

MINIMIZING DEDUCTIBLE COSTS IN CONTAINER DAMAGE CLAIMS TO CONTROL THE OPERATIONAL RESERVE BUDGET: A CASE STUDY OF A STATE-OWNED CARGO HANDLING COMPANY



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Abstract

Managing deductible costs in container damage claims is a critical issue in maintaining the stability of a stevedoring company's operational budget. This study aims to analyze strategies for controlling deductible costs through the integration of risk management, accounting information systems, and internal controls. Data were collected through in-depth interviews, observations, and documentation at PT Terminal Petikemas Surabaya, and then analyzed using the Miles and Huberman interactive model. The results indicate that deductible costs cannot be directly reduced because they are fixed, but they can be controlled by reducing the frequency of recurring minor claims. The lack of integration among risk, information, and control systems is the primary cause of cost inefficiency. Therefore, controlling deductible costs requires a systemic, integration-based approach to enhance operational efficiency and maintain the company's financial stability.

Keywords: Deductible Cost Control; Enterprise Risk Management; Accounting Information Systems; Internal Control; Operational Efficiency

INTRODUCTION

The port sector is one of the main pillars of the global trade system, serving as a strategic hub in the international supply chain. Container loading and unloading activities are a crucial element in ensuring the smooth distribution of goods across national borders, which directly impacts a country's logistics efficiency and economic competitiveness. In the context of globalization and the increasing volume of international trade, ports no longer function merely as transit points but have evolved into complex, multidimensional logistics hubs (Hall, 2022). Therefore, optimizing port operational performance has become an unavoidable necessity to maintain the overall efficiency of the logistics system (Hlali, 2020).

In practice, cargo handling companies particularly those classified as State Owned Enterprises (SOEs) are required to manage their operations efficiently and accountably. This not only relates to improving service productivity but is also closely tied to controlling operational costs, which serve as a key indicator of the company's financial performance (Wang, C.-N.; Nguyen, N.-A.-T.; Fu, H.-P.; Hsu, H.-P.; Dang, 2021). Operational efficiency at container terminals has been shown to have a significant impact on optimizing cargo flow and reducing overall logistics costs. Empirical studies indicate that improved operational efficiency can directly enhance a port's competitiveness within the global logistics network (Kurt et al., n.d.).

However, despite these operational complexities, container loading and unloading activities carry high operational risks, particularly regarding potential container damage during the handling process. Such damage can result from various factors, including human error, equipment limitations, and dynamic working conditions. This phenomenon indicates that port operational systems are not entirely risk-free, necessitating a comprehensive risk management approach (Budiyanto & Fernanda, 2020). Research shows that container damage is an inherent risk in the logistics chain that requires economically informed decision-making regarding repairs and maintenance (Hoffmann & Stahlbock, 2020).

The impact of container damage is not merely operational; it also has a direct financial impact on the company. Any damage that occurs has the potential to incur additional costs, whether in the form of repair costs or insurance claims. In this context, companies generally use insurance as a risk mitigation tool to shift part of the burden of loss. Insurance serves as a protective mechanism against the uncertainties of risk in maritime logistics activities, which are becoming increasingly complex and dynamic (Plessis et al., 2023).

Nevertheless, the use of insurance does not entirely eliminate the financial burden borne by the company. The presence of a deductible in every claim means that a portion of the loss remains the company's responsibility. This issue is often considered insignificant on a micro scale, but in the context of high claim frequency, the accumulation of deductible costs can become a significant financial burden (Fan et al., 2023). This situation reflects the potential for cost inefficiencies that, if not properly managed, can affect the company's financial stability (Kořacz et al., 2024).

Furthermore, the issue of deductible costs becomes increasingly complex when a company lacks an integrated monitoring and control system for damage incidents and the claims process. This lack of control has the potential to cause significant budget variances, which ultimately lead to a decline in organizational efficiency. From a cost management perspective, this situation highlights a gap between the ideal concept of operational cost

control and the reality on the ground, which still faces various limitations in systems and oversight (Id et al., 2023).

