Effect of Working Capital and Financial Aspects to Firm Value: an Empirical Study on Indonesian Listed Firms

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Abstract—**Working capital management and financial aspects are important for increasing the value of a firm. Adjustments to the leverage, profitability/asset utilization, and growth of the company will affect firm value. The study was conducted on 167 non-financial companies listed on the Indonesia Stock Exchange in the period 2007–2016 using panel data analyzed using linear model regression with firm size as the control. The results show working capital, represented by the Net Trade Cycle, has a significant negative relationship to firm value. Meanwhile, the financial aspects show a significant positive relationship for leverage and profitability to firm value while sales growth has no significant effect on firm value.**

Keywords Working Capital, Financial Aspects, Firm Value

I. INTRODUCTION

Working capital management has been a growing topic of interest since the Asian financial crisis of 1997–1998. Companies need to be prepared to face economic change and doing so needs an understanding of working capital. The importance of managing inventory in executing corporate actions, which mostly relate to efficiency, increased during the economic slowdown [1]. According to the Bank Indonesia Annual Report 2016, world economic growth remained weak at 3.1% compared with 3.2% in the previous year. Thus, many countries decided to shift their economic growth strategy to their respective domestic markets. This was followed by low world commodity prices for both energy and non-energy, which are still low and influenced by weak demand and large supply. Firms are required to have good management to support the economy of Indonesia in which, next year, there will be opportunities in domestic and global market demand.

With the development of its infrastructure, Indonesia is expected to be an investment destination and a driver for business in Indonesia, thus encouraging further economic development.

Various studies on working capital have contributed to determine the relationship of profitability with working capital in various countries in Asia with their respective properties. The ability of managers to respond to certain changes in economic conditions and situations is an important aspect of a company's

competitive value. Companies that can react quickly and correctly to unexpected events (such as interest rates or drastically changing raw material prices) will have a competitive advantage compared with other companies [2]. Although the company's competitive advantage is multidimensional and seen from various aspects, the company's financial management is important in keeping the company operating and enabling companies to compete in the market. By increasing the value of the company, Modigliani and Miller [3] argue that under conditions of homogeneous investors, no taxes, and no transaction costs, firm financing strategy cannot increase the value of the firm. However, under real conditions, leverage can increase the value of the company with the existence of a tax advantage of debt. With the proper utilization of leverage for investment funding, the company can increase its value by paying attention to capital budgeting as reflected in its debt and equity [4]. This study is expected to contribute to the development of working capital management. Based on previous research, the effect shown from the management of working capital on firm value is a non-linear relationship [5].

II. CONCEPTUAL FRAMEWORK AND PREVIOUS LITERATURE

A. Working Capital Management

Working capital reflects how the company operates on a daily basis and relates to the investment of the company in short-term assets. Working capital represents the financial health of the company and is associated with profitability and liquidity. In the management of working capital, there are two points of view that indicate the effects of working capital and investment decisions. The first point of view indicates that the higher the level of the company's working capital, the higher the company's chance of increasing sales and getting an earlier payment discount [6]. By increasing sales and profits from the company, the working capital can increase the firm value. On the other hand, the higher level of working capital will require funding to meet its financial needs, making the company issue financing with a larger amount and increasing the possibility of bankruptcy [7]. Working capital, as measured by current assets and short-term liabilities, may have a mismatch that can increase the profitability of the company but may also increase the risk of

insolvency. However, if the management focuses on liquidity, then it can lower profitability; thus, the managers of a business entity undergo a dilemma in achieving a trade-off between liquidity and profitability as desired [8].

B. Working Capital Components and Policies

Policies in working capital management can be categorized as aggressive, conservative, or moderate. Aggressive policies are indicated by low inventory values, receivables, and cash accounts to generate revenue at some level [9]. An aggressive policy is used to increase the profitability of the firm because it will lower cash but increase risk due to the slight difference between current assets and short-term liabilities [10]. Conservative policies are carried out by companies with relatively higher cash and inventory reserves, even investing in short-term stocks and finance with long-term debt and/or equity. This provides a lower risk and, in return reduces profitability because long-term debt will have large interest rates financing costs [9]. The moderate policy is applied to companies that want to have protection in their company by financing current assets with current liabilities and long-term assets with long-term debt, but with moderate investments the returns are relatively moderate [11].

