

Surety Bond Underwriting Process with Scoring Techniques

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ABSTRACT: This journal discusses the Surety Bond Guarantee Process using the Case-by-Case Pattern conducted by Perum Jamkrindo. This Journal also explains the analysis that occurs on Surety Bond acceptance factors using the Case-by-Case Pattern. Data that is used is primary data taken from a company that is undergoing an underwriting process. This process uses a scoring technique so that it provides more objective results than is based on the decision of the underwriter. Based on the results of the study it can be concluded that the surety bond of a company has been declared qualified to be given a guarantee from the guarantee company.

Keywords: Underwriting, Surety Bond, Scoring Technique

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I. INTRODUCTION

The basic principle of credit guarantee is the takeover of the risk of guaranteed failure in fulfilling its financial obligations to the recipient of the guarantee but does not eliminate the guaranteed financial obligation to the recipient of the guarantee until the recipient of the guarantee states that the guaranteed credit is paid off. Another case with an insurance business entity, a guarantee does not run an insurance business or sell insurance products while insurance companies in practice run a guaranteed business. The guarantee also has a business actor and uses a different legal basis.

A credit guarantee is an activity of providing guarantees for the fulfillment of the financial obligations of credit recipients (guaranteed) to the recipient of the guarantee. One credit guarantee in Perum Jamkrindo is Suretyship products which are divided into two parts, namely counter bank guarantee & Surety Bond. Surety Bond is a 3-party agreement between surety (first-party) based on its belief in the principal (second party) jointly promising to the obligee (third party) that if the principal for some reason becomes negligent or fails to carry out the work in accordance with what was promised with the obligee, the surety will be responsible for the obligee to settle the principal's obligations.

The development of Surety Bond in Indonesia as a product that guarantees the failure of a transaction/project is still closely related to the constraints of the existence of Surety Bond itself. It is different from the US and UK states which are required to use Surety Bond in each of their projects and have strong institutional and economic and political facilities. Perum Jamkrindo still has to be optimistic about the market potential of Surety Bond products which is very broad, considering that the concept of Surety Bond product guarantees will always be needed by the Principal and Obligee in providing security in carrying out their projects.

Risk and dangerous properties such as the construction business are important for making decisions that will guarantee the guarantee by the guarantor. Poor decisions, weak guarantee standards, and inadequate risk management can cause significant harm to guarantors. Therefore, the main objective of the Underwriter is to provide credit to contractors that represent a small or acceptable risk of loss. However, underwriting is a long and complex process. It is very subjective because of the large involvement of the human element (Russell 1992) and the guarantee industry does not have a standard way of doing business. Using the old manual evaluation techniques and simple checklists results in inadequate data processing (Bakheet 1999).

In the academic scope, the Scoring system is generally used to estimate bankruptcy and possible default. Suretyship is a loss avoidance mechanism where customers are qualified based on their characteristics. None of the parties involved, namely, principal, surety, and obligee, assume that they will suffer losses. From this perspective, bond qualifications are very similar to getting bank credit. The banks also do not bear losses in

credit decisions and prequalify their customers based on an assessment of four C credits including character, capacity, capital, and conditions (Russell 2000). Character is defined as the borrower's reputation and willingness to pay based on past behavior. Capacity is the ability of the debtor to pay or run a business that is not successful to generate the income needed to pay. Capital refers to the creditor's equity which is defined as the difference between assets and liabilities. Finally, these conditions are included in the elements where the debtor will be analyzed by the creditor and the Guarantor in the Scoring Table.

Running a business requires a Surety Bond as a risk guarantor for the project to be implemented. To guarantee their efforts, a risk submission process is required to Perum Jamkrindo, after that Perum Jamkrindo will evaluate whether the candidate is guaranteed to be feasible or not based on the risk profile proposed. The evaluation process is an underwriting process. The underwriting process needs to be known in detail by the parties involved in the guarantee process in order to understand why a guarantee is accepted or rejected. Therefore, given the importance of the Underwriting process, the writer takes the theme of the Surety Bond Underwriting Process by using the Case by Case pattern method.

