Testing the risk-taking hypothesis on the cash conversion cycle anomaly

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Abstract

This study aims to explore whether risk-taking in working capital management can explain the cash conversion cycle (CCC) anomaly, as documented in recent literature. By examining a dataset comprising non-financial US firms spanning from 1986 to 2022, this study finds that firms with lower CCC exhibit higher levels of operational and stock return risks. These firms also reported to allocate a more significant portion of their resources toward capital expenditures and/or research and development (R&D) expenses. These findings suggest that the significantly positive abnormal returns of firms with low CCC, as documented in the CCC anomaly, can be attributed to the undertaking of higher risks. Further analysis on the components of the CCC shows that firms with low CCC manage their inventory and accounts payable days policies to expose them to higher levels of firm risk.

Keyword: risk-taking; cash conversion cycle; inventory days; accounts receivable days; accounts payable days; working capital

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1. Introduction

Recent empirical evidence has drawn attention to the interesting phenomenon of the cash conversion cycle (CCC) anomaly in US firms. This anomaly, as highlighted in studies by Wang (2019) and Lin and Lin (2021), reveals a connection between a firm's CCC and its future stock returns. Firms with low CCC are documented to yield higher-than-average stock returns, while those with high CCC exhibit the opposite trend. Wang (2019) reports that an arbitrage trading strategy of taking a long position in firms within the lowest CCC decile and short-selling those in the highest CCC decile results in an annual abnormal stock return of 5% to 7%, which is robust to various risk-factor models and different measures of CCC. Interestingly, the CCC anomaly is not confined to the US markets alone but is also discernible in segmented international markets, albeit at a more moderate level (Chen et al., 2022).[1]

Wang (2019) and Chen et al. (2021) examine the funding risk and the mispricing hypotheses as an attempt to explain the source of the CCC anomaly. Both studies find insignificant and limited evidence that this anomaly stems from funding risk, but they both concur that their results are more consistent with the mispricing hypothesis, suggesting that investors may not fully grasp the implications of CCC on a company's future earnings and are, therefore, taken by surprise when firms with low (high) CCC demonstrate higher (lower) earnings than expected. Their conclusion is based on the evidence that low (high) CCC firms have positive (negative) abnormal returns on the firms' earnings announcements. Both studies also report that the stock mispricing tends to occur more prominently in stocks with higher limitations to arbitrage.

Wang's (2019) and Chen et al.'s (2021) argument that the mispricing hypothesis is the root cause of the CCC anomaly appears to challenge the efficient market hypothesis, which presupposes that all relevant information is already priced into the market. This is particularly noteworthy given the ample evidence documented in the literature, going back at least since 1996, of the significant relationships between CCC and firm profitability and stock returns (see

[1] Chen et al. (2022) also document the presence of the CCC anomaly in equally weighted portfolios but not in value weighted portfolios of stocks.

among others, Jose et al., 1996; Shin and Soenen, 1998; Deloof, 2003; Zeidan and Shapir, 2017; Berg et al. 2024). These studies find that a shorter (longer) CCC has consistently been linked to higher (lower) firm profitability and stock returns. Therefore, the premise that stock investors are not aware of the effects of CCC on a firm's profitability and stock returns is debatable. Up to date, however, there has been no other study providing an alternative explanation to the CCC anomaly. Thus, the cause of the CCC anomaly has largely remained unexplored. Apart from the funding risk and the mispricing hypotheses, Wang (2019) and Chen et al. (2022) did not delve into other potential explanations for this anomaly. Hence, this study attempts to present an alternative explanation to the source of this stock return anomaly.

This study posits that the CCC anomaly aligns with the risk-taking in working capital management for several reasons. First, previous research has established that younger CEOs tend to engage in more aggressive working capital management by investing less in working capital (Adhikari et al., 2021; Burney et al., 2021). Second, younger CEOs are often perceived as less risk-averse than their older counterparts (Barker and Muller, 2002; Serfling, 2014). Therefore, it is plausible that firms adopting an aggressive approach to working capital management, which is risky, tend to have lower CCC. Third, risk-taking in various corporate events or activities has been associated with higher firm stock returns (e.g., Cao and Wei, 2005; Massa and Patgiri, 2009; Chen and Ma, 2011; Cohen et al., 2012; Yim, 2013). Consequently, according to the risk-taking hypothesis, the CCC anomaly may arise from the fact that low CCC firms embrace higher operational risk through their working capital practices. This hypothesis, if validated, raises another empirical question: What motivates firms to assume greater risk by reducing their investments in working capital? Until now, however, there is currently no formal study that has examined the link between firm risk-taking and the cash conversion cycle, let alone the mechanisms that underlie this risk-taking behaviour. This study aims to address these gaps in the literature.

By analysing a dataset of non-financial US firms from 1986 to 2022, this study begins by examining the relationships between CCC and proxies for firm risk-taking, such as the standard deviation of EBITDA and the standard deviation of stock returns (John et al., 2008; Coles et al., 2006). The test results reveal a negative relation between CCC and these risk-taking indicators, suggesting that low CCC firms, or firms that adopt a more aggressive approach to working capital management compared to that of high CCC firms, exhibit higher risk. A closer examination on the policy components of CCC (inventory days, accounts receivable days, and accounts payable days policies) suggests that firms utilize a combination of inventory and accounts payable days policies to facilitate higher risk-taking (Kieschnick et al., 2013 and Wu et al., 2019). This study then investigates how aggressive working capital management, or adopting a low CCC policy, relates to higher risk-taking. In addressing this question, this study examines the relation between CCC and several proxies for the mechanisms for risk-taking such as cumulative capital expenditures (capex) and research and development (R&D) expenses (drawing from Guay, 1999; Ryan and Wiggins, 2002; Coles et al., 2006; Khieu and Pyles, 2016). The results show that CCC and its policy components have significantly negative relationships with these risk-taking mechanisms.

In summary, the findings of this study suggest that firms that employ aggressive working capital management (low CCC) exhibit higher levels of risk-taking, as evidenced by their substantial investments in capital expenditures and R&D expenses. Given that prior research has consistently linked greater risk-taking with higher stock returns, these findings offer a plausible explanation for the CCC anomaly: firms with low (high) CCC achieve higher (lower) abnormal returns because they assume more (less) risk. The findings of this study, therefore, provide two valuable contributions to the literature and practical implications to stock investors and firm managers. First, this study provides evidence that low CCC firms exhibit significantly higher operating and stock return risks, suggesting that the positive and significant stock abnormal returns of low CCC firms associated with the CCC anomaly, can be attributed to the higher risks taken in managing the firms' working capital. This finding has significant implication to investors attempting to capitalize on the CCC anomaly. Second, this study provides empirical evidence that working capital policies have a significant control on the operating and stock return risks of a company. Thus, the results of this study suggest that firm managers can benefit from taking higher risk by managing their firms' working capital policies and investing the cash saved in long term investments that have positive impact on their firm value.