If the products and services used can be paid earlier, then the risk of loss in payments from customers becomes lower. If the receivables are not collectible due to poor working capital management, it can increase the funding needs of capital and debt [12]. On the other hand, a longer receivables period can increase sales and the interest from sales [13]. Inefficient inventory management can damage the company in the future and the level of inventory has no effect in reducing the level of production of the company and its sales value [14]. According Damodaran [13], the motive of the company in maintaining its inventory is to prevent the occurrence of material deficiencies that can disrupt the production process, thereby keeping the production process in order and maintaining the availability of products to sell. At the same time, high inventories can lead to increased costs of storage, security, and damaged goods. In accounts payable management, extending the time required for payment to suppliers can be beneficial to invest in other instruments [12]. On the other hand, short-term debt repayments to suppliers can provide discounts from suppliers to companies, which also can be part of corporate strategy [5], making transactions easier for companies to make purchases [15].

Working capital is related to size. Previous research indicates that the poor management of working capital causes long-term funding to be less qualified, which is the main reason why small companies fail) [16-18]. Smaller firms often rely more on funding from business owners, supplier loans, and short-term bank loans for their investments in cash, receivables, and inventory accounts [19, 20].

C. Firm Value and Working Capital

Several studies show a direct relationship between investment decisions and firm value [21-23]. Modigliani and Miller [3] suggest that decision-making for funding and investment is independent from one another. Firm value can be calculated using Tobin's Q, where based on previous research conducted by Agrawal and Knoeber [24], Himmelberg, Hubbard, and Palia [25], Thomsen, Pedersen, and Kvist [26], and Florackis, Kostakis, and Ozkan [27] the value of a company is the ratio of total market value of the equity and book value of the debt divided by the book value of the company's total assets. The use of Tobin's Q as a measure of value to see the effect of working capital management on firms is chosen because each measure of value will have a different effect [28].

According to Shin and Soenen [29], Net Trade Cycle (NTC) is a measurement of liquidity management that estimates the funding needs of companies, primarily in working capital. If NTC has a low value, then the company has a low investment level on working capital and vice versa, and reveals the company's decision on investment. The expected relationship between working capital and firm value is concave or U-shaped. Based on previous research, if working capital is low, then it has a positive effect on firm value; however, if the level of working capital is high, then the relationship between working capital and firm value is negatively or inversely related. Fazzari, Hubbard, and Petersen [30] support this statement by showing the imperfection of the capital market resulting in both opposite effects.

Modigliani and Miller [3] state that in *ceteris paribus*, firms can obtain external funding without any constraints; therefore, investment is not related on internal working capital management. In the absence of market imperfections, such as asymmetric information and agency costs, it also may increase the costs used out of working capital or generated within funds [31-33]. In this case, Fazzari et al. [30] suggest that firms calculate other financial factors such as internal funding, access to working capital, and the cost of funding.

III. DATA AND METHODOLOGY

Data collected for the study are mainly secondary data from the financial reports of non-financial companies listed on the Indonesia Stock Exchange. The sample period for financial data is 2007–2016. Panel data are treated through regression analysis. Panel data are used due to the cross-sectional data within time series. In order to determine the model, the Chow and Hausman tests were performed, showing this research is using a fixed effect method. Descriptive analysis is conducted to provide preliminary information about the used variables.

The variables used in the study are analyzed in Table I. In order to test the proposed functional form, we analyze a quadratic model. Following Shin and Soenen [29], we use NTC as a measure of working capital management and analyze each part of its component: days of account receivable (DAR), days of inventory (DI), and days of account payable (DAP). Furthermore, we regress firm value against NTC and its square (NTC2). Other variables are also present in the performance regression model for other potential influences on the performance of the firm. Specifically, the variables are firm size (SIZE), leverage (LEV), opportunity growth (GROWTH), and return on assets (ROA). Therefore, we estimate the following model:

TABLE I. DESCRIPTIVE STATISTICS

	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Std. Error	Statistic
TOBINQ	0.1812	4.3995	1.2492	0.01660	0.6784
NTC	-460.3099	1606.4111	94.2348	2.7103	110.7584
NTC2	0.0047	2580556	21140.3	1984.85	81112.3865
DAR	0.4702	331.1518	56.9113	1.0322	42.183
DI	0.0746	3184.5374	129.9097	5.44	222.3114
DAP	0.4585	1232.1078	62.626	1.867	76.2963
SIZE	10.1836	18.3905	14.5068	0.0401	1.6393
LEV	0.0002	1.1460	0.3003	0.0044	0.1833
GR	-.8143	6.3842	0.1462	0.0086	0.3553
ROA	-.6452	0.3983	0.0627	0.0018	0.0754