II. METHODOLOGY

This research was conducted on one of the X projects managed by Perum Jamkrindo. To join the Surety Bond Product credit guarantee in Perum Jamkrindo, the Guarantor will process guaranteed candidates using the guarantee process mechanism that applies at Perum Jamkrindo that is the CBC Pattern (Case By Case). In this writing, the guarantee process uses the CBC Pattern because it is one of the guaranteed products for Construction and Procurement of Goods / Services. According to the 2013 Perum Jamkrindo Annual Report Case By Case Pattern is a Case-by-Case guarantee which approval is made on a case-by-case basis on loans provided by Guarantee Recipients, where Perum Jamkrindo evaluates the business feasibility of Guaranteed candidates in advance for each submission of guarantee before issuing a Letter Guarantee Principle Approval (SP3) as a form of guarantee agreement. In this case, Perum Jamkrindo can approve or disapprove the submission of the guarantee in accordance with the analysis in the process.

Analysis method using scoring techniques. The scoring technique is a process of changing the instrument's answers into numbers which are quantitative values of an answer to items in the instrument (Djaali & Muljono, 2004). According to the Journal of Scoring Approach to Construction Bond Underwriting (Mehmet & Hastak, 2010) Scoring technique is one of the objective tools to reduce the level of subjectivity involved in the guarantee process. In a general sense, Scoring is the process of turning some information into numbers which are then added to build rankings. The main objective of each Scoring system is to predict the future in terms of probabilities using historical data (Lewis 1992; Mays 2001).

The scoring table is one of the underwriting processes that contains company data with qualitative values into quantitative values using a particular method and range of values. In the Scoring table, there is a 4 P feasibility analysis namely Personality, Payment, Productivity, Prospect, This can be interpreted that Personality is Character, Payment is Capital, Productivity is Capacity, and Prospect is Continuity.

III. RESULT AND DISCUSSION

Surety Bond is a product used to provide guarantees to the project owner/obligee against losses arising from non-fulfillment of the obligations of the project implementer/principal for a project (construction / non-construction) within a predetermined time limit.

The benefits of Surety Bond for principals can obtain Suretyship guarantees quickly, easily, and at a relatively low cost, collateral/collateral is not the main requirement in obtaining guarantees. The benefits of a Surety Bond for the obligee are easy in the disbursement process if the principal default (suretyship/guarantee from the credit guarantee company provides guarantees to the obligee that the project managed/owned by the obligee will be carried out and completed according to the contract agreed.

There are various types of Surety Bonds (construction / non-construction), namely:

1. Bid bond
2. Performance bond
3. Advance payment bond
4. Maintenance bonds
5. Payment Bond

The Underwriting Process in Suretyship Business Products includes a feasibility analysis of Guaranteed Candidates that occur using Scoring Tables, containing sub-assessments with 4P principles, namely Personality, Payment, Productivity, and Prospect:

- a. Personality: Length of Business Operation, Number of Obligees that use Principal, Length of Relationship with Obligee, Indemnity Agreement (SPKMGR) signed, Indemnity Legality that has been ratified.

Table 1. Sub Assessment Personality

Category	Sub-Assessment	Percentage	Criteria	Value %	Value*Percentage
PERSONALITY	Long-time operational business	8%	> 10 yrs	100	8
			$\geq 5 \text{ yrs s/d} \leq 10 \text{ yrs}$	66.67	5.3336
			< 5 yrs	33.33	2.6664
	Relation with Obligee	10%	> 2 Obligee	100	10
			2 Obligee	66.67	6.667
			1 Obligee	33.33	3.333
SUB ASSESSMENT PAYMENT	Long-time in touch with Obligee	8%	> 5 yrs	100	8
			$\geq 2 \text{ thn s/d} \leq 5 \text{ thn}$	66.67	5.3336
			< 2 yrs	33.33	2.6664
	Indemnity Agreement	5%	By President Director	100	5
			Power of attorney by President Director	50	2.5
			Authorized by a Notary	100	5
	The legality of Ind. Agreement	5%	Stamped but Unauthorized by a Notary	66.67	3.3335
			No stamped and Unauthorized by a Notary	33.33	1.6665

- b. Payment : Financial Liquidity Ratio, Profitability Ratio, Solvency Ratio, Large Equity compared to Current Project Value, Audited Principal Financial Statements.