The remainder of this study is structured as follows. Section 2 discusses the literature leading to the development of the risk-taking hypotheses. Section 3 provides the methodology and the description of the sample. Section 4 provides the empirical results and Section 5 concludes.

2. Theoretical underpinning and hypothesis

The cash conversion cycle (CCC) of a company is the company's working capital policy that represents the number of days it takes for external financing or internal cash utilization for its operational needs (Leach and Melicher, 2017; Berk and DeMarzo, 2017). CCC consists of inventory days policy, accounts receivables policy and accounts payables policy, and together they constitute the working capital policies of a company. Firms with longer CCC necessitate greater investments in working capital. While allocating more resources to working capital can help secure sales, it doesn't necessarily indicate prudent working capital management. For instance, the literature documents that the incremental value of cash invested in net operating working capital is reported to be lower than when held in a cash account, and that excessive investment in working capital is linked to reduced firm value (Kieschnick et al., 2013; Aktas et al., 2015).[2] Similarly, recent evidence documented by Berg et al. (2024) suggests that firms with low CCC have lower cost stickiness compared to that of firms with higher CCC. They find that firms with low CCC not only are more adaptable to a decline in their sales performance, but also have a lower cost adjustment when such a situation occurs. As CCC is the sum of numbers of inventory days and account receivables days minus accounts payable days, a firm can reduce its CCC by managing the components of the working capital policy, either by diminishing inventory and/or accounts receivables days, extending accounts payable days, or implementing a combination of these working capital strategies.

Reducing CCC, however, often involves higher risk.[3] For example, reducing inventory days can lead to stock-outs that can negatively impact sales. Shortening accounts receivables days might mean offering less favourable terms or no trade credit to customers with lower credit ratings. This credit policy can potentially lead to customer loss. Similarly, extending accounts payable days may involve forgoing supplier-offered trade discounts, which can be costly, or, if payment is deferred beyond the trade terms, the firm may lose trade credits from its suppliers. Consequently, lowering CCC can increase the operational risk of a firm.

Nevertheless, a lower CCC also means less cash tied up in working capital. Firms can redirect the freed-up cash flows from reduced inventory and/or accounts receivables days

[2] The literature suggests that firms may over/underinvest in net working capital (Aktas et al. 2015; Zeidan and Shapir, 2017). This study, however, does not examine this issue.

[3] Firms can have low CCC due to, for example, employing Just-In-Time inventories, offering higher trade discounts to customers or paying accounts payables longer than trade terms due to financial constraints. While these factors can be a plausible explanation to low CCC, they are not consistent with the risk-taking hypothesis examined in this study.

and/or extended accounts payable days toward positive net present value projects. Previous studies suggest that firms may reduce their working capital to internally fund long-term investments. For example, Fazzari and Petersen (1993) find that firms in need of cash for capital expenditures can internally fund these expenses by reducing their investment in working capital (defined as current assets minus current liabilities), and Bates et al. (2009) document that firms prefer to internally finance their research and development (R&D) expenses by reducing net working capital rather than seeking external capital. This preference arises because R&D investment opportunities typically involve lower asset tangibility, making external financing relatively costlier compared to internally generated financing sourced from reduced working capital. Since investments in capital expenditures and R&D are generally expected to enhance firm value, this finding helps explain why a low CCC is associated with higher firm profitability and increased firm value (Shin and Soenen, 1998; Jalal and Khaksari, 2020). Nonetheless, investments in capital expenditures and R&D also come with added risk, thus considered as risk-taking mechanisms.

Given that increased risk-taking tends to lead to greater operational and stock return volatilities for firms (John et al., 2008; Coles et al., 2006), and considering that R&D expenses and capital expenditures are often viewed as proxies for risk-taking mechanisms (Coles et al., 2006; Guay, 1999; Ryan and Wiggins, 2002), the higher risk taken by firms employing aggressive working capital management is likely to manifest in increased operational and stock return volatilities, as well as a greater commitment to capital expenditures and R&D expenses. Therefore, this study postulates the following hypotheses:

H_1: There is a negative relationship between CCC and risk-taking. Firms with low (high) CCC exhibit higher (lower) operating and stock return risks.

H_2: CCC is negatively related to risk-taking mechanisms. Firms with low (high) CCC take higher (lower) risk by investing more (less) in capital expenditures and/or R&D expenses.

3. Research Design

3.1. Methodology

Wang (2019) documents that the cash conversion cycle (CCC) can effectively predict abnormal stock returns for a period of up to three years following a CCC portfolio construction, indicating that firms may engage in risk-taking during this timeframe. This study assesses corporate risk-taking using two measures: (1) the standard deviation of EBITDA from year t+1 to t+3, and (2) the standard deviation of annual stock returns from year t+1 to t+3. It is worth noting that CCC is known to exhibit variations across different industries (Wang, 2019; Berk and DeMarzo, 2017; Hawawini et al., 1996). Therefore, this study employs the following panel data regression model controlling for industry and year effects:

$$Risk - Taking_{i,t+1\ to\ t+3} = \alpha_0 + CCC_{i,t} + CONTROL_{i,t} + Industry\ Effect + Year\ Effect + \varepsilon_{i,t} \quad (1)$$

where *Risk-Taking* is either the standard deviation of EBITDA (*STDEBITDA*) or standard deviation of annual stock returns (*STDRET*). Following the literature (Berg et al., 2024; Tong and Wei, 2011; Raddatz, 2006; Deloof, 2003; Shin and Soenen, 1998; Jose et al., 1996; Berk and Demarzo, 2017), cash conversion cycle (*CCC*) is measured as inventories x 365/Cost of goods sold + account receivables x 365/sales – account payables x 365/cost of goods sold. Thus, *CCC* is inventory days (*INVDAYS*) plus accounts receivable days (*ARDAYS*) minus accounts payable days (*APDAYS*). Following prior studies on risk-taking, control variables are *SIZE* which is natural logarithm of market capital, *MB* which is market to book ratio, *GROWTH* which is the change in sales scaled by sales at t-1, *LEVERAGE* which is debt to equity ratio, *ROA* which is return on assets, *CAPEX* which is capital expenditures, *TANGIBILITY* which is fixed assets scaled by total assets, *CASHFLOW* which is operating cashflows scaled by total assets and *AGE* which is the natural logarithm of 1 + number of firm years from the date of incorporation.

