

AUDIT RISK ROLE: SUPPLY CHAIN MANAGEMENT WITH COSO AND COBIT SYSTEMS AS IMPLEMENTATION OF THE SARBANES OXLEY ACT 2002

M. FIRZA ALPI¹, JONY², ISKANDAR MUDA³

¹Universitas Muhammadiyah Sumatera Utara, Medan, Indonesia

²Universitas Pelita Harapan, Medan, Indonesia

³Universitas Sumatera Utara, Medan, Indonesia

¹E-mail: m.firzaalpi@umsu.ac.id

Abstract. *Supply Chain Finance* (SCF) plays an increasingly important role in operational and financial practices and is attracting increasing attention from academia and industry. This research provides an overview of existing progress in research on Financial Supply Chain Management. The study found that COBIT has actively contributed to supporting various banking activities and increasing their effectiveness through electronic devices and fast service delivery. COBIT and COSO integration in governance and audit readiness. The findings of this research demonstrate the importance of regulatory frameworks. This article summarizes the development trends and status quo of Financial Supply Chain Management. The aim is to provide readers with guidance and a strong conceptual framework for future research

Keywords: Audit Risk, Supply chain management, Supply chain Finance, Coso, Cobit

PRELIMINARY

Nikolovski (2016) has identified three risks faced by auditors. Errors and omissions in highly complex transactions documented using judgment or guesswork are a major source of inherent risk. Control deficiencies in the organization do not affect this audit risk (AR). Misrepresentation of financial statements caused by variables other than control defects has inherent risks (Taylor, 2000). AR controls refer to the possibility of inaccurate financial reports due to a lack of relevant controls or internal control failures within an organization. The risk is high in situations where controls are inadequate to detect or prevent fraudulent activity or errors (Bentley-Goode et al., 2017). Based on Balfe et al (2023), detection risk arises when auditors are unable to detect or fail to identify misstatements in financial statements due to errors or prohibited activities. This can occur when the audit company's procedures are insufficient to detect material misstatements resulting from fraud or errors in the financial statements. Typically, sampling or non-sampling errors are responsible for the detection risk. Additionally, supply chain financing is an important part of supply chain management that connects buyers, sellers, and financial institutions. Supply chain financing (Chen & Hu, 2011; Baerentsen & Thorstenson, 2012) helps businesses reduce financial costs and improve business performance (Hofmann & Zumsteg, 2015). More importantly, supply chain financing helps release working capital that is "trapped" in the supply chain. Another benefit of supply chain finance is that it is a solution for optimizing working capital, and the development of the supply chain finance market needs to consider its characteristics and characteristics.

The findings of this research reveal inconsistencies in COSO ERM and show how the COBIT framework can help develop an effective internal control system. In addition, Rubino et al (2017) attempted to determine the impact of the ITG COBIT framework on the control environment and internal control system. They analyze how the COBIT framework affects the control environment and internal control systems.

Supply chain management is at the heart of the global economy and successful supply chain risk management is critical to a company's success. Supply chain management data is uneven, both for individual companies in supply chain management and for relationships between multiple supply chains. Credit data sourced from banks can help identify some weak points in the supply chain