Table 2. Sub Assessment Payment

Category	Sub-Assessment	Percentage	Criteria	Value %	Value*Percentage
PAYMENT	Financial liquidity ratio	6%	> 10%	100	6
			$80\% < RL \leq 100\%$	66.67	4.0002
			$\leq 80\%$	33.33	1.9998
	Profitability ratio	5%	> 15%	100	5
			$10\% < RR \leq 15\%$	66.67	3.3335
			$\leq 10\%$	33.33	1.6665
	Solvency ratio	6%	$\leq 30\%$	100	6
			$30\% < RS \leq 60\%$	66.67	4.0002
			> 60%	33.33	1.9998
	Equity vs Current project value	5%	> 50%	100	5
			$> 25\% \text{ up to } \leq 50\%$	66.67	3.3335
			$\leq 25\%$	33.33	1.6665
	Financial statement audit	5%	Registered Auditor	100	5
			Non Audit	66.67	3.3335
			-	33.33	1.6665

Table 3 Show about formulation of payment point that uses for underwriting proses. According to the payment point, formulating for each point is liquidity, profitability, Solvency, Equaity, and Financial Statement Audit.

Table 3. Formulation of Payment Point

Formulation for each point is as follows:		Parameter Value		
1. Liquidity Ratio	$= (\text{total current assets} / \text{total current liabilities}) * 100$	>100	$80\% < RL \leq 100\%$	80%
2. Profitability Ratio	$= (\text{total profit} / \text{total capital}) * 100$	>15%	$10\% < RR \leq 15\%$	$\leq 10\%$
3. Solvency Ratio	$= \text{profit} + \text{capital}$			
4. Equity VS Current project value	$= (\text{total liability} / \text{total equity}) * 100$	$\leq 30\%$	$30\% < RS \leq 60\%$	$> 60\%$
5. Financial Statement Audit	$= (\text{total equity} / \text{project value}) * 100$	> 50%	$> 25\% \text{ up to } \leq 50\%$	$\leq 25\%$

- c. Productivity: Experience with the same type of work, experts according to the project, other projects being worked on, equipment for working on the project.

Table 4. Sub Assessment Productivity

Category	Sub-Assesment	Percentage	Criteria	Value %	Value*Percentage
PRODUCTIVITY	Experiences of the type of job	5%	> 4 Same Projects	100	5
			> 1 < 4 Same Projects	66.67	3.3335
			Never yet	33.33	1.6665
	Experts according to the project	5%	> 5 Experts	100	5
			> 2 < 5 Experts	66.67	3.3335
			1 Expert	33.33	1.6665
	Another project being worked on	5%	No	100	5
			Up to 2 Projects	66.67	3.3335
			> 2 Projects	33.33	1.6665
	Equipment for working on projects	5%	Adequately, One's own	100	5
			Routine Rental with Supplier	66.67	3.3335

- d. Prospect: Terms in the contract, project contract period, project location to the Principal Headquarters, Supply of origin of the project raw materials.

Table 5. Sub Assessment Prospect

Category	Sub-Assesment	Percentage	Criteria	Value %	Value*Percentage
PROSPECT	Terms In Contracts	6%	Convenient To Do	100	6
			Still Workable	66.67	4.0002
			Hard To Do	33.33	1.9998
	Project Contract Periods	3%	< 1 year	100	3
			up to 1 year	66.67	2.0001
			> 1 year	33.33	0.9999
	Project location with headquarters	3%	Same Province	100	3
			Other Province	66.67	2.0001
			Overseas	33.33	0.9999
	Supply of raw materials	5%	From Own Province	100	5
			From Near Province	66.67	3.3335

Since the beginning of Suretyship, Underwriters have based their decisions on three contractor variables, namely character, capacity, and capital. Then, another variable, continuity, is added to the evaluation process. These variables are generally known as the relationship of the first four evaluations namely the Character of the obligee which is the most qualitative part of the Underwriter process. This usually includes close observation of the contractor's reputation, past performance and work ethics. Capacity relates to the amount and quality of resources required by the obligee to successfully complete projects such as management, equipment, labor, materials, and previous experience. Capital represents the financial strength of the obligee and its ability to finance the projects carried out and compensate for losses that may occur. Continuity refers to the ability of a construction company to continue its work without interruption if the Principal is removed from operations at a critical time (Russia, 1992; Lewis 2000; Heffron, and Maloney, 1996).