From a theoretical perspective, effective operational cost control should be supported by the integration of risk management, accounting information systems, and robust internal controls (Bracci, E., Mouhcine, T., Rana, T. and Wickramasinghe, 2022). However, in practice, this integration has not yet been fully and optimally implemented, particularly in the management of deductible costs in container damage claims. This indicates a research gap, as most previous studies have focused more on operational efficiency or risk management in general, but have not specifically examined the control of deductible costs as part of an operational budget management strategy.

In addition, there is an empirical gap between ideal conditions and operational realities in cargo handling companies, particularly state-owned enterprises. Ideally, companies are expected to be able to control all components of operational costs in a systematic and measurable manner. However, in practice, minor costs such as deductibles are often overlooked in strategic planning, even though they have a significant cumulative impact on the operational contingency budget. This situation highlights the need for a more comprehensive approach to managing risk-based operational costs.

Based on the above discussion, this study is important to conduct in order to thoroughly explore strategies for minimizing deductible costs in container damage claims as a means of controlling the operational reserve budget. This study is expected to provide a theoretical contribution to the development of risk-based cost control concepts, as well as a practical contribution to stevedoring companies in improving operational efficiency and financial stability. The novelty of this study lies in the integration of deductible cost analysis with risk management approaches and internal control systems in the context of port operations, which has been relatively limited in previous studies.

RESEARCH METHOD

The research approach employs a non-positivist method with an interpretive paradigm through a case study strategy to gain an in-depth understanding of the phenomenon of deductible cost management in container damage claims within the company's operational context. The research site is PT Terminal Petikemas Surabaya, with primary respondents drawn from the legal department as well as the finance and accounting departments, which are directly involved in the claims process and cost recording. The data used consists of primary data in the form of in-depth interviews and direct observation of the claims process, and secondary data in the form of claims reports, standard operating procedures (SOPs), and company financial reports.

The variables in this study were operationalized as analytical constructs encompassing the operational risk of container damage, the claims process and cost recording within the accounting information system, internal controls, and the impact of deductibles on the operational reserve budget. Data analysis was conducted using the Miles and Huberman interactive model through the stages of data reduction, data presentation, and drawing conclusions, supported by validation techniques such as source and method triangulation, member checks, and audit trails to ensure data credibility. This approach allows for a

contextual analysis of the relationships between variables to produce a comprehensive understanding of deductible cost control strategies in stevedoring companies.

RESULTS AND DISCUSSION

Container damage claims often pose a critical challenge for state-owned stevedoring companies (BUMN) because the deductible costs that cargo owners must bear can strain operational reserve budgets. A literature review indicates that the insurance claims process is often hindered by a lack of understanding of the policy and the completeness of supporting documents; the design of insurance products, including deductible levels and premiums, significantly impacts the total costs borne by the company; and operational improvements in risk management and claims documentation can reduce the probability of claims being denied as well as the amount of the deductible ultimately paid (Hans U. Schulz, n.d.).

The low deductible on container damage claims requires synergy between improved internal claims capabilities, appropriate insurance policy design (CAR/all-risk cargo), and operational risk management integrated with port efficiency. The literature indicates that successful claims are heavily supported by complete documentation and a thorough understanding of the policy, while premium costs and deductibles are influenced by policy design and implemented risk mitigation measures (Prastowo, 2023). Port operational efficiency also plays a role in reducing the frequency and impact of container damage, thereby leading to lower overall deductible costs (Asril, 2013). Case studies in the context of ports and related industries provide a relevant practical framework for application in state-owned stevedoring companies to keep operational reserve budgets under control.

The results of the study, which involved data reduction, categorization, and interpretation, indicate that container damage incidents in the field are the primary determinant of claims, which directly impact the company's operational costs. Data processed in the form of thematic narratives reveal that damage is influenced by human error, equipment condition, and high operational pressure, thereby forming a pattern of recurring incidents. These findings indicate that operational risk serves as the starting point in the cost formation process, as explained within the ERM framework that inherent risks must be identified from the outset of operational processes (Yuwono, M.A Rachmawati, 2025). Thus, failure to control risks at this stage will have systemic impacts on subsequent stages in the cost management process (Gözde Yanginlar, 2023).

