WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Working Capital Management and Profitability: An Empirical Analysis of the Cash Conversion Cycle and Its Components in Selected Indian Companies

S. Sathwik[a], Meda Srinivasa Rao[b]

[a]BBA Department, Koneru Lakshmaiah Education Foundation, Vaddeswaram, India (Roll No. 2400560088)
[b]Professor, BBA Department, Koneru Lakshmaiah Education Foundation, Vaddeswaram, India

A B S T R A C T :

Distributors tie up large amounts of capital in inventory and receivables and finance much of it through supplier credit, so the cash conversion cycle (CCC) is a natural summary of how efficiently they run working capital. This paper asks whether a shorter CCC is associated with higher profitability among listed Indian distributors, and which CCC components carry the association. Secondary data were taken from the Screener.in company pages (compiled from company filings) for two listed distributors, Redington Ltd (IT products) and Shankara Building Products Ltd (building products), over twelve fiscal years (FY2014–FY2025; 24 firm-years). CCC was decomposed into days sales outstanding (DSO), inventory storage period (DIO) and accounts payable period (DPO), and profitability was measured as return on assets (ROA), that is, net profit over year-end total assets. Within each firm, a longer CCC went with a lower ROA (Redington $r = -0.41$; Shankara $r = -0.54$). A firm-fixed-effects regression gave a slope of −0.051 percentage points of ROA per CCC day (SE 0.020, $p = .018$). In an exploratory decomposition, inventory storage period (−0.070, $p = .035$) and accounts payable period (+0.057, $p = .028$) were associated with ROA, while days sales outstanding were not ($p = .466$). Redington's shorter and more stable cycle (mean 34.2 days against 54.8) coincided with higher mean ROA (5.09% against 4.20%), and removing a one-off divestment gain from its FY2025 profit left the direction of the result unchanged. The findings are directionally consistent with the working-capital literature but rest on two firms, serially correlated annual observations and day counts taken from an aggregator rather than from annual-report line items. Supply chain finance (SCF) adoption could not be measured with the data retrieved and is not tested. The paper closes with a reproducible design for a full-sample study of at least 12–15 distributors that would also test SCF.

Keywords: Working Capital Management; Cash Conversion Cycle; Return on Assets; Distributors; Secondary Data Analysis; India; Inventory Storage Period; Pilot Study

Introduction

Working capital management (WCM) is central to the financial management of distribution businesses, where inventory and receivables absorb most of the capital employed and trade credit from suppliers funds a large part of it. Because the cash conversion cycle combines days of inventory, days of receivables and days of payables into a single measure of the time cash is tied up in operations, it is widely used as a summary of working capital efficiency (Gitman & Zutter, 2015). A shorter cycle means that a rupee invested in stock returns as cash sooner, which lowers financing needs and, other things equal, should raise returns on the capital employed.

The empirical link between the cycle and profitability has been documented mainly in samples of firms from other countries (Shin & Soenen, 1998; Deloof, 2003; García-Teruel & Martínez-Solano, 2007). Whether the same relationship holds for listed Indian distributors, and which components of the cycle carry it, is less clear. This matters for distributors in particular because their margins are thin, their balance sheets are dominated by working capital, and they sit between suppliers who set credit terms and customers who expect them.

This paper is a deliberately narrow first step. It asks one question that the available data can answer: is a shorter CCC associated with higher ROA among listed Indian distributors, and which components carry the association? It does not estimate the effect of supply chain finance (SCF) adoption. SCF, which includes reverse factoring, vendor financing and discounting of trade receivables on platforms such as TReDS, is an important adjacent topic (Hofmann, 2005; Gelsomino et al., 2016), but adoption could not be measured from the data retrieved here, and the paper therefore treats it as the subject of the full study proposed in Section 9.

1.1. Background

The two firms studied differ sharply in scale and product mix. Redington Ltd distributes IT products and recorded average annual sales of about ₹55,276 Cr over the study period; Shankara Building Products Ltd distributes building products and averaged about ₹2,916 Cr. Despite this difference of roughly nineteen times in sales, both firms earn modest returns on assets (mean ROA of 5.09% and 4.20% respectively), which is typical of

distribution, where profitability depends on turning stock and receivables quickly. In such businesses a few days of CCC can be worth a meaningful share of the return earned on assets.

SCF has attracted attention as a way to ease the tension that arises when a buyer extends its accounts payable period to shorten its own cycle at the expense of its suppliers. In India, platforms such as TReDS allow suppliers to discount receivables due from large buyers. Whether such arrangements show up in distributors' reported working capital and profitability is an open empirical question, and one that first requires a reliable baseline of how the plain CCC relates to ROA. This paper supplies a small, transparent baseline.

