

**WORKING CAPITAL MANAGEMENT AND FIRM PROFITABILITY
DURING AND AFTER THE ECONOMIC CRISIS AMONG MALAYSIAN
LISTED COMPANIES**

TASIU TIJJANI KADEMI

**MASTER OF SCIENCE
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BY

TASIU TIJJANI KADEMI

815032

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ABSTRACT

The aim of the study is to explore the working capital management components and examine their relationship with firm profitability among Malaysia listed companies during and after the global financial crisis of 2008-2009. Based on the descriptive results, Malaysian firms practice conservative working capital management techniques due to the fact that current ratio is high and debt ratio is low compared with prior studies. The multiple regression analysis on the 260 listed Bursa Malaysia companies shows a negative relationship between working capital management components (i.e. average collection period and average payment period) and firm profitability during and after the crisis periods. Moreover, cash conversion cycle negatively relates with firm profitability after the crisis. Inventory turnover days indicate a positive and significant relation with firm profitability during the crisis period. These findings suggest that Malaysian firms should try and collect cash from customers faster, pay bills as soon as possible and minimise the gap between initial investment and the time cash is collected from customers during both crisis and non-crisis periods. Nevertheless, management should maintain considerable level of stock to avoid shortage and supply interruption during the crisis.

Keywords: working capital management, average collection period, cash conversion cycle, inventory turnover period, average payment period, profitability, Malaysia

ABSTRAK

Tujuan kajian ini adalah untuk meneroka komponen pengurusan modal kerja dan memeriksa hubungan mereka dengan keberuntungan yang kukuh di kalangan syarikat-syarikat Malaysia yang disenaraikan semasa dan selepas krisis kewangan global 2008-2009. Berdasarkan keputusan deskriptif syarikat Malaysia mengamalkan teknik pengurusan modal kerja konservatif disebabkan oleh hakikat bahawa nisbah semasa adalah tinggi dan nisbah hutang adalah rendah berbanding dengan kajian terlebih dahulu. Analisis regresi berganda ke atas 260 syarikat yang disenaraikan di Bursa Malaysia menunjukkan hubungan yang negatif antara komponen pengurusan modal kerja (iaitu tempoh kutipan purata dan tempoh pembayaran purata) dan keuntungan firma semasa dan selepas tempoh krisis. Selain itu, kitaran penukaran tunai negatif berkaitan dengan keuntungan firma selepas krisis. Hari pusing ganti inventori menunjukkan hubungan yang positif dan signifikan dengan keuntungan firma dalam tempoh krisis. Penemuan ini menunjukkan bahawa syarikat-syarikat Malaysia perlu cuba dan mengumpul wang tunai daripada pelanggan lebih cepat, membayar bil secepat mungkin dan mengurangkan jurang antara pelaburan awal dan tunai masa yang dikumpul daripada pelanggan semasa kedua-dua krisis dan bukan krisis tempoh. Walau bagaimanapun, pengurusan harus mengekalkan tahap besar stok bagi mengelakkan kekurangan dan membekalkan gangguan semasa krisis.

Kata kunci: pengurusan modal kerja, tempoh kutipan purata, kitar penukaran tunai, tempoh perolehan inventori, tempoh pembayaran purata, keuntungan, Malaysia

Table of Content

| | |
|---------------------------------------------|-------------------------------------|
| TITLE PAGE..... | Error! Bookmark not defined. |
| CERTIFICATION | ii |
| PERMISSION TO USE | iii |
| ACNOWLEDGEMENT | iv |
| ABSTRACT | v |
| ABSTRAK | vi |
| Table of Content | vii |
| LIST OF TABLES..... | x |
| LIST OF FIGURES | x |
| LIST OF ABBREVIATIONS | xi |
| CHAPTER ONE..... | 1 |
| INTRODUCTION | 1 |
| 1.1 Background of the Study | 1 |
| 1.2 Statement of the Problem | 4 |
| 1.3 Research Objectives | 6 |
| 1.4 Research Questions | 6 |
| 1.5 Scope of the Study | 6 |
| 1.6.1 Theoretical Significance | 7 |
| 1.6.2 Practical Significance | 7 |
| 1.7 Definition of Terms..... | 8 |
| 1.8 Organization of Remaining Chapters..... | 8 |
| 1.9 Conclusion..... | 9 |
| CHAPTER TWO | 11 |
| LITERATURE REVIEW..... | 11 |
| 2.0 Introduction | 11 |