Furthermore, the research findings indicate that these incidents of damage lead to claims processes involving legal, financial, and insurance functions. Data from the interviews suggest that the claims process still faces administrative complexities, delays in filing, and weak coordination among work units. These conditions indicate that the claims process functions not only as an administrative mechanism but also as a critical point that determines the extent of the company's cost exposure (Gözde Yanginlar, 2023). From an ERM perspective, this weak coordination reflects a lack of integration in organizational risk management, thereby increasing the potential for operational losses (Liang & Yubin, 2025).

In the next stage, the research findings indicate that the claims process is recorded in the accounting information system; however, the system is not yet functioning optimally. The processed data reveal delays in recording and limitations in the available information, resulting in management lacking adequate visibility into emerging cost patterns. This indicates that the accounting information system has not yet been able to fulfill its role as a

provider of accurate and timely information. In the context of AIS theory, this condition demonstrates that the quality of the information system is critical to the effectiveness of cost control within an organization (Alshaiti, 2023).

Analytically, the relationship among the variables indicates that the accounting information system acts as a mediating variable linking operational risk to deductible costs. When the information system fails to provide accurate, real-time data, internal controls cannot function effectively. This situation leads to delays in decision-making and weak control over incurred costs. Thus, accounting information systems and internal controls must be viewed as an integrated whole in supporting the effectiveness of cost control (Chen et al., 2025).

Furthermore, the research findings indicate that the internal controls currently in place have not been able to effectively oversee the claims processing and cost recording processes. The analyzed data reveal weaknesses in oversight procedures, a lack of periodic evaluations, and a lack of integration between systems. This suggests that internal controls have not functioned as an effective control mechanism. From the perspective of COSO theory, these weaknesses indicate gaps in the monitoring and control activities components, which result in increased cost risks (Yao et al., 2025).

The subsequent analysis indicates that these conditions lead to the emergence of ongoing deductible costs. Interviews with the legal department revealed that deductible costs cannot be minimized because they are a fixed component of the insurance plan; however, the company can control claim amounts to keep them below the deductible threshold. These findings suggest that small, recurring costs are the primary factor driving cost accumulation. Thus, the frequency of occurrences becomes the primary determinant in cost formation (Plessis et al., 2023).

In the context of variable relationships, the frequency of container damage acts as a triggering factor that increases the number of small claims, which then accumulate into a significant cost burden. This indicates that operational risk has an indirect relationship with costs through the mechanism of event frequency. In other words, the higher the frequency of damage, the greater the resulting financial impact. This finding reinforces that risk control should focus on preventing incidents, not merely mitigating losses (Kim et al., 2019).

Furthermore, the research findings indicate that the accumulation of these deductible costs has a direct impact on the company's cash flow and the stability of its operating budget. The analyzed data reveal a variance between budgeted and actual costs, caused by the high frequency of small claims. This indicates that operational costs are influenced not only by major incidents but also by the accumulation of uncontrolled minor incidents (Bücher & Rosenstock, 2024). Furthermore, the research findings indicate that the lack of integration between ERM, the accounting information system, and internal controls is the primary cause of suboptimal cost control. These three systems operate in isolation, preventing them from generating synergies in risk and cost management. This situation indicates that the organization lacks a systemic approach to operational cost control (Gleißner & Berger, 2024).

From a theoretical perspective, the integration of ERM, SIA, and internal control should form a comprehensive control system. ERM serves to identify risks, SIA provides cost information, and internal control ensures the effectiveness of implementation. The lack of integration among these three variables leads to gaps in cost management, preventing organizations from controlling costs optimally (Carlos et al., 2023). Compared to previous

studies, the results of this study indicate that operational cost control is influenced not only by external factors such as logistics complexity but also by internal organizational factors. Previous studies emphasized the importance of technology, but this study shows that without system integration, technology cannot have a significant impact on cost efficiency (Id et al., 2023).

In addition, this study makes a novel contribution by identifying deductible costs as a concrete indicator of the failure of cost control systems. These findings expand the literature by demonstrating that small, recurring costs can be a major source of operational inefficiencies. This indicates that cost control must be based on an analysis of the frequency and patterns of occurrences. Furthermore, the research results show that an effective cost control approach must be based on system integration and risk management. Organizations must be able to link risk information with cost recording systems and control mechanisms in real-time. Thus, cost control is not only reactive but also proactive in preventing risks (Xiaohui, 2022).