1.2. Problem Statement

Distributors must balance three competing pressures: holding enough inventory to serve customers, granting enough credit to keep them, and negotiating enough supplier credit to fund both. The cash conversion cycle summarises the net result, but it is unclear from recent Indian data whether shorter cycles actually coincide with higher profitability, or whether the association is driven by one component, such as inventory, more than by others. Without this evidence, managers cannot tell which lever deserves attention first, and researchers cannot judge whether a more complex question, such as the role of SCF, is worth the cost of a full study.

1.3. Research Gap

Studies of the CCC–profitability relationship are numerous, but few use recent annual data on listed Indian distributors, and fewer still separate the association into its components within firms. Most evidence on SCF concerns large manufacturers and exporters rather than distributors. The present paper addresses the first gap at pilot scale: it provides within-firm estimates for two listed distributors over twelve years, reports the component-level pattern, and tests whether a one-off gain changes the conclusion. It also records the data and design requirements for the second gap, so that SCF can be tested properly in a larger sample.

1.4. Objectives and Research Questions

This study aims to:

- Measure the within-firm association between the cash conversion cycle and return on assets among listed Indian distributors;
- Decompose the association into days sales outstanding, inventory storage period and accounts payable period, on an exploratory basis;
- Test whether the result is sensitive to a one-off gain in reported profit; and
- Specify a reproducible design for a full-sample study that also tests SCF adoption.

The research questions are: (RQ1) Is a shorter CCC associated with a higher ROA within a distributor over time? (RQ2) Which of DSO, DIO and DPO is most strongly associated with ROA? (RQ3) Is the association sensitive to a one-off gain in net profit? A fourth question, whether SCF adoption mediates the CCC–ROA relationship, is deferred to the full study because SCF could not be measured here.

Literature Review

The review is limited to sources whose content could be stated with confidence. Indian studies cited in an earlier draft of this work could not be verified and are not relied on.

1. Gitman and Zutter (2015), "Principles of Managerial Finance"

Standard textbook treatment of working capital management. It defines the cash conversion cycle as the time between paying for inputs and collecting from customers, and shows how inventory, receivable and payable days combine into it. The definitions used in this paper follow this treatment.

2. Shin and Soenen (1998), "Efficiency of Working Capital Management and Corporate Profitability"

A frequently cited empirical study using a large sample of listed non-financial firms. It reports an inverse relationship between the length of the cash conversion cycle and profitability, which supplies the directional expectation tested in H1.

3. Deloof (2003), "Does Working Capital Management Affect Profitability of Belgian Firms?"

Examines Belgian non-financial firms and finds that shorter inventory and receivable periods go with higher gross operating income. The study also reports a negative association between accounts payable period and profitability, which the author reads as less profitable firms paying their suppliers later. This is a useful contrast for the positive DPO coefficient found in the present data.

4. García-Teruel and Martínez-Solano (2007), "Effects of Working Capital Management on SME Profitability"

Studies Spanish small and medium-sized firms and reports that managers can raise profitability by shortening inventory and days sales outstanding. The study indicates that the working capital–profitability link is not confined to large listed firms.

5. Klapper, Laeven and Rajan (2012), "Trade Credit Contracts"

Analyses how trade credit contracts between suppliers and buyers are designed. The paper is relevant here because it shows that payable terms are shaped by features of the supplier–buyer relationship, not solely by the buyer's choice, which is why accounts payable periods are treated as only partly under a distributor's control.

6. Hofmann (2005), "Supply Chain Finance: Some Conceptual Insights"

An early conceptual paper on SCF. It argues that coordinated financing across the supply chain can ease the tension between a buyer's wish to extend accounts payable period and a supplier's need for liquidity, positioning SCF as a possible alternative to unilateral payables extension.

7. Gelsomino et al. (2016), "Supply Chain Finance: A Literature Review"

Reviews the SCF literature and organises its instruments and perspectives. It points to the importance of information systems and inter-firm relationships for SCF to function, which motivates measuring SCF adoption carefully in the full study.

8. Wuttke, Blome, Foerstl and Henke (2013), "Managing the Innovation Adoption of Supply Chain Finance"

Draws on six European case studies to examine how and when firms adopt SCF. It treats SCF as an organisational innovation rather than a purely financial product, which supports measuring adoption from firms' own disclosures.