network. Moreover, supply chain management is a well-known management strategy that seeks to delight its customers by adding value to customer service, reducing costs and increasing competitive advantage through the integration of key business processes in the supply chain. Since supply chain management was proposed in the 1980s, three decades have passed (Oliver & Webber 1982). Due to globalization and information technology, supply chain management has become more important and achievable (Cousins et al., 2006). From previous research, organizations are considered to no longer compete as individuals but as supply chains (Lambert & Cooper, 2000). Supply chain members include all companies that interact with the focal company directly or indirectly through its suppliers or customers, from the point of origin to the point of consumption. Thus, supply chain analysis occurs from the focal company. Based on the first approach, supply chain finance research from Camerinelli (2009) focuses on the financial and financial aspects of supply chains as a set of solutions, products and services provided by financial institutions. The supply chain financing approach is oriented towards improving cash flow management of the supply chain to help supply chain agents minimize credit and working capital risks in the supply chain. The possibility of cost savings is created through increased trust, commitment to compliance, thereby increasing benefits for all stakeholders throughout the supply chain (Pfohl & Gomm, 2009; Wuttke et al., 2013a). Since the implementation of the framework by the Committee of Sponsoring Organizations (COSO) in 1992, the internal audit function has undergone significant changes. In contrast to traditional theories that only focus on financial controls, the COSO framework offers a comprehensive approach that includes both hard and soft controls, such as employee competence and professionalism. (Abdulakareem & Muhammad, 2020 and Adawiyah et al., 2020). Based on Roussy et al. (2020), an effective internal control system requires a thorough understanding and accurate identification of various control dimensions and their significance in achieving organizational goals. Based on Felo et al. (2023), “tone at the top” is a control environment component of the COSO framework. It is an integrated control framework that conceptualizes an effective internal control system. COSO serves as a basic foundation for improving mutual understanding between relevant business stakeholders because it provides a common language that facilitates effective communication and information flow after declared of Sarbanes Oaxley Act 2002; consequently, it helps businesses in achieving their goals efficiently (Bozoklar et al., 2020).

LITERATURE REVIEW

Audit Risk

The findings of this research reveal inconsistencies in COSO ERM and show how the COBIT framework can help develop an effective internal control system. Additionally, Rubino et al. (2017) attempted to determine the impact of the ITG COBIT framework on the control environment and internal control system. They analyze how the COBIT framework affects the control environment and internal control systems (Nasution et al., 2020). Specifically, this research shows how COBIT structure and processes influence seven categories of control environment factors. The findings indicate that the application of the COBIT framework provides valuable guidance for managers and auditors to implement or evaluate internal control systems. The audit literature review centers on internal controls and failures observed over many years of practical experience related to corporate failure, accounting, and auditing. These disasters emphasize the need for a more comprehensive view of control systems. In the past, evaluating the effectiveness of an economic unit's control system in detecting and preventing errors and fraud in financial statements lacked a framework and standards (Tambunan et al., 2018). This situation requires a broader understanding of the control system. However, the COSO framework has filled this void by providing a set of standards for evaluating the effectiveness of internal controls. This framework allows an approximate evaluation of the effectiveness of an economic unit's control system. The COSO integrated framework for internal control is the only standard currently used in the United States to evaluate the effectiveness of internal control systems in financial reporting (Mohammed et al., 2021). Several authors have discussed the COSO conceptual framework in previous literature and found that it provides guidance



and clarity (Rashid et al., 2021). Both separately and collectively, the components of the COSO framework have been the subject of extensive research.

Supply Chain Management

Financial Supply Chain Management can have different meanings from different points of view in the supply chain including: logistics service provider (LSP), information service provider (ISP) and financial service provider (FSP). This concept starts from a simple definition of “cash flow management (including financial payments or short-term financial supplies) among supply chain members”, and in some other definitions, emphasizes managing investment costs or financial supplies for the entire supply chain and method of production (Haykal et al., 2020). FSCM contains a number of approaches and services to accelerate the flow of financial resources and information between commercial partners in the supply chain (Hausman, 2005). Based on another definition, the FSCM concept includes the facilitation of financial supply tools for supply chains by banks and third-party financial service providers through the introduction of modern payment processes and conditions by such financial institutions for supply chain partners. Another point of view on “Financial Supply Chain Management” should be expressed after calculating all financial activity expenses, which occur within a supply chain and among its members and also determining methods to reduce these costs without causing risk to weaker members of the supply chain (Muda et al., 2021). Another approach to “Financial Supply Chain Management” defines it as a set of processes that include cash exchange, inventory, and information management in the supply chain. In this concept, FSCM is a series of cross-functional processes that manage key processes related to risk, working capital and information management. Based on another definition, financial supply chain management is detecting effective management methods and optimizing the working capital of a company; not only from the organization's internal point of view but from the organization's external point of view (i.e. from the point of view of other members of the chain). This optimization can be done through collaboration on accounts payable, accounts receivable, liquidity and risk. The ultimate goal of financial supply chain management is to obtain clarity and demonstration of the purchase to payment and order to cash receipt processes. This cash-to-cash cycle is one of the most important factors in effective supply chain success. This can result in efficiency and profitability in addition to saving costs in a supply chain. Optimizing processes and better financial flows by companies will reduce the need for working capital, thereby reducing demand for financial credit from banks. This approach will save costs and create more investment opportunities for all members of the supply chain. Companies usually focus on financial supply chain management when the following issues seem particularly significant (Fujimori et al., 2005; Al-Omouh et al., 2022).

