THE EFFECT OF WORKING CAPITAL MANAGEMENT ON SMEs PROFITABILITY IN MALAYSIA


Abstract: The paper examines the effects of working capital management on Malaysian SMEs profitability within the sight of control factors measured by the size of the firm, leverage, and sales growth. Secondary data was drown from Companies Commission of Malaysia, database for 66 SMEs in Malaysia for the period between 2006-2012. Panel data regressions were applied in the analysis. Empirical results established a negative effect of working capital administration measures: Stock Turnover in Days, Days Account Receivables, and Cash Conversion Cycle on SMEs benefit intermediaries, Return on Equity (ROE) and Return on Assets. The results also established a positive effect of Net Operating Profit on Cash Conversion Cycle. Furthermore, the study also revealed a positive effect of Days Account Payables on SME’s Return of Asset and Return of Equity, yet having a negative effect on Net operating Profit. The findings imply that profitability of Malaysian SMEs relies upon effective working capital management. The results imply that Profitability of Malaysian SMEs depends upon effective working capital management. The paper contributes empirical evidence on the effect of working capital on Malaysian SMEs.

Key words: Working capital, working capital management, SMEs, profitability, Malaysia

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Introduction

Working capital administration is one of the critical part of the financial management of many organizations. It deals with the choice on the composition of current assets and current liabilities in a business (Mansoori and Muhammad, 2012). Working capital administration assumes an imperative part in the growth of shareholder’s wealth of larger companies. A positive link has been established between working capital management and profitability of the larger manufacturing companies, for examples Chatterjee (2010), Davis (2016), De-Almeida and Eid (2014) and Hussain et al. (2012) highlighted a positive significant relationship between working capital management and profitability in relation to the manufacturing sectors. However, the discuss on working capital management in the context of Small and Medium Enterprises (SMEs) is ongoing in the literature. The greater part of SMEs does not have long-term assets, like, vehicles, office

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equipment or building. Therefore, the proportion of current resources over aggregate total assets is very high as majority of the assets comprise of stock, cash balances and account receivable (Ali, 2015). Previous researchers in the area of working capital management and SME profitability has come out with mixed findings, though the context in terms of nature of businesses and location of research differs. For example, Pais and Gama (2015) and Banos-Caballero et al., (2010) reported that working capital management has a positive link with SMEs profitability in Portuguese and Spain respectively. So also, Tauringana and Afrifa (2013) found asignificant positive effect of the components of working capital management on SMEs' profitability in the United Kingdom. Similarly, Afee (2011), Lyngstadaas and Berg (2016) and Tran et al., (2017) found a similar result in Pakistan, Norway and Vietnam respectively.

On the contrary, Banos-Caballero et al., (2012) found a negative relationship between working capital management profitability of Spanish SMEs in a different study. In a similar development, Gul et al., (2013) reported a negative relationship between working capital management and performance of SME in Pakistan. So also, Konak and Güner (2016) and Napompech (2012) found a similar result in Spain, Istanbul, and Thailand respectively. The inconsistencies in the findings make the research on working capital management and profitability of SMEs inconclusive. Therefore, this paper examines the effects of working capital management on SMEs profitability in Malaysia as previous empirical research has focused on larger companies and SMEs in another country. The literature on working capital management in Malaysian context is relatively rare, particularly on SMEs. Additionally, this paper is unique as it examined the said relationship in the presence of control variables measured by the size of the firm (SIZE), leverage (LEV) and sales growth (SGW).

Review of Previous Empirical Studies

The literature has provided mixed results on the relationship effect between working capital management and profitability of SME firms across different set up, with the relatively similar proportion between the positive and negative relationship between the studies. Konak and Güner (2016) reported a negative effect of working capital management on SME profitability in Istanbul. Similarly, Gul et al. (2013) reported a negative relationship between working capital management and performance of SME in Pakistan. In a similar development, Jose et al. (1996) found a negative effect of aggressive working capital management on profitability of US firms with a particular focus on Cash Conversion Cycle (CCC). They found that CCC has negative relationship with return on investment as proxy for the firm’s profitability. On the contrary, Lyngstadaas and Berg (2016) found a positive link between working capital management and the performance of SMEs in Norway. Also, Pais and Gama (2015) and Tran et al. (2017) reported same in a similar study in Portuguese and Vietnam respectively. Other studies have established a positive link between some aspect of working capital management
For instance, Mohamad and Saad (2010) conduct a study to measure the impact of working capital management and the performance of Malaysian listed companies. They found that current assets to total asset ratio have a positive effect on the firm performance based on Tobin Q, ROI and ROA. So also, Akinlo (2011) reported a positive link between conversion cycle, account receivables, inventory period and performance listed firms in Nigeria for the period 1999 to 2007. While account payable is negatively related to profitability. In addition, Afeef (2011) found negative relationship between working capital management and SMEs performance in Pakistan. Specifically, the spelled out that inventory conversion period and receivable collection period are negatively correlated with operating profit. Furthermore, Gul et al., (2013) found that a number of day’s accounts payable (APP) has a positive relationship with profitability while average collection period (ACP), cash conversion cycle (CCC), inventory turnover (INV) and debt ratio (DR) have a negative relationship with profitability in a SMEs in Pakistan. Again, Dinku (2013) reported a positive relationship between a number of day’s accounts payable and ROA of SMEs in Ethiopia. While, the number of days accounts receivable, cash conversion cycle and a number of days inventory have a negative effect on ROA. He argued that an increase of day’s accounts payable causes increases the ROA and also increase in the number of days accounts receivable, a number of days inventory and cash conversion cycle relates to a decrease of the ROA level (Dinku, 2013). To conclude, based on the review above, it is clear that there are mixed findings exist across countries due to the differentiation in the nature of research and context. Hence, this study was set to empirically examined the effect of working capital management on SMEs profitability particularly in the context of Malaysia. Therefore, this paper presents the research framework and hypothesis in the following subsections. Figure 1 shows working capital components as independent variables while SMEs profitability as dependent variables together with the control variables measured by the size of the firm (SIZE), leverage (LEV) and sales growth (SGW).