9. Driscoll and Kraay (1998), "Consistent Covariance Matrix Estimation with Spatially Dependent Panel Data"

Methodological paper presenting standard errors that are robust to cross-sectional and temporal dependence in panel data. Its approach is proposed in Section 9 for the full study, because annual observations of one firm are serially correlated.

10. Baron and Kenny (1986), and Preacher and Hayes (2008)

Baron and Kenny set out the classic stepwise test of mediation, which an earlier draft of this work planned to use. Preacher and Hayes recommend resampling-based tests of the indirect effect, which are preferred for the full study.

1.5. Research Gap

Three gaps follow from this review. First, the CCC–profitability relationship is well established for samples in Belgium, Spain and other countries, but evidence for listed Indian distributors using recent annual data is thin. Second, studies typically report the association for the pooled sample, which mixes differences between firms with changes within firms over time; a within-firm design isolates the latter. Third, the SCF literature describes instruments and adoption processes, but no study that this review could verify measures SCF adoption among Indian distributors from annual-report disclosures and links it to the CCC–ROA relationship. This paper addresses the first two gaps at pilot scale and specifies how to address the third.

Conceptual Framework

The framework in Figure 1 treats the cash conversion cycle as the channel through which days sales outstanding, inventory storage period and accounts payable period influence return on assets. Shorter DSO and DIO shorten the cycle, while longer DPO also shortens it because supplier credit funds part of the operating cycle. A shorter cycle reduces the capital tied up per rupee of sales, which should raise ROA. Inventory storage periods are typically under direct management control, while accounts payable periods depend on supplier terms (Klapper et al., 2012), so the three components may relate differently to ROA.

SCF adoption is shown in Figure 1 with a dashed outline. It could influence how a firm achieves a given CCC, and so possibly moderate or mediate the CCC–ROA relationship, but it is not part of the model tested here. This study tests one hypothesis:

H1: Within a firm, a shorter cash conversion cycle is associated with higher return on assets.

No directional hypotheses are set for the individual components. Their decomposition in Section 5.5 is exploratory.

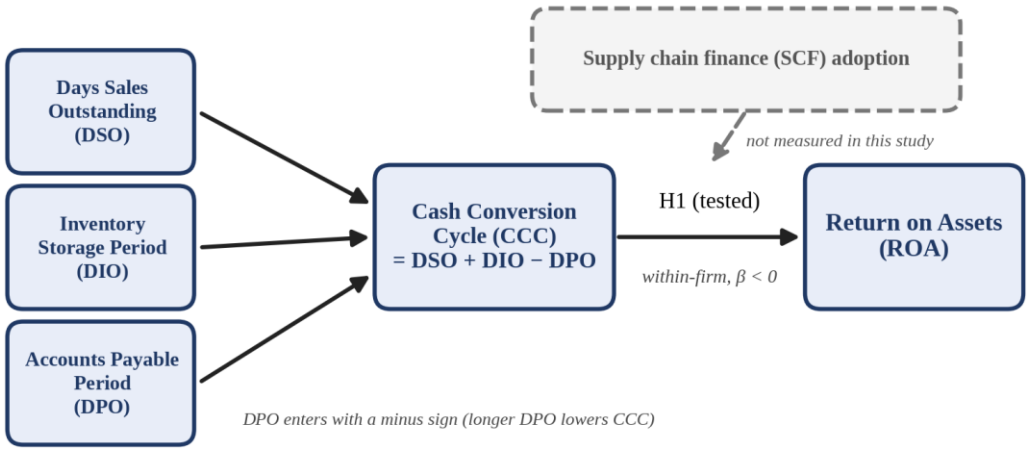


Figure 1 - Conceptual framework of the study

Note. Solid arrows show relationships examined in this paper. The dashed box marks SCF adoption, which could not be measured and is reserved for the full study.

Research Methodology

1.6. Research Design

The study uses a quantitative, secondary-data panel design at pilot scale. Two listed distributors are observed over twelve March fiscal years (FY2014–FY2025), giving 24 firm-years. The analysis is within-firm: it asks whether, in years when a firm's CCC is longer than its own average, its ROA is

lower than its own average. This removes stable differences between the firms, such as product mix and scale, which would otherwise confound a comparison of two businesses as different as an IT-products distributor and a building-products distributor.

1.7. Sample and Data Sources

Sample. Two listed distributors were retained. Redington Ltd distributes IT products and is listed on the NSE and BSE. Shankara Building Products Ltd distributes building products and was listed in March 2017. Both report on a March fiscal year. Mono Pharmacare was excluded as a candidate because its reported inventory storage periods (133–497 across the years retrieved) and days sales outstanding were implausible for its scale. Medico Remedies and Compuage Infocom could not be retrieved because the data provider's robots.txt disallowed access.

