseen short-term risks. The JKN program has embraced the pay-as-you-go method of managing social health insurance finances. This indicates that it pays expenses out of the contributions' current revenue (Charles and Weber, 2009). Government subsidies, as well as participant contributions that are not subsidized, provide a portion of the funding for health funds.

In the early phases of the JKN program, there is a considerable increase in the number of members, and the majority of them immediately consume healthcare benefits; this circumstance is popularly known as the insurance effect. According to a prior study by Caitlin M. Farrell and Aaron Gottlieb (2020), extending access to health insurance and increasing health insurance coverage were related to an increase in outpatient and inpatient utilization. Although another study by Finkelstein A., et al. (2012) found that an increase in healthcare utilization by low-income populations was associated with health insurance.

The impact of healthcare services, provider accessibility, the hospital and primary care facilities to support medical treatment, and other social concerns related to the cost of contribution pricing have all been examined in prior studies of social health insurance. Due to healthcare benefits, referral policies, and contribution policies based on participants' financial capability, they identified areas that policymakers can improve.

Some studies emphasize financial aspects of health economic policy and government as an owner of the JKN program, such as how the increase in contributions correlates with the number of requests for lowering the JKN class and its relationship with the utility of primary healthcare, which are studied based on family income and the community's response (Hasibuan, R., et al., 2020). Nur, R., et al. (2019) examined whether there is a relationship between income and selecting the JKN membership class. Muttaqien, M., et al. (2021) found that informal sector participants stopped paying premiums for the JKN program due to the uncertainty of income earned related to the routine obligation to pay JKN contributions every month at a certain amount. According to Maulana, A.N., et al. (2022), the community has an important role in determining the financial capacity of the JKN program as a contributor. The

study finds that participants have a good ability to pay JKN contributions by comparing the proportion of income and the amount of contribution paid by society in rural areas.

Although JKN financial sustainability concerns have been brought up in certain studies, it was discovered that a number of criteria were related to ability and willingness to pay, which would affect the amount of contributions paid by particular membership segments. When JKN participants fail to pay the required contributions on time or temporarily forgo medical care or treatment, they accumulate arrears. To meet the principles of mutual cooperation and "the law of the large number," on the other hand, members of a social security program should make regular contributions regardless of whether they are ill or not. In contrast, BPJS Kesehatan bases the medical expenses it pays on the entire medical benefits that are offered when a medical path is necessary.

Despite the fact that numerous empirical studies have been conducted around the world (such as Cheluget et al., 2014; Pranowo et al., 2010; Ogawa, 2003) with the goal of determining the most critical variables that affect the severity of financial distress in an insurance company, the findings remain inconclusive. The reasons that lead to the financial troubles of Indonesia's (social) insurance business have only been the subject of a few studies. It should be emphasized that industrialized and developing/underdeveloped countries have different economic frameworks, bankruptcy laws, and bankruptcy procedures. As a result, while these models were created for use in rich nations, using well-known prediction models like Altman's Z-score (1968) or Ohlson's logit model (Ohlson, 1980) O-score may not be helpful in predicting financial distress in developing countries. In developing countries, profitability, liquidity, leverage, cash flow ratios, and firm size were deemed significant by Waqas and Md-Rus (2018) research.

In examining financial sustainability, it is important to determine which factors and key indicators are used to predict financial distress. Addressing this issue, we analyze the liquidity ratio, the claim ratio, contribution collectability on contribution arrears, and account receivables turn-over from 2016 to 2021 by constructing a logistic regression model. The purpose of this study is to determine the impact of JKN program specific factors, such as liquidity, the claim ratio, the collectability ratio from contribution arrears, and receivable turn-over (RATO) on the Indonesian JKN program. Six years of JKN program financing data are taken into account in this study, and financial distress is predicted using empirical analysis.

This paper is divided into five sections. In Section 2, pertinent financial distress literature is evaluated with the goal of identifying key financial distress predictors. In Section 3, essential indicators are measured, and data and methodology for forecasting financial distress are discussed in more detail. We discuss the data collection, statistical analysis, and the empirical findings in the section reports, and the final section finishes with the corresponding findings and suggestions for further study.

Literature Review

National Health Insurance in Indonesia

The National Health Insurance (JKN) is a Mandatory Health Insurance (MHI) or Social Health Insurance (SHI) system that has been in place since January 2014 to ensure that citizens receive health care benefits and protection in meeting their basic health requirements. Law (UU) No. 40 of 2004 concerning the National Social Security System requires the implementation of JKN as a component of the national social security system. JKN is administered by the Health Social Security Administrative (BPJS), a state-owned transformation company known as PT Askes (Persero). This health insurance program is mandatory for all Indonesian residents, including foreigners who have been employed in the country for at least six months (Bappenas, 2014).