COSO

COSO is an abbreviation of the Committee of Sponsoring Organizations of the Treadway Commission, founded in 1985. The main mission of COSO is to improve or increase the quality of an entity's financial reports through business ethics, effective internal control, and corporate governance. COSO has 5 components: The control environment is a series of standards, processes and structures that form the basis for implementing IC throughout the organization. There are five principles related to this component, namely:

1. Commitment to integrity and ethical values
2. Carry out supervisory responsibilities
3. Establish structure, authority and responsibility
4. Commitment to competence
5. Encourage accountability for the IC system

IT auditors serve both external and internal audit roles, although perhaps most professionals here serve as internal auditors for their companies. Following up on the previous discussion of the Sarbanes-Oxley Act (SOx) Rules, this chapter introduces what is known as the COSO internal control framework and also outlines COSO-related IT governance processes in the company's current business.



COSO and SOx internal controls, discussed in the previous chapter, started in the United States, but internal control guidance rules are now accepted throughout the world. Both have their origins as general financial and operations review guides and are highly applicable to IT governance environments as well. Understanding and using the COSO internal control framework is important for building effective IT governance processes. While these rules and procedures have their origins in financial reporting and auditing, in today's IT-centric world, COSO internal controls are an important IT governance tool. These are the rules that companies must follow to confirm or prove to regulators that their organizations have effective internal controls in place and that they are operating in accordance with the new rules.

COBIT

Control Objectives for Information and Related Technology (COBIT) can be defined as a control tool for information and related technology and is an open standard for control of information technology developed by the Information System Audit and Control Association (ISACA) through the institution it founded, namely the Information and Technology Governance Institute (ITGI) in 1992. Cobit, which was first launched in 1996, underwent changes in the form of more attention to source documents, revisions at a further level as well as detailed control objectives and the addition of an implementation tool set in its second edition which was published in 1998. Cobit in its third edition marked by the entry of COBIT's new main publisher, namely ITGI. The fourth edition of COBIT is the final version of the control objectives for information and related technologies. According to Sarno (2009: 19). COBIT defines business objectives related to information technology activities that generally exist in companies. The COBIT framework only explains business objectives related to information technology processes. In order to facilitate the control process, COBIT groups these objectives into a Balanced Scorecard performance perspective as shown in table 6.1 (ITGI, COBIT 4.1, 2007). Companies/organizations may not have all business objectives as grouped in the table. In preparing business goals, companies can choose those that suit the characteristics of their respective organizations. Selection of business objectives can be done by defining the organization's main business processes and supporting businesses first.

METHOD

The method used in this research is literature review. Literature review is the first and important step in preparing a research plan. Literature study is a search and research of literature by reading various books, journals and other publications related to the research topic, to produce a piece of writing regarding a particular topic or issue (Marzali, 2016). In literature studies for the purpose of producing scientific writing, such as theses, theses and dissertations, the writer explores literature related to the topic and problem of his research, about society and the research area, about theories that have been used and produced by people related to our research topic, about the research methods used in the study, and so on (Marzali, 2016). Literature studies are carried out with the awareness that knowledge is continuously increasing (accumulating), that our research topics, society and research areas have been explored by people before, and we can learn from what these people have done. So, we are not the first to research this topic, society and region. There are two main objectives of the literature review. First, a literature review is carried out with the aim of writing a paper to introduce new studies on a certain topic that those who are active in that scientific topic need to know. This study may be published at any time for the public interest. Examples of studies of this kind can be seen, for example, in the Annual Review of Anthropology, Annual Review of Sociology, and so on. Those who are just beginning researchers on a particular topic can use this annual review publication as initial reading (Tjahjono, H., 2018). The second purpose of the literature review is for the benefit of the research project itself. In this case, making a literature review is to enrich our insight into our research topic, help us in formulating research problems, and help us in determining the appropriate theories and methods to use in our research. By studying other people's studies, we can determine whether to imitate, repeat, or criticize a particular study. We use other