CV. X is one of the UMKMK that can guarantee its project to use Surety Bond at Jamkrindo Public Corporation (PERUM). This project certainly goes through an Underwriting process in advance by using a Scoring table to analyze the eligibility of guaranteed candidates.

Unlike other Suretyship Products, Surety Bond Products already use the system, so the scores that come out are automatically algorithmized from the existing database. With this writing, it will allow the Principal to utilize these factors to add to the total Principal prequalification process. In addition, the Principal will have a better understanding of why certain information is requested and how that information is used in the decision-making process.

The Underwriting process for receiving a guarantee using the Case By Case pattern uses a Scoring table as a feasibility analysis of the guaranteed candidate in determining whether the guarantee can be guaranteed or not. The scoring table is calculated based on the implementation guidelines (operational guidelines) in Perum Jamkrindo also using the Technical Guidance Document for Using the Surety Bond Online Application.

Table 6. Analysis of Eligibility for Principal Candidates

Appropriateness Analysis of Principal		
Principal Name: CV. X		
Address: Indonesia		
Assessment Factors	Criteria	Value
Long-time operational business	= 5 yrs up to = 10 yrs	5.3334
Relation with Obligee	> 2 Obligee	10.0000
Indemnity Agreement	By President Director	5.0000
The legality of Ind. Agreement	Stamped but Unauthorized by a Notary	3.3335
Long-time in touch with Obligee	≥ 2 yrs up to ≤ 5 yrs	5.3334
Financial liquidity ratio	> 100%	6
Profitability ratio	$\leq 10\%$	1.6665
Solvency ratio	$\leq 30\%$	6
Equity vs Current project value	> 50%	5
Financial statement audit	Non Audit	3.3335
Experiences of the type of job	> 4 Same Projects	5
Experts according to the project	> 5 Experts	5
Other projects being worked on	> 2 Projects	1.6665
Equipment for working on projects	Routine Rental With Supplier	3.3335
Terms In Contracts	Convenient To Do	6
Project Contract Periods	< 1 year	3
Project location with headquarters	Another Province	2.01
Supply of raw materials	From Near Province	3.3335
TOTAL VALUE		80.3438
PROJECT GOVERNMENT/BUMN/BUMD :	OF SUBMISSION APPROVED	OF SURETY BOND
PRIVATE PROJECTS :	OF SUBMISSION APPROVED	OF SURETY BOND

One example of Feasibility Analysis guaranteed candidates who will be the author of the analysis comes from CV. X, who has been accepted by the Underwriting process because he meets the requirements and criteria contained in the Scoring assessment table. From the analysis table, the writer will describe the criteria and factors that cause the Principal to be guaranteed by Perum Jamkrindo. The scoring factor in the Scoring Table is evaluating 4 P, namely Personality, Payment, Productivity, Prospect.

Personality

The first evaluation is the Character (character) or Personality of the guaranteed candidate which is the most qualitative part of the Underwriter process. This usually includes close observation of the contractor's reputation, past performance and work ethics. In the Scoring Table of the first 4 P's, Personality analyzes the following: Business Operating Duration, Number of Bonds using Principal, Length of Relationship with Obliee, Indemnity Agreement (SPKMGR) signed, Indemnity Legality that has been ratified.

1. The first analysis to be evaluated is the Business Operational Duration Sub-Assessment which has a weighting of 8% for that category with Criteria of 5 years to 10 years which scores 5.3334. This value is obtained from the Case By Case acceptance system algorithm, especially for Surety Bond products that have been integrated by the portal Perum Jamkrindo. This value illustrates that the Principal Company has been operating in a span of 5 years to 10 years so that the experience has varied. Because of these criteria, for the sub-assessment of the Principal Business Operations get a percentage value of 66.67% with a weighting value of 5.3334.