In many nations that have social health insurance, including South Korea, Taiwan, Thailand, and the Philippines, various health policy and funding systems have been developed. In Taiwan, out-of-pocket payments and direct government funding are added to the payroll tax-based premiums that make up the majority of the National Health Insurance (NHI) budget. The insured, their employer, and the government pay premiums to the NHI Administrator. According to the NHI Act, the government receives 36% of the 89% of premiums that make up the NHI's revenues from premiums. There are four main funding sources for Phil Health in the Philippines: (1) the national and local governments, (2) insurance (both public and private), (3) user fees/out-of-pocket, and (4) donors.

The funding source for Indonesia's JKN program is similar to Taiwan's and the Philippines. The Indonesian government controls the funding source, which consists of government finances and other membership contributions (workers, employers, and self-insured). All contributions were pooled into the JKN fund to cover the medical expenses of all members registered. The findings of empirical studies by Freeman, J.D., et al. (2008) that estimate causal relationships between health insurance and health care utilization and/or health outcomes indicate that health insurance increases utilization and improves health.

Since its establishment in 2014, the JKN program has been one of the Indonesian government's social security initiatives to offer healthcare benefits or health protection (social insurance) for all Indonesian residents. The Social Security Agency for Health (BPJS Kesehatan), which the Indonesian government has appointed, will oversee the JKN program's management of healthcare finance roles such as revenue (contribution) collection, strategic purchasing, and risk pooling. Since social health insurance is required by law, no selection criteria are disclosed to the participants when they sign up for membership in the JKN program.

Other than financial indicators (ratios) that measure liquidity, solvability, and profitability of funds for Health Social Security (DJS), as stated by regulations, are measured by net assets that must at least meet estimated claim payments for the next one and a half months and at most estimated claim payments for the next six months. In addition to liquidity

and cash flows, certain financial ratios must be maintained to meet current obligations to healthcare providers.

Concept of Financial Distress

Various types of industries experience financial disruptions as well, each with a unique set of causes. Due to these differences, in recent years, a variety of methodologies, empirical data, and variables have been used to calculate estimates of the likelihood that companies will experience financial difficulties. In accordance with the expansion of the business sector and the number of businesses, the researchers used a larger number of research samples over a longer time period and a broader spectrum of financial indicators.

Wruck, K. H. (1990) explains financial distress as a situation where a company's operating cash flow is insufficient to meet current obligations (such as trade payables or interest expenses), so the company is forced to make decisions to overcome the problem. Andrade, G. et al. (1997) explained financial distress as the condition of the company being unable to pay its obligations to third parties or creditors. According to Dar, et al. (2019), default occurs when businesses fail to meet their financial obligations due to a lack of available finances. In other words, it is debt that implies the account holder is unable to make payments. Nuswantara, et al. (2023) noted that financial distress is a state in which a firm or individual is unable to create revenue or income due to an inability to fulfil or pay its financial obligations.

According to earlier studies, financial ratios have been used to forecast firm failure. Among the writers who have contributed the most significantly to this field are Beaver, W. H. (1996), Altman (1968), Deakin (1972), and Ohlson (1980). The Z-score model developed by Altman (1968), which Taffler (1983), Taffler (2003), Smith and Graves (2005), and other prior studies on failure prediction mostly utilized. The study of Isayas, Y.N. (2021), which was published later, demonstrates that tangible assets and loss ratios have positive values and statistically significantly affect the financial hardship of insurance businesses.

In their study of the variables influencing the outcomes of financial distress prediction on BPJS Health (JKN program) Prasetyo, E. et al. (2020) also offered suggestions for preserving financial stability. The study's conclusions take into account both internal (high financial costs and participant contributions) and external (BPJS participants and government involvement) elements that affect financial distress.

In overcoming the decline in net assets, the government has applied many policies to support financing through various schemes. Under such circumstances, the government has reviewed the amount of JKN contributions in 2020 by setting contribution (premium) schemes for all participant segments. Additional policies were established to prevent participants from being in arrears by imposing service fines if they access JKN services at advanced-level reference health facilities (FKRTL). Due to adjustments in contributions and decreases in the utilization of health services as a result of the COVID-19 virus's rapid spread

and the government's declaration of a COVID-19 pandemic status in the second quarter of 2020, the net asset deficit has decreased since 2020.