people's studies as comparison material for our own studies. By criticizing other people's writings, we then create something new. In this article we will specifically discuss literature studies for their own research purposes, especially for students who will write their final scientific work (thesis, thesis or dissertation) (Marzali, 2016). Based on this explanation, the researcher used literature review by analyzing it as a research method to carry out the research in question.

RESULTS AND DISCUSSION

Papers used in the literature are properly cited. shows the top 10 publications by number of citations. We took a closer look at the sources cited by these papers and found that Hans & Moritz 2009 had the highest number of citations with a publication entitled Supply chain finance: optimizing financial flow in supply chains published in the Journal of Logistics Research. As shown in Figure 6, the international journal of production economics, the international journal of physical distribution and logistics management, and the journal of purchasing and supply management dominate the citations. This is evident from research that financial journals are not widely used. The analysis used by the journal shows the literature is comprehensive. Although this field is labeled supply chain finance, such studies are not often found in leading mainstream finance journals. This shows that there are no models and techniques available in mainstream financial research to gain a deeper understanding of issues related to finance. Keyword analysis is very important and is used to provide clarification of supply chain financing conceptual points. Supply chain financing related to supply chain finance and management should be driven by policy. The topic of financial solutions or financial problems is a critical topic that attracts attention. Supply chain financing has received attention from various parties such as banks, companies, customers and researchers

Table 1. The Topics of Financial Solutions

Author and Year	Journal	Quote	Document Title
Hans & Moritz, 2009	Logistics Research	209	Supply chain financing: optimizing financial flows in the supply chain
Dong et al., 2012	Computers & Industrial Engineering	201	A framework for measuring service supply chain management performance
Gelsomino et al., 2016	International Journal of Physical Distribution & Logistics Management	184	Supply chain financing: a literature review
Xu et al., 2018	Journal of Business Process Management	171	Supply chain financing: A systematic literature review and bibliometric analysis
Yan et al., 2016	International Journal of Production Economics	147	Partial credit guarantee contracts in capital-constrained supply chains: Financing balance and coordination strategies
Wuttke et al., 2013a	International Journal of Logistics Research and Applications	118	Supply chain financing: applying financial theory to supply chain management to improve financing in the supply chain
Wuttke et al., 2013b	Journal of Business Logistics	115	Managing the Adoption of Supply Chain Financing Innovations—Empirical Evidence From Six European Case Studies
Caniato et al., 2016	Supply chain management	111	Does funding solve supply chain financing problems?
Tang et al., 2018	Journal of Cleaner Production	107	Procurement from Suppliers with Financial Constraints and
Wuttke et al., 2016	International Journal of Production Economics	107	Supply chain financing: Optimal introduction and adoption decisions