Sources. Financial figures were retrieved on 10 October 2026 from Screener.in company pages (Ratios, Profit & Loss and Balance Sheet sections), which are compiled from company filings. As an external check, Redington's FY2025 figures were compared with a press report of the company's annual report (FilingReader, 7 July 2025), which gives revenue of ₹99,562 Cr and profit of ₹1,340 Cr excluding a gain from the Paynet divestment. Screener's FY2025 revenue for Redington (₹99,334 Cr) is within 0.3% of the reported figure. Shankara's listing date was confirmed from the Chittorgarh IPO record.

Data verification. The retrieval tool did not return every table row with its label, so several rows were identified by arithmetic reconciliation: total assets, sales and net profit were matched by checking them against each other (for example, sales minus expenses equals operating profit). The CCC recomputed from the retrieved day counts matches the CCC reported by the source to within one day in every year, which supports this matching. The annual reports themselves were not accessed directly.

1.8. Variable Measurement

The definitions follow the standard formulation: DIO = (Average Inventory / Cost of Goods Sold) × 365; DSO = (Average Receivables / Net Sales) × 365; DPO = (Average Payables / Cost of Goods Sold) × 365; and CCC = DSO + DIO − DPO. Rupee balances for inventory, receivables and payables were not retrieved, so the study uses the day counts as printed by the source and recomputes CCC from them. The source's day-count basis (sales or COGS) could not be confirmed from the pages retrieved, so the day counts are not strictly comparable with the COGS-based definitions above. Because the same source and basis apply to both firms in every year, within-firm comparisons are less exposed to this issue than comparisons across studies.

Profitability is measured as return on assets: ROA = Net Profit / Year-end Total Assets × 100. Year-end rather than average assets are used because only year-end balances were retrieved. SCF adoption is not measured.

1.9. Data Analysis

Analysis proceeds in five steps. (1) Descriptive statistics by firm, including means for each component, the CCC range, and mean CCC in FY2014–FY2019 and FY2020–FY2025. (2) The Pearson correlation and OLS slope of ROA on CCC within each firm. (3) A pooled firm-fixed-effects regression, estimated by removing each firm's mean from both variables, which gives the common within-firm slope of ROA on CCC. (4) An exploratory fixed-effects regression of ROA on DSO, DIO and DPO entered together. (5) A sensitivity check that removes the one-off Paynet divestment gain from Redington's FY2025 profit. The significance threshold is $\alpha = .05$. Reported p-values assume independent observations and are therefore optimistic (Section 8).

Data Analysis & Results

1.10. Sample Characteristics

The final sample comprises two distributors observed for twelve years each (24 firm-years). Redington Ltd (IT products) averaged ₹55,276 Cr in annual sales; Shankara Building Products Ltd (building products) averaged ₹2,916 Cr. Shankara was listed in March 2017; both firms report consolidated March-year-end figures for all twelve fiscal years.

1.11. Descriptive Results

Table 1 shows that Redington's cycle is shorter and more stable, with a mean CCC of 34.2 days against 54.8 for Shankara, and a range of 14–50 days against 37–74. Shankara's longer cycle is driven mainly by inventory (mean DIO of 52.5 days against 30.3), since days sales outstanding (52.1 and 51.4) and accounts payable periods (48.0 and 49.0) are very similar across the two firms. Mean ROA is higher for Redington (5.09% against 4.20%).

Table 1 - Descriptive statistics, FY2014–FY2025 (12 years per firm)

Firm	Mean sales (₹ Cr)	DSO	DIO	DPO	CCC	CCC range	Mean ROA (%)
Redington Ltd	55,276	52.1	30.3	48.0	34.2	14–50	5.09
Shankara Building Products	2,916	51.4	52.5	49.0	54.8	37–74	4.20

Note. Source: Screener.in. Day counts are as printed by the source; ROA is computed from net profit and total assets. Sales is the average across years. Redington's mean ROA includes the FY2025 divestment gain (see Section 5.6).

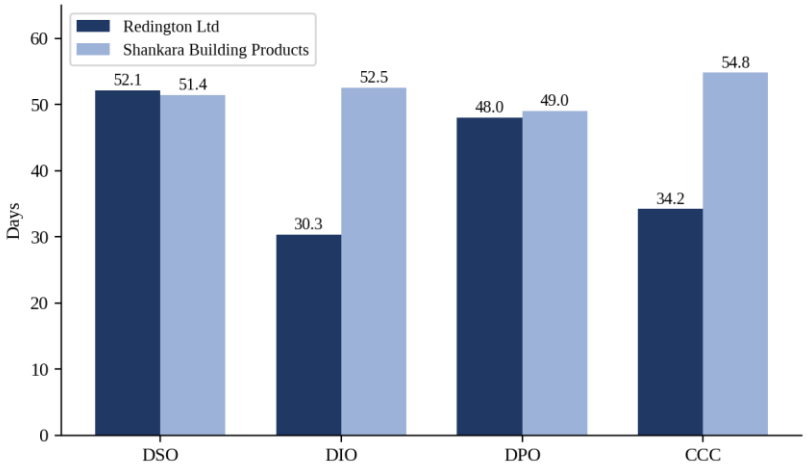


Figure 2 - Mean working capital days by firm, FY2014–FY2025

Note. Based on the values in Table 1. CCC = DSO + DIO − DPO; the reported mean CCC differs from the arithmetic combination of the three printed means by 0.1–0.2 days, which reflects rounding and the source's own calculation.

The gap in mean CCC between the firms can be broken into its components (Table 2). The inventory difference of 22.2 days is slightly larger than the total gap of 20.6 days, with days sales outstanding and accounts payable periods making small offsetting contributions. In this sample, therefore, the difference in cycle length between the two distributors is almost entirely a difference in inventory holding.

Table 2 - Decomposition of the CCC gap between Shankara and Redington

Component	Gap (days)	Effect on CCC gap (days)	Share of gap (%)
Inventory Storage Period (DIO)	+22.2	+22.2	107.8
Days Sales Outstanding (DSO)	−0.7	−0.7	−3.4
Accounts Payable Period (DPO)	+1.0	−1.0	−4.9
Rounding residual	—	+0.1	0.5
Total CCC gap (54.8 − 34.2)	—	+20.6	100.0

Note. Gap = Shankara minus Redington, using the means in Table 1. A longer DPO lowers CCC, so its effect carries the opposite sign to its gap. Shares are calculated on the total gap of 20.6 days and can exceed 100% when other components offset the main one.

Both firms shortened their cycles over time, but by different amounts (Figure 3). Redington's mean CCC fell from 41.0 days in FY2014–FY2019 to 27.5 days in FY2020–FY2025, a fall of 13.5 days, while Shankara's fell from 57.2 to 52.3 days, a fall of 4.9 days. These are descriptive comparisons of two firms and are not tested.

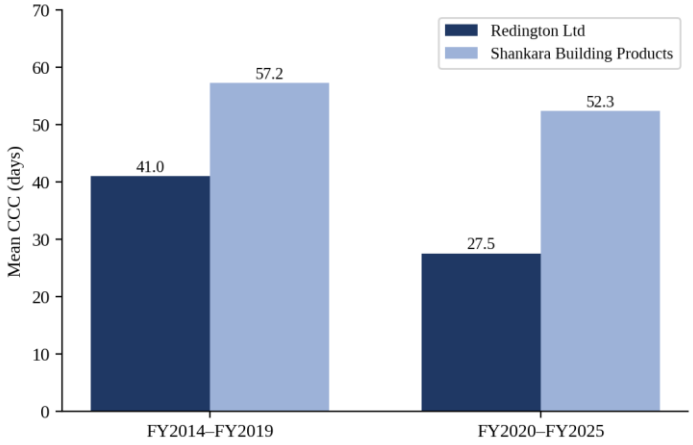


Figure 3 - Mean CCC by sub-period and firm

Note. Means of the annual CCC values for the six fiscal years in each sub-period.

1.12. Within-Firm Association between CCC and ROA

Table 3 reports the within-firm correlation and slope. In both firms, years with a longer CCC are years with a lower ROA. The correlation is −0.41 for Redington and −0.54 for Shankara, and the slopes are −0.040 and −0.059 percentage points of ROA per CCC day. The individual correlations are not

significant at the 5% level (p = .184 and .068), which is unsurprising with twelve observations each, and the p-values are optimistic because annual observations of one firm are serially correlated.

Table 3 - Within-firm correlation and slope of ROA on CCC (n = 12 per firm)

Firm	Pearson r	p-value	Slope (pp ROA per CCC day)	SE of slope	Sensitivity: r excluding FY2025 gain
Redington	−0.41	.184	−0.040	0.028	−0.48
Shankara	−0.54	.068	−0.059	0.029	—

Note. Slopes are OLS estimates within each firm. Per-firm p-values assume independent years and are optimistic. pp = percentage points. The sensitivity column applies only to Redington; see Section 5.6.