Theories of Financial Distress

The private sector commonly employs the terms "failure" and "bankruptcy." Failure occurs when the rate of return on invested capital is less than the rates on comparable investments (Altman, 2006). When a company breaches its responsibilities, it indicates that it is on the verge of collapse or is in the earliest phases of bankruptcy. Tuckman and Chang (1991) initially proposed a theory of financial vulnerability in which an organization is deemed financially vulnerable if it is likely to reduce its services in response to a financial disruption. The primary predictors of vulnerability based on financial ratios are 1) inadequate equity balances, 2) highly concentrated revenue, 3) low administrative expenses, and 4) low operating margins. According to Hager (2001), Tuckman-Chang measures may help predict the closure of some non-profit organizations, but they are not applicable to all non-profits.

There are particular financial tools to handle the financial circumstances, distress, and vulnerability. In times of financial difficulty, a business must concentrate on short-term financial resources that can be quickly turned into cash. On the other hand, organizations that face financial vulnerability must look for longer-term, less liquid, and flexible resources. The standard three ratios of current ratios, cash or quick ratio, and total days of cash on hand, are used to calculate financial ratios that evaluate a company's ability to meet its short-term financial obligations. These ratios are based on liquidity and solvency.

After multiple tests, Altman revised his Z-score model in 1995, using four ratios to predict financial distress. Working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, and the market value of equity to book value of total debt are the four ratios. For non-manufacturing companies, the model is known as the revised Altman's Z-score with the following discriminant function (Altman, 2000):

$$Z\text{-score} = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

Description:

X₁ = working capital/total asset

X₂ = retained earnings/total asset

X₃ = earnings before interest and taxes/total asset

X₄ = book value of equity/book value of total debt

Table 1
The Description of Category in the Altman Z-score

Z-score value	Interpretation
More than 2.99	The company has no financial problems (safe zone).

Between 2.99 and 1.23	The company is in the gray area (it cannot be classified whether the company is healthy or bankrupt).
Less than 1.23	The company has financial problems or bankrupt.

Since business procedures and legal requirements for non-profits differ from those in the commercial sector, a modified version of Altman's Z-score method should be created and utilized as a measure for non-profits. A non-profit must concentrate on challenges with liquidity and daily cash flow as an organization. The organization must appropriately monitor and analyse by utilizing a variety of financial ratios on a regular basis to detect financial hardship or failure. Financial ratios will offer details on the financial health of the firm and be helpful to managers as management tools.

Myser, S. (2016) asserted in her paper titled "Financial Health of Non-Profit Organizations," which focuses specifically on financial distress, that a model was created to predict the financial health of non-profit organizations using measurements that differ from those of private sector organizations. External economic indicators, net assets or change in net assets, fund operating surplus (deficit), debt ratio, total margin, asset allocation efficiency, fundraising efficiency, dependence on contributions and grants, program demand, revenues per employee, days of payables, and defensive intervals ratio were among the financial ratios identified in the study to predict the level of health finance in non-profit organizations.

As a non-profit program (organization), the JKN program's balance sheet does not include equity, which is a reference to capital resources on common corporations' financial reports. The liquidity ratio, collectability, and the claim ratio are three financial statistics utilized in this program to measure financial performance. The Health Social Security Fund (DJS)'s net asset deficit from 2015 to 2020 is a sign that the JKN program may experience financial difficulties, which puts its long-term viability in jeopardy. In his investigation of the fiscal issues facing the national social health security program (JKN), Mas'udin (2019) used the Zmijewski (X-Score) and Altman (Z-Score) models to anticipate and analyse financial distress. The study demonstrates that the JKN program had financial distress from 2014 to 2016, which is classified as economic failure because of unfavourable deficit conditions.

Financial Distress Determinants

Liquidity

Numerous studies have demonstrated that a corporation's liquidity, which reflects its ability to meet short-term maturities, is a crucial factor in determining its financial difficulties. Increased liquidity has also been found to lessen corporate financial distress, according to Abdullah (2006), in addition to reducing corporate financial distress. Financial distress and liquidity have a favourable association, according to research by Kristanti and

Rahayu (2016). Them et al. (2011) research demonstrated that there is a negative correlation between liquidity and financial distress.

Liquidity is the capacity of business to meet its short-term financial obligations with its current assets at maturity. In addition to the company's total financing, liquidity also has to do with the capacity to turn existing assets into cash. If the company wishes to optimize profitability, the level of liquidity should be maintained.