2. The next analysis is a sub-assessment of how the Principal's relationship with the Obligee weighs up to 10%. This concerns how the character between the Principal and Obligee, whether the Principal has a connection with the Recipients of the Guarantee or Obligee. The file that has been entered into the Surety Bond system is the Principal has a relationship with more than 2 Bonds. Then it can be concluded that the Principal has a good relationship by having more than 2 obligee connections. Therefore, for the sub-assessment of the relationship with the obligee, the Principal gets a Weight of 10 with a percentage value of 100%.
3. The third point for Personality Principal Analysis is the sub-rating of the Indemnity Agreement which has a weighting of 5%. In the file submitted directly obtained from the Principal Managing Director. Because of this criterion, a 100% Percentage value is obtained with a Weight Value of 5. This is related to the Indemnity Agreement or the Compensation Agreement, namely the SPKMGR (Letter of Ability to Pay Compensation Agreement) which is directly made and signed by the President Director.
4. The next thing that will be analyzed for Personality is the sub-assessment of the Legal Indemnity Agreement, which has a weighting of 5% for the Personality category. Files received from the Principal have stamped and Non-Notary criteria. Therefore, get a Percentage Value of 66.67% with a Weight of 3.3335. This indicates that the Legality of the Indemnity Agreement is valid because it is stamped, although not notarized.
5. The final Personality category to be analyzed is the Old Principal sub-rating related to the Obligee. This sub-assessment weighs 8% for the Personality category. Files that have been received have criteria that have been associated with the obligee for a span of 2 years to 5 years. Therefore the Principal gets a Gratuity Value of 66.67% and a Weight Value of 5.3334. This indicates that the Principal has a fairly good and trusted relationship by establishing a relationship from a span of 2 years to 5 years

Payment

The second evaluation is Capital (Capital) or Payment in representing the financial strength of the obligee and its ability to finance the projects carried out and compensate for losses that might occur.

In the 4 P Scoring table, hereinafter is Payment which contains Financial Liquidity Ratio, Profitability Ratio, Solvency Ratio, Large Equity compared to Present Project Value, Audited Principal Financial Statements.

1. The first analysis for the Payment category is a sub-valuation of the Financial Liquidity Ratio (Liquidity ratio is a ratio that shows a company's ability to meet obligations or pay its short-term debt. This ratio can be used to measure how liquid a company is. If a company is able to meet its obligations, it means the company is liquid whereas if the company is unable to meet its obligations, it means that the company is liquid. In the Feasibility Analysis, the Guaranteed Candidate gets the criterion that the Financial Liquidity Ratio owned is more than 100%, which can be classified as a good ratio. 100% with a Weight of 6.
2. The next feasibility analysis of Guaranteed Candidates is a sub-assessment of the Profitability Ratio, which has a weighting of 5% in the Payment Category. Profitability ratios are ratios that are often used to measure the ability of a company to generate profits within a certain period. This profitability ratio is very closely related to the survival of a company. If the ratio value is good, it means the company has a healthy financial condition. In addition, profitability can also be used to measure when making a decision on the problem of meeting the company's financial needs, whether to use foreign capital assistance on credit or by using their own capital. From the file given, the candidate is guaranteed to get a Profitability Ratio of less than 10%, and a percentage value of 33.33% with a weighting value of 1.6665. This value indicates that the financial condition of the candidates is guaranteed to be less healthy.
3. Next is the Solvability Ratio sub-assessment which weighs 6% in the Payment Category. This ratio is intended to measure to what extent the company's assets are financed by debt. This ratio shows an indication of the level of security of the lenders (banks). In the file given by a guaranteed candidate the Solvency Ratio obtained is less than equal to 30% with a Percentage Value of 100% and a weighting value of 6. This indicates that the Principal in running his company has good financial indicators because the assets financed by many debts are still in an acceptable ratio.
4. Equity vs Current Project Value is a sub-valuation with a weighting of 5% in the Payment category. Equity vs. Current Project Value is the ratio between the amount of capital owned by the Principal and the Project Value that will be carried out by the Principal. From the file received, an assessment is obtained that the Equity vs. Project Value is more than 50% with a percent value of 100% and a weighting value of 5. This indicates that the comparison of Principal's capital with the project to be carried out is sufficient if when the Principal runs the risk of collapse and is unable to continue the project that is being run.
5. AFinancial Statement audit is the last sub-assessment in the Payment category with a weighting of 5%. In the file received from the Principal, there is an Audit of Financial Statements that are not audited. Therefore, the Percentage Value obtained is 66.67% with a Weight Value of 3.3335. This indicates that the Financial Statements that have not been audited, so the validity of the data is uncertain or not.

Productivity

The third evaluation is Capacity or Productivity related to the amount and quality of resources required by the obligee (Recipient of Guarantee) to successfully complete projects such as management, equipment, labor, materials, and previous experience.