![Figure 1. Research framework](image)
Methodology

Quantitative research was adopted for this paper and secondary data was used extracted from annual financial reports of the sampled SMEs. The data consists of account receivables, inventories, account payables, total debt, total equity, total current assets, total current liabilities, total assets, revenue or sales, profit after tax, and profit before tax. Companies Commission of Malaysia (CCM) is an autonomous body that functions as a center for corporate information, regulation, and development of Malaysian companies (Gorondutse et al., 2016). CCM database was used for collection of data. Thus, companies’ financial figures were collected for the period of 2006-2012 which will use for the research purpose through individual company reports.

Models

Three models are run to develop the relationship between the working capital management and the SMEs profitability in addition to other firm characteristics i.e. Firm size, sales growth, and leverage as follows:

The first model will examine the relationship between ROA and working capital components measures:

$$ ROA_{it} = \beta_0 + \beta_1 (DAR)_{it} + \beta_2 (ITID)_{it} + \beta_3 (DAP)_{it} + \beta_4 (CCC)_{it} + \beta_5 (SIZE)_{it} + \beta_6 (LEV)_{it} + \beta_7 (SG)_{it} + e $$

(1)

The second model will examine the relationship between NOP and working capital components measures:

$$ NOP_{it} = \beta_0 + \beta_1 (DAR)_{it} + \beta_2 (ITID)_{it} + \beta_3 (DAP)_{it} + \beta_4 (CCC)_{it} + \beta_5 (SIZE)_{it} + \beta_6 (LEV)_{it} + \beta_7 (SG)_{it} + e $$

(2)

The third models will examine the relationship between ROE and working capital components measures:

$$ ROE_{it} = \beta_0 + \beta_1 (DAR)_{it} + \beta_2 (ITID)_{it} + \beta_3 (DAP)_{it} + \beta_4 (CCC)_{it} + \beta_5 (SIZE)_{it} + \beta_6 (LEV)_{it} + \beta_7 (SG)_{it} + e $$

(3)

Results and Discussion

As mentioned in the previously, there are three dependent variables which are, Return on Assets (ROA), Net Operating Profit (NOP) and Return on Equity (ROE), whereas Days Account Receivables (DAR), Inventory Turnover in Days (ITID), Days Account Payable (DAP) and Cash Conversion Cycle (CCC) are the independent variables. Table 1 presents the summary of descriptive statistics of the variables with respect to 66 SMEs with 526 observations in Malaysia.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>526</td>
<td>.0837</td>
<td>.0002</td>
<td>.5400</td>
<td>.0852</td>
</tr>
<tr>
<td>NOP</td>
<td>526</td>
<td>.8656</td>
<td>.0018</td>
<td>14.93</td>
<td>1.304</td>
</tr>
<tr>
<td>ROE</td>
<td>526</td>
<td>.0674</td>
<td>-4.313</td>
<td>95.30</td>
<td>.3074</td>
</tr>
</tbody>
</table>
The average value of the return on asset (ROA), net operating profit (NOP) and return on equity (ROE) are 8.4%, 86.6 and 6.7% respectively. This finding shows that SMEs in Malaysia are cost effective in generating more profit from their operations by utilizing their total assets. Furthermore, the return to equity holders is considered to be relatively moderate. The maximum value for ROA, NOP, and ROE are 54.0% and 14.93% and 95.30% respectively. This indicates that SMEs in Malaysia have shown a higher ROE with the maximum value of 95.30. Pearson correlation test is conducted to examine the relationship between the dependent and independent variables. The result shows that SMEs days account receivable is having a negative correlation with the three dependent variables i.e., ROA, NOP, and ROE while days account payable positive correlation with ROA and ROE but negative correlation with NOP. Furthermore, inventory turnover in days and cash conversion cycle are having a negative correlation with three dependent variables. Moreover, DAR and DAP are having a high correlation of 0.715, while ITID and CCC are also having a correlation of 0.931. These correlations are statistically significant at the 1% level. But all other independent variables in the model are considered to have low correlations but statistically significant at the 1% and 5% confidence level. Multicollinearity is not a problem to this paper as indicated by the low pair-wise correlation among the variables. To confirm that, a Variance Inflating Factor (VIF) was reported in table 2. The R-square are relatively low for all the variables which give a lower VIF at the range of 1.058 to 2.153 indicating the absence of multicollinearity problem.

### Table 2. Multicollinearity

<table>
<thead>
<tr>
<th>Variables</th>
<th>R²</th>
<th>VIF = 1/(1-R²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAP</td>
<td>0.53466</td>
<td>2.149</td>
</tr>
<tr>
<td>ITID</td>
<td>0.25194</td>
<td>1.337</td>
</tr>
<tr>
<td>DAR</td>
<td>0.53556</td>
<td>2.153</td>
</tr>
<tr>
<td>CCC</td>
<td>0.50998</td>
<td>2.041</td>
</tr>
<tr>
<td>LGSZ</td>
<td>0.18632</td>
<td>1.229</td>
</tr>
<tr>
<td>SGW</td>
<td>0.05474</td>
<td>1.058</td>
</tr>
<tr>
<td>LEV</td>
<td