Claim Ratio

In the insurance industry, the loss incurred on net premiums earned is referred to as the claim ratio, also known as the loss ratio. If an accident takes place on the insured object, the insurer (guarantor) may be held liable under Law No. 2 of 1992. After a loss happens, the claim will be paid by an insurance company (or another company) to an insured person (or company) as compensation or honor service obligations. The financial distress of the insurance company is escalated when this ratio is high since there is less money available for reimbursement. Higher claim settlement ratios should indicate a higher risk of insolvency for insurance businesses. Contrarily, one could anticipate that, all else being equal, businesses with lower loss ratios would outperform those with higher loss ratios (Freixas et. al., 2000).

The Collectability Ratio

Contribution collection is a process for recording contributions paid by a contributor over their lifetime, which can then be used by the benefit-paying authority to determine the amount of social security benefit due. The guidelines from the International Social Security Association (ISSA) are addressed to all organizations that receive social security contributions and make sure they are being followed. These guidelines are meant to help institutions deal with problems and make contribution collection more effective and efficient. They are also meant to raise awareness of how complicated contribution collection and compliance systems are and how they affect social security overall (ISSA Guidelines). Collectability ratio is defined as the contribution paid divided by booked premium revenues. When this ratio is high, it means that there is more money available to pay out health care payments.

The effect of payment ability turns out to be financial issues, and arrears in contribution payments have been a challenging issue to solve. This is due to the diversity of groups involved, including employees from both formal and informal sectors, citizens who are dependent on government assistance, retirees, government employees, and others.

Receivable Turn Over

Account receivable is a current asset that plays a significant role in large current activities. Mattison, B., et al. (2015) noted that a receivable is created when a company sells products or services to a third party on account (on credit). It is a monetary claim against a

business or an individual. A receivable is the right to receive cash in the future from a current transaction.

The company's payment conditions affect the turnover rate for accounts receivable. Dirie and Ayuma (2018) claim that the key is for businesses to use early detection of accounts at risk to enable proactive management of a customer before they file for bankruptcy. Clients that are unable to pay should not be the only focus of accounts receivable management.

BPJS Kesehatan has faced financial difficulties due to uncollectible contributions and growing numbers of arrears that meet a default definition. The payments have been overdue for more than 90 days, the longer the period of payment due, the greater the probability to be uncollected or defaulted. To address the probability of default, a provision was calculated on an annual basis for the asset impairment based on self-assessment.

Research Method

This study empirically tests the factors affecting the JKN program's financial sustainability. This study relies on secondary data from BPJS Kesehatan's financial report and management report, which are provided to regulators on a monthly basis. BPJS Kesehatan is required to submit financial data of the JKN program semi-annually to the President of the Republic of Indonesia as a BPJS Kesehatan management accountability report. On an annual basis, audited financial statements are reported to JKN program regulators that are compliant with the Indonesian Financial Accounting Standard.

Table 2
The Description of Model Variables and the Measurement

Category	Name	Symbol	Measurement
Dependent variable	Operating Cash flows (Dummy)	Y	Cash flow is a measure of a company's ability to generate cash from its operations and represents the possibility of negative or positive cash flows occurred 1 for distress and 0 for not distress.
Independent variables	Claim Ratio	X ₁	Dividing the benefit cost by contribution income (also known as the loss ratio).
	Collectability Ratio	X ₂	Ability to collect contributions from booked premium revenues.
	Liquidity Ratio	X ₃	Dividing total current assets by total current liabilities.
	Receivable Turnover (RTO)	X ₄	Measuring the number of times over a given period that a company collects its average accounts receivable.

The purposive sampling method is used to describe the impact of model variables that were observed and compiled in 72 populations (N), which are analyzed and tested as preparation. During given periods, all variables highly fluctuated due to the increase in JKN membership and utilization rate of medical care (insurance effect). This period of time is considered to observe financial difficulties caused by cash flow mismatch to fulfill short-term obligations until cash flow recovery due to a contribution adjustment in 2020 by the central government.

The fundamental characteristics of the sample variables are summarized and measured using descriptive statistics. In this study, analytical methods are used in several steps: descriptive analysis, auto-correlation test, and multi-collinearity test, the test of the goodness-of-fit (The Hosmer–Lemeshow test), expectation-prediction evaluation, and regression analysis.

In this study, we use logistic regression analysis that can be formulated as follows:

$$P_i = \frac{1}{1 + e^{-(\beta_1 + \beta_2 x_{2i} + \dots + \beta_k x_{ki} + u_i)}}$$

Where P_i is the probability that $y_i = 1$; e is the exponential under the logit approach.