In the 4 P, Scoring Table that will be analyzed is Productivity. Productivity contains Principal Experiences of the same type of work, experts according to the project, other projects being worked on, and equipment to work on the project.

1. The first analysis of the Productivity Category is Experience on the Type of Work which weighs 5% in this Category. In the file provided, the Principal's Experience with the same type of work gets criteria of more than 4 of the same project. Therefore, for the sub-experience of the same type of work, the percentage score is 100% with a weight value of 5. This shows that the Principal has experience in holding a large number of projects by holding more than 1 project.
2. The second analysis of the Productivity Category is Expert according to the project, this sub-assessment has a weighting of 5% in the Productivity category. In the file provided, the Principal has more than 5 experts according to the project. Therefore, for this sub-assessment, the Principal gets a percentage value of 100% with a weighting value of 5. This shows that the Principal has Experts to carry out the project concerned, so that trust from Surety increases.
3. The third analysis of the Productivity Category is Other Projects That Are Being Done, this sub-assessment has a weighting of 5% for the Productivity Category. In the file provided, the Principal is working on more than two projects. Therefore, for this sub-assessment, the Principal gets a percentage value of 33.33% with a weighting value of 1.6665. This indicates that the Principal has other obligations to complete the project before getting a new additional project because it is too risky then the value given by Surety is very low.
4. The final analysis of the Productivity Category is Equipment for Working on Projects, this sub-assessment gives a weighting of 5% in the Productivity category. In the file provided, the Principal does not have the equipment to work on the project, so the Principal must rent regularly with the relevant supplier. Therefore, the Principal only gets a gratuity value of 66.67% with a weight value of 3.3335.

Prospect

The last evaluation is Continuity. Continuity or Prospect refers to the ability of a construction company to continue its work without interruption if the Principal is removed from the project at a critical time

In the 4 P Scoring table, the final analysis will be Prospect. Prospect contains the terms of the contract, the project contract period, the location of the project to the Principal Head Office, Supply of origin of the project raw materials.

1. The first analysis to be analyzed is the sub-assessment of the Terms in the Contract, which has a weighting of 6% in the Prospect Category. In the file provided, the Principal has a project that is conditionally easy to do. Therefore, the assessment obtained is also high, the Principal gets a percentage value of 100% with a weight value of 6. This indicates that the Principal is able to do the project well.
2. The second analysis to be analyzed is the sub-assessment of the Project Contract Period, which has a weighting of 3% in the Prospect Category. In the file provided, the Principal has a project with criteria that can be done in less than 1 year, which can be done easily and quickly. Therefore, the Principal gets a gratuity value of 100% with a weight value of 3.
3. The third analysis to be analyzed is the sub-assessment of the Project Location of the Head Office, which has a weighting of 3% in the Prospect Category. In the file provided, the Principal has a project located in another province, indicating that it is quite difficult to monitor project activities that are being carried out because mobility is hampered by great distances from the central office. Therefore, the Principal gets a gratuity value of 66.67% with a weight value of 2,0001.
4. The final analysis to be analyzed is the sub-project Raw Material Supply sub-assessment weighing 5% in the Prospect Category. In the file provided, the Principal supplies raw materials for the project from the nearest province. This indicates that it takes quite a long time to find raw materials whose provinces are not familiar because they need a survey to find suitable raw materials for the project that is being carried out. Therefore, the Principal gets a gratuity value of 66.67% with a weight value of 3.3335.

From the process discussed by the author in the previous sub-chapter, it can be concluded that the Principal concerned can guarantee his guarantee to Perum Jamkrindo because the total value obtained meets the Underwriter's decision on the Assessment Values in the Scoring Table.