To assess the mechanism used for implementing corporate risk-taking, this study conducts the following regression analysis:

$$Risk - Taking\ Mechanism_{i,t+1\ to\ t+3} = \alpha_0 + CCC_{i,t} + CONTROL_{i,t} + Industry\ Effect + Year\ Effect + \varepsilon_{i,t} \quad (2)$$

where Risk-*Taking Mechanism* is either the cumulative capital expenditures (*CUMCAPEX*) or cumulative R&D expenses (*CUMRND*). Cumulative capital expenditures (R&D expenses) are measured as the sum of capital expenditures (R&D expenses) scaled by total assets, from years t+1 to t+3.

3.2. Data

Data for this study are obtained from the Refinitiv database. All firms falling under the financial industry category (SIC codes 6000-6999) are excluded from the sample. To ensure the accurate measurement of the cash conversion cycle (CCC), it was essential for this study to have complete data for all components of CCC. Consequently, observations with missing component(s) were excluded from the analysis. The database provides access to the necessary variables for the analysis, spanning from 1986 to 2022. To mitigate the influence of outliers, all variables are winsorised at the 1^{st} and 99^{th} percentiles.

Table 1 presents the descriptive statistics for the variables used in the analysis. On average, firms require 67 days of short-term financing for their day-to-day operations. This figure exceeds the 42-day average reported by Wang (2019), likely due to the impact of the COVID-19 pandemic. The mean values for inventory days, accounts receivable days, and accounts payable days are 84, 61, and 86 days, respectively. The number of accounts payable days suggests that, on average, firms in the sample do not settle their trade debts within 30 days, but only around 25 percent of the sample (at the 25th percentile) take advantage of trade discounts offered by their suppliers. Cumulative capital expenditures and research and development (R&D) expenses, on average, represent 17 percent and 30 percent of total assets, respectively.

Insert Table 1 Here

Table 2 provides an overview of the correlations between the variables employed in the analysis. These correlations shed light on the relationships between the cash conversion cycle (*CCC*) and its components. Notably, *CCC* is found to be primarily correlated with inventory days policy, followed by cash collection policy, and, to a lesser degree, accounts payable days policy. The negative correlation observed between *CCC* and the risk-taking proxies (*STDEBITDA* and *STDRET*) aligns with the notion that a shorter cash conversion cycle is linked to increased risk-taking. The control variables exhibit relatively low correlations among themselves, suggesting that multicollinearity is unlikely to be a concern in the regression analysis.

Insert Table 2 Here

4. Empirical results

4.1. CCC and firm risk-taking

This subsection presents the empirical findings regarding the relationship between the cash conversion cycle (CCC) and risk-taking, obtained by running Regression (1). The test results are reported in Table 3. The coefficients on *CCC* concerning both operating risk (*STDEBITDA*) and stock return risk (*STDRET*) are negative and statistically significant at the 1 percent level. This result strongly supports the notion that a lower (higher) CCC is indicative of higher (lower) firm risk-taking, aligning with the risk-taking hypothesis. In other words, low CCC firms are riskier than high CCC firms. The higher 3-year-future operating and stock return risks of low CCC firms, according to the risk-taking hypothesis, explain the positive abnormal stock returns of low CCC firms 3 years after the portfolio constructions as documented in the CCC anomaly (Wang, 2019). Additionally, smaller firm size (SIZE) and operating cash flows (CASHFLOWS) are observed to be associated with heightened firm risk.

Insert Table 3 Here

The cash conversion cycle (CCC) comprises three components: inventory days, accounts receivable days, and accounts payable days. Table 4 presents the results of the regression tests when *CCC* is disassembled into its parts. Columns 1 to 4 in Panel A provide insights into the regressions of individual CCC components, separately analysed in relation to firm risk-taking. The result in column 1 shows that shorter (longer) inventory days are negatively (positively) linked to risk-taking. However, when it comes to cash collection policy, it exhibits a weakly positive association with risk-taking (Column 2). One possible explanation for this positive association is that extending trade credit to customers with lower credit ratings could contribute to an increase in firm risk, and vice versa. The coefficient on *CASHCYCLE* in Column 3, which represents the combined effect of inventory and accounts receivable days, is negative but not statistically significant. This may be attributed to the offsetting influence of inventory and accounts receivable days policies on risk-taking. Accounts payable days policy, all else being equal, positively contributes to firm risk-taking, as indicated in Column 4. This means deferring (or expediting) payments to suppliers increases (or decreases) risk. Prior research, however, suggests that working capital policies are interconnected and should not be effectively examined in isolation (Schiff and Lieber, 1974; Sartoris and Hill, 1983; Kim and Chung, 1990; Kieschnick et al., 2013). For instance, inventory management can be influenced by trade credit terms from suppliers, which are, in turn, affected by the cash collected from customers. Therefore, Column 5 presents the results of the regression test where all three components of CCC are simultaneously included in the same regression. The findings consistently suggest that lower inventory and longer accounts payable policies are associated with higher risk-taking. Similar results are documented in Panel B when stock return volatility (*STDRET*) is employed as the proxy for risk-taking.

Insert Table 4 Here

4.2. CCC and the mechanism for risk-taking

Following the negative relationship between the cash conversion cycle (CCC) and firm risk-taking, this section examines the mechanisms employed by low CCC firms to take on more risk. Existing literature has established that capital expenditures and R&D expenses serve as the mechanisms through which firms take on risk (Coles et al., 2006; Khieu and Pyles, 2016; Guay, 1999; Ryan and Wiggins, 2002), signifying that these firms increase their risk by investing more in capital expenditures and/or R&D. Thus, the first proxy for the risk-taking mechanism examined is cumulative capital expenditures, scaled by total asset and the second proxy for the risk mechanism is cumulative R&D expenses scaled by total assets. Table 5 reports the results of the regression analyses pertaining to the relationships between CCC and the proxies for these risk-taking mechanisms. The coefficients on CCC in both cases are significantly negative, suggesting that low CCC firms tend to invest more in capital expenditures and/or R&D expenses. This result aligns with the notion that firms reduce their CCC to allocate resources towards fixed investments. Such investments are expected to enhance firm value and are, therefore, in line with the CCC anomaly.