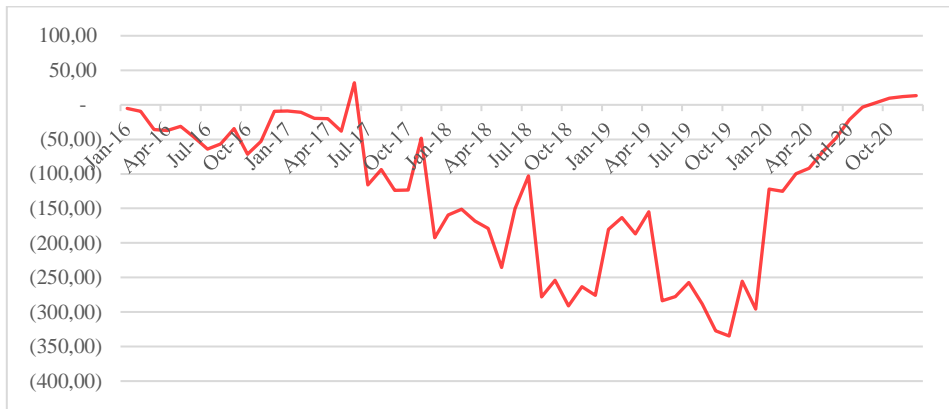
Since the score of the logit model is between 0 and 1, if it is more than 0.5, this study will categorize as distressed, and it will categorize as non-distressed if the score is less than 0.5 (Gujarati and Porter, 2009).

Referring to common practice in relevant studies, the figure from the Altman Z-Score is able to provide a prediction of financial distress based on categories. By putting financial ratios into the equation of the Modified Altman Model (1983) we could examine the financial condition.

Result and Discussion

By using the modified Altman model, we concluded that the JKN program has suffered financial distress in the past four years, as shown in Figure 1. During hardship times in the JKN program, some financing policies have been implied to overcome liquidity issues, and payments to healthcare providers have been postponed. There are financial interventions made by the government to temporarily overcome the liquidity mismatch, such as the advance payments of subsidized contributions that are regularly paid by the government on a monthly basis. Short-term financing for healthcare providers is settled by banks' factoring schemes.

Figure 1
The Result of Altman Z-score



Source: the results are processed by Ms Excel

The government has assessed the JKN program's premium or contribution for possible increases in 2020 due to insufficient coverage of healthcare benefit. At the same time, pandemic COVID-19 has had a favourable impact on liquidity due to the diminishing of healthcare utilization and improved financial performance.

Based on variables mentioned in the previous section, the descriptive statistics of independent variables such as claim ratio, the collectability ratio, the liquidity ratio, and receivable turn-over are presented in Table 3.

Table 3
Summary of Descriptive Statistics

	Claim Ratio	Collectability Ratio	Liquidity Ratio	Receivables Turnover
N	72	72	72	72
Mean	0.9518	1.0418	0.4313	22.4340
Median	1.0117	1.0122	0.1499	20.1500
Maximum	1.5550	1.4314	2.3192	66.2600
Minimum	0.5049	0.8069	0.0357	1.3100
Stdev	0.2585	0.12245	0.6291	16.4397

Source: the results are processed using EViews12

The mean score of the claim ratio is 0.9518, with a minimum value of 0.5049 and a maximum value of 1.5550. The highest claim ratio shows that healthcare expenses exceed income. The standard deviation of the claim ratio amounts to 0.2585. The collectability ratio has an average value of 1.0418, and the minimum and maximum values, respectively, are 0.8069 and 1.4314, with a standard deviation of 0.12245. The collectability ratio is the main

factor determining liquidity and affecting the operating cash flow of the JKN program. The JKN program has suffered financial insolvency for the last four years (2016–2019) and reached the lowest level of current assets at Rp1,4 trillion. Accumulated deficit net assets tipped to Rp57 trillion in 2019. The average liquidity ratio is 0.4313, implying that the company has a liquidity position below the standard liquidity ratio of 2:1. The standard deviation of liquidity ratios is 0.6291, while the minimum and maximum values, respectively, and are 0.0357 and 2.3192. The average value of receivable turn-over is 22.434, and the minimum and maximum values are 1.3100 and 66.260, respectively. A standard deviation of receivable turn-over of 16.439 shows that its value is lower than its mean value.

The correlation analysis and variance inflation factor (VIF) for multicollinearity are presented in Table 4. According to Gujarati and Porter (2009), there is multicollinearity if the VIF value exceeds 10.