Overall, the results of this study indicate that controlling deductible costs cannot be achieved in isolation but must be addressed through a systemic approach that integrates risk management, information systems, and internal controls. The relationships among the variables indicate that operational risk, as an independent variable, influences costs through information systems and controls as mediating variables (Ispas & Mironeasa, 2023).

Thus, this study confirms that the effectiveness of cost control is largely determined by the level of integration and the quality of system implementation within an organization. Without such integration, organizations will continue to face recurring cost risks that impact the company's financial stability.

CONCLUSION

Controlling deductible costs for container damage claims cannot be achieved directly by reducing the deductible amount—since it is fixed within the insurance scheme but rather by managing the frequency of operational risks, which are the primary source of such claims. The effectiveness of cost control is largely determined by the level of integration between Enterprise Risk Management (ERM), accounting information systems, and internal controls within the organization. The lack of integration among these three aspects leads to weak risk management, limited cost information, and suboptimal control functions, thereby increasing operational costs and disrupting the stability of the operational reserve budget. Thus, controlling deductible costs requires a systemic approach that focuses not only on financial aspects but also on risk management and the overall quality of the organizational system.

This study has limitations due to the scope of the case study, which focuses on only one company; therefore, generalizing the research findings should be done with caution, taking into account different organizational contexts. Additionally, the qualitative approach used is highly dependent on the informants' subjectivity and the limited access to internal company data. Therefore, future research is recommended to expand the research scope by involving more similar companies and combining qualitative and quantitative approaches to obtain more comprehensive results. Furthermore, the development of an integration model between risk management, information systems, and digital technology-based internal controls is also important to be further investigated to improve the effectiveness of operational cost control in the port sector.

REFERENCES

- Alshaiti, H. (2023). *Influences of Internal Control on Enterprise Performance : Does an Information System Make a Difference ?* Turnbull 1999.
- Asril, N. (2013). *EFFORTS TO INCREASE PRODUCTION ASSESSMENT STEVEDORING IN PORT PANTOLOAN IN ANTICIPATION TO SUPPRESS THE OLD SHIP IN BERTH*. 25, 328–336.
- Bracci, E., Mouhcine, T., Rana, T. and Wickramasinghe, D. (2022). *Risk Management and Management Accounting Control Systems within Public Sector Organizations: A Systematic Literature Review*. 42(April 2021), 395–402. <https://doi.org/10.1080/09540962.2021.1963071>
- Bücher, A., & Rosenstock, A. (2024). Combined modelling of micro-level outstanding claim counts and individual claim frequencies in non-life insurance. *European Actuarial Journal*, 14(2), 623–655. <https://doi.org/10.1007/s13385-024-00383-7>
- Budiyanto, M. A., & Fernanda, H. (2020). Risk Assessment of Work Accident in Container Terminals Using the Fault Tree Analysis Method. *Journal of Marine Scine and Engineering*, 8(466). <https://doi.org/doi:10.3390/jmse8060466>
- Carlos, A., Rajeev, Y., & Oyadomari, C. T. (2023). *Role of Emerging Technologies in Accounting Information Systems for Achieving Strategic Flexibility through Decision-Making Performance : An Exploratory Study Based on North American and South American Firms*. 24(June), 199–218. <https://doi.org/10.1007/s40171-022-00334-9>
- Chen, H., Wang, S., & Yang, D. (2025). *COSO-Based Internal Control and Comprehensive Enterprise Risk Management : Institutional Background and Research Evidence from China*. 1–14.
- Fan, Y., Schwartz, F., Voß, S., & Woodruff, D. L. (2023). *Catastrophe insurance and flexible planning for supply chain disruption management : a stochastic simulation case study* *Catastrophe insurance and flexible planning for supply chain disruption management : a stochastic simulation case study*. <https://doi.org/10.1080/00207543.2023.2176179>
- Gleißner, W., & Berger, T. B. (2024). *Enterprise Risk Management : Improving Embedded Risk Management and Risk Governance*. 2016.
- Gözde Yangınlar. (2023). *THE EFFECT OF SUPPLY CHAIN RISK MANAGEMENT ON LOGISTICS PERFORMANCE AND INNOVATION PERFORMANCE* Gözde Yangınlar A , Mustafa Emre Civelek B , Emre Gülçür C Article history : Keywords : Supply Chain Risk Management ; Innovation Performance ; The Effect of Su. 1–22.
- Hall, J. W. (2022). *Ports ' criticality in international trade and global supply-chains*. 1–13. <https://doi.org/10.1038/s41467-022-32070-0>
- Hans U. Schulz. (n.d.). Port of Manzanillo : Climate Risk Management. *EXECUTIVE SUMMARY*.
- Hlali, A. (2020). *Theoretical highlights in container port logistics systems*. 181–191. <https://doi.org/10.21463/jmic.2020.09.2.13>
- Hoffmann, N., & Stahlbock, R. (2020). A decision model on the repair and maintenance of shipping containers. *Journal of Shipping and Trade*, 5(22). <https://doi.org/doi.org/10.1186/s41072-020-00070-2>
- Id, A. M., Nyawira, L., Id, B. T., Id, R. G. N., Munywoki, J., Hanson, K., Mulwa, A., Molyneux, S., Maina, I., Id, C. N., Jemutai, J., & Barasa, E. (2023). Budget monitoring , accountability practices and their influence on the efficiency of county health systems