| | |
|--------------------------------------------------------|----|
| 2.1 Fisher Separation Theory | 11 |
| 2.2 Trade-off theory | 12 |
| 2.3 Firm Profitability | 12 |
| 2.4 Working Capital Concept | 14 |
| 2.5 Working Capital Management and Profitability | 16 |
| 2.5.1 Cash Conversion Cycle (CCC)..... | 19 |
| 2.5.2 Accounts Receivables | 22 |
| 2.5.3 Inventory Turnover | 25 |
| 2.5.4 Account Payables | 27 |
| 2.5.5 Control Variables..... | 29 |
| 2.6 Conclusion | 31 |
| CHAPTER THREE | 32 |
| METHODOLOGY | 32 |
| 3.1 Introduction..... | 32 |
| 3.2 Research Design | 32 |
| 3.2.1 Type of Study | 32 |
| 3.2.2 Data collection source and Method..... | 32 |
| 3.2.3 Population Frame | 33 |
| 3.2.4 Sample & Sampling Technique | 33 |
| 3.3 Regression Models | 34 |
| 3.4 Data Analysis Techniques | 38 |
| 3.4 Conclusion | 39 |
| CHAPTER FOUR | 40 |
| RESULTS AND DISCUSSION..... | 40 |
| 4.0 Introduction | 40 |
| 4.1 Descriptive Statistics | 40 |
| 4.2 Correlation | 45 |

| | |
|------------------------------------------------|----|
| 4.3 Normality Test | 50 |
| 4.4 Autocorrelation and Multicollinearity..... | 50 |
| 4.5 Regression Analysis | 51 |
| 4.6 Conclusion | 61 |
| CHAPTER FIVE | 62 |
| CONCLUSION AND RECOMMENDATION | 62 |
| 5.0 Introduction | 62 |
| 5.1 Summary of Major Findings..... | 62 |
| 5.2 Implication of the Study | 65 |
| 5.2.1 Theoretical Implication..... | 65 |
| 5.2.2 Practical and Policy Implication..... | 65 |
| 5.3 Limitation of the Study | 67 |
| 5.4 Recommendation for Future Research | 67 |
| 5.5 Conclusion..... | 67 |
| REFERENCES | 68 |

LIST OF TABLES

| | |
|--------------------------------------------------------------------------------------------------------|-------|
| Table 3.2 Sample Selection..... | 34 |
| Table 3.1 Operational definition and variable measurement..... | 36-37 |
| Table 4.1 Descriptive Statistics..... | 42 |
| Table 4.2 Pearson Correlation during Crisis period 2008-2009..... | 46 |
| Table 4.3 Pearson Correlations after Crisis Period 2012-2013..... | 47 |
| Table 4.4 Normality Tests..... | 50 |
| Table 4.5 Autocorrelation and Multicollinearity Tests..... | 51 |
| Table 4.6 Regression Results of Working Capital Management Components and Operating Profit Margin..... | 52 |
| Table 4.7 Regression Results of Working Capital Management Components and Return on Assets..... | 53 |
| Table 5.1 Summary of Hypothesis Testing..... | 63 |

LIST OF FIGURES

| | |
|------------------------------------|----|
| Figure 3.1 Research Framework..... | 37 |
|------------------------------------|----|