Table 4
The Correlation for the Logit Model

Variables	Claim Ratio	Collectability Ratio	Liquidity Ratio	Receivables Turnover	VIF
Claim Ratio	1.0000				1.5338
Collectability Ratio	0.4388	1.0000			1.3549
Liquidity Ratio	-0.5486	-0.4605	1.0000		1.6247
Receivables Turnover	0.2005	0.1214	-0.2698	1.000	1.0836

Source: the results are processed using EViews12

This study used logistic regression to test the effect on the claim ratio, the collectability ratio, the liquidity ratio, and receivable turn-over that interacts with operating cash flows. The probability results in Table.5 show that some variables have a significant impact (p-value 0.05) and others do not (p-value > 0.05). The p-values of the claim ratio and the collectability ratio, respectively, 0.0016 and 0.0067, have a significant effect. The claim ratio has a positive relationship with operating cash flows; otherwise, the collectability ratio is negatively correlated. This means that operating cash flows are affected by the claim ratio, which represents how healthcare is utilized, and the collectability ratio, which represents how well contributions are collected. The liquidity ratio and receivable turn-over have no significant impact on operating cash flows. However, the liquidity ratio is negatively correlated and receivable turn-over is positive.

Table 5
The Logit Regression Results

	Estimate	Std. Error	z-statistic	p-value
Intercept	5.3060	3.6901	1.4379	0.1505

Claim Ratio (X1)	5.4281	1.7241	3.1483	0.0016
Collectability Ratio (X2)	-9.5768	3.5342	-2.7097	0.0067
Liquidity Ratio (X3)	-3.2393	1.6799	-1.9282	0.0538
Receivables turn-over (X4)	0.0457	0.0292	1.5623	0.1182

McFadden R-squared : 0.4240

H-L Statistic : 5.0429 Prob.Chi-Sq(8) : 0.7530

Source: the results are processed using EViews12

From the results of the analysis, the equations were obtained:

$$Y_i = 1 / (1 + e^{-(5.3060 + 5.4281X1 - 9.5768X2 - 3.2393X3 + 0.0457X4 + u)})$$

R-square describes how far dependent data can be explained by independent data. R-square has a value between 0 and 1, with the provision that the closer to number one, the better. If R-square is 0.424, it means that 42.4% of the distribution of the dependent variable can be explained by the independent variables and the remaining explained by other variables outside of this study.

The Hosmer-Lemeshow test shows Prob.Chi-Sq = 0.7530 (more than 0.05), which indicates that variables are fit to predict financial distress. The result of expectation-prediction evaluation indicates that the equation is 86.11% correct, it proves the use of models and variables is accurate and correct.

Implications

The JKN program, as a social security system in healthcare coverage that is owned by the Indonesian government, is a strategic program to improve the quality of life for Indonesian citizens. Through this program, all citizens have the same right to access health services and obtain medical treatment. Health is the key to improving people's quality of life so they can be more productive in contributing to the nation's development.

This study implies that health care funding is one of the critical factors in ensuring that the JKN program is sustained to provide all health benefits to Indonesian citizens. Liquidity is the key to being maintained, so any factors that would affect it should be monitored intensively. Operating cash flow reflects how resources are utilized in operational transactions; if it cannot be maintained effectively, other financing sources would be allocated to support operational financing. The more healthcare expenses disbursed, the greater the claim ratio will be. On the other hand, the source of JKN health funding depends on contributions collected to fulfil all obligations; the more contributions collected, the more reserves of JKN program funds accumulate for foreseen obligations.

Recommendations

However, the findings of this study had many limitations and drawbacks due to MHI/SHI scheme comparability, reforming government policies in medical tariffs and

contribution's rates, and other structural-operational aspects that were not taken into account. Many factors could contribute to financial problems for the JKN program, a not-for-profit program, from 2014 to 2020 that are not comparable to commercial companies in dealing with the stages of financial difficulties. On the other hand, a limited type of financial ratio is used and adjusted into the items of the JKN program's financial statements.

The consequences of this study include management, regulators, and upcoming researchers, among other stakeholders. This study suggests that managers should have more control over particular ratios since they are motivated to take preventative action in order to preserve financial equilibrium. This outcome provides a summary of the regulatory ramifications of adding a provision for impairment losses of contributions that are past due for the segmented members.

Future research on the same subject, such as financial accounting and the MHI/SHI industry, will benefit from using this study as additional reference material.

Conclusions

Accounting-based financial parameters are commonly used to forecast the financial difficulty of businesses. If the financial statement items are comparable, the preceding model of financial distress could be employed. We chose several approaches to find related businesses' financial measurements, such as insurance companies and other service companies, to create models that operating cash flow can be utilized to predict business distress and represent the changing current trend in the period of research.