TABLE II. VARIABLES AND CALCULATIONS

Variable	Calculation	Hypothesis/Expected Sign
Tobin Q's Corporate Performance	(Market value of equity + book value of debt)/Book value of Total Assets	
Net Trade Cycle (NTC)	(Account Receivable +Inventory- Account Payable) *365/Sales	The expected result is the relationship between working capital and firm value. Working capital and firm value is positive when the level of working capital is low; however, if the level of working capital is high, then the relationship between working capital and firm value is negatively or inversely related [5].
Days of Account Receivable (DAR)	Account Receivable*365/Sales	Expected sign for firm value is negative, indicating inefficiency in credit arrangements [28].
Days of Inventory (DI)	Inventory*365/Cost of Goods Sold	The expected sign of days of inventory and firm value is negative, indicating inefficient inventory management [28].
Days of Account Payable (DAP)	Account Payable*365/ Cost of Goods Sold	The expected sign of firm value is positive, indicating efficiency in managing payments [28].
Leverage	Total Debt/Total Assets	Previous research has shown that debt ratios have a negative relationship to firm value [34, 35].
Growth	(Sales-Sales year before)/Sales year before	Increasing growth opportunities and more fluctuations in future cash flows will increase the firm's cash holdings and short-term investments [36, 37]. Thus, higher growth should increase the value of the company.
ROA	EBIT/Total Assets	Return on Assets (ROA) is positive, indicating that the total assets used for the company's operations are able to provide profits for the company. Conversely, negative ROA shows that total assets used do not provide profit/loss.
Size	Ln(Total Assets)	Firm size has a positive relationship to profitability, generally due to large firms with higher credit grades being able to easily obtain funding from the stock market, thus saving a small amount of cash [38, 39].

$$(1)\, Tobin's\ Q = \beta_0 + \beta_1 NTC_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 ROA_{i,t}$$

$$(2)\, Tobin's\ Q = \beta_0 + \beta_1 DAP_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 ROA_{i,t}$$

$$(3)\, Tobin's\ Q = \beta_0 + \beta_1 DI_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 ROA_{i,t}$$

$$(4)\, Tobin's\ Q = \beta_0 + \beta_1 DAR_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 ROA_{i,t}$$

$$(5)\, Tobin's\ Q = \beta_0 + \beta_1 NTC_{i,t} + \beta_2 NTC_{i,t}^2 + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 ROA_{i,t}$$

The estimated model regressed using Ordinary Least Method in panel data consist of time series and cross section for listed companies in Indonesian Stock Exchange.

4. Data and Summary

The variables used in the estimated model were analyzed using correlation as a symptom of the beginning or prediction of the relationship of one variable to another. Based on the values shown in the Pearson's correlation in Table III, the relationship of NTC, NTC2, DAR, DI, and DAP variables to represent working capital correlate; thus, the regression is done with different models in accordance with the initial objectives of the study. The NTC2 value exceptions to NTC2 are used due to the non-linear relationship of working capital to the firm. The effect of working capital and financial aspects to the value of the company, then the regression model analyzed to determine the relationship of working capital and financial factors to the firm value. The regression test uses Tobin's Q as a dependent variable. The observation results are displayed in Table IV. Based on the results, NTC has a negative relationship to company value in accordance with previous research where, for example, a company storing large amounts of inventory can increase the cost of warehousing, insurance, and security costs that usually arise with increasing inventory [40] and allocation of the company's funding so that the company faces high interest expenses [7]. While days of account payable results have an insignificant positive relation to Tobin's Q, days of inventory and days of account receivable have insignificant positive relation to Tobin's Q, which is different from previous studies [28]. In order to observe the possible effects when using the two approaches of working capital to firm value, in Model 5, NTC is insignificant and positive in relation to firm value and NTC2 is significant and negative in relation to Tobin's Q. The positive NTC and negative coefficients of NTC2 indicate a quadratic relationship to firm value in accordance with previous studies [5]. With this quadratic relationship, the optimal point of value is $-\beta_1/2\beta_2$, which becomes the boundary point where, in the event of the addition of time required by the company to convert the purchase into sales, there will be a decrease in the value of the company. Increasing the market capitalization or the value of the company can be done by minimizing the time difference of DAP until resold into cash by ensuring the DAR and DI are rather similar to DAP so that the value of NTC becomes smaller.