LIST OF ABBREVIATIONS

| | |
|-------|----------------------------------------|
| CCC: | cash conversion cycle |
| NOI: | Net operating income |
| ACP: | Average collection Period |
| ITD: | Inventory turnover in days |
| APP: | Average payment period |
| EBIT: | Earning before interest and taxes |
| ROA: | Return on assets |
| OPM: | Operating profit margin |
| WCM: | Working capital management |
| UUM: | University Utara Malaysia |
| SPSS: | Statistical package for social science |
| DR: | Debt ratio |
| CR: | Current ratio |
| SG: | Sales growth |
| WCMC: | working capital management component |

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The worldwide financial crisis of 2008-2009 that started in the United States brought many negative consequences to the global economy in general. It began as an asset bubble created by many new financial derivatives that, together with other issues, compounded the problems and drove the subprime loan (Krugman, 2009). Krugman further highlighted that the crisis later on escalated into banking and housing crises that effected consumer and investment demand.

The Malaysian economy felt the global economic crisis in two main broad areas, export and foreign direct investment. Impacts on manufacturing sector exports were the most noticeable Abidin and Rasiah (2009) stated that electrical and electronics industry recorded a decline of 41.4% during the first quarter of 2009 which was worst than during the last quarter of 2008 that stood at 22.5%. This was due to a decline in the dominant export-oriented industries together with weak support from the domestic market-oriented industries. The value increment in the sector dropped by 17.6% during the first quarter of 2009, which was worst compared with the decline reported at the end of the year 2008.

The loan activities of commercial banks became lethargic notwithstanding the lower overnight policy rate (OPR), the lower statutory reserve requirement (SRR) and extra funds accessible for loans. The decrease in loan advances started in September 2008 and reached a severe level between November 2008 and January 2009 (Abidin & Rasiah, 2009).

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REFERENCES

- Abidin, M. Z., & Rasiah, R. (2009). The global financial crisis and the Malaysian economy: relation and responses. *United Nations Development Programme (UNDP), Malaysia*.
- Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: The case of Jordan. *International Journal of Managerial Finance*, 8(2), 155-179.
- Ahmadi, M., Arasi, I. S., Garajafary, M., & Branch, A. (2012). Studying the relationship between working capital management and profitability at Tehran stock exchange: A case study of food industry. *Research Journal of Applied Sciences, Engineering and Technology*, 4(13), 1868-1874.
- Ahmadpour, A., Zare, M. J., & Rostami, K. H. (2012). An empirical study of association between working capital management and performance: Evidence from Tehran stock exchange. *Journal of Social and Development Sciences*, 3(8), 279-285.
- Akinlo, O. O., & Olufisayo, O. (2011). The effect of working capital on profitability of firms in Nigeria: Evidence from general method of moments (GMM). *Asian Journal of Business and Management Sciences*, 1(2), 130-135.
- Barine, M. N. (2012). Working capital management efficiency and corporate profitability: Evidences from quoted firms in Nigeria. *Journal of Applied Finance & Banking*, 2(2), 215-237.
- Baveld, M. B. (2012). relation of working capital management on the profitability of public listed firms in the Netherlands during the financial crisis.
- Bei, Z., & Wijewardana, W. P. (2012). Working capital policy practice: Evidence from Sri Lankan companies. *Procedia-Social and Behavioral Sciences*, 40, 695-700.
- Bellouma, M. (2011). The relation of Working Capital Management on Profitability: The Case of Small and Medium-Sized Export Companies in Tunisia. *Management international/International Management/Gestiòn Internacional*, 15(3), 71-88.
- Bhunia, A., & Das, A. (2012). Affiliation between working capital management and profitability. *Interdisciplinary Journal of Contemporary Research in Business*, 3(9), 957-968.
- Brigham, E., & Houston, J. (2011). Fundamentals of financial management. *Cengage Learning*.
- Charitou, M. S., Elfani, M., & Lois, P. (2010). The relation of working capital management on firm's profitability: Empirical evidence from an emerging market. *Journal of Business & Economics Research (JBER)*, 8(12).