Table7.Ratings By Category in Scoring Tables

No	Sub Assesment	Category	Percentage	Valuation
1	Personality	Long-time operational business	1% - 21 %	deficient
		Relation with Obligee	22% - 27%	adequent
		Long-time in touch with Obligee	28% - 36%	good
		Indemnity Agreement		
		The legality of Ind. Agreement		
2	Prospect	Terms In Contracts	1% - 10%	deficient
		Project Contract Periods	11% - 13%	adequent
		Project location with headquarters	14% - 17%	good
		Supply of raw materials		
3	Productivity	Experiences of the type of job	1% - 11%	deficient
		Experts according to the project	12% - 15%	adequate
		Other projects being worked on	16% - 20%	good
		Equipment for working on projects		
4	Payment	Financial liquidity ratio	1% - 16%	deficient
		Profitability ratio	17% - 20%	adequent
		Solvency ratio	21 - 27%	good
		Equity vs Current project value		
		Financial statement audit		

Scoring tables that have been analyzed produce a value of 80.3438. This value is included in the category of Applying for Surety Bond Approval Without Collateral Issuance.

Table 8. Decision Assesment

Underwriter's Decision on Total Assessment Values for value multipliers	
1. 33.33 - 59.99	submission of surety bond issuance was rejected
2. 60.00 - 77.77	submission of surety bond issuance is approved on condition
3. 77.78 - 100	submission of surety bond issuance is approved without collateral

IV. CONCLUSION

The Surety Bond Underwriting Process by using a Case By Case Pattern to analyze the eligibility of a guaranteed candidate in guaranteeing his project with Surety Bond, Guarantor or Perum Jamkrindo will Underwriting using the Scoring Table which contains the 4P principle of Personality, Payment, Productivity, Prospect. This is used to see how much risk will be borne by the Guarantor.

Scoring tables that analyze the eligibility of guaranteed candidates for Surety Bonds have become a system that is very easy, effective, and efficient. Because only by using the document file provided, the system will algorithm a qualitative statement from the document to be quantitative, which becomes a value as a reference whether the guarantee can be accepted or rejected.

Through Scoring Tables, the categories that have been analyzed will become quantitative data and then will be an evaluation in making reference to the Minutes of the Committee which is the basis for issuing a Surety Bond Guarantee.

REFERENCES

- [1] Rynerson, G. 2017. The Surety Underwriting Process: What You Need To Know. April 24, 2019, <https://suretybondauthority.com/surety-underwriting-process-need-know/> Surety Bond Authority Professionalism & Integrity.
- [2] Neuschaefer, Rolf A. 2006. Surety Underwriting, Sales & Service. April 26, 2019, <https://www.irmi.com/articles/expert-commentary/surety-underwriting-sales> service-a-delicate-balance International Risk Management Institute, Inc. (IRMI) Texas
- [3] Thomas, Patrick J. 2016. Understanding The Underwriting Process Of Surety Bonds. April 24, 2019. <https://pjtagency.com/understanding-underwriting-process-surety-bonds/> Patrick J. Thomas Agency. Minneapolis USA
- [4] Ignatowski, Crystal. 2018. What Is Surety Bond Underwriting ?. April 27, 2019. <https://www.quora.com/What-is-surety-bond-underwriting> Content Developer for Surety Solutions LLC.
- [5] Ignatowski, Crystal. 2017. Surety Bond Underwriting: What It Is & How Does It Affect Your Bondability?. 27 April 2019. <https://blog.suretiesolutions.com/suretynews/surety-bond-underwriting-what-it-is-how-it-affects-your-bondability>
- [6] Salim, Abbas. 2007. Insurance and Risk Management. Jakarta: Raja Grafindo Persada

- [7] Bayraktar, M.E., & Hastak, Makarand. 2010. Scoring Approach to Construction Bond Underwriting. JOURNAL OF CONSTRUCTION ENGINEERING AND MANAGEMENT. J. Constr. Eng. Manage., 2010, 136 (9): 957-967. April 24, 2019.
- [8] Utami, N.W., 2017. Solvency Ratios and How to Be Resolved. Journal by Mekari. May 8, 2019. <https://www.jurnal.id/id/blog/2018-pembahasan-mengen-rasio-rentability-dan-cara-perg/>
- [9] Utami, N.W., 2017. Understanding Liquidity Ratios, Types and Uses in the Company. Journal by Mekari. May 8, 2019. <https://www.jurnal.id/id/blog/2017-pengahaman-rasio-likuiditas-kenis-dan-kamanaannya-dalam-per company/>
- [10] Choiiri, E. O., 2018. Some Things Regarding Profitability Ratios & How to Calculate What You Need to Know. Journal by Mekari. May 8, 2019. <https://www.jurnal.id/id/blog/2017-rasio-solvability-and-how-solution/>

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