- in Kenya. *PLOS GLOBAL PUBLIC HEALTH*, 1–21.
<https://doi.org/10.1371/journal.pgph.0001908>
- Ispas, L., & Mironeasa, C. (2023). *Risk-Based Approach in the Implementation of Integrated Management Systems : A Systematic Literature Review*. 1–22.
- Kim, J., Kim, T., Son, K., Bae, J., Son, S., Kim, T., Son, K., Bae, J., Son, S., Kim, J., Kim, T., & Son, K. (2019). A quantitative risk assessment development using risk indicators for predicting economic damages in construction sites of South Korea predicting economic damages in construction sites of South Korea. *Journal of Asian Architecture and Building Engineering*, 18(5), 472–478.
<https://doi.org/10.1080/13467581.2019.1681274>
- Kolacz, M. K., Storms, K., Sys, C., & Verheyen, W. (2024). Economic and legal impacts of delayed containers. *Journal of Shipping and Trade*. <https://doi.org/10.1186/s41072-024-00185-w>
- Kurt, I., Aymelek, M., Boulougouris, E., & Turan, O. (n.d.). *Operational Cost Analysis for a Container Shipping Network Integrated with Offshore Container Port System : A Case Study on the West Coast of North America*.
- Liang, L. Y., & Yubin, Z. (2025). *The Impacts of Digital Transformation on Firm Performance : A Case Study of Tesla Business Model*. XII(2321).
<https://doi.org/10.51244/IJRSI>
- Plessis, F., Goedhals-gerber, L., Eeden, J. Van, Sciences, M., Africa, S., Africa, S., Plessis, F., Plessis, D., & Eeden, V. (2023). *Trends in weather-related marine cargo insurance claims : A South African perspective*. 1–12.
- Prastowo, D. (2023). *ANALISIS PENGARUH PENGGUNAAN ASURANSI CONTRACTOR ALL RISK, BUNGA BANK, DAN BAGI HASIL TERHADAP PENGALIHAN POTENSI RISIKO PADA PROYEK KONSTRUKSI*. 4(10), 1613–1627.
- Wang, C.-N.; Nguyen, N.-A.-T.; Fu, H.-P.; Hsu, H.-P.; Dang, T.-T. (2021). *Efficiency Assessment of Seaport Terminal Operators Using DEA Malmquist and Epsilon-Based Measure Models*. 10(48). <https://doi.org/doi.org/10.3390/axioms 10020048>
- Xiaohui, Z. (2022). *The optimization countermeasure analysis of the cost control problem of small and medium-sized enterprises in the new era*. 4(14), 112–115.
<https://doi.org/10.25236/AJBM.2022.041418>
- Yao, Y., Kaewtip, S., Panyadee, C., & Techatunminasakul, S. (2025). *Research on the Impact of Internal Control on Enterprise Growth : Based on the Empirical Analysis of Equipment Manufacturing Listed Enterprises in*. 5(6), 415–430.
- Yuwono, M.A Rachmawati, D. (2025). *Assessing Fraud Risk Management Effectiveness in Logistics : A Case Study of PT . Lestari in Indonesia*. 14(01), 1–23.