1.13. Pooled Firm-Fixed-Effects Estimate

Pooling both firms and removing each firm's mean gives a slope of −0.051 percentage points of ROA per CCC day (SE 0.020; t = −2.58; p = .018; 21 residual degrees of freedom). The approximate 95% confidence interval, computed from the reported estimate and standard error, runs from about −0.093 to −0.009. Taken at face value, a cycle that is 10 days shorter is associated with about half a percentage point higher ROA, which is roughly a tenth of the mean ROA of either firm. This interpretation requires caution: the standard error assumes independent observations, the estimate is driven by two firms, and common shocks, such as those of FY2021 and FY2022, affected both firms in the same years.

1.14. Exploratory Decomposition

Table 4 enters the three components together in a fixed-effects regression. Inventory storage periods show the clearest association: a day of extra inventory goes with 0.070 percentage points lower ROA (p = .035). Accounts payable periods are positively associated with ROA (+0.057, p = .028), meaning that longer supplier credit goes with higher ROA, which is the sign implied by CCC. Days sales outstanding shows no association (+0.040, p = .466). Figure 4 shows the same pattern: the intervals for DIO and DPO lie on opposite sides of zero, while the interval for DSO spans it.

Table 4 - Firm-fixed-effects regression of ROA on the three CCC components (exploratory)

Component (days)	Coefficient (pp ROA per day)	SE	p-value
Days Sales Outstanding (DSO)	+0.040	0.054	.466
Inventory Storage Period (DIO)	−0.070	0.031	.035
Accounts Payable Period (DPO)	+0.057	0.024	.028

Note. The three components are entered together, so they are not independent in their effect on CCC (CCC = DSO + DIO − DPO). A positive DPO coefficient means that longer payables are associated with higher ROA. Exploratory: two firms and 24 observations.

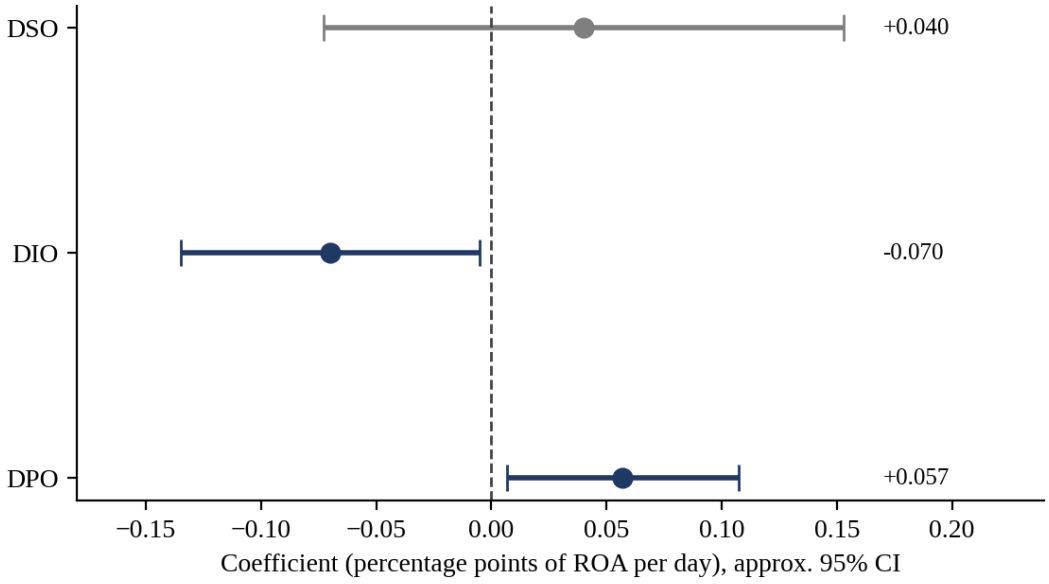


Figure 4 - Component coefficients with approximate 95% confidence intervals

Note. Based on Table 4. Intervals are approximated as the coefficient ± 2.093 × SE (19 residual degrees of freedom) and assume independent observations. The dashed line marks zero.

This pattern fits the view that inventory and supplier terms are the main levers, but with two firms and 24 observations the decomposition cannot be treated as more than a pointer for the larger study.

1.15. Sensitivity to a One-Off Gain

Redington's reported FY2025 net profit of ₹1,821 Cr includes a gain from the Paynet divestment. Excluding the gain (profit of ₹1,340 Cr) lowers FY2025 ROA from 6.60% to 4.86%. The within-firm correlation for Redington then becomes −0.48 instead of −0.41, and the direction of the result is unchanged. Shankara's figures are not adjusted because no one-off items were identified in the data retrieved. This check also shows that the comparison of mean ROA between the firms is sensitive to a single item, so ROA should be read alongside its components.

1.16. Hypothesis Summary

Table 5 - Summary of hypothesis testing

No.	Hypothesis	Evidence	Outcome
H1	Shorter CCC is associated with higher ROA	Within-firm r = −0.41 (Redington) and −0.54 (Shankara); pooled FE slope −0.051 pp per day, p = .018	Directionally supported; not established (n = 2 firms)

Note. Evidence is drawn from Sections 5.3 to 5.6; see Section 8 for the limitations on inference.

Discussion

The direction of the CCC–ROA association is consistent with Shin and Soenen (1998) and with the wider working-capital literature. In both firms, and in the pooled estimate, longer cycles coincide with lower ROA, and the result survives removal of Redington's one-off gain. Two points stand out.

First, Redington's shorter and more stable cycle coincides with a higher ROA, but the comparison between the firms is not clean: the two operate in different product markets, differ greatly in scale, and Redington's average ROA is sensitive to one divestment gain. The within-firm estimates are the more informative results because they compare each firm with itself.

Second, the within-firm evidence points to inventory storage period as the component most associated with profitability, and Table 2 shows that inventory accounts for virtually the whole difference in cycle length between the firms. This suggests that inventory management is the first lever for a distributor. The positive coefficient on accounts payable period is consistent with the idea that supplier credit supports returns, although Deloof (2003) reports the opposite sign in Belgian firms and attributes it to weaker firms paying suppliers later. Reverse causation is therefore plausible in the present data too: more profitable firms may be better placed to finance stock and negotiate terms.

What the data cannot show is whether SCF changes these relationships. An earlier draft of this study reported that SCF reduced CCC by about 22 days and raised ROA by about 15%. Those figures could not be traced to any source and have been removed; nothing in the present data supports or contradicts them.

Conclusion

Among two listed Indian distributors over twelve years, a shorter cash conversion cycle is associated with higher return on assets, and the association is strongest for inventory storage period. The pooled within-firm slope of −0.051 percentage points of ROA per CCC day is statistically distinguishable from zero under the stated assumptions, and the direction is unchanged when a one-off gain is removed. The evidence is consistent with H1 but too limited to establish it. The results motivate the larger study in Section 9, which would test H1 on at least 12–15 distributors and would also address SCF adoption, which this pilot could not measure.

Limitations

- **Sample size:** two firms cannot support inference about distributors in general. A credible study needs at least 12–15 listed distributors observed over at least five years, which gives roughly 60–90 firm-years.
- **Data source:** day counts come from an aggregator and were not checked line by line against annual reports. The COGS-based definitions in Section 4.3 require rupee figures for inventory, receivables, payables and cost of goods sold from each annual report. This is the most important gap to close before publication.
- **Serial correlation:** annual observations of one firm are not independent. The reported standard errors and p-values are therefore optimistic. Inference in the full study should use standard errors clustered by firm, or Driscoll–Kraay standard errors, and report the number of firms.
- **Common shocks:** events such as those of FY2021 and FY2022 affected both firms in the same years, so the pooled estimate partly reflects shared conditions rather than independent evidence.
- **Causality:** the association is descriptive. Reverse causation is plausible, since more profitable firms may have more room to finance inventory and offer longer credit.
- **Scope of SCF:** SCF adoption was not measured, so the paper provides no evidence on SCF. Adoption could be measured from annual-report notes by searching for disclosure of supply chain finance, reverse factoring, vendor financing or TReDS participation; this content analysis has not been done.
- **Measurement:** ROA uses year-end rather than average assets, and the day-count basis of the source could not be confirmed. The FY2025 divestment gain was adjusted for Redington only.

Recommendations

Because the evidence rests on two firms, the recommendations for practice are tentative and the main recommendation is for further research.

For distributor firms: (1) Track CCC and its three components every period, not only profitability; (2) Treat inventory storage period as the first lever, since inventory explained almost all of the difference in cycle length and had the clearest association with ROA here; (3) Assess ROA with one-off gains and losses separated, as the Redington results show how a single item can change a comparison.

For lenders and analysts: (1) When comparing distributors, benchmark on CCC components and not on the headline cycle alone; (2) Report profitability measures with and without exceptional items.

For regulators and data providers: (1) Encourage clear disclosure in the notes to accounts of supply chain finance, reverse factoring and TReDS participation, which would make SCF adoption measurable for research; (2) Document the day-count basis of published working-capital ratios.

For researchers: The full study should follow the design in Table 6, which is specified so that another researcher could reproduce it.

Table 6 - Proposed design for the full study

Element	Specification
Sampling frame	Listed companies on the NSE whose primary business is distribution or wholesale trade, identified from annual-report business descriptions and industry classification. The frame is enumerated before selection and the exclusion list is recorded.
Inclusion criteria	Consolidated statements for at least five consecutive March year-ends (for example FY2020–FY2025); revenue above ₹500 Cr in each year; exclude banks, NBFCs and firms with a change of fiscal year or a merger in the window.
Data extraction	Sales, COGS, inventory, trade receivables, trade payables, total assets and net profit from audited consolidated statements. DIO, DSO, DPO and CCC computed with average balances; ROA on year-end total assets. Two coders extract independently; discrepancies above 1% resolved against the source; 10% of firm-years re-checked.
Exceptional items	One-off gains and losses recorded separately; results reported with and without them.
SCF measure	Binary indicator of disclosure of SCF programmes, reverse factoring, vendor finance or TReDS participation, plus the amount of payables financed where disclosed. Coded by two readers from the notes to accounts with an agreement check.
Models	(a) Firm and year fixed-effects regression of ROA on CCC; (b) the same with the three components entered separately; (c) mediation of the CCC–ROA relationship by SCF adoption using a bootstrap indirect-effect test, not the Baron and Kenny steps alone; (d) robustness to ROCE and operating cash-flow margin.
Inference	Standard errors clustered by firm, with Driscoll–Kraay errors as a check; results reported with the number of firms and firm-years.

Note. This design replaces the earlier plan that depended on figures that could not be traced to a source.

REFERENCES

- Altaf, N., & Shah, F. A. (2018). How does working capital management affect the profitability of Indian companies? *Journal of Advances in Management Research, 15*(3), 347–366. https://doi.org/10.1108/JAMR-06-2017-0076
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173
- Chittorgarh. (n.d.). *Shankara Buildpro IPO subscription record*. Retrieved October 10, 2026, from https://www.chittorgarh.com/ipo_subscription/shankara-buildpro-ipo/635/
- 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
- Driscoll, J. C., & Kraay, A. C. (1998). Consistent covariance matrix estimation with spatially dependent panel data. *The Review of Economics and Statistics, 80*(4), 549–560. https://doi.org/10.1162/003465398557825
- FilingReader. (2025, July 7). *Redington's FY25 annual report: Revenue growth 11%, profit rise 10%*. https://filingreader.com/news-wire/mumbai/2025-07-07/redingtons-fy25-annual-report-revenue-growth-11-profit-rise-10
- García-Teruel, P. J., & Martínez-Solano, P. (2007). Effects of working capital management on SME profitability. *International Journal of Managerial Finance, 3*(2), 164–177. https://doi.org/10.1108/17439130710738718

- Gelsomino, L. M., Mangiaracina, R., Perego, A., & Tumino, A. (2016). Supply chain finance: A literature review. *International Journal of Physical Distribution & Logistics Management, 46*(4), 348–366. https://doi.org/10.1108/IJPDLM-08-2014-0174
- Gitman, L. J., & Zutter, C. J. (2015). *Principles of managerial finance* (14th ed.). Pearson.
- Klapper, L., Laeven, L., & Rajan, R. (2012). Trade credit contracts. *The Review of Financial Studies, 25*(3), 838–867. https://doi.org/10.1093/rfs/hhr122
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879
- Screener.in. (n.d.). *Redington Ltd (consolidated) financial data*. Retrieved October 10, 2026, from https://www.screener.in/company/REDINGTON/consolidated/
- Screener.in. (n.d.). *Shankara Building Products Ltd (consolidated) financial data*. Retrieved October 10, 2026, from https://www.screener.in/company/SHANKARA/consolidated/
- 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
- Shin, H.-H., & Soenen, L. (1998). Efficiency of working capital management and corporate profitability. *Financial Practice and Education, 8*(2), 37–45.
- Wuttke, D. A., Blome, C., Foerstl, K., & Henke, M. (2013). Managing the innovation adoption of supply chain finance—Empirical evidence from six European case studies. *Journal of Business Logistics, 34*(2), 148–166. https://doi.org/10.1111/jbl.12016