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Impact of COVID-19 on Working Capital Management: A Theoretical Approach

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Abstract: This study uses an archival technique to examine the impact of COVID-19 on working capital management. The study reviews previous research published in high-impact journals between 2000 and 2021. In addition, the study uses the risk trade-off theory, market timing theory, and cash conversion cycle theory as lenses to understand the relationship between COVID-19 and working capital management. Both theoretical and empirical reviews indicate that the impact of the COVID19 plague has weakened the finances of business organizations on a global scale. Thus, reviewed theories suggest that for the business organizations to come into the limelight of financial muscle amidst COVID-19, managers should review variable costs and work with their main partners, and access to funds that have been made available to corporate organizations as a result of the mitigation of the COVID-19 plague.
Keywords: cash conversion cycle theory; COVID-19; market timing theory; risk-return trade-off theory; working capital management

Abstrak: Penelitian ini menggunakan teknik kearsipan untuk mengkaji dampak COVID-19 terhadap pengelolaan modal kerja. Studi ini meninjau penelitian sebelumnya yang diterbitkan dalam jurnal-jurnal *high-impact* antara tahun 2000 dan 2021. Selain itu, penelitian ini menggunakan teori *risk trade-off*, teori *market timing*, dan teori *cash conversion cycle* sebagai lensa untuk memahami hubungan antara COVID-19 dan pengelolaan modal kerja. Tinjauan baik teoretis maupun empiris menunjukkan bahwa dampak wabah COVID19 mampu melemahkan keuangan organisasi bisnis dalam skala global. Dengan demikian, teori yang ditinjau menunjukkan bahwa agar organisasi bisnis menjadi pusat perhatian bagi kekuatan finansial di tengah COVID-19, para manajer harus meninjau biaya variabel dan bekerjasama dengan mitra utama mereka, dan sebagai hasilnya bisa merujuk ke akses ke dana yang telah tersedia untuk organisasi perusahaan sebagai mitigasi wabah COVID-19.
Kata Kunci: teori cash conversion cycle; COVID-19; teori market timing; teori risk-return trade-off; pengelolaan modal kerja

INTRODUCTION

The impact of the COVID-19 plague has weakened the finances of business organizations on a global scale. The restriction mechanisms put in place to slow the spread of deadly diseases create obstacles in the supply chain and threaten the continuity of large and small businesses around the world (Sansa, 2020; OECD, 2020; Sharma et al., 2020; Rababah et al., 2020; Kalemli-Ozca et al., 2020). Evidently, Amnim et al. (2021) confirmed that the lockdown syndrome imposed by the government in the COVID-19 surge is increasingly preventing organizations from obtaining local and international supplies has a negative impact on the liquidity and profitability of the organization.

Due to this situation, the loss of global GDP caused by the COVID-19 syndrome from 2020 to 2021 exceeds US$4 trillion (UNCTAD, 2021). Likewise, the OECD report (2020) shows that more than 60% of business organizations in developed countries such as the United States, the United Kingdom, Canada, Belgium, and the Netherlands are on the verge of extinction due to the impact of the COVID-19 plague. Furthermore, the report added that more than 80% of business organizations in emerging economies had experienced a financial crisis.

In Nigeria, the National Bureau of Statistics reported that due to the COVID-19 plague, the banking industry alone lost 917.5 billion naira, causing more than 20,000 people to lose their jobs (CNN, 2021). Therefore, the increasing impact of COVID-19 on the organization's liquidity and profitability has attracted the attention of accountants, economists, financial experts, and scholars worldwide. This financial exclusion syndrome forces managers to develop strategies to solve the mystery of the financial impact of COVID-19. One such strategy is working capital management. Working capital management is a predictive indicator of company performance during the financial crisis, as it affects current assets, short-term liabilities, income, and operating costs (Zimon & Tarighi, 2021; Akgün & Karatas, 2021). It involves planning and controlling current assets and liabilities in such a way that, on the one hand, the risk of default on obligations due in the short term is eliminated and, on the other hand, excessive investment in these assets is avoided (Omaliko & Okpala, 2020). Thus, this current study intends to examine the impact of COVID-19 on working capital management. Specifically, to determine the extent to which COVID-19 influences business organizations' liquidity, supply chain, and profitability.

Among some researchers, such as Zimon and Hossein (2021), Zimon and Dankiewicz (2020), Bolaji (2020), Amnim et al. (2021), and Sansa (2020) recognize the importance of working capital management to company profitability. Furthermore, theoretical and empirical studies confirm that active capital management can promote corporate viability, performance, sustainability, and competitive advantage during the financial crisis (Wuave et al., 2020; Tesfaye, 2020; Rus & Monica-Violeta, 2020; Kocha et al., 2020). The important questions related to researchers are: To what extent does COVID-19 affect the liquidity of business organizations? How much does COVID-19 affect the supply chain of business organizations? And how much does COVID-19 affect the profitability of business organizations?

LITERATURE REVIEW

A large number of studies linked various theories with the management of working capital, such as the Liquid Assets theory (Amnim et al., 2021), Risk –Trade-off Theory (Hope et al., 2020; Mshelia, 2016), Pecking Order Theory (Fasesin et al., 2017), Economic Order Quantity (EOQ) Model (Abubakar et al., 2020; Kasozi, 2017), Rational choice theory (Fasesin et al., 2021; Aifuwa et al., 2020; Zimon & Dankiewicz, 2020), Agency Theory (Akindele & Odusina, 2015), Keynesian Theory of Money (Kabuye, Kato & Bugambiro, 2019), Operating cycle theory (Mabandla, 2018; Oyedele et al., 2017), Market timing theory (Nguyen et al., 2019) and Cash Conversion Cycle Theory (Oladimeji and Aladejebi, 2020; Korede, 2017).

However, no or few studies used a mixture of different theories to explain working capital management amid the financial crisis. Thus, this study warrants details to address this contemporary gap in the literature by using combines various theories, risk trade-off theory, market timing theory, and cash cycle theory to explain the impact of COVID-19 on working capital management from concept construction to organizational renewal. The selection of the three theories is based on the fact that the theories explain the best financing decisions in the financial crisis and access to the funds that have become available to business organizations as a result of crises such as the COVID-19 plague.

The Risk-Return Trade-off Theory

The risk-return trade-off theory was traced dates back to the literature started by Modigliani and Miller (1958). Myers proposed this theory in 1984. Since then, the theory has been used by researchers and academics to solve liquidity problems (Amankwah et al., 2021; Rababah et al., 2020; Barine, 2012; Muhammad et al., 2010). The theory believes that any organization facing a difficult situation, such as the sudden spread of the new corona pneumonia epidemic on a global scale, will face a cash shortage, leading to liquidity problems. In addition, the organization may find that the invoices for its suppliers

are difficult to settle, which will affect the production process, and negatively impact profitability (Barine, 2012; Amankwah et al., 2021). The work of Zimon and Hossein (2021) believes that the flexibility of credit policies during COVID19 can generate high costs of debt collection and risks of insolvency. Similarly, Amankwah et al. (2021) lamented that adherence to strict and unattractive business credit policies during the financial crisis (COVID-19 pandemic) would lead to lower levels of sales and profits.

The lockdown mechanism to slow the spread of deadly diseases has created bottlenecks in the supply chain, and most companies have experienced financial crises. The theory holds that financial managers should re-examine variable costs by reducing labor, entertainment, and training, imposing travel bans and non-essential meeting restrictions, and unpaid leave to conserve cash (Amnim et al., 2021). Mirza et al. (2020) also encourage managers to generate cash flow through customer relationships by offering discounts for early payment during the financial crisis. The risk-tradeoff theory is consistent with the claim that managers should consider accounts receivable during the financial crisis and work with their main partners to optimize cash flow (Rus & Achim, 2020). Agyei et al. (2020) relate trade-off theory to financial decisions in financial crises and show that trade-off theory is the best theory to predict the best financing decisions.

Similarly, Moore and Mirzaei (2016) used trade-off theory to test the impact of the global financial crisis on the financial structure of firms. They found that trade-off theory provides the best financial decisions. In another study, Theeuwen (2018) used trade-off theory to investigate the impact of the last global financial crisis on the organizational capital structure between 2008 and 2016 in Germany, France, and the United Kingdom. The result indicates that trade-off theory is the most influential theory of capital structure that predicts the best financial decision. In addition, Lew's (2019) research is consistent with previous research, that is, trade-off theory is the most influential capital structure theory and can predict the best financial decisions in a crisis. Finally, Trinh and Phuong (2016) also used trade-off theory to explain the impact of the financial crisis on the capital structure. The study established that trade-off theory is the most influential theory that brings firms into the limelight of success amid crises.

Wolters (2017) also reiterated that the trade-off theory indicates that complementary policies are needed to mitigate risks, such as the COVID-19 syndrome from the financial crisis to the monetary policy framework that monitors credit growth and the price of assets. Hassan and Samour (2016) used compensation theory to explain the impact of the corporate capital structure during the 2008 financial crisis. The study confirmed that trade-off theory could better explain decisions about the capital structure of companies during a crisis. Therefore, it is closely related to risk trade-off theory research. Especially as the third phase of COVID-19 resurfaced in many countries, businesses must make financial decisions to improve their working capital.

Market Timing Theory

Market timing theory is another popular theory related to working capital management. This theory was conceptualized by Baker and Wurgler (2002) to find cheaper types of financing regardless of their current internal resources, debt levels, and equity capital. A growing number of studies have applied this theory to explain the capital structure of companies during the global financial crisis (Bolton et al., 2013; Russel & Hung, 2013). According to Wang et al. (2007), the marketing timing theory is the main determinant of the financial policy of a company and has a lasting impact on the management of working capital.

Bloom and Milkovich (2012) reiterated that the marketing timing theory helps managers choose the most appropriate financing method when investing. Similarly, Hu et al. (2008) believe that market timing theory is positively related to working capital management. The work of Mittoo and Zhang (2006) and De Bie and De Haan (2007) showed that market timing theory has a significant positive correlation with financial decision-making. Another study by Kayhan and Titman (2007) reiterated that the market timing theory affects capital structure.

Similarly, the findings of Korajczyk and Levy (2003) are consistent with previous studies, that is, the theory of marketing time is the main predictor of optimal financial decisions. The theory shows that managers may need to use more trade credit, especially when financial institutions are not motivated to provide credit to businesses during the COVID-19 pandemic. The theory also depicts that managers need access to funds that have been made available to corporate organizations as a result of

the mitigation of the COVID-19 spike. Therefore, given the fact that under the COVID-19 pandemic whiplash, businesses are expected to make driving-funded hype financial decisions to survive the pandemic era, market timing theory is considered appropriate to propel this study.

Cash Conversion Cycle Theory

The cash conversion cycle theory has attracted the attention of researchers and scholars around the world since the 2008 global financial crisis. The theory was initiated by Richards and Laughlin (1980) to explain the lead-time cash outflow for purchasing input resources and the cash inflow from sales. Belghitar and Khan (2013) argue that the theory of cash conversion cycles is the best for developing the best financial strategy, especially during the financial crisis (COVID-19 surge). From this perspective, Campello et al. (2011) point out that this theory is also the core of companies in developing countries facing financial exclusion. According to Korede (2017), the cash conversion cycle theory is very important in an organization because financial managers spend a lot of time determining short-term assets and liabilities. The author argues that the shorter the cash conversion cycle, the better the company. On principle basis, Gill et al. (2010) lamented that in a financial crisis like COVID-19, credit policy flexibility could bring about debt collection costs and the risk of insolvency. Adhering to strict and unattractive business credit policies can reduce sales and profit.

Shockley and Turner (2014) also look at the theory from an inventory perspective. Managers need to find the optimal level to balance the costs and benefits of holding large and small inventories. Modi (2012) reiterates that companies must have short-term assets in a cautious cushion in the midst of the crisis (COVID-19 surge). Therefore, the theory advocates that managers need to review financial solutions such as debtor factoring and review supply chain finance and dynamic discounting to agree to short-term solutions that support cash flow. To make businesses successful and prosperous during and after COVID-19, it is assumed that the Cash Conversion Cycle theory is adequate to drive research.

COVID-19 Pandemic and its Effect on Working Capital Management

The deadly disease (COVID-19) broke out in Wuhan, China, in December 2019, and the World Health Organization (WHO) declared it a global pandemic on March 11, 2020. The COVID-19 has claimed many lives, and the number of confirmed infections in European countries exceeds 3 million. In Asian countries, more than 5 million infections have been recorded, and more than 9 million have been recorded in the American continent. As of December 2020, there have been more than 600,000 deaths (WHO, 2020). Similarly, the OECD report (2020) shows that COVID-19 has barely affected companies globally. More than 65% of corporate organizations have liquidity problems on the European continent. On the American continent, more than 75% of companies have suffered losses, of which more than companies cannot pay short-term costs. On the Asian continent, more than 80% of business organizations are negatively affected, and 70% of them do not have cash. In comparison, more than 90% of business organizations have experienced a cash trap, and 60% of them are dying in African countries (OECD, 2020).

Many studies on the rise of COVID-19 and working capital management are being published in high-impact journals. For example, Zimon and Hossein (2021) conducted a study to understand the extent of the increase in COVID-19 on Polish working capital management policies. The results show that fatal diseases have a negative impact on working capital management policies. Another study conducted in Rome by Achim et al. (2021) showed that the increase in COVID-19 has a negative impact on the working capital of the Roman manufacturing company. Similarly, research by Nakat and Bou-Mitri (2021) shows that the COVID-19 pandemic has threatened the financial strength of the Lebanese food industry. Furthermore, the study by Škare et al. (2021) also reiterated that the COVID-19 pandemic had had a negative impact on travel and tourism working capital in Spain and Poland. In addition, the studies of Emerson and Johnson (2020), Halkos and Zisiadou (2020), and McKee and Stuckler (2020) also confirmed that the deadly virus plague (COVID-19) had put the tourism industry in developing countries into economic difficulties.

Similarly, Bolaji (2020) investigated the impact of the COVID-19 pandemic on the working capital of Nigerian SMEs and found that a fatal disease forced the industry to shut down. Another recent study by Omaliko and Okpala (2020) aims to examine the impact of the COVID-19 pandemic on the liquidity and profitability of Nigerian companies. It turns out that, based on previous research, the COVID-19 pandemic has financially weakened many business organizations. Similarly, Hope et al.

(2020) also studied the relationship between COVID-19 and Nigeria's business performance. Again, research has shown that the COVID-19 pandemic has barely affected business organizations.

The work of Iwedi et al. (2020) also confirmed that COVID-19 had weakened Nigeria's corporate finances. Another study conducted in China by Lin and Zhang (2020) showed that COVID-19 has a negative impact on working capital management policies. Xinhua (2020) also confirmed that the COVID-19 pandemic had harmed many organizations. Another study conducted by Tesfaye (2020) in Ethiopia also showed that the banking industry had been severely affected by the COVID-19 pest. In addition, Wakode's (2020) research links bank failures to the COVID-19 pandemic. In the same direction, the work of Demirguc-Kunt et al. (2020) also revealed that business organizations are negatively affected by the COVID-19 crisis. In addition, Baret et al. (2020) also reiterated that the wave of COVID-19 has severely damaged financial markets and banks. The previous studies have established a negative link between COVID-19 and working capital policies (Topcu & Gulal, 2020; Nuhu, 2020; Kocha et al., 2020). In the same view, Jacob et al. (2020) reiterated that the COVID19 pandemic has financially affected Nigeria's higher education institutions. Agrawal (2020) and Buda et al. (2020) also established that COVID-19 syndrome has financially affected airlines. The studies of Mirza et al. (2020) and Yarovaya et al. (2020) are consistent with previous studies that COVID-19 is the main determinant of the significant decrease in cash flow adequacy. These empirical and theoretical findings imply that crises like COVID-19 significantly impact working capital management.

RESEARCH METHODOLOGY

This study uses an archival technique to examine the impact of COVID-19 on working capital management. First, the study reviews previous research published in high-impact journals between 2000 and 2021. In addition, the study uses the risk trade-off theory, market timing theory, and cash cycle theory as lenses to understand the relationship between COVID-19 and working capital management. Table 1 displays the theories along with the applications of working capital management policies amid COVID-19.

Table 1. Description and Application of Stated Theories

S/N	Adopted Theory	Reason of Adoption	Empirical Evidence	Application in the Current Study
1	Risk Trade-Off Theory	The theory advocates that when organization face financial challenges especially during crisis, such as the sudden spread of the new corona pneumonia epidemic, the organization should re-examine variable costs by reducing workforce, entertainment, and training, imposing travel bans and non-essential meeting restrictions, and unpaid leave to conserve cash.	Risk trade-off theory encourages managers to generate cash flow through customer relationships by offering discounts for early payment and consider accounts receivable and work with their main partners to optimize cash flow (Rus & Achim, 2020; Agyei et al., 2020).	The trade-off theory predicts the best financing decisions in financial crises by review variable costs and work with their main partners to optimize cash flow.
2	Market Timing Theory	Market timing theory assists managers to finding cheaper types of financing regardless of their current internal resources, debt levels, and equity capital during financial crisis.	The marketing timing theory is the main determinant of the financial policy of a company and has a lasting impact on the management of working capital during the global financial crisis (Bolton et al., 2013; Russel & Hung, 2013).	The theory shows that managers may need to use more trade credit, especially when financial institutions are not motivated to provide credit to businesses during the COVID-19 pandemic. The theory also depicts that managers need access to funds that have been made available to corporate organizations as a result of the mitigation of the COVID-19 spike.
3	Cash Conversion Cycle Theory	The cash conversion theory advocates that during financial crisis like COVID-19, credit policy flexibility could bring about debt	The cash conversion cycle theory is very important in an organization because financial managers spend a	Therefore, the theory is advocating that managers need to review financial solutions such as debtor factoring and

		collection costs and the risk of insolvency and adhering to strict and unattractive business credit policies can also reduce sales and profit levels. From the perspective of inventory levels, the theory depicts that managers need to find the optimal level to balance the costs and benefits of holding large and small inventories.	lot of time determining short-term assets and liabilities. Empirical evidence shows that companies must hold short-term assets in a cautious cushion in the midst of the crisis (COVID-19 surge).	review supply chain finance and dynamic discounting to agree to short-term solutions that support cash flow. In order to make businesses successful and prosperous during and after COVID-19.

CONCLUSION

Both theoretical and empirical reviews have shown that the impact of the COVID-19 epidemic has weakened the financial situation of business organizations around the world. The restriction mechanism in place to curb the spread of deadly diseases creates obstacles in the supply chain, negatively affects the liquidity and profitability of organizations and threatens the continuity of large and small companies around the world. This means that the plague of COVID-19 has caused business organizations to experience financial crises on a global scale. Thus, the revised theories suggest that for corporate organizations to become the focus of financial strength in COVID-19, managers must review variable costs work with their key partners and obtain funding for corporate organizations to mitigate the crisis.

Theoretical Implication

This research established the relevance and suitability of the theories proposed in this study to the findings. Ten theories were proposed in the study, and three were adoptively synced with the study to provide a footing for the stated topic. It was discovered that there were not out of sync with the study, and they were risk trade-off theory, marketing timing theory, and cash conversion cycle theory. The theories provided the basis for explaining the possible interaction between the COVID-19 surge and working capital management. This current study supports the theories' claims that working capital management policies could be improved by continuously reviewing variable costs, working with the key partners, access to cheaper funds, and holding short-term assets in a cautious cushion in the midst of the crisis. Thereby theoretically explaining the need to consider combining the theories for linking COVID-19 syndrome and working capital management as none can fully capture the entire scope of the study.

Practical Implication

The study has contributed to the body of knowledge by identifying the diverse theories that have been used at different times to discuss financial crisis (COVID-19) and been able to infuse three of them for a practicable application (risk-trade-off theory, market timing theory and cash conversion cycle theory) with their implication on working capital management. The study is proof for managers, researchers, scholars, and policymakers that organizations can adopt working capital management policies to support cash flow during and after the COVID-19 plague.

Limitation and Recommendation for Further Studies

This study has several limitations that can be researched for future studies. The first limitation is that the study was limited to three theories (risk-trade-off theory, market timing theory, and cash conversion cycle theory), whereas other theories such as liquid assets theory, pecking order theory economic order quantity model, rational choice theory, agency theory, Keynesian theory of money and operating cycle theory could be adopted to explain the effect of COVID-19 on working capital management. Secondly, the study used only a qualitative approach. Meanwhile, both qualitative and quantitative techniques can be used in future studies.

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