Based on the logistic regression model, we estimate the financial distress by using selected variables. Our main variables of interest, both the claim ratio and collectability ratio, are significant predictors of financial distress. It indicates that healthcare utilization, compared to contribution income and contribution collection, has a dominant role in reflecting the financial capability of the organization. Intuitively, the increase in contribution collections should translate into an increase in liquidity and the operating cash flow for the JKN program. The collectability ratio represents the productivity level needed to manage contribution arrears from JKN participants. The JKN program is experiencing a financial problem and has a very low liquidity ratio, which is the amount of cash or liquid assets drained to fulfil all mature short-term liabilities. This structural problem should be taken seriously by the government to overcome liquidity mismatches and ensure financial sustainability.

BIBLIOGRAPHY

- Abdullah, Shamsul Nahar. 2006. Board Structure and Ownership in Malaysia: The Case of Distress Listed Companies. *Corporate Governance*, 6(5), pp. 582-594. <https://doi.org/10.1108/14720700610706072>
- Agarwal, V., and Taffler, R. (2003). The Distress Factor Effect in Equity Returns: Market Mispricing or Omitted Variable?. *SSRN Electronic Journal*.
- Altman, E. I. 1968. Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy. *Journal of Financial*, 23(24), pp. 589-609.
- Altman, E. I., & Rijken, H. A. 2006. A Point-in-Time Perspective on Through-the-Cycle Ratings. *Financial Analysts Journal*, 62(1).
- Andrade, G., & Kaplan, S. N. 1997. *How Costly is Financial (Not Economic) Distress? Evidence from Highly Leveraged Transactions that Became Distressed*. [Online]. Retrieved May 1, 2023, from: <https://www.nber.org/papers/w6145>.
- Beaver, W. H. 1996. Financial Ratios as Predictors of Failure. *Journal of Accounting Research*, 4, pp. 71-111. <https://doi.org/10.2307/249017>.
- Caitlin M Farrell & Aaron Gottlieb. 2020. The Effect of Health Insurance on Health Care Utilization in the Justice-Involved Population: United States, 2014-2016. *American Journal of Public Health*, 110(S1), S78-S84. <https://doi.org/10.2105/AJPH.2019.305399>.
- Charles, N., & Weber, A. 2009. *Social Health Insurance: A guidebook for planning*.
- Deakin, E. B. 1972. A Discriminant Analysis of Predictors of Business Failure. *Journal of Accounting Research*, 10(1), pp. 167-179.
- Dirie, A., & Ayuma, C. 2018. Effect of Accounts Receivables Management on Financial Performance in Small and Medium Firms in Mogadishu, Somalia. *International Journal of Management and Commerce Innovations*, 6(1), pp. 378-383.
- Finkelstein, A., Taubman, S., Wright, B., Bernstein, M., Gruber, J., and Newhouse, J. P. 2012. The Oregon Health Insurance Experiment: Evidence from the First Year. *The Quarterly Journal of Economics*, 127(3), pp. 1057-1106. <https://doi.org/10.1093/qje/qjs020>.
- Freeman, J. D., Kadiyala, S., Bell, J. F., and Martin, D. P. 2008. The Causal Effect of Health Insurance on Utilization and Outcomes in Adults: A Systematic Review of US Studies. *Medical Care*, 46(10), pp. 1023-1032.