TABLE III. PEARSON'S CORRELATIONS

	TOBINQ	NTC	DAR	DI	DAP	SIZE	LEV	GR	ROA
TOBINQ	1.00								
NTC	-0.047 0.028	1.00							
DAR	-0.134 0.000	0.255 0.000	1.00						
DI	0.023 0.176	0.815 0.000	-0.082 0.000	1.00					
DAP	-0.032 0.099	-0.191 0.000	0.139 0.000	0.056 0.12	1.00				
SIZE	0.239 0.000	-0.119 0.000	-0.156 0.000	0.014 0.285	0.114 0.000	1.00			
LEVERAGE	-0.080 0.001	-0.115 0.000	-0.066 0.004	-0.140 0.000	0.039 0.054	0.155 0.000	1.00		
GROWTH	0.094 0.000	-0.033 0.086	-0.092 0.000	0.023 0.172	-0.017 0.242	0.013 0.301	-0.039 0.055	1.00	
ROA	0.350 0.000	-0.023 0.175	-0.083 0.000	-0.008 0.368	-0.123 0.000	0.143 0.000	-0.268 0.000	0.213 0.000	1.00

TABLE IV. REGRESSION ANALYSIS

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
C	-0.1443 (-0.3843)	-0.2012 (-0.5376)	-0.2032 (-0.5423)	-0.2054 (-0.5481)	-0.0599 (-0.4283)
NTC	-0.0003* (-1.6967)				0.0002 (0.8823)
NTC2					-0.0001*** (-2.6672)
DAR		0.0002 (0.3997)			
DI			0.00001 (0.1079)		
DAP				0.00004 (0.2042)	
LEVERAGE	0.3440** (2.8974)	0.3334** (2.7939)	0.3378** (2.8434)	0.3373* (2.8381)	0.3338*** (2.8157)
GROWTH	0.0326 (0.9079)	0.0434 (1.2094)	0.0416 (1.1679)	0.0415 (1.1680)	0.0374 (1.044)
ROA	1.5992*** (6.8532)	1.6020*** (6.857)	1.5997*** (6.8487)	1.6049*** (6.8327)	1.5433*** (6.6)
SIZE	0.0837** (3.2625)	0.0849*** (3.298)	0.0856*** (3.336)	0.0857*** (3.3377)	0.0750*** (2.906)
Adjusted R^2	0.5151	0.5143	0.5142	0.5142	0.1577
F-value	11.371	11.335	11.333	11.333	53.117
p-value	0.000	0.000	0.000	0.000	0.000

[a].Regression results with Tobin's Q as the dependent variable are performed with fixed effect method on non-financial firms open in the period 2007–2016. NTC is account receivable and inventory less account payable divided by sales multiplied by 365. NTC2 is the square of NTC. DAR is a receivable account divided by sales multiplied by 365. DI is inventory divided cost of goods sold multiplied by 365. DAP is account payable divided by cost of goods sold multiplied by 365. LEVERAGE is total debt divided by total assets. GROWTH is this year's sales less last year's sales divided by sales last year. ROA is earnings before interest and taxes divided by total assets. SIZE is the natural logarithm of total assets. Significance levels: ***, **, and * are, respectively, 0.01, 0.05, and 0.1.

Based on the regression results for the five models, the level of risk (leverage) owned by the company has a positive relationship with the value, contrary to previous studies [34, 35]. Firm value will be higher if leverage is higher as financial leverage can increase the profitability of the company by increasing the ability to earn income based on the earnings before interest and taxes-to-total assets ratio exceeds the value of interest cost of debt from the value of the company [41]. As in previous studies, firm growth shows a positive relationship with firm value [5, 28]. The insignificance of growth shows the value of investment on the value of Tobin's Q is influenced by economic uncertainty and investment decisions [42] as the economic recession in Southeast Asia slowed company growth [43].