Insert Table 5 Here

Table 6 presents the results of the regression analyses where the components of CCC are regressed against the mechanisms of firm risk-taking. The results in both Panels A and B mirror the findings reported in Table 5. Firms manage their working capital by reducing inventory and cash collection days, and/or extending accounts payable days to allocate resources toward their fixed investments. These results also align with the observed patterns in

Table 4, reinforcing the notion that firms manage their working capital policies to facilitate investments in long-term assets that results in higher levels of risk.

Insert Table 6 Here

4.3. Robustness tests

To test the robustness of the results regarding the relationships between CCC and firm risk-taking, as well as the mechanisms for risk-taking, this study employs firm fixed effects regressions. The results of these additional analyses are presented in Tables 7 and 8.[4] The robustness test results, as reported in both Tables 7 and 8, show that firms reduce their CCC by actively managing their inventory days to embrace higher levels of risk. These results are consistent with the results reported in previous tables and align with the risk-taking hypothesis, that firms adjust their CCC downward to accommodate the increase in risk-taking.[5]

Insert Table 7 Here

Insert Table 8 Here

Prior studies suggest that firms can also utilize leverage as a means to facilitate their risk-taking (Coles et al., 2006; Faccio et al., 2016). To examine the robustness of the association between CCC and the proxy for the mechanism for risk-taking, this study also employs three-year average of leverage ratios from year t+1 to year t+3 as an alternative proxy for risk-taking mechanism. The results, as reported in Table 9, show a negative relationship between the coefficients on CCC and future leverage, which are consistent with the results reported in Table 5.

Insert Table 9 Here

[4] For brevity, control variables are not reported but are available upon request.

[5] The R-squared within of the fixed-effect regressions reported in Tables 7 and 8 are lower than the adjusted R-squared reported in Tables 3 to 6 suggesting that the pooled regression models better explain the variation in risk-taking between firms than within firms as reported in fixed effect regressions.

5. Conclusion

This study finds that the risk-taking hypothesis aligns with the cash conversion cycle anomaly. Firms with lower cash conversion cycles (CCC) exhibit higher levels of both operating and stock return risks. Furthermore, these firms are reported to allocate a greater portion of their resources to capital expenditures and/or research and development (R&D) expenses. These results are consistent with the notion that firms optimize their working capital management by reducing investments in it, freeing up cash that is redirected into more substantial and riskier long-term projects. These investments are anticipated to create value, eventually translating into higher stock returns, thereby giving rise to the CCC anomaly.

This finding implies that the abnormal stock returns of firms with low and high CCC levels in the context of the CCC anomaly are a result of the differing levels of risk undertaken by these firms. Therefore, the abnormally positive stock returns of low CCC firms as documented in the CCC anomaly, after adjusting for higher risk taken in managing the firms' working capital policies, should be considered as normal stock returns. This finding is relevant for both investors and firm managers, shedding light on the dynamics of risk and its impact on investment and returns.

References

Adhikari, H.P., Krolikowski, M.W., Malm, J. and Sah, N.B. (2021). Working capital (mis)management – impact of executive age. *Accounting and Finance*, 61, 727-761.

Aktas, N., Croci, E. and Petmezas, D. (2015). Is working capital management value-enhancing? Evidence from firm performance and investments. *Journal of Corporate Finance*, 30, 98-113.

Barker, V. L. III. and Mueller, G. C. (2002). CEO characteristics and firm R&D spending. *Management Science*, 48, 782–801.

Bates, T.W., Kahle, K.M. and Stulz, R.M. (2009). Why do U.S. firms hold so much more cash than they used to? *Journal of Finance*, 64 (5), 1985-2021.

Berg, T., Gustafsson, E. and Wahlstrom, R.R. (2024). Cost management and working capital management: ebony and ivory in perfect harmony? *Journal of Management Control*, https://doi.org/10.1007/s00187-024-00368-3

Berk. J. and DeMarzo, P. (2020). *Corporate Finance*, 3rd ed. Pearson, Boston.

Burney, R.B., James, H.L. and Wang, H. (2021). Working capital management and CEO age. *Journal of Behavioral and Experimental Finance*, 30, 1-15.

Cao, M. and Wei, J. (2005). Stock market returns: A note on temperature anomaly. *Journal of Banking & Finance*, 29, 1559-1573.

Chen, C.H., Choy, S.K., and Tan, Y. (2022). The cash conversion cycle spread: International evidence. *Journal of Banking and Finance*, 140, 1-24.

Chen, Y.R. and Ma, Y. (2011) Revisiting the risk-taking effect of executive stock options on firm performance. *Journal of Business Research*, 64, 640-648.

Cohen, D.A., Dey, A. and Lys, T.Z. (2012). Corporate governance reform and executive incentives: Implications for investments and risk Ttking. *Contemporary Accounting Research*, 30 (4), 1296-1332.

Coles, J.L., Daniel, N.D. and Naveen, L. (2006). Managerial incentives and risk-taking. *Journal of Financial Economics*, 79, 431-468.

Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? *Journal of Business Finance & Accounting*, 30 (3), 573-587.

Faccio, M., Marchica, M.T. and Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance*, 39, 193-209.

Fazzari, S.M. and Petersen, B.C. (1993). Working capital and fixed investment: new evidence on financing constraints. *RAND Journal of Economics*, 24, 328–342.

Guay, W. (1999). The sensitivity of CEO wealth to equity risk: an analysis of the magnitude and determinants. *Journal of Financial Economics*, 53, 43–71.

Hawawini, G., Viallet, C. and Vora, A. (1996). Industry influence on corporate working capital decisions. *Sloan Management Review*, 27 (4), 15-24.

Jalal, A. and Khaksari, S. (2020). Cash cycle: A cross country analysis. *Financial Management*, 49, 635-671.

John, K., Litov, L. and Yeung, B. (2008). Corporate governance and risk-taking. *Journal of Finance*, 63, 1679-1728.

Jose, M.L., Lancaster, C. and Stevens, J.L. (1996). Corporate returns and cash conversion cycles. *Journal of Economics and Finance*, 20 (1), 33-46.

Khieu, H.D. and Pyles, M.K. (2016). The influence of a credit rating change on dividend and investment policy interactions. *Financial Review*, 51, 579-611.

Kieschnick, R., Laplante, M., Moussawi, R. (2013). Working capital management and shareholders' wealth. *Review of Finance*, 17, 1827-1852.

Kim, Y.H. and Chung, K.H. (1990). An integrated evaluation of investment in inventory and credit: A cash flow approach. *Journal of Business Finance & Accounting*, 17 (3), 381-390.

Leach, J.C. and Melicher, R.W. (2017). *Entrepreneurial Finance*, 6th ed., Cengage Learning, Boston.

Lin, Q. and Lin, X. (2021). Cash conversion cycle and aggregate stock returns. *Journal of Financial Markets*, 52, 1-27.

Massa, M. and Patgiri, R. (2009). Incentives and Mutual Fund Performance: Higher performance or just higher risk taking? *Review of Financial Studies*, 22 (5), 1777–1815.

Raddatz, C. (2006). Liquidity needs and vulnerability to financial underdevelopment. *Journal of Financial Economics,* 80, 677-722.

Ryan Jr., H. and Wiggins III, R. (2002). The interactions between R&D investment decision and compensation policy. *Financial Management*, 31, 5-29.

Sartoris, W. L. and Hill, N.C. (1983). A Generalized Cash Flow Approach to Short-Term Financial Decision. *Journal of Finance*, 38(2), 349-360.

Schiff, M. and Lieber, Z. (1974). A model for the integration of credit and inventory management. *Journal of Finance*, 29 (1), 133-140.

Serfling, M. A. (2014). CEO age and the riskiness of corporate policies. *Journal of Corporate Finance*, 25, 251–273.

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

Tong, H. and Wei, S.J. (2011). The composition matters: Capital inflows and liquidity crunch during a global economic crisis. *Review of Financial Studies,* 24 (6), 2023-2052.

Wang, B. (2019). The cash conversion cycle spread. *Journal of Financial Economics*, 133, 472-497.

Wu, Q., Muthuramna, K. and Seshadri, S. (2019). Effect of financing costs and constraints on real investments: The case of inventories. *Production and Operations Management*, 28 (10), 2573–2593.

Yim, S. (2013). The acquisitiveness of youth: CEO age and acquisition behavior. *Journal of Financial Economics*, 108 (1), 250-273.

Zeidan, R. and Shapir, O.M. (2017). Cash conversion cycle and value-enhancing operations: Theory and evidence for a free lunch. *Journal of Corporate Finance*, 45, 201-219.

Table 1. Descriptive Statistics

Variable	Mean	Median	Std. Dev.	P25	P75
CCC	67.19	56.86	131.01	12.64	109.66
INVDAYS	83.83	53.07	131.75	10.80	105.10
ARDAYS	60.65	51.27	63.08	29.60	72.95
APDAYS	86.22	46.77	262.40	28.85	77.26
SIZE	12.68	12.78	2.73	10.74	14.66
MB	2.76	1.93	11.54	1.07	3.62
GROWTH	0.30	0.08	1.28	-0.03	0.23
LEVERAGE	0.60	0.28	2.41	0.00	0.91
ROA	-0.15	0.04	1.10	-0.06	0.09
CAPEX	0.06	0.04	0.08	0.02	0.07
TANGIBILITY	0.50	0.40	0.40	0.19	0.74
CASHFLOW	-0.04	0.07	0.59	-0.01	0.12
AGE	2.47	2.64	0.95	1.95	3.22
STDEBITDA	0.21	0.04	1.15	0.02	0.10
STDRET	0.73	0.36	2.44	0.20	0.66
CUMCAPEX	0.17	0.11	0.24	0.05	0.21
CUMRND	0.30	0.16	0.42	0.05	0.38

CCC is cash conversion cycle. *INVDAYS* is inventory days. *ARDAYS* is accounts receivables days and *APDAYS* accounts payables days. *SIZE* is the natural logarithm of firm market capital. *MB* is market to book ratio. *GROWTH* is the change in sales from year t-1 to year t. *LEVERAGE* is debt to equity ratio. *ROA* is return on assets. *CAPEX* is capital expenditures scaled by total assets. *TANGIBILITY* is fixed assets scaled by total assets. *CASHFLOW* is operating cashflows scaled by total assets. *AGE* is the natural logarithm of 1 + number of firm years from the date of incorporation. *STDEBITDA* is the standard deviation of a firm's EBITDA from year t+1 to t+3. *STDRET* is the standard deviation of a firm's stock returns from year t+1 to t+3. *CUMCAPEX* is cumulative asset-scaled capital expenditures from year t+1 to t+3. *CUMRND* is cumulative asset-scaled R&D expenses from year t+1 to t+3.

Table 2. Correlations

	STDEBITDA	*STDRET*	*CCC*	*INVDAYS*	*ARDAYS*	*APDAYS*	*SIZE*
STDRET	0.09						
CCC	-0.10	-0.02					
INVDAYS	0.02	0.00	0.67				
ARDAYS	0.06	0.03	0.34	0.11			
APDAYS	0.11	0.05	-0.01	0.40	0.23		
SIZE	-0.20	-0.20	0.00	-0.03	-0.07	-0.06	
MB	-0.05	-0.01	0.01	0.01	0.00	0.01	0.10
GROWTH	0.12	0.04	-0.02	0.06	0.08	0.08	-0.08
LEVERAGE	-0.04	-0.02	-0.02	-0.03	-0.03	-0.02	0.08
ROA	-0.42	-0.09	0.13	-0.04	-0.07	-0.15	0.24
CAPEX	0.00	0.00	-0.12	-0.05	-0.09	0.01	0.06
TANGIBILITY	-0.01	-0.03	-0.19	-0.13	-0.23	-0.04	0.03
CASHFLOW	-0.39	-0.11	0.09	-0.08	-0.11	-0.17	0.29
AGE	-0.10	-0.11	0.06	0.01	-0.06	-0.06	0.29

	MB	*GROWTH*	*LEVERAGE*	*ROA*	*CAPEX*	*TANGIBILITY*
GROWTH	0.01					
LEVERAGE	0.48	-0.02				
ROA	0.05	-0.16	0.05			
CAPEX	0.03	0.19	0.02	-0.03		
TANGIBILITY	-0.06	-0.11	0.06	0.01	0.29	
CASHFLOW	0.08	-0.15	0.05	0.71	0.04	0.03
AGE	-0.03	-0.18	0.02	0.13	-0.15	0.21

STDEBITDA is the standard deviation of a firm's EBITDA from year t+1 to t+3. *STDRET* is the standard deviation of a firm's stock returns from year t+1 to t+3. *CCC* is cash conversion cycle. *INVDAYS* is inventory days. *ARDAYS* is accounts receivables days and *APDAYS* accounts payables days. *SIZE* is the natural logarithm of firm market capital. *MB* is market to book ratio. *GROWTH* is the change in sales from year t-1 to year t. *LEVERAGE* is debt to equity ratio. *ROA* is return on assets. *CAPEX* is capital expenditures scaled by total assets. *TANGIBILITY* is fixed assets scaled by total assets. *CASHFLOW* is operating cashflows scaled by total assets. *AGE* is the natural logarithm of 1 + number of firm years from the date of incorporation.

Table 3. The relation between CCC and risk-taking

	STDEBITDA		*STDRET*	
CCC (x100)	-0.042***	(0.000)	-0.025***	(0.006)
SIZE	-0.032***	(0.000)	-0.134***	(0.000)
MB	-0.002***	(0.000)	0.001	(0.258)
GROWTH	0.044***	(0.000)	0.006	(0.495)
LEVERAGE	-0.002	(0.511)	-0.007	(0.164)
ROA	-0.387***	(0.000)	0.000	(0.986)
CAPEX	-0.123*	(0.087)	0.192	(0.204)
TANGIBILITY	0.007	(0.647)	0.027	(0.388)
CASHFLOW	-0.424***	(0.000)	-0.160***	(0.000)
AGE	-0.009	(0.165)	-0.088***	(0.000)
Intercept	0.361	(1.000)	1.902	(1.000)
Industry-fixed effect	Y		Y	
Year-fixed effect	Y		Y	
Obs.	35,823		41,622	
Adj. R2	0.2037		0.0483	

Dependent variable is *STDEBITDA* or *STDRET. STDEBITDA* is the standard deviation of a firm's EBITDA from year t+1 to t+3. *STDRET* is the standard deviation of a firm's stock returns from year t+1 to t+3. *CCC* is cash conversion cycle. *SIZE* is the natural logarithm of firm market capital. *MB* is market to book ratio. *GROWTH* is the change in sales from year t-1 to year t. *LEVERAGE* is debt to equity ratio. *ROA* is return on assets. *CAPEX* is capital expenditures scaled by total assets. *TANGIBILITY* is fixed assets scaled by total assets. *CASHFLOW* is operating cashflows scaled by total assets. *AGE* is the natural logarithm of 1 + number of firm years from the date of incorporation. *p*-values are in parentheses.

*, *** denote statistical significance at the 10% and 1% levels respectively.

Table 4. The relations between the components of CCC and risk-taking

Panel A.

	STDEVEBITDA				
	(1)	(2)	(3)	(4)	(5)
INVDAYS (x100)	-0.008*				-0.023***
	(0.060)				(0.000)
ARDAYS (x100)		0.017*			0.005
		(0.070)			(0.627)
CASHCYCLE (x100)			-0.004		
			(0.343)		
APDAYS (x100)				0.015***	0.020***
				(0.000)	(0.000)
SIZE	-0.032***	-0.031***	-0.032***	-0.031***	-0.032***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MB	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH	0.044***	0.043***	0.044***	0.043***	0.043***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEVERAGE	-0.002	-0.001	-0.001	-0.001	-0.001
	(0.528)	(0.552)	(0.541)	(0.619)	(0.570)
ROA	-0.395***	-0.396***	-0.395***	-0.393***	-0.391***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPEX	-0.089	-0.087	-0.089	-0.093	-0.097
	(0.215)	(0.228)	(0.216)	(0.193)	(0.175)
TANGIBILITY	0.024	0.031**	0.025	0.029*	0.023
	(0.108)	(0.038)	(0.101)	(0.052)	(0.132)
CASHFLOW	-0.429***	-0.425***	-0.428***	-0.419***	-0.420***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AGE	-0.011*	-0.012*	-0.011*	-0.011*	-0.009
	(0.068)	(0.058)	(0.064)	(0.084)	(0.126)

Intercept	0.319	0.302	0.317	0.307	0.323
	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)
Industry-fixed effect	Y	Y	Y	Y	Y
Year-fixed effect	Y	Y	Y	Y	Y
Obs.	35,823	35,823	35,823	35,823	35,823
Adj. R2	0.2016	0.2016	0.2016	0.2024	0.2029

Panel B.

	STDEVRET				
	(1)	(2)	(3)	(4)	(5)
INVDAYS (x100)	-0.011				-0.032***
	(0.231)				(0.001)
ARDAYS (x100)		0.016			-0.001
		(0.394)			(0.976)
CASHCYCLE (x100)			-0.006		
			(0.479)		
APDAYS (x100)				0.020***	0.026***
				(0.000)	(0.000)
SIZE	-0.134***	-0.134***	-0.134***	-0.133***	-0.134***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MB	0.001	0.001	0.001	0.001	0.001
	(0.258)	(0.266)	(0.261)	(0.295)	(0.283)
GROWTH	0.007	0.006	0.007	0.005	0.006
	(0.461)	(0.507)	(0.470)	(0.607)	(0.548)
LEVERAGE	-0.007	-0.007	-0.007	-0.007	-0.007
	(0.165)	(0.173)	(0.168)	(0.189)	(0.173)
ROA	-0.003	-0.003	-0.003	0.002	0.004
	(0.853)	(0.844)	(0.856)	(0.896)	(0.808)

CAPEX	0.211	0.212	0.211	0.201	0.196
	(0.162)	(0.160)	(0.162)	(0.183)	(0.195)
TANGIBILITY	0.035	0.043	0.035	0.043	0.033
	(0.260)	(0.169)	(0.260)	(0.169)	(0.293)
CASHFLOW	-0.165***	-0.162***	-0.164***	-0.158***	-0.160***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AGE	-0.089***	-0.089***	-0.089***	-0.088***	-0.086***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Intercept	1.872	1.847	1.861	1.843	1.911
	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)
Industry-fixed effect	Y	Y	Y	Y	Y
Year-fixed effect	Y	Y	Y	Y	Y
Obs.	41,622	41,622	41,622	41,622	41,622
Adj. R2	0.0483	0.0481	0.0481	0.0485	0.0487

Dependent variable is *STDEBITDA* or *STDRET. STDEBITDA* is the standard deviation of a firm's EBITDA from year t+1 to t+3. *STDRET* is the standard deviation of a firm's stock returns from year t+1 to t+3. *INVDAYS* is inventory days. *ARDAYS* is accounts receivables days and *APDAYS* accounts payables days. *CASHCYCLE* is the sum of inventory and accounts receivables days. *SIZE* is the natural logarithm of firm market capital. *MB* is market to book ratio. *GROWTH* is the change in sales from year t-1 to year t. *LEVERAGE* is debt to equity ratio. *ROA* is return on assets. *CAPEX* is capital expenditures scaled by total assets. *TANGIBILITY* is fixed assets scaled by total assets. *CASHFLOW* is operating cashflows scaled by total assets. *AGE* is the natural logarithm of 1 + number of firm years from the date of incorporation. *p*-values are in parentheses.

*, ** and *** denote statistical significance at the 10%, 5% and 1% levels respectively.

Table 5. Cash conversion cycle and the mechanism for risk taking

	CUMCAPEX		*CUMRND*	
CCC (x100)	-0.006***	(0.000)	-0.008***	(0.000)
SIZE	0.003***	(0.000)	-0.016***	(0.000)
MB	0.001***	(0.000)	0.001***	(0.000)
GROWTH	-0.006***	(0.000)	-0.003	(0.232)
LEVERAGE	-0.004***	(0.000)	-0.002	(0.110)
ROA	-0.005***	(0.002)	0.004	(0.325)
CAPEX	0.951***	(0.000)	0.064	(0.118)
TANGIBILITY	0.099***	(0.000)	-0.039***	(0.000)
CASHFLOW	-0.020***	(0.000)	0.000	(0.960)
AGE	-0.017***	(0.000)	-0.023***	(0.000)
Intercept	0.468***	(0.010)	0.583	(0.193)
Industry-fixed effect	Y		Y	
Year-fixed effect	Y		Y	
Obs.	41,509		22,864	
Adj. R2	0.2863		0.0755	

Dependent variable is *CUMCAPEX* or *CUMRND. CUMCAPEX* is cumulative asset-scaled capital expenditures from year t+1 to t+3. *CUMRND* is cumulative asset-scaled R&D expenses from year t+1 to t+3. *CCC* is cash conversion cycle. *SIZE* is the natural logarithm of firm market capital. *MB* is market to book ratio. *GROWTH* is the change in sales from year t-1 to year t. *LEVERAGE* is debt to equity ratio. *ROA* is return on assets. *CAPEX* is capital expenditures scaled by total assets. *TANGIBILITY* is fixed assets scaled by total assets. *CASHFLOW* is operating cashflows scaled by total assets. *AGE* is the natural logarithm of 1 + number of firm years from the date of incorporation. *p*-values are in parentheses.

*** denotes statistical significance at the 1% level.

Table 6. The components of cash conversion cycle and the mechanism for risk-taking

Panel A.

	CUMCAPEX				
	(1)	(2)	(3)	(4)	(5)
INVDAYS (x100)	-0.004***				-0.005***
	(0.000)				(0.000)
ARDAYS (x100)		-0.006***			-0.006***
		(0.001)			(0.001)
CASHCYCLE (x100)			-0.004***		
			(0.000)		
APDAYS (x100)				0.000	0.001***
				(0.946)	(0.002)
SIZE	0.003***	0.003***	0.003***	0.003***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MB	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH	-0.006***	-0.006***	-0.006***	-0.006***	-0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEVERAGE	-0.004***	-0.004***	-0.004***	-0.004***	-0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-0.006***	-0.006***	-0.006***	-0.006***	-0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPEX	0.956***	0.956***	0.956***	0.956***	0.955***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TANGIBILITY	0.101***	0.100***	0.100***	0.102***	0.099***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CASHFLOW	-0.021***	-0.021***	-0.022***	-0.021***	-0.021***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AGE	-0.017***	-0.017***	-0.017***	-0.017***	-0.017***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Intercept	0.452**	0.460**	0.461**	0.447**	0.466**
	(0.013)	(0.011)	(0.011)	(0.014)	(0.010)
Industry-fixed effect	Y	Y	Y	Y	Y
Year-fixed effect	Y	Y	Y	Y	Y
Obs.	41,509	41,509	41,509	41,509	41,509
Adj. R2	0.2856	0.2853	0.2857	0.2851	0.2859

Panel B.

			CUMRND		
	(1)	(2)	(3)	(4)	(5)
INVDAYS (x100)	-0.008*				-0.023***
	(0.060)				(0.000)
ARDAYS (x100)		0.017*			0.005
		(0.070)			(0.627)
CASHCYCLE (x100)			-0.004		
			(0.343)		
APDAYS (x100)				0.015***	0.020***
(0.000)				(0.000)	(0.000)
SIZE	-0.032***	-0.031***	-0.032***	-0.031***	-0.032***
(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MB	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GROWTH	0.044***	0.043***	0.044***	0.043***	0.043***
(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEVERAGE	-0.002	-0.001	-0.001	-0.001	-0.001
	(0.528)	(0.552)	(0.541)	(0.619)	(0.570)
ROA	-0.395***	-0.396***	-0.395***	-0.393***	-0.391***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPEX	-0.089	-0.087	-0.089	-0.093	-0.097

	(0.215)	(0.228)	(0.216)	(0.193)	(0.175)
TANGIBILITY	0.024	0.031**	0.025	0.029*	0.023
	(0.108)	(0.038)	(0.101)	(0.052)	(0.132)
CASHFLOW	-0.429***	-0.425***	-0.428***	-0.419***	-0.420***
(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AGE	-0.011*	-0.012*	-0.011*	-0.011*	-0.009
	(0.068)	(0.058)	(0.064)	(0.084)	(0.126)
Intercept	0.319	0.302	0.317	0.307	0.323
	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)
Industry-fixed effect	Y	Y	Y	Y	Y
Year-fixed effect	Y	Y	Y	Y	Y
Obs.	22,864	22,864	22,864	22,864	22,864
Adj. R2	0.0752	0.0751	0.0751	0.0755	0.0756

Dependent variable is *CUMCAPEX* or *CUMRND. CUMCAPEX* is cumulative asset-scaled capital expenditures from year t+1 to t+3. *CUMRND* is cumulative asset-scaled R&D expenses from year t+1 to t+3. *INVDAYS* is inventory days. *ARDAYS* is accounts receivables days and *APDAYS* accounts payables days. *CASHCYCLE* is the sum of inventory and accounts receivables days. *SIZE* is the natural logarithm of firm market capital. *MB* is market to book ratio. *GROWTH* is the change in sales from year t-1 to year t. *LEVERAGE* is debt to equity ratio. *ROA* is return on assets. *CAPEX* is capital expenditures scaled by total assets. *TANGIBILITY* is fixed assets scaled by total assets. *CASHFLOW* is operating cashflows scaled by total assets. *AGE* is the natural logarithm of 1 + number of firm years from the date of incorporation. *p*-values are in parentheses.

*, **, *** denote statistical significance at the 10%, 5% and 1% levels respectively.

Table 7. Fixed effects regressions on cash conversion cycle and the risk-taking

Panel A.

	STDEBITDA					
	(1)	(2)	(3)	(4)	(5)	(6)
CCC (x100)	-0.001					
	(0.802)					
INVDAYS (x100)		-0.014***				-0.014***
		(0.003)				(0.002)
ARDAYS (x100)			0.057***			0.000
			(0.000)			(0.547)
CASHCYCLE (x100)				0.001		
				(0.773)		
APDAYS (x100)					0.003	0.001
					(0.174)	(0.129)
Firm-fixed effect	Y	Y	Y	Y	Y	Y
Year-fixed effect	Y	Y	Y	Y	Y	Y
Controlled variables	Y	Y	Y	Y	Y	Y
Obs.	35,823	35,823	35,823	35,823	35,823	35,823
R2	0.0231	0.0233	0.0243	0.0231	0.0231	0.0234

Panel B.

	STDRET					
	(1)	(2)	(3)	(4)	(5)	(6)
CCC (x100)	-0.019*					
	(0.097)					
INVDAYS (x100)		-0.017				-0.020*
		(0.164)				(0.093)
ARDAYS (x100)			-0.031			-0.001

			(0.173)			(0.539)
CASHCYCLE (x100)				-0.018*		
				(0.074)		
APDAYS (x100)					0.008	0.002**
					(0.106)	(0.045)
Firm-fixed effect	Y	Y	Y	Y	Y	Y
Year-fixed effect	Y	Y	Y	Y	Y	Y
Controlled variables	Y	Y	Y	Y	Y	Y
Obs.	41,622	41,622	41,622	41,622	41,622	41,622
R2	0.0389	0.0389	0.0389	0.0389	0.0389	0.0390

Dependent variable is *STDEBITDA* or *STDRET. STDEBITDA* is the standard deviation of a firm's EBITDA from year t+1 to t+3. *STDRET* is the standard deviation of a firm's stock returns from year t+1 to t+3. *CCC* is cash conversion cycle. *INVDAYS* is inventory days. *ARDAYS* is accounts receivables days and *APDAYS* accounts payables days. *CASHCYCLE* is the sum of inventory and accounts receivables days. *p*-values are in parentheses.

*, ** and *** denote statistical significance at the 10%, 5% and 1% levels respectively.

Table 8. Fixed effects regressions on cash conversion cycle and the mechanism for risk-taking

Panel A.

	CUMCAPEX					
	(1)	(2)	(3)	(4)	(5)	(6)
CCC (x100)	-0.006***					
	(0.000)					
INVDAYS (x100)		-0.002**				-0.002**
		(0.030)				(0.021)
ARDAYS (x100)			-0.008***			0.000
			(0.000)			(0.892)
CASHCYCLE (x100)				-0.003***		
				(0.000)		
APDAYS (x100)					0.000	0.000
					(0.929)	(0.389)
Firm-fixed effect	Y	Y	Y	Y	Y	Y
Year-fixed effect	Y	Y	Y	Y	Y	Y
Obs.	41,509	41,509	41,509	41,509	41,509	41,509
R2	0.1242	0.1233	0.1237	0.1235	0.1232	0.1233

Panel B.

	CUMRND					
	(1)	(2)	(3)	(4)	(5)	(6)
CCC (x100)	-0.002					
	(0.411)					
INVDAYS (x100)		-0.004*				-0.005*
		(0.079)				(0.079)
ARDAYS (x100)			-0.014***			0.000
			(0.004)			(0.598)

CASHCYCLE (x100)				-0.006***		
				(0.006)		
APDAYS (x100)					-0.002*	0.000
					(0.076)	(0.695)
Firm-fixed effect	Y	Y	Y	Y	Y	Y
Year-fixed effect	Y	Y	Y	Y	Y	Y
Obs.	22,864	22,864	22,864	22,864	22,864	22,864
R2	0.0083	0.0085	0.0085	0.0083	0.0083	0.0083

Dependent variable is *CUMCAPEX* or *CUMRND. CUMCAPEX* is cumulative asset-scaled capital expenditures from year t+1 to t+3. *CUMRND* is cumulative asset-scaled R&D expenses from year t+1 to t+3. *CCC* is cash conversion cycle. *INVDAYS* is inventory days. *ARDAYS* is accounts receivables days and *APDAYS* accounts payables days. *CASHCYCLE* is the sum of inventory and accounts receivables days. *p*-values are in parentheses.

** and *** denote statistical significance at the 5% and 10% levels respectively.

Table 9. Cash conversion cycle and cumulative leverage as the mechanism for risk-taking

	LEV3YEARS	
CCC (x100)	-0.017*	(0.095)
SIZE	0.042***	(0.000)
MB	-0.002*	(0.060)
GROWTH	-0.002	(0.822)
LEVERAGE	0.276***	(0.000)
ROA	0.061***	(0.002)
CAPEX	-0.297*	(0.077)
TANGIBILITY	0.026	(0.454)
CASHFLOW	0.060*	(0.087)
AGE	-0.042***	(0.004)
Intercept	1.617	(1.000)
Industry-fixed effect	Y	
Year-fixed effect	Y	
Obs.	41,911	
Adj. R2	0.0925	

Dependent variable is *LEV3YEARS. LEV3YEARS* is the average of leverage ratio from year t+1 to t+3. *CCC* is cash conversion cycle. *SIZE* is the natural logarithm of firm market capital. *MB* is market to book ratio. *GROWTH* is the change in sales from year t-1 to year t. *LEVERAGE* is debt to equity ratio. *ROA* is return on assets. *CAPEX* is capital expenditures scaled by total assets. *TANGIBILITY* is fixed assets scaled by total assets. *CASHFLOW* is operating cashflows scaled by total assets. *AGE* is the natural logarithm of 1 + number of firm years from the date of incorporation. *p*-values are in parentheses.

* and *** denote statistical significance at the 10% and 1% levels respectively.