- Ching, H. Y., Novazzi, A., & Gerab, F. (2011). Relationship between working capital management and profitability in brazilian listed companies. *journal of global business and economics*, 3(1), 74-86.
- Deloof, M. (2003). Does working capital management affect profitability of belgian firms? *Journal of Business Finance & Accounting*, 30(3-4), 573-588.
- Dong, H. P., & Su, J. T. (2010). The relationship between working capital management and profitability: A vietnam case. *International Research Journal of Finance and Economics*, 49, 62-71.
- Eljelly, A. M. (2004). Liquidity-profitability tradeoff: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, 14(2), 48-61.
- 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), 74-84.
- Filbeck, G., & Krueger, T. M. (2005). An analysis of working capital management results across industries. *American Journal of Business*, 20(2), 11-20.
- Fisher, W. (2010). Rasch, frisch, and two fishers: A social history of the econometric origins of some widely used psychometric models. *Available at SSRN 1698919*.
- Garcia, J., Martins, F., & Brandão, E. (2011). The relation of working capital management upon companies' profitability: Evidence from european companies. *Available at SSRN 2165210*.
- Garson, G. D. (2012). Testing statistical assumptions. North Carolina: Statistical associates Publishing.
- Gustafson, C. R., Barry, P. J., & Sonka, S. T. (1988). Machinery investment decisions: A simulated analysis for cash grain farms. *Western Journal of Agricultural Economics*, 244-253.
- Hayajneh, O. S., & Yassine, F. L. A. (2011). The relation of working capital efficiency on profitability—an empirical analysis on jordanian manufacturing firms. *International Research Journal of Finance and Economics*, 66(2011), 67-69.
- Kaur, H. V., Singh, S., & Ropar, P. M. D. (2013). Managing efficiency and profitability through working capital: An empirical analysis of bse 200 companies. *Asian Journal of Business Management*, 5(2), 197-207.
- Kline, R. B. (1998) Principles and practices of structural equation modeling. *Guilford, New York*.

- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Krugman, P. (2009). How did economists get it so wrong? *New York Times*, 2(9), 2009.
- Linacre, J. (1998). Rasch at the cowles commission. *Rasch Measurement Transactions*, 11(4), 603.
- Love, I., Preve, L. A., & Sarria-Allende, V. (2007). Trade credit and bank credit: Evidence from recent financial crises. *Journal of Financial Economics*, 83(2), 453-469.
- Makridakis, S., & Wheelwright, S. Interactive forecasting: Univariate and multivariate methods, 1978: San Francisco CA: Holden-Day.
- Malik, Z. U., & Iqbal, A. (2012). Affect of working capital management on firms profitability in sugar industry of pakistan.
- Mansoori, E., & Muhammad, D. J. (2012). The relation of working capital management on firm's profitability: Evidence from singapore. *Interdisciplinary Journal of Contemporary Research in Business*, 4(5).
- Mathuva, D. (2009). The influence of working capital management components on corporate profitability: a survey on Kenyan listed firms. *Research Journal of Business Management*, 3(1), 1-11.
- McInnes, A. N. S. (2000). Working capital management: theory and evidence from New Zealand listed limited liability companies (*Doctoral dissertation, Lincoln University*).
- Mekonnen, M. (2011). The relations of working capital management of firms profitability.
- Mohamad, N. E. A. B., & Saad, N. B. M. (2010). Working capital management: The relation of market valuation and profitability in Malaysia. *International Journal of Business and Management*, 5(11), p140.
- O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 41(5), 673-690.
- Ogundipe, S. E., Idowu, A., & Ogundipe, L. O. (2012). Working capital management, firms' performance and market valuation in Nigeria. *World Academy of Science, Engineering and Technology*, 61, 1196-1200.
- Padachi, K. (2006). Trends in working capital management and its relation on firms' performance: an analysis of Mauritian small manufacturing firms. *International Review of business research papers*, 2(2), 45-58.

- Padachi, K., Narasimhan, M., Durbarry, R., & Howorth, C. (2008). An analysis of working capital structure and financing pattern of mauritian small manufacturing firms. *Journal of Applied Finance*, 14(7), 41-62.
- Phillips, A. L. (1997). Treasury management: job responsibilities, curricular development, and research opportunities. *Financial Management*, 69-81.
- Pouraghajan, A., & Emamgholipourarchi, M. (2012). Relation of Working Capital Management on Profitability and Market Evaluation: Evidence from Tehran Stock Exchange. *International Journal of Business and Social Science*, 3(10), 311-318.
- Quayyum, S. T. (2011). Relationship between working capital management and profitability in context of manufacturing industries in Bangladesh. *International Journal of Business and Management*, 7(1), p58.
- Raheman, A., Afza, T., Qayyum, A., & Bodla, M. A. (2010). Working capital management and corporate performance of manufacturing sector in pakistan. *International Research Journal of Finance and Economics*, 47(1), 156-169.
- Raheman, A., & Nasr, M. (2007). Working capital management and profitability—case of pakistani firms. *International Review of Business Research Papers*, 3(1), 279-300.
- Rehn, M. E. (2012). Relations of Working Capital Management on Company Profitability-An industry-wise study of Finnish and Swedish public companies (Available on Internet).
- Richards, V. D., & Laughlin, E. J. (1980). A cash conversion cycle approach to liquidity analysis. *Financial management*, 32-38.
- Sabri, T. B. (2012). Different Working Capital Policies and the Profitability of a Firm. *International Journal of Business and Management*, 7(15), p50.
- Saleem, Q., & Rehman, R. U. (2011). relation of liquidity ratios on profitability. *Interdisciplinary Journal of Research in Business*, 1(7), 95-98.
- Sharma, A., & Kumar, S. (2011). relation of working capital management on firm profitability empirical evidence from india. *Global Business Review*, 12(1), 159-173.
- Shin, H. H., & Soenen, L. (1998). Efficiency of working capital management and corporate profitability. *Financial practice and education*, 8, 37-45.
- Silver, M. S. (1997). Business statistics (2nd ed.). *McGraw-Hill London*.
- Singh, K., & Asress, F. C. (2011). Determining working capital solvency level and its effect on profitability in selected Indian manufacturing firms. *International Journal Of Research In Commerce, Economics And Management*. [9].

- Smith, K. (1980). Profitability versus liquidity tradeoffs in working capital management. *Readings on the management of working capital*, 549-562.
- Soekhoe, S. G. (2012). The relations of working capital management on the profitability of Dutch listed firms.
- Subramanyam, K. R. (2014) *Financial statement analysis*(11th ed.) McGraw-Hill International.
- 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, 1-16.
- Uremadu, S. O., Egbide, B. C., & Enyi, P. E. (2012). Working capital management, liquidity and corporate profitability among quoted firms in Nigeria evidence from the productive sector. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 2(1), 80-97.
- Usama, M. (2012). Working capital management and its affect on firm's profitability and liquidity: In other food sector of (kse) karachi stock exchange. *Arabian Journal of Business and Management Review (Oman Chapter)*, 1(12), 62-73.
- Wasiuzzaman, S., & Arumugam, V. C. (2013). Determinants of working capital investment: A study of Malaysian publiclisted firms. *Australasian Accounting Business and Finance Journal*, 7(2), 49-70.
- Yang, X. (2011). The role of trade credit in the recent subprime financial crisis. *Journal of Economics and Business*, 63(5), 517-529.
- Zariyawati, M. A., Annuar, M. N., Taufiq, H., & Rahim, A. A. (2009). Working capital management and corporate performance: Case of Malaysia. *Journal of Modern Accounting and Auditing*, 5(11), 47-54.
- Zariyawati, M. A., Taufiq, H., Annuar, M. N., & Sazali, A. (2010, June). Determinants of working capital management: Evidence from Malaysia. *In Financial Theory and Engineering (ICFTE), 2010 International Conference on* (pp. 190-194). IEEE.