As the importance of a particular management area increases, the need for appropriate decision-making support in that area also increases. Decision-making problems in supply chain management range from single quantitative criteria analysis to problems of multiple criteria and/or objectives, where quantitative and qualitative criteria must be combined. A very common decision-making problem in supply chain management is single-criteria, purely quantitative considerations in inventory control. For such problems, classical methods only consider costs and minimize them within certain limits, such as customer service. However, even in such cases, authors tend to argue that conflicting goals are balanced (cf. Axsäter 2006). Decision making with multiple criteria provides support for such strategic decisions (see Montibeller/Franco 2011), allowing consideration of qualitative and conflicting objectives (see Ram et al. 2011). Wallenius et al. (2008) state that the most important support that a multiple decision-making approach provides to decision makers is perhaps the structured examination of the decision problem as part of the process. Although many applications Although such supply chain management methods already exist, a literature survey regarding multiple-criteria decision-making methods, which allow the consideration of qualitative information in supply chain management, is not yet available. COSO and COBIT and AR. The results relate to the test of the main model, and relationships between variables have been demonstrated. When independent variables are measured separately in a segmented model,. This finding is particularly interesting because it suggests that Iraqi banks have not effectively utilized CG mechanisms to support the implementation of control frameworks, resulting in a lack of integration between these mechanisms. Therefore, bank management and the board of directors should desire the collaboration of ITG and the internal control department. According to Beyer and Laney (2012), Big Data is defined as “High-volume, high-velocity, and/or diverse information assets that demand innovative and cost-effective forms of information processing that enable increased insight, decision-making, and process automation. ” Additionally, Big Data has been defined with the concept of '3V' by (Laney, 2001). With the advancement of technology across Supply Chain entities, the data generated is increasing rapidly. Firican, (2017) the flow of information is documented in the form of physical documents to the use of Information Technology in the Supply Chain. Most of the information flows related to material flows are documented in the form of digital structured data. Because the scope of Supply Chains is now global,

Additionally, entities such as marketing and sales now rely on analyzing unstructured data along with structured data to gain better insights into customer needs and improve the cost aspects of Supply Chain processes. The use of Big Data can offer significant value in areas such as product development, market demand prediction, supply decisions, distribution optimization, and customer feedback (Arunachalam, et al., 2017; Laney, 2001; Miguel & Gómez, 2016). According to an Accenture study (2014), companies with a disciplined strategy in utilizing Big Data Analytics will gain greater returns on their investment in Big Data Analytics as shown in the Figure above. It has been proven that a clear and systematic strategy for Big Data Analytics can provide a good Return on Investment, areas in the Supply Chain such as Marketing, Procurement, Transportation, Warehousing can be utilized by Big Data and Big Data Analytics (Benabdellah et al., 2016). By leveraging big data, supply chains should function with the aim of improvement in areas such as customer needs prediction, supply chain assessment, overall supply chain efficiency, reaction time, risk assessment, and improved prediction of customer needs: improving supply chain efficiency, improving risk assessment in the supply chain, increasing reaction times (ComputerWorld, 2018). Given the high infrastructure costs for Big Data Analytics, specific research to make Big Data Analytics more cost-effective can be carried out by reducing the infrastructure costs for storing Big Data. To increase the volume and accuracy of data generated from various processes such as manufacturing and logistics, it is necessary to increase the accuracy of sensors in physical systems as well as improve data integration technology between various business processes and can be a potential field of study for the future. research.


CONCLUSION


This study uses analysis of ongoing trends and the development status of supply chain financing. Using ranking analysis and illustration of important factors in publications, we identify important data that helps form an accurate description of the subject matter. After analyzing the keywords in the Financial Supply Chain Management literature, it seems important to consider it as an interdisciplinary research phenomenon that includes policies and investments in management and financing. Analysis of the author's country of origin shows that developed countries dominate most of the research on Financial Supply Chain Management. Financial Supply Chain Management is seen as an important topic that is gaining increasing recognition in the academic field. Recent literature shows an increasing focus on Financial Supply Chain Management, but less interest has been paid to mainstream finance and economics journals. This creates a void that allows the researcher to investigate the following directions in his research. Since Financial Supply Chain Management is a topic that is based on finance and management, this creates a need to look at the problem using more financial solutions and financial perspectives. In addition, a more developed and more focused theory is needed. This research aims to evaluate the impact of integrating the COSO and COBIT and AR frameworks. The results relate to the test of the main model, and relationships between variables have been demonstrated. When independent variables are measured separately in a segmented model, this finding is particularly interesting because it suggests that Iraqi banks have not effectively utilized CG mechanisms to support the implementation of control frameworks, resulting in a lack of integration between these mechanisms. Therefore, bank management and the board of directors should desire the collaboration of ITG and the internal control department.

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