IV. CONCLUSIONS

The purpose of this study was to explain the relationship between working capital and financial aspects and the value of non-financial companies listed on the Indonesia Stock Exchange in the period 2007–2016. This study supports the findings of previous studies in showing the negative influence on firm value and a non-linear relationship of the

NTC to firm value, where the value decreases above an optimal point. Based on working capital components, there is an insignificant positive relationship with working capital component, consisting of days of account receivable, days of inventory, and days of account payable to firm value. Due to economic effects, the company's growth rate has an insignificant positive relationship to firm value. The level of risk or leverage has a positive relationship to the value of the company so that the higher the leverage the higher the value of the company. Asset utilization, or ROA, has a positive relationship so that the higher the value of ROA, the higher the value of the company. There are several points that can be taken for managers in order to increase firm value by adjusting for lower working capital and taking a higher total debt ratio in order to enhance the company's market value while ensuring the profitability of the company.

REFERENCES

[1] J. Enqvist, M. Graham and J. Nikkinen, "The impact of working capital management on firm profitability in different business cycles: Evidence from Finland," Res. Int. Bus. Financ, vol. 32, pp. 36-49, 2014.

[2] A. P. Hamlin and D. Heathfield, "Competitive management and working capital," Manag. Decis. Econ. vol. 12, pp. 207-217, 1991.

[3] F. Modigliani and M. H. Miller, "The cost of capital, corporation finance and the theory of investment," Am. Econ. Rev, vol. 48, pp. 261-297, 1958.

[4] W. Ross and Jordan, Corporate Financial Fundamental. NewYork: McGraw-Hill, 2008.

[5] S. B. Caballero, P. J. Teruel, and P. M. Solano, "Working capital management, corporate performance, and financial constraints," J. Bus. Res, vol. 67(3), pp. 332-338, 2014.

[6] M. Deloof, "Does working capital management affect profitability of Belgian firms?" J. Bus. Financ. Accounting, vol. 30(3-4), pp. 573-588, 2003.

[7] R. Kieschnick, M. LaPlante and R. Moussawi, "Working capital management and shareholder wealth," 2011. Working paper (SSRN: http://ssrn.com/abstract=1431165).

[8] K. Padachi, "Trends in working capital management and its impact on firms' performance: an analysis of Mauritian small manufacturing firms," Int. Rev. Bus. Res, vol. 2, pp. 45-58, 2006.

[9] Leo R. Cheatham, "Evaluation of the effects of holding excess inventories," Manag Financ, Vol. 15(6), pp. 1-6, 1989.

[10] T. Gallagher and A. Joseph, Financial Management: Principles and Practices with Finance Center Disk. 2nd ed., Prentice Hall, 2013.

[11] M. Siddiquee and S. M. Khan, Analyzing Working Capital Performance: Evidence from Dhaka Stock Exchange (DSE) Ltd., 2008

[12] E. Berhasak, Efek Modal Kerja Terhadap Profitabilitas Perusahaan-Perusahaan di Industri Manufaktur di Indonesia pada Tahun 2007. Tesis Program Studi Magister Manajemen, Universitas Indonesia, Jakarta, 2008

[13] A. Damodaran, Corporate finance: Theory and practice. John Wiley and Sons, Inc., 1997.

[14] R. Singh, et al. "Aerobic production of isoamyl acetate by overexpression of the yeast alcohol acetyl-transferases AFT1 and AFT2 in Escherichia coli and using low-cost fermentation ingredients," Bioprocess. Biosyst. Eng. vol. 31(4), pp. 299-306, 2008

[15] Y. J. Wang, "Liquidity management, operating performance, and corporate value," J. Multinational Financ. Manag, vol. 12, pp. 159-169, 2002.

[16] J. Berryman, "Small business failure and bankruptcy: a survey of the literature," Euro. Small Bus. J, vol. 1, pp. 47-59, 1983.

[17] P. Dunn and L. Cheatham, Fundamentals of small business financial management for start-up, survival, growth, and changing economic circumstances," Manag. Financ. vol. 19(8), pp. 1-13, 1993.

[18] I. Lazaridis and D. Tryfonidis, "Relationship between working capital management and profitability of listed companies in the Athens stock exchange," J. Financ. Manag. Anal, vol. 19, pp. 26-35, 2006.

[19] F. Chittenden, P. Poutziouris and N. Michaelas, Financial Management and Working Capital Practices in UK SMEs. Manchester Business School: Manchester, 1998.

[20] F. Saccurato, "The study of working capital," Business Credit, January, vol. 96, pp. 36-37, 1994.

[21] M. B. Burton, A. A. Lonie and D. M. Power, "The stock market reaction to investment announcements: The case of individual capital expenditure projects," J. Bus. Financ Accounting, vol. 26, pp. 681-708, 1999.

[22] K. E. Chung, P. Wright and C. Charoenwong, "Investment opportunities and market reaction to capital expenditure decisions," J. Banking Financ, vol. 22, pp. 41-60, 1998.

[23] J. J. McConnell and C. J. Muscarella, "Corporate capital expenditure decisions and the market value of the firm," J. Financial Econ, vol. 14, pp. 399-422, 1985

[24] A. Agrawal and C. R. Knoeber, "Firm performance and mechanisms to control agency problems between managers and shareholders," J. Financial Quant. Anal, vol. 31, pp. 377-397, 1996.

[25] C. Himmelberg, R. Hubbard and D. Palia, "Understanding the determinants of managerial ownership and the link between ownership and performance," J. Financial Econ, vol. 53, pp. 353-384, 1999.

[26] S. Thomsen, T. Pedersen and H. Kvist, "Blockholder ownership: Effects on firm value in market and control based governance systems," J. Corporate Financ, vol. 12, pp. 246-269, 2006.

[27] C. Florackis, A. Kostakis and A. Ozkan, "Managerial ownership and performance," J. Bus. Res, vol. 62, pp. 1350-1357, 2009.

[28] Abuzayed, "Working capital management and firms' performance in emerging markets: the case of Jordan," International Journal of Managerial Finance, vol. 8(2), pp. 155-179, 2012.

[29] H. H. Shin and L. Soenen, "Efficiency of working capital management and corporate profitability," Financial Practice and Education, vol. 8, pp. 39-45, 1998.

[30] S. M. Fazzari, R. G. Hubbard and B. C. Petersen, "Financing constraints and corporate investment," Brookings Papers on Economic Activity, vol. 1, pp. 141–195, 1988.

[31] B. Greenwald, J. E. Stiglitz and A. Weiss, "Informational imperfections in the capital market and macroeconomic fluctuations," Am. Econ. Rev, vol. 74, pp. 194-199, 1984.

[32] M. C. Jensen and W. H. Meckling, "Theory of the firm: Managerial behavior, agency cost and ownership structure," J. Financial Econ, vol. 3, pp. 305-360, 1976.

[33] S. Myers and N. Majluf, "Corporate financing and investment decisions when firms have information that investors do not have," J. Financial Econ, vol. 13, pp. 187-221, 1984.

[34] K. Hammes, "Firm performance, debt, bank loans and trade credit. An empirical study", Department of Economics: Gothenburg University, Gothenburg, 2003.

[35] J. M. C. Mesquita and J. E. Lara, "Capital structure and profitability: the Brazilian case", working paper, Academy of Business and Administration Sciences Conference, Vancouver, July 11-13, 2003.

[36] J. M. Kim, et al. "Transposable elements and genome organization: a comprehensive survey of retrotransposons revealed by the complete Saccharomyces cerevisiae genome sequence," Genome. Res. vol. 8(5), pp. 464-78, 1998.

[37] T. Opler and L. Pinkowitz, R. Stulz and R. Williamson, "The determinants and implications of corporate cash holdings," J. Financ Econ, Elsevier, vol. 52(1), pp. 3-46, 1999.

[38] C. Chan, "The study on working capital management of manufacturing business," unpublished master's dissertation,

Department of Management Science, Tam Kang University, Taiwan, 1993.

[39] M. Peel and N. Wilson, "Working capital and financial management practices in the small firm sector," Int. Small Bus. J, vol. 14, pp. 52-68, 1996.

[40] Y. Kim and K. Chung, "An integrated evaluation of investment in inventory and credit: A cashflow approach," J. Bus. Financ. Accounting, vol. 17(3), pp. 381-390, 1990.

[41] R. W. Hutchinson, "The capital structure and investment decisions of the small owner-managed firm: some explanatory issues," Small Bus. Econ, vol. 7, p. 231, 1995.

[42] E. Tran, "Cancer immunotherapy based on mutation-specific CD4+ T cells in a patient with epithelial cancer," Sci. vol. 9(344-6184), pp. 641-5, 2014.

[43] M. Fazli, M. Sam, and Y. Hoshino, "Sales Growth, Profitability, and Performance: Empirical Study of Japanese ICT Industries with Three ASEAN Countries," Interdisciplinary J. Contemp. Res. Bus, vol. 4, 2013.