- Freixas, X., Giannini, C., Hoggarth, G., and Soussa, F.2000. Lender of Last Resort: What Have We Learned Since Bagehot? *Journal of Financial Services Research*,18(1), pp. 63-94. <https://doi.org/10.1023/a:1026527607455>.
- Gujarati, D. N., and Porter, D. C.2009. *Basic Econometrics (5th edition)*. New York: Douglas Reiner.
- Hager, M. A. 2001. Financial Vulnerability Among Arts Organizations Financial Vulnerability Among Arts Organizations: A Test of the Tuckman-Chang Measures. *Nonprofit and Voluntary Sector Quarterly*,30(2), pp. 376-392.
- Hasibuan, R., Purnama, T.B., and Susanti, N.2020. Respon Kenaikan Iuran Jaminan Kesehatan Nasional dan Utilitas Puskesmas oleh Peserta JKN di Medan. *Jurnal Kebijakan Kesehatan Indonesia : JKKI*, Vol. 09(04 December 2020), pp. 211–217.
- Isayas, Y. N.2021. Financial distress and its determinants: Evidence from Insurance Companies in Ethiopia. *Cogent Business and Management*, 8(1), 1951110. <https://doi.org/10.1080/23311975.2021.1951110>.
- ISSA Guidelines: *Contribution Collection and Compliance*. [Online]. Retrieved May 1, 2023, from: <https://ww1.issa.int/guidelines/cc/174401>.
- Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional. *Social protection in Indonesia: Challenges and Plans*. Jakarta: Direktorat Perlindungan dan Kesejahteraan Masyarakat; 2014.
- Kristanti, F.T., and Rahayu, S.2016.The Determinant of Financial Distress on Indonesian Family Firm. *Procedia - Social and Behavioral Sciences*, 219 (2016), pp. 440 – 447. <https://doi.org/10.1016/j.sbspro.2016.05.018>
- Mas'udin. 2017. Identifikasi Permasalahan Finansial pada Jaminan Sosial Kesehatan Nasional. *Jurnal Info Artha*, 1(2), pp. 111-119.
- Mattison, B., Matsumura, E. M., and Miller-Nobles, T.2015. *Horngren's Accounting, The Financial Chapters, Global Edition (11th ed.)*. Pearson International Content. <https://bookshelf.vitalsource.com/books/9781292119342>.
- Maulana, A. N., Purwaningrum, F., Fitrianti, Y. Hartini, F.T and Thabrany, H. 2022. Mengukur Kemampuan Mengiur untuk Jaminan Kesehatan Nasional (JKN) tahun 2021 di Indonesia. *Jurnal Jaminan Kesehatan Nasional*, 2(1), pp.39-52. <https://doi.org/10.53756/jjkn.v2i1.51>.
- Ministry of Health and Welfare Taiwan.2022. *Taiwan National Health Insurance Administration*. [Online]. Retrieved May 1, 2023, from : <https://www.nhi.gov.tw/English/>

- Muttaqien, M., Setiyaningsih, H., Aristianti, V., Coleman, H.L.S., Hidayat, M.S., and Dhanalvin, E., et al. 2021. Why Did Informal Sector Workers Stop Paying for Health Insurance In Indonesia? Exploring Enrollees' Ability and Willingness To Pay. *PLoS ONE*, 16(6). <https://doi.org/10.1371/journal.pone.0252708>.
- Myser, S., Ho, A., & Wintoki, M. B. 2016. *Financial Health of Nonprofit Organizations*. Dissertation. University of Kansas.
- Nur, R., et. al. 2018. Analisis Faktor Yang Mempengaruhi Pemilihan Kelas Kepesertaan Jaminan Kesehatan Nasional. *Faletehan Health Journal*, 5(3), pp. 135–141.
- Prasetyo, E.I., Prasetio, T., and Hulu, D. 2020. Analisis Faktor-Faktor Yang Dapat Memprediksi Financial Distress Pada Badan Penyelenggara Jaminan Sosial (BPJS) Kesehatan Tahun 2014-2018. *Widyakala Journal*, 7(1), pp. 19-27. <https://doi.org/10.36262/widyakala.v7i1.272>.
- Ohlson, J. A. 1980. Financial Ratios and the Probabilistic Prediction of Bankruptcy. *Journal of Accounting Research*, 18(1), pp. 109-131.
- Smith, M., & Graves, C. 2005. Corporate Turnaround and Financial Distress. *Managerial Auditing Journal*, 20(3), pp. 304–320. <https://doi.org/10.1108/02686900510585627>.
- Taffler, R. J. 1983. The Assessment of Company Solvency and Performance Using a Statistical Model. *Accounting and Business Research*, 13(52), pp. 295–308. <https://doi.org/10.1080/00014788.1983.9729767>.
- Thim, C. K., Choong, Y. V., & Nee, C. S. 2011. Factors affecting financial distress: The case of Malaysian public listed firms. *Corporate Ownership & Control*, 8(4-3), pp. 345-351. <https://doi.org/10.22495/cocv8i4c3art3>
- Tuckman, H. P., and Chang, C. F. 1991. A Methodology for Measuring the Financial Vulnerability of Charitable Nonprofit Organizations. *Nonprofit and Voluntary Sector Quarterly*, 20(4), pp. 445–460. <https://doi.org/10.1177/089976409102000407>.
- Waqas, H. and Md-Rus, R. 2018. Predicting financial distress: Importance of accounting and firm-specific market variables for Pakistan's listed firms, *Cogent Economics & Finance*, 6(1), 1545739. <https://doi.org/10.1080/23322039.2018.1545739>.
- Wruck, K. H. 1990. Financial Distress, Reorganization, and Organizational Efficiency. *Journal of Financial Economics*, Vol. 27 (1990), pp. 419-444.

Copyright holder:

Yurita Yuliddin (2022)

First publication right:
Syntax Literate: Jurnal Ilmiah Indonesia

This article is licensed under:

