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Linking working capital management to value-based financial performance

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Background: Effective working capital management (WCM) enables corporate leaders to direct scarce resources to the most promising and productive uses. Value can thus be created in a sustainable manner by deploying excess capital to financially feasible projects. As prior authors focused on the associations between WCM and short-term profitability metrics, the value-based perspective warrants attention.

Aim: The linkages between WCM and value-based financial performance were investigated in the South African emerging market context.

Setting: The value-based WCM and financial performance outcomes of 122 firms that were listed on the Johannesburg Stock Exchange between 2006 and 2022 were analysed, thereby incorporating two crisis periods.

Method: Panel regression analysis was conducted to explore the linkages between selected value-based financial performance and WCM metrics.

Results: Significant negative relationships were noted between net operating working capital (NOWC) and return on invested capital and spread, respectively. In contrast, a significant positive link was observed between NOWC and free cash flow (FCF). The sampled companies' WCM strategies thus enhanced their value-based financial performance.

Conclusion: Optimal WCM had positive value-based financial performance implications for selected JSE-listed companies over a 17-year period, including the 2008 global financial crisis and the COVID-19 pandemic.

Contribution: The value-based perspective can enable corporate leaders to optimise the allocation of working capital.

Keywords: working capital management; financial performance; value-based measures; Johannesburg Stock Exchange; net operating working capital; net operating trade cycle.

Introduction

Corporate efficiency largely depends on the ability of business leaders to manage working capital (Mandipa & Sibindi 2022). An effective working capital management (WCM) strategy can further enhance corporate sustainability (Griffith & Carroll 2011). Working capital components should accordingly be allocated to their most favourable uses to enhance a company's financial well-being. Effective WCM strategies ensure that current assets and current liabilities are effectively utilised. Such strategies also facilitate the successful deployment of excess capital into financially feasible projects with related positive financial performance implications (Zimon & Tarighi 2021).

Corporate leaders traditionally preferred short-term accounting-based financial performance metrics to measure financial health (Akbar, Akbar & Draz 2021; Aktas, Croci & Petmezas 2015; Arunkumar & Ramanan 2013; Deari et al. 2024; Falope & Ajilore 2009; Lazaridis & Tryfonidis 2006; Mathuva 2010; Sharma & Kumar 2011; Soukhakian & Khodakarami 2019). However, accounting-based financial performance metrics are associated with several limitations, including the potential manipulation of financial data, and the exclusion of the cost of capital (Martin, Petty & Wallace 2009). Literature furthermore shows inconclusive results on the link between these measures and firm value (Ricca, Ferrara & Loprevite 2023).

The value-based management (VBM) perspective was hence adopted for the purpose of this study, as it encourages corporate leaders to account for the magnitude of return, the required investment, and the opportunity cost of capital. This perspective centres on value creation for

shareholders but also incorporates elements of the stakeholder theory (Martin et al. 2009). This theory accounts for multiple constituencies and their interests by considering how they are impacted by the operations of a company, as well as their impacts on the organisation over time (Arora, Sur & Chauhan 2021; Donaldson & Preston 1995). Ineffective WCM is a major cause of corporate collapse which has negative implications for a range of stakeholders, including suppliers and consumers (Association of Chartered Certified Accountants 2026). Managers should thus ensure sound VBM, as it can result in a virtuous cycle of sustainable value creation.

Given the important role that VBM can play to safeguard a company's long-term survival, corporate leaders should reflect on how they can adapt and improve their companies' WCM practices to minimise inefficiencies and enhance value creation (Barney 2018). Prior WCM researchers largely focused on the association between profitability and two accounting-based working capital metrics, namely the cash conversion cycle (CCC) and the net trade cycle (NTC) (Akbar et al. 2021; Aktas et al. 2015; Arunkumar & Ramanan 2013; Deari et al. 2024; Falope & Ajilore 2009; Lazaridis & Tryfonidis 2006; Mathuva 2010; Sharma & Kumar 2011; Shin & Soenen 1998; Soukhakian & Khodakarami 2019). Most of them reported a significant negative link from an accounting-based perspective. Yet, these metrics are exposed to several weaknesses, including focusing on the length of time that invested capital spends in the operating cycle whilst not accounting for the invested amount (Boisjoly, Conine & McDonald 2020; Wang 2019).

The CCC indicates the number of days between the first cash outflow associated with the production of an item, and the final inflow of cash received when the inventory is sold (Hillier et al. 2010). The CCC can hence be improved by decreasing the trade receivables period and the inventory period and increasing the trade payables period. Like the CCC, the NTC also considers trade receivables, inventory and trade payables but expresses these items relative to sales (Ameer & Otherman 2021; Erasmus 2010; Shin & Soenen 1998). By implication, a shorter CCC and NTC reduce the need for external financing.

An alternative working capital metric that is relevant to a range of stakeholders, given that it reflects efficiency from an operating perspective is net operating working capital (NOWC). To align this metric with the accounting-based CCC and NTC metrics, the net operating trade cycle (NOTC) is used in this study. The value-based NOTC metric is determined by dividing the NOWC by sales and converting it into the applicable number of days per annum.

From a value-based WCM perspective, focus should be placed on cash flow management and its related implications by incorporating NOWC. Value-based management of working capital hence aligns short-term operational cash flow with shareholder value creation. The CCC could be optimised by effectively managing inventory, trade receivables and trade payables. In the context of VBM, corporate leaders should thus strive to determine the optimal level of liquid resources that would optimise firm value. Efficient management of the CCC speeds up cash generation, reduces financing costs and can improve return on invested capital (ROIC) (Arora et al. 2021; Makhija & Trivedi 2020). Yet prior scholars largely focused on profitability outcomes linked to WCM whilst VBM evidently warrants attention.

Given this identified gap in the literature, the linkages between WCM and financial performance were explored in the South African emerging market context by incorporating free cash flow (FCF), ROIC and spread (ROIC less weighted average cost of capital [WACC]). Panel regression analyses were conducted for 122 companies that were listed on the Johannesburg Stock Exchange (JSE) between 2006 and 2022. The 17-year research period included two crisis periods, namely the 2008 global financial crisis and the COVID-19 pandemic. According to Shen et al. (2020), effective WCM is of particular importance during a crisis period. The COVID-19 pandemic resulted in immense uncertainty regarding optimal levels of current assets and current liabilities for companies operating in diverse industries globally (Klöckner, Schmidt & Wagner 2021; Shen et al. 2020).

The remainder of the article is structured as follows: The literature review covers key financial performance and WCM concepts. An overview of relevant prior research is also provided accompanied by the hypothesis. Thereafter, the data collection and analysis are explained. Based on the discussed results, recommendations are offered to corporate leaders, shareholders and future researchers.

Literature review

In this section, financial performance will be discussed from accounting- and value-based points of view. Thereafter, key WCM considerations will be outlined. Reference will also be made to the linkages between the discussed metrics, accompanied by an overview of selected prior research.

Reflecting on financial performance

Financial performance is a multi-dimensional construct. In the broadest sense, financial performance refers to the degree to which short-, medium- and long-term financial objectives have been accomplished (Shen et al. 2020). Accounting-based metrics typically provide users with information regarding historic profitability. Despite relying on audited financial data, such measures might be manipulated by management. Commonly used accounting-based metrics include the return on assets (ROA) and return on equity (ROE) ratios (Aktas et al. 2015; Arunkumar & Ramanan 2013; Oke 2023).

In turn, value-based metrics ensure that focus is placed on a cycle of sustainable value creation. This strategic value creation process entails generating long-term financial, as well as social and environmental value by integrating

sustainability into the core operations of a company. Outcomes include enhancing competitiveness by optimising WCM, decreasing waste and reducing related costs. In turn, divergent stakeholders' demands can be met (Manninen, Laukkanen & Huiskonen 2024).

A financial performance metric is considered part of the VBM perspective if it accounts for a company's cost of equity or WACC (Young & O'Byrne 2001). The theoretical background of value-based measures is largely rooted in FCF valuation (Griffith & Carroll 2011). A company's FCF represents the amount by which its operating cash flow exceeds its working capital needs and capital expenditure on non-current assets. A firm's FCF is hence calculated after provision for all investments in financially feasible projects has been made. The metric accordingly indicates the cash flow that is available to be distributed to a company's capital providers (Griffith & Carroll 2011).

As it is more challenging to manipulate value-based metrics than accounting-based measures, some scholars prefer FCF above accounting-based return ratios (Hann, Ogneva & Ozbas 2013). Zimon and Tarighi (2021) described FCF as a reliable indicator of how well companies have maintained their operating cash flows. When calculating FCF, financial managers typically commence with the net operating profit after tax (NOPAT), before incorporating the change in net operating capital (NOC) required to support operations. A key advantage associated with the NOPAT metric is thus that it allows for comparison between companies irrespective of how they are financed (Mauboussin & Callahan 2022).

Furthermore, NOPAT and the investment in NOC could be used to compute the ROIC metric. This value-based return measure expresses NOPAT as a percentage of a company's NOC. In turn, NOC comprises of NOWC and long-term operating capital. The ROIC measure thus enables managers to make effective asset allocation decisions and compare investment opportunities. Managers will typically select the investment opportunity that returns the highest ROIC (Martin et al. 2009).

The financial feasibility of an investment could further be assessed by comparing its ROIC to the company's WACC (Martin et al. 2009). The resultant spread value reflects whether the return earned on the invested capital exceeds the cost of obtaining the capital. If WACC is larger than ROIC, additional investment in NOC will diminish value. According to PricewaterhouseCoopers (PwC 2019:6) 'more can be done to boost ROIC' through WCM. Companies could accordingly enhance their ROIC by optimising their WCM.

Key working capital considerations

Working capital management refers to the management of a company's short-term assets and liabilities with the aim of improving its operating efficiency (Le 2019). Ideally, current assets should thus be allocated in a manner that maximises operating efficiency and minimises waste (Boțoc & Anton 2017). Sound WCM practices should provide an ongoing investment in the current assets of a company, thereby allowing the timeous settlement of expenses, including inventory purchases. Furthermore, such practices could ensure continuous growth through additional investments in specific current assets. A primary indicator of an effective WCM strategy is thus that it has a positive impact on value creation. Underinvestment in working capital can cause liquidity problems (Habib & Kayani 2022; Le 2019).

Prior WCM authors largely focused on the CCC and the NTC. The NTC differs from the CCC in the sense that the trade receivables, inventory and trade payables are expressed relative to sales, whereafter it is multiplied by the number of days per annum (Akbar et al. 2021; Ameer & Otherman 2021; Erasmus 2010). Since both the CCC and NTC are calculated based on information contained in a company's financial statements, these working capital measures reflect the accounting perspective.

In contrast, the VBM framework centres on FCF, and by implication incorporates WCM through NOWC (Strischek 2001). The amount of FCF generated by a company could be considerably influenced by its WCM strategy, as reflected by the changes in NOWC over time (Griffith & Carroll 2011). The FCF metric thus enables investors to reflect on a company's operational efficiency and adopted WCM strategy (Hann et al. 2013).

As the NOWC specifically focuses on a company's operational efficiency, only items that are directly linked to operating activities are considered. This metric is hence computed by accounting for changes in selected operating current assets, such as trade receivables and inventory and trade payables that are required to support the operating activities (Strischek 2001). The NOTC can be determined to assess a company's WCM by dividing the NOWC by sales and converting it to the number of days per annum. By implication, the shorter the NOTC, the more efficiently a company has managed its NOWC.

Pertaining to WCM strategies, an aggressive strategy entails that management aims to maximise profitability and free up maximum capital for expansion purposes by maintaining low levels of working capital. Working capital shortfalls are then financed with short-term debt. Although cash flow can improve, liquidity risk can also increase given the potential inability to meet short-term obligations. This strategy is usually utilised if management can predict future cash requirements with relatively high accuracy (Guizani & Abdalkrim 2023; Tsuruta 2018). Furthermore, large companies tend to exercise their bargaining power with suppliers when implementing this strategy (Jabbouri et al. 2025).

In contrast, managers that follow a conservative WCM strategy prioritise liquidity by maintaining high levels of current assets, thereby resulting in high carrying costs. Such high levels of working capital are typically funded by long-

term financing sources (Guizani & Abdalkrim 2023; Tsuruta 2018). Profitable companies with high operating cash flows tend to adopt this WCM strategy (Jabbouri et al. 2025). A moderate WCM strategy aligns debt maturities with the maturity of the company's financial needs. As this strategy entails maintaining average inventory, it typically translates in stable operations. Profitability can thus be improved. Corporate leaders can accordingly meet short-term obligations while avoiding high carrying costs (Weinraub & Visscher 1998).

Overview of prior research and motivation for selection of the variables

Prior researchers mainly reported a significant negative relationship between the CCC and selected accounting-based profitability metrics (Aktas et al. 2015; Aldubhani et al. 2022; Arunkumar & Ramanan 2013; Doan & Bui 2020; Falope & Ajilore 2009; Hossain 2020; Kasozi 2017; Kiymaz, Haque & Choudhury 2024; Koroma & Bein 2024; Kumar, Sawarni & Roy 2024; Lazaridis & Tryfonidis 2006; Louw, Hall & Brummer 2016; Mandipa & Sibindi 2022; Mathuva 2010; Özkaya & Yaşar 2023; Sawarni, Narayanswamy & Ayyalusamy 2021; Shah 2019; Tran, Abott & Yap 2017). Similar results were noted for the NTC WCM metric (Ameer & Otherman 2021; Erasmus 2010; Shin & Soenen 1998). Several scholars have further investigated the relationships between the components of the CCC and profitability. As seen in Table 1, most of them noted a significant negative relationship between profitability, and the inventory and trade receivable periods and a significant positive link with the trade payables period (Boțoc & Anton 2017; Deloof 2003; Garcia-Teruel & Martinez-Solano 2007; Habib & Dalwai 2024; Kiymaz et al. 2024; Tauringana & Afrifa 2013; Uyar 2009).

Perusal of Table 1 further highlights an evident need to adopt the value-based perspective to investigate the linkages between WCM and financial performance metrics. The researchers therefore identified suitable value-based return ratios based on a rigorous literature review. PricewaterhouseCoopers (2019) recommended that companies should account for value creation opportunities (proxied by ROIC) by optimising working capital levels. The ROIC metric was hence selected as a value-based return ratio for this empirical investigation.

In the VBM context, managers should focus on achieving ROIC in excess of WACC. The spread was hence selected, as this value-based measure indicates whether value was created or destroyed. Furthermore, FCF is a key value-based indicator, as this metric is directly impacted by operational efficiency (Hann et al. 2013). Pertaining to the value-based WCM metrics, NOWC was selected based on the overview of prior research. The NOTC was then derived from NOWC.

Compared to other emerging markets, South Africa experiences unique socio-economic challenges. South Africa has a well-developed financial sector, yet it is the most unequal country globally (World Bank 2022). Furthermore, despite being a highly industrialised and technologically advanced economy within the African continent, 37.9% of the population lives in poverty, coupled by a high unemployment rate (Statistics South Africa 2025). The following hypothesis was formulated based on the preceding discussion:

H_0: There is no relationship between value-based working capital and financial performance metrics of selected JSE-listed companies over the period 2006 to 2022.

Research methods and design

This quantitative investigation was conducted to analyse the relationships between value-based WCM and financial performance variables for selected JSE-listed companies over a period of 17 years, including two crisis periods. The sample comprised 122 companies that were listed on the JSE between 2006 and 2022, thereby incorporating the 2008 global financial crisis and the COVID-19 pandemic. Working capital management is of particular importance during crisis periods (Shen et al. 2020).

Companies operating in the Consumer Staples, Consumer Discretionary, Health Care, Oil and Gas, Technology, Telecommunications and Industrials industries were

TABLE 1: Overview of prior research.

Investigated link	Main finding	Scholars
CCC and profitability	Significant negative relationship	Kiymaz et al. (2024), Koroma and Bein (2024), Kumar et al. (2024), Özkaya and Yaşar (2023), Aldubhani et al. (2022), Mandipa and Sibindi (2022), Sawarni et al. (2021), Doan and Bui (2020), Hossain (2020), Shah (2019), Soukhakian and Khodakarami (2019), Louw et al. (2016), Aktas et al. (2015), Arunkumar and Ramanan (2013), Sharma and Kumar (2011), Mathuva (2010), Falope and Ajilore (2009), Lazaridis and Tryfonidis (2006)
Inventory period and profitability	Significant negative relationship	Kiymaz et al. (2024), Kumar et al. (2024), Mandipa and Sibindi (2022), Doan and Bui (2020), Mabandla (2018), Boțoc and Anton (2017), Tran et al. (2017), Louw et al. (2016), Uyar (2009), Garcia-Teruel and Martinez-Solano (2007), Deloof (2003)
Trade receivables and profitability	Significant negative relationship	Kiymaz et al. (2024), Mandipa and Sibindi (2022), Doan and Bui (2020), Mabandla (2018), Boțoc and Anton (2017), Kasozi (2017), Tran et al. (2017), Louw et al. (2016), Uyar (2009), Garcia-Teruel and Martinez-Solano (2007), Deloof (2003)
Trade payables and profitability	Significant positive relationship	Habib and Dalwai (2024), Kiymaz et al. (2024), Doan and Bui (2020), Mabandla (2018), Boțoc and Anton (2017), Tran et al. (2017), Louw et al. (2016), Tauringana and Afrifa (2013), Uyar (2009), Garcia-Teruel and Martinez-Solano (2007), Deloof (2003)
CCC and operating performance	Significant negative relationship	Mabandla (2018), Ukaegbu (2014), Enqvist, Graham and Nikkinen (2014), Lazaridis and Tryfonidis (2006), Deloof (2003)
CCC and ROA	Non-significant positive relationship	Deari et al. (2024), Koroma and Bein (2024), Soukhakian and Khodakarami (2019), Sharma and Kumar (2011)
NTC and ROA	Significant negative relationship	Ameer and Otherman (2021), Erasmus (2010), Shin and Soenen (1998)
NTC and ROE	Significant positive relationship	Akbar et al. (2021)

Note: Please see the full reference list of the article, Johnson, L.R., Mans-Kemp, N. & Erasmus, P.D., 2026, 'Linking working capital management to value-based financial performance', *South African Journal of Economic and Management Sciences* 29(1), a6250. https://doi.org/10.4102/sajems.v29i1.6250 for more information.

CCC, cash conversion cycle; ROA, return on assets; NTC, net trade cycle; ROE, return on equity.

included in the sample. Basic Materials and Financials companies were excluded given that the format of their financial statements, nature of their activities and the level of regulation differ from the considered industries.

Value-based financial performance (the dependent variable) was proxied by the FCF, ROIC and spread metrics. The following equations (Equations 1, 2, and 3) were used to determine these variables based on data sourced from Bloomberg (Martin et al. 2009):

$$\text{FCF} = \text{NOPAT} - \Delta\text{Long-term operating capital} - \Delta\text{NOWC} \quad \text{[Eqn 1]}$$

$$\text{ROIC} = \frac{\text{NOPAT}}{\text{NOC}} \quad \text{[Eqn 2]}$$

$$\text{SPREAD} = \text{ROIC} - \text{WACC} \quad \text{[Eqn 3]}$$

where:

NOPAT: Net operating profit after tax

Long-term operating capital: Long-term operating assets minus long-term operating liabilities

NOWC: Selected operating current assets – selected operating current liabilities

NOC: LTOC + NOWC

WACC: Weighted after-tax cost of capital sources

The working capital variables were calculated as follows (Martin et al. 2009), based on data sourced from Bloomberg (Equations 4 and 5):

$$\text{NOWC} = \text{Selected operating current assets} - \text{selected operating current liabilities} \quad \text{[Eqn 4]}$$

$$\text{NOTC} = \frac{\text{NOWC}}{\text{Sales}} \times 365 \quad \text{[Eqn 5]}$$

Market capitalisation (SIZE) was included as a control variable given that the management of current assets and current liabilities is particularly important for smaller companies (Boțoc & Anton 2017; Singhania & Mehta 2017). Current liabilities are often a main source of financing for small companies when struggling to obtain sufficient funding over the long term, in line with the discussed WCM strategies (Singhania & Mehta 2017). Large firms tend to exercise their bargaining power with suppliers to implement an aggressive WCM strategy (Jabbouri et al. 2025). Leverage (LEV) was also included as a control variable, determined as total debt-to-total assets. This variable can considerably alter the costs associated with external financing and might therefore impact WCM strategies. Furthermore, highly leveraged companies tend to have higher liquidity needs, which might impact their WCM strategy (Jabbouri et al. 2025).

Descriptive trends were analysed for the outlined variables. Where applicable, outlier values were winsorised before conducting panel regression analysis to test the hypothesis. The appropriate model per analysis was selected based on the outcomes of the F-test and Hausman test. All variance inflation factors were below the threshold value of five. Based on the outcomes of the Breusch-Pagan test, the results were adjusted for heteroskedasticity.

The following panel regression model was applied (Equation 6):

$$\text{Value-based financial performance} = \beta_{0i} + \beta_1\text{NOWC}_{it} + \beta_2\text{NOTC}_{it} + \beta_3\text{SIZE}_{it} + \beta_4\text{LEV}_{it} + \epsilon_{it} \quad \text{[Eqn 6]}$$

Ethical considerations

Ethical clearance to conduct this study was obtained from the Stellenbosch University Research Ethics Committee: Social, Behavioural and Education Research (REC: SBE) (Project no.: ONB- 2023-27650). The study was classified as exempt from ethical clearance.

Results and discussion

Descriptive trends for the dependent variable will be discussed first, proxied by FCF, ROIC and spread. Table 2 reflects the descriptive statistics for FCF (in Rand million; log values).

The overall mean in Table 2 is almost nine times higher than the overall median FCF. The annual mean and median values also fluctuated considerably over the research period. The standard deviations and the substantial range confirm considerable variation in this variable. Zimon and Tarighi (2021) described FCF as a reliable indicator of how well companies have maintained their operating cash flows, especially during crisis periods, while making financially

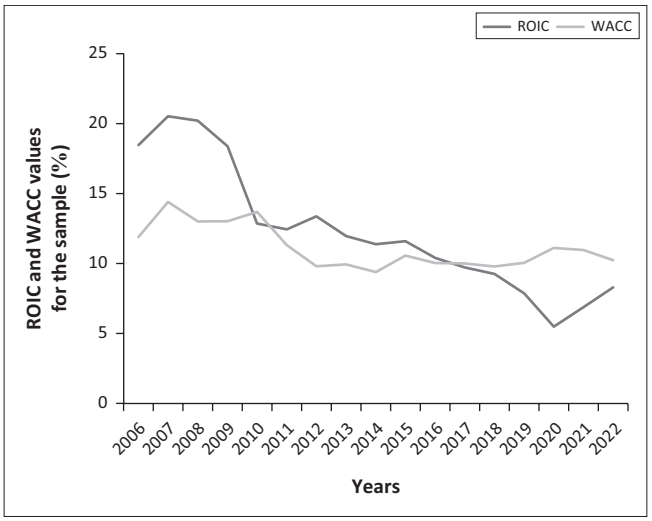
TABLE 2: Descriptive statistics for free cash flow.

Years	Valid (*n*)	Mean	Median	Minimum value	Maximum value	Standard deviation
2006	53	-381.99	-10.46	-6488.96	1352.79	1403.24
2007	57	-367.87	-8.28	-7135.01	601.80	1490.09
2008	66	324.81	20.98	-2407.30	4749.17	998.29
2009	71	181.38	43.54	-15 374.58	13 410.82	2730.48
2010	75	926.69	95.45	-572.15	25 916.93	3228.36
2011	76	712.62	107.18	-3576.85	10966.88	1962.31
2012	76	473.47	93.58	-5875.32	18 176.78	2390.57
2013	76	724.95	21.70	-9547.04	37 274.22	4643.46
2014	83	473.58	47.46	-6363.85	21 715.56	2975.04
2015	84	804.84	68.88	-12 050.03	37 899.03	4450.08
2016	85	741.87	58.68	-2972.36	18 873.33	2916.40
2017	88	890.74	129.92	-5622.40	17 048.62	2920.77
2018	91	867.87	74.44	-8022.87	23 314.31	3443.61
2019	92	656.69	90.71	-7803.43	16 669.13	2946.03
2020	99	-890.73	-2.34	-30 365.60	5790.79	4236.43
2021	96	1092.46	98.49	-15 054.92	21 324.01	4345.29
2022	96	754.58	141.59	-7092.92	16 560.96	2423.05
Overall period	**1364**	**502.00**	**57.38**	**-30 365.60**	**37 899.03**	**3216.26**

feasible investments. The negative mean value in 2020 could be partly ascribed to the uncertainty and negative financial implications that working capital-intensive firms experienced during the advent of the COVID-19 pandemic. The sizeable negative minimum FCF values that were reported by a telecommunications company were linked to negative NOPAT values coupled with substantive long-term operating capital.

Figure 1 displays the annual median ROIC and WACC values. The spread reflects the difference between these values. The declining trend observed for ROIC is linked to decreases in NOPAT and increases in NOC. Variability in the NOPAT and capital requirements of companies translates into additional risk for shareholders, given the uncertainty in projecting future cash flows (Brigham & Daves 2021). Several corporate leaders were therefore more conservative with their investment decisions in response to the substantial uncertainty brought about by the COVID-19 pandemic. WACC exhibited less fluctuation than ROIC, as seen in Figure 1. In 2010, and again from 2017 to 2022, the ROIC was lower than the WACC. This trend resulted in negative spread values, thereby illustrating the negative impact that the global financial crisis and the COVID-19 pandemic had on the sampled companies' financial health.

The NOWC and NOTC were used as proxies for value-based WCM (the independent variable). Table 3 reflects the descriptive statistics for NOWC (log values in Rand million), followed by the NOTC in Table 4 (number of days). Table 3 reveals a substantial increase in the mean and median NOWC values over the duration of the research period. Management should ensure that sufficient investments are made in operating current assets and liabilities to facilitate growth. However, if they fail to efficiently utilise NOWC to earn a return that exceeds WACC, value would be destroyed. The mean NOWC values more than doubled between 2006 and 2010. During the same time, the sampled companies were confronted with increased pressure on their financial health resulting from the global financial crisis. In contrast, a much slower increase in NOWC is observed between 2020 and 2022.



ROIC, return on invested capital; WACC, weighted average cost of capital.

FIGURE 1: Return on invested capital and weighted average cost of capital per annum.

As seen in Table 4, the overall mean NOTC value is about 1 month longer than the overall median NOTC. This noticeable difference, as well as the size of the range point towards substantial outliers. The substantive maximum NOTC values reported in 2021 and 2022 are ascribed to the low revenue reported by a sampled company. Subsequently, fraudulent business activities and a bid to be placed in liquidation came to light (Moneyweb 2022). Pertaining to the control variables (descriptive statistics not tabulated), the sampled companies differed considerably in terms of size. They further funded about a fifth of their total assets with debt.

TABLE 3: Descriptive statistics for net operating working capital.

Years	Valid (*n*)	Mean	Median	Minimum value	Maximum value	Standard deviation
2006	53	903.90	518.31	-700.92	5139.90	1115.60
2007	57	939.56	533.57	-778.80	5711.00	1218.02
2008	66	1432.19	618.35	-1585.20	12 993.00	2478.67
2009	71	1511.84	627.39	-743.00	20 743.00	2965.83
2010	75	1939.90	710.57	-4.09	30 970.00	4072.50
2011	76	1885.88	639.60	-14.54	28 687.00	3789.39
2012	76	2094.30	820.05	-614.10	42 987.00	5206.14
2013	76	2406.04	838.86	-293.68	43 079.00	5429.92
2014	83	2382.55	790.80	-43.57	29 899.00	4336.87
2015	84	2929.33	796.12	-21.12	47 716.00	6319.97
2016	85	3229.73	992.00	-118.55	50 062.00	6581.34
2017	88	3401.21	1346.22	-0.83	46 687.00	6478.18
2018	91	3455.16	1402.61	-80.68	32 451.00	5517.85
2019	92	3307.30	1408.17	-4.88	31 287.00	5056.44
2020	99	3272.18	1683.26	-670.00	28 683.00	4903.27
2021	96	3818.50	1962.90	-25.77	29 189.00	5752.33
2022	96	3827.72	1711.32	-35.16	34 646.00	5975.33
Overall period	**1364**	**2660.19**	**930.15**	**-1585.20**	**50 062.00**	**5062.84**

TABLE 4: Descriptive statistics for net operating trade cycle.

Years	Valid (*n*)	Mean	Median	Minimum value	Maximum value	Standard deviation
2006	53	109.19	94.48	-16.55	471.36	88.99
2007	57	95.92	83.98	-14.71	418.99	76.78
2008	66	97.74	92.34	-177.42	359.13	85.05
2009	71	101.47	85.80	-0.85	479.89	81.55
2010	75	103.84	93.16	-125.46	477.30	90.74
2011	76	97.60	86.25	-332.12	350.56	94.89
2012	76	89.27	81.00	-332.12	393.04	91.55
2013	76	92.63	80.25	-35.63	411.53	74.71
2014	83	103.26	84.22	-37.87	515.59	90.64
2015	84	104.59	88.78	-6.91	515.27	85.29
2016	85	108.87	89.13	-2.12	515.27	87.61
2017	88	110.40	89.07	-11.40	1121.81	126.26
2018	90	122.88	84.21	-0.77	1404.73	194.88
2019	92	122.82	78.90	-9.52	2482.22	260.97
2020	98	116.71	79.39	-15.26	726.93	123.51
2021	94	155.83	84.60	-5.25	5017.69	513.14
2022	94	173.82	83.27	-61.56	5017.69	543.06
Overall period	**1358**	**114.17**	**84.38**	**-332.12**	**5017.69**	**228.71**

Outcomes of the panel regression analysis

The panel regression results for ROIC (dependent variable), NOWC and NOTC are reported in Table 5. A statistically significant negative regression coefficient is reported for NOWC. This significant result shows that the sampled companies with lower NOWC values had higher ROIC values. High NOWC might reflect inefficient WCM given that substantive cash is tied up in operations. The discussed descriptive results furthermore show that NOWC increased gradually over the research period, while ROIC decreased. The sampled companies that managed to curb their investment in NOWC thus benefited in terms of ROIC. PricewaterhouseCoopers (2019) confirmed that return on investment can be enhanced by releasing cash from working capital. Furthermore, effective WCM entails that sufficient investments are made in operating current assets and that trade payable terms are optimised, which are in turn essential to ensure sustainable value creation (Strischek 2001).

Pertaining to the control variables, large sampled companies generated higher ROIC than small companies, in line with the outcome reported by Endri and Fathony (2020). A statistically significant negative regression coefficient is further reported for leverage. Managers of the sampled companies that avoided excessive debt use thus benefited in terms of ROIC. The regression outcomes for spread are reported next in Table 6.

The statistically significant negative association shown between NOWC and spread in Table 6 suggests that the sampled companies with lower NOWC had higher spread values. In terms of WCM, lower NOWC values indicate that companies have either maintained or reduced their investment in operating current assets, while taking advantage of credit terms by delaying repayments to creditors. Lower NOWC was also related to higher ROIC (see Table 5), which by implication contributed to larger spread values.

Large sampled companies and those with low leverage further had high spread values. Theoretically, WACC is expected to initially decrease if more debt financing is used, given that debt is the cheapest source of financing. WACC starts to increase once the minimum value related to the theoretical optimal capital structure is exceeded (Mauboussin & Callahan 2022). Corporate leaders hence cautiously monitor debt usage, as too much debt can increase risk levels, thereby constraining their companies' ability to generate cash flow in a sustainable manner (Mauboussin & Callahan 2022). The results for FCF are reported in Table 7.

The sampled companies with large investments in NOWC generated higher FCF, compared to those with lower NOWC. It is important to note that NOPAT and the net change in long-term operating capital should also be considered, as these values could considerably impact FCF (Griffith & Carroll 2011; Martin et al. 2009). Enhanced operational efficiency might have facilitated investments in financially feasible projects. In turn, NOPAT would increase, and by implication FCF would be positively impacted.

The statistically significant negative regression coefficient for NOTC (at the 10% level) in Table 7 indicates that the sampled companies with shorter NOTCs had higher FCF values. A shorter NOTC points to more efficient WCM. The results thus show that enhanced WCM efficiency had positive FCF implications for the sampled companies during a 17-year period, including two crisis periods. Since the advent of the COVID-19 pandemic and the increased emphasis on sustainable value creation, managers place renewed focus on FCF (Zimon & Tarighi 2021).

As shown in Table 7, smaller sampled companies generated higher amounts of FCF. This result might be partly explained by smaller companies having fewer financially feasible projects to invest in. Their FCF might hence be higher compared to their larger counterparts with more financially feasible projects because of the related lower investment in operating capital required by smaller companies. Furthermore, the sampled companies that utilised less debt reported larger FCF. As companies can use FCF to reduce debt, companies with higher FCFs might have lower leverage (Yeo 2018). Based on the reported results, the null hypothesis was hence rejected. Working

TABLE 5: Linking return on invested capital to working capital management.

Variable	Regression coefficient	Standard error	*t*-value	Pr > |*t*|	*t*-value adjusted for heteroskedasticity†
NOWC	-0.33	3.04	-6.44***	0.00	-4.33***
NOTC	0.05	< 0.00	1.75*	0.08	1.49
SIZE	0.71	1.07	9.90***	0.00	5.19***
LEV	-0.26	0.03	-8.82***	0.00	-5.73***

Note: Two way-fixed effects (F = 56.67***; Degrees of freedom: 4, 1226); R-squared = 0.16.
NOWC, net operating working capital; NOTC, net operating trade cycle; SIZE, Market capitalisation; LEV, leverage.
***, Significant at the 1% level; **, Significant at the 5% level; *, Significant at the 10% level.
†, Breusch-Pagan test for heteroskedasticity = 1453.55***.

TABLE 6: Regression results for spread and working capital management.

Variable	Regression coefficient	Standard error	*t*-value	Pr > |*t*|	t-value adjusted for heteroskedasticity†
NOWC	-0.34	3.56	-6.14***	0.00	-4.07***
NOTC	0.05	< 0.00	1.61	0.11	1.59
SIZE	0.57	1.24	7.30***	0.00	3.94***
LEV	-0.22	0.03	-6.97***	0.00	-5.26***

Note: Two way-fixed effects (F = 36.56***; Degrees of freedom: 4, 1240); R-squared = 0.11.
NOWC, net operating working capital; NOTC, net operating trade cycle; SIZE, Market capitalisation; LEV, leverage.
***, Significant at the 1% level; **, Significant at the 5% level; *, Significant at the 10% level.
†, Breusch-Pagan test for heteroskedasticity = 2959.96***.

TABLE 7: Linking free cash flow to working capital management.

Variable	Regression coefficient	Standard error	*t*-value	Pr > |*t*|	*t*-value adjusted for heteroskedasticity†
NOWC	0.71	540.20	10.87***	0.00	6.91***
NOTC	-0.12	0.68	-3.36***	0.00	-1.92*
SIZE	-0.37	187.96	-3.98***	0.00	-3.65***
LEV	-0.22	4.51	-5.90***	0.00	-4.24***

Note: Two way-fixed effects (F = 35.96***; Degrees of freedom: 4, 1240); R-squared = 0.10.
NOWC, net operating working capital; NOTC, net operating trade cycle; SIZE, Market capitalisation; LEV, leverage.
***, Significant at the 1% level; **, Significant at the 5% level; *, Significant at the 10% level.
†, Breusch-Pagan test for heteroskedasticity = 1987.59***.

capital management practices evidently impacted the value-based performance outcomes of the sampled companies.

Effective WCM is of particular importance during crisis periods (Shen et al. 2020). The COVID-19 pandemic considerably impacted the optimal levels of current assets and current liabilities of companies operating in various industries (Alareeni & Hamdan 2022; Shen et al. 2020). In turn, companies' CCCs typically increase during crisis periods (Zimon & Tarighi 2021). Zimon and Tarighi (2021) further found that companies tend to keep more inventory and allow more lenient credit terms during crisis periods. Corporate managers should hence cautiously balance capital being tied up in working capital sources and being able to withstand crisis periods, thereby contributing to sustainable value creation that could have positive implications for a range of stakeholders.

Separate analyses were conducted for the three largest industries, namely Consumer Staples, Consumer Discretionary and Industrials (non-tabulated). For the ROIC analysis, these industries had statistically significant negative regression coefficients for NOWC, in line with the results observed for the full sample. The Consumer Discretionary industry further yielded similar results to the full sample for NOTC. In contrast, a negative but statistically non-significant relationship was noted between NOTC and ROIC for the Consumer Staples and Industrials sub-samples.

The industry analyses further revealed statistically significant negative regression coefficients for NOWC and spread, similar to the results reported for the full sample. The Consumer Discretionary sub-sample reflected a statistically significant positive regression coefficient for NOTC. The results for Consumer Staples and Industrials did not reflect statistically significant regression coefficients for NOTC.

The outcomes for the industry-specific regression analyses, including FCF and NOWC, were similar than those reported for the full sample. The industry-specific results for NOTC further reflected statistically significant negative regression coefficients for Consumer Staples and Consumer Discretionary. This negative association could indicate that shorter NOTCs resulted in higher FCF values, in line with the results reported for the full sample.

Conclusion

If corporate leaders manage working capital more efficiently, the resulting excess capital could be invested in financially feasible projects (Zimon & Tarighi 2021). Value-based management outlines that such projects can contribute to creating value over the long term in a sustainable manner. Yet prior researchers largely focused on the linkages between WCM and accounting-based financial performance metrics. They favoured the CCC and NTC metrics that are exposed to several weaknesses. To address the identified knowledge gap, the link between WCM and financial performance was investigated from a value-based perspective in the South African emerging market context over a 17-year period that included two crisis periods. Prior scholars noted that effective WCM is of particular importance during crisis periods.

The sample comprised 122 JSE-listed companies operating in diverse industries between 2006 and 2022. The ROIC and spread metrics were used to account for the allocation of operating current assets towards financially feasible investments and earning returns in excess of WACC. In turn, FCF reflected the cash flows that are relevant for capital providers. NOWC was utilised to account for WCM efficiency. The NOTC was further incorporated as a value-based alternative for the commonly used accounting-based CCC.

The panel regression results revealed statistically significant negative regression coefficients for NOWC for both ROIC and spread. The sampled companies with smaller NOWC values hence had higher value-based returns. Such companies were arguably more successful in directing scarce resources towards financially feasible projects. Their WCM strategies hence enhanced their value-based financial performance during the research period.

A statistically significant positive regression coefficient was further observed for NOWC, with FCF as the dependent variable. Enhanced operational efficiency might have contributed to facilitating investments in financially feasible projects at the sampled companies. In contrast, a statistically significant negative link was noted between NOTC and FCF. Shorter NOTCs likewise pointed to more efficient management of NOWC. Effective WCM thus had positive FCF implications for the sampled companies.

Recommendations

Based on the reported outcomes, it is recommended that corporate leaders should give more attention to the selection of a suitable WCM strategy. They should ensure that the selected strategy is sufficiently aligned with their company's goals. The allocation of operating current assets and current liabilities should thus be regularly reviewed. Investors are further encouraged to increase their use of value-based metrics when evaluating investments. They should hold corporate leaders accountable by asking questions pertaining to questionable WCM practices.

Limitations and suggestions for future research

Pertaining to the study's limitations, the reported results are not generalisable to all JSE-listed companies, as Basic Materials and Financials were excluded from the sample. Future scholars can thus explore the WCM strategies of companies operating in these industries. Case studies can further be conducted to account for the impact of crisis periods on WCM strategies. Future researchers could also conduct semi-structured interviews with corporate leaders to

explore their views on WCM best practices and potential pitfalls in emerging and developed markets. Interviewees could also be requested to explain how they perceive the linkages between VBM and WCM. The qualitative outcomes can then be compared with the reported quantitative results.

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CRediT authorship contribution

Liam R. Johnson: Conceptualisation, Formal analysis, Methodology, Writing – original draft, Writing – review & editing. Nadia Mans-Kemp: Conceptualisation, Supervision, Writing – review & editing. Pierre D. Erasmus: Conceptualisation, Supervision, Writing – review & editing. All authors reviewed the article, contributed to the discussion of results, approved the final version for submission and publication, and take responsibility for the integrity of its findings.

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Data availability

The data that support the findings of this study are available from Bloomberg at https://data.bloomberg.com/.

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References

Akbar, M., Akbar, A. & Draz, M.U., 2021, 'Global financial crisis, working capital management, and firm performance: Evidence from an Islamic Market Index', *SAGE Open* 11(2), 21582440211015705. https://doi.org/10.1177/21582440211015705

Aktas, N., Croci, E. & Petmezas, D., 2015, 'Is working capital management value-enhancing? Evidence from firm performance and investments', *Journal of Corporate Finance* 30(1), 98–113. https://doi.org/10.1016/j.jcorpfin.2014.12.008

Aldubhani, M.A.Q., Wang, J., Gong, T. & Maudhah, R.A., 2022, 'Impact of working capital management on profitability: Evidence from listed companies in Qatar', *Journal of Money and Business* 2(1), 70–81. https://doi.org/10.1108/JMB-08-2021-0032

Ameer, R. & Otherman, R., 2021, 'The impact of working capital management on financial performance of cost leadership and differentiation strategy firms in different business cycles: Evidence from New Zealand', *Journal of Asia-Pacific Business* 22(1), 39–57. https://doi.org/10.1080/10599231.2021.1866398

Arora, S., Sur, J.K. & Chauhan, Y., 2021, 'Does corporate social responsibility affect shareholder value? Evidence from the COVID-19 crisis', *International Review of Finance* 22(2), 325–334. https://doi.org/10.1111/irfi.12353

Arunkumar, O.N. & Ramanan, T.R., 2013, 'Working capital management and profitability: A sensitivity analysis', *International Journal of Research and Development: A Management Review* 2(1), 52–58.

Association of Chartered Certified Accountants, 2026, *Working capital management*, viewed 10 March 2026, from https://www.accaglobal.com/gb/en/student/exam-support-resources/fundamentals-exams-study-resources/f9/technical-articles/wcm.html.

Barney, J.B., 2018, 'Why resource-based theory's model of profit appropriation must incorporate a stakeholder perspective', *Strategic Management Journal* 39(1), 3305–3325.

Boisjoly, R.P., Conine, T.E. & McDonald, M.B., 2020, 'Working capital management: Financial and valuation impacts', *Journal of Business Research* 108, 1–8. https://doi.org/10.1016/j.jbusres.2019.09.025

Boțoc, C. & Anton, S.G., 2017, 'Is profitability driven by working capital management? Evidence for high-growth firms from emerging Europe', *Journal of Business Economics and Management* 18(6), 1135–1155. https://doi.org/10.3846/16111699.2017.1402362

Brigham, E.F. & Daves, P.R., 2021, *Intermediate financial management*, 14th edn., Cengage Learning, Mason.

Deari, F., Kukeli, A., Barbuta-Misu, N. & Virlanuta, F.O., 2024, 'Does working capital management affect firm profitability? Evidence from European Union countries', *Journal of Economic and Administrative Sciences* 40(5), 1060–1080. https://doi.org/10.1108/JEAS-11-2021-0222

Deloof, M., 2003, 'Does working capital management affect profitability of Belgian firms', *Journal of Business Finance & Accounting* 30(3&4), 573–588. https://doi.org/10.1111/1468-5957.00008

Doan, T.T. & Bui, T.T., 2020, 'Nonlinear impact of supply chain finance on the performance of seafood firms: A case study from Vietnam', *Uncertain Supply Chain Management* 8(1), 267–272. https://doi.org/10.5267/j.uscm.2020.1.001

Donaldson, T. & Preston, L., 1995, 'The stakeholder theory of the modern corporation: Concepts, evidence, and implications', *Academy of Management Review* 20(2), 65–91. https://doi.org/10.2307/258887

Endri, E. & Fathony, M., 2020, 'Determinants of firm value: Evidence from financial industry', *Management Science Letters* 10(1), 111–120. https://doi.org/10.5267/j.msl.2019.8.011

Enqvist, J., Graham, M. & Nikkinen, J., 2014, 'The impact of working capital management on firm profitability in different business cycles: Evidence from Finland', *Research in International Business and Finance* 32(1), 36–49. https://doi.org/10.1016/j.ribaf.2014.03.005

Erasmus, P.D., 2010, 'Working capital management and profitability: The relationship between the net trade cycle and return on assets', *Management Dynamics* 19(1), 2–10.

Falope, O.I. & Ajilore, O.T., 2009, 'Working capital management and corporate profitability: Evidence from panel data analysis of selected quoted companies in Nigeria', *Research Journal of Business Management* 3(3), 73–84. https://doi.org/10.3923/rjbm.2009.73.84

Garcia-Teruel, P.J. & Martinez-Solano, P., 2007, 'Effects of working capital management on SME profitability', *International Journal of Management Finance* 3(2), 164–177. https://doi.org/10.1108/17439130710738718

Griffith, J.M. & Carroll. C., 2011, 'Free cash flow, leverage and investment opportunities', *Journal of Business and Economics* 1(2), 1–5.

Guizani, M. & Abdalkrim, G., 2023, 'Female directors and working capital management: Aggressive vs. conservative strategy', *Management Research Review* 46(7), 976–995. https://doi.org/10.1108/MRR-02-2022-0146

Habib, A.M. & Dalwai, T., 2024, 'Does the efficiency of a firm's intellectual capital and working capital management affect its performance?' *Journal of the Knowledge Economy* 15(1), 3202–3238. https://doi.org/10.1007/s13132-023-01138-7

Habib, A.M. & Kayani, U.N., 2022, 'Does the efficiency of working capital management affect a firm's financial stress? Evidence from UAE', *Corporate Governance: The International Journal of Business in Society* 22(7), 1567–1586. https://doi.org/10.1108/CG-12-2021-0440

Hann, R.N., Ogneva, M. & Ozbas, O., 2013, 'Corporate diversification and the cost of capital', *Journal of Finance* 68(5), 1961–1999. https://doi.org/10.1111/jofi.12067

Hillier, D., Ross, S., Westerfield, R., Jaffe, J. & Jordan, B., 2010, *Corporate finance*, 12th edn., McGraw-Hill Education, Maidenhead.

Hossain, T., 2020, 'The effect of working capital management on profitability: A study on manufacturing companies in Bangladesh', *International Journal of Research in Business and Social Science* 9(6), 114–122. https://doi.org/10.20525/ijrbs.v9i6.872

Jabbouri, I., Benrqya, Y., Satt, H., Naili, M. & Omari, K., 2025, 'Determinants of working capital management for emerging markets firms: Evidence from the MENA region', *Journal of Economic and Administrative Sciences* 41(4), 1348–1365.

Kasozi, J., 2017, 'The effect of working capital management on profitability: A case of listed manufacturing firms in South Africa', *Investment Management and Financial Innovations* 14(2), 336–346. https://doi.org/10.21511/imfi.14(2-2).2017.05

Kiymaz, H., Haque, S. & Choudhury, A.A., 2024, 'Working capital management and firm performance: A comparative analysis of developed and emerging economies', *Borsa Istanbul Review* 24(3), 634–642. https://doi.org/10.1016/j.bir.2024.03.004

Klöckner, M., Schmidt, C.G. & Wagner, S.M., 2021, 'The impact of the COVID-19 pandemic on shareholder value', *Academy of Management Proceedings* 1, 1–6. https://doi.org/10.5465/AMBPP.2021.45

Koroma, S. & Bein, M., 2024, 'The moderating effect of economic policy uncertainty on the relationship between working capital management and profitability: Evidence from UK non-financial firms', *Sage Open* 14(2), 1–19. https://doi.org/10.1177/21582440241242552

Kumar, S.S., Sawarni, K.S. & Roy, S., 2024, 'Influence of working capital efficiency on firm's composite financial performance: Evidence from India', *International Journal of Productivity and Performance Management* 73(9), 2787–2806. https://doi.org/10.1108/IJPPM-07-2023-0374

Lazaridis, I. & Tryfonidis, D., 2006, 'Relationship between working capital management and profitability of listed companies in the Athens stock exchange', *Journal of Financial Management and Analysis* 19(1), 26–35.

Le, B., 2019, 'Working capital management and firm's valuation, profitability and risk: Evidence from a developing market', *International Journal of Managerial Finance* 15(2), 191–204. https://doi.org/10.1108/IJMF-01-2018-0012

Louw, E., Hall, J. & Brummer, L., 2016, 'Working capital management of South African retail firms', *Journal of Economic and Financial Sciences* 9(2), 545–600. https://doi.org/10.4102/jef.v9i2.58

Mabandla, N.Z., 2018, 'The relationship between working capital management and the financial performance of listed food and beverage companies in South Africa', Master's dissertation, University of South Africa, Pretoria.

Makhija, H. & Trivedi, P., 2020, 'An empirical investigation of the relationship between TSR, value-based and accounting-based performance measures', *International Journal of Productivity and Performance Management* 70(5), 1118–1136. https://doi.org/10.1108/IJPPM-05-2019-0231

Mandipa, G. & Sibindi, A.B., 2022, 'Financial performance and working capital management practices in the retail sector: Empirical evidence from South Africa', *Risks* 10(3), 63. https://doi.org/10.3390/risks10030063

Manninen, K., Laukkanen, M. & Huiskonen, J., 2024, 'Framework for sustainable value creation: A synthesis of fragmented sustainable business model literature', *Management Research Review* 47(1), 99–122. https://doi.org/10.1108/MRR-03-2022-0177

Martin, J.D., Petty, J.W. & Wallace, J.S., 2009, *Value-based management with corporate social responsibility*, Oxford University Press, New York, NY.

Mathuva, D.M., 2010, 'The influence of working capital management components on corporate profitability: A survey on Kenyan listed firms', *Research Journal of Business Management* 4(1), 1–11. https://doi.org/10.3923/rjbm.2010.1.11

Mauboussin, M.J. & Callahan, D., 2022, *How to calculate ROIC and handle common issues*, Morgan Stanley, viewed 14 February 2024, from https://www.morganstanley.com/im/publication/insights/articles/article_returnoninvestedcapital.pdf.

Moneyweb, 2022, *High court bid to place Afristat in liquidation*, viewed 02 August 2023, from https://www.moneyweb.co.za/news/companies-and-deals/high-court-bid-to-place-afristat-in-liquidation/.

Oke, O.O., 2023, 'Developing a performance evaluation model integrating the accounting and value-based management models for industrial companies', Doctor of Philosophy in Accounting dissertation, University of Johannesburg, Johannesburg, viewed 17 March 2025, from https://www.proquest.com/docview/3132878441/previewPDF/E99EFF58305948CCPQ/1?accountid=14049&sourcetype=Dissertations%20&%20Theses.

Özkaya, H. & Yaşar, S., 2023, 'Working capital management in the food and beverage industry: Evidence from listed European companies', *Agricultural Economics* 69(2), 78–88. https://doi.org/10.17221/383/2022-AGRICECON

PricewaterhouseCoopers (PwC), 2019, *Working capital report 2019/20: Creating value through working capital*, viewed 14 February 2024, from https://www.pwc.com/gx/en/working-capital-management-services/assets/working-capital-report-final.pdf.

Ricca, B., Ferrara, M. & Loprevite, S., 2023, 'Searching for an effective accounting-based score of firm performance: A comparative study between different synthesis techniques', *Quality & Quantity* 57, 3575–3602. https://doi.org/10.1007/s11135-022-01522-6

Sawarni, S., Narayanswamy, S. & Ayyalusamy, K., 2021, 'Working capital management, firm performance and nature of business: An empirical evidence from India', *International Journal of Productivity and Performance Management* 70(1), 179–200. https://doi.org/10.1108/IJPPM-10-2019-0468

Shah, S., 2019, 'Impact of working capital management on profitability of pharmaceutical and chemical companies: A comparative study of Pakistan and India', *Journal of Managerial Sciences* 13(1), 38–46.

Sharma, A.K. & Kumar, S., 2011, 'Effect of working capital management on firm profitability: Empirical evidence from India', *Global Business Review* 12(1), 159–173. https://doi.org/10.1177/097215091001200110

Shen, H., Fu, M., Pan, H., Yu, Z. & Chen, Y., 2020, 'The impact of the COVID-19 pandemic on firm performance', *Emerging Markets Finance and Trade* 56(10), 2213–2230. https://doi.org/10.1080/1540496X.2020.1785863

Shin, H. & Soenen, L., 1998, 'Efficiency of working capital management and corporate profitability', *Financial Practice and Education* 8(2), 37–45.

Singhania, M. & Mehta, P., 2017, 'Working capital management and firms' profitability: Evidence from emerging Asian countries', *South Asian Journal of Business Studies* 6(1), 80–97. https://doi.org/10.1108/SAJBS-09-2015-0060

Soukhakian, I. & Khodakarami, M., 2019, 'Working capital management, firm performance and macroeconomic factors: Evidence from Iran', *Cogent Business & Management* 6(1), 1–24. https://doi.org/10.1080/23311975.2019.1684227

Statistics South Africa, 2025, *Poverty trends in South Africa: An examination of absolute poverty between 2006 and 2023*, viewed 10 March 2026, from https://www.statssa.gov.za/?p=19078#:~:text=According%20to%20the%20*Poverty%20Trends%20in%20South,million%20people%20living%20in%20poverty%20in%202023.

Strischek, D., 2001, 'A banker's perspective on working capital and cash flow management', *Strategic Finance* 83(4), 38–45.

Tauringana, V. & Afrifa, G.A., 2013, 'The importance of working capital management and its components to SME profitability', *Journal of Small Business and Enterprise Development* 2(3), 453–469. https://doi.org/10.1108/JSBED-12-2011-0029

Tran, H. Abbott, M. & Yap, C., 2017, 'How does working capital management affect the profitability of Vietnamese small and medium-sized enterprises?' *Journal of Small Business and Enterprise Development* 24(1), 2–11.

Tsuruta, D., 2018, 'Do working capital management strategies matter? Evidence from small business data in Japan', *Asia-Pacific Journal of Financial Studies* 47(6), 824–857. https://doi.org/10.1111/ajfs.12239

Ukaegbu, B., 2014, 'The significance of working capital management in determining firm profitability: Evidence from developing economies in Africa', *Research in International Business and Finance* 31(1), 1–16. https://doi.org/10.1016/j.ribaf.2013.11.005

Uyar, A., 2009, 'The relationship of cash conversion cycle with firm size and profitability: An empirical investigation in Turkey', *International Research Journal of Finance and Economics* 24(1), 186–193.

Wang, B., 2019, 'The cash conversion cycle spread', *Journal of Financial Economics* 133(2), 472–497. https://doi.org/10.1016/j.jfineco.2019.02.008

Weinraub, H.J. & Visscher, S., 1998, 'Industry practice relating to aggressive conservative working capital policies', *Journal of Financial and Strategic Decisions* 11(2), 11–18.

World Bank, 2022, *Inequality in Southern Africa: An assessment of the Southern African customs union*, World Bank, Washington, DC.

Yeo, H-J., 2018, 'Role of free cash flows in making investment and dividend decisions: The case of the shipping industry', *Asian Journal of Shipping and Logistics* 34(2), 113–118. https://doi.org/10.1016/j.ajsl.2018.06.007

Young, S.D. & O'Byrne, S.F., 2001, *EVA and value-based management: A practical guide to implementation*, McGraw Hill, New York, NY.

Zimon, G. & Tarighi, H., 2021, 'Effects of COVID-19 global crisis on the working capital management policy: Evidence from Poland', *Journal of Risk and Financial Management* 14(4), 1–17. https://doi.org/10.3390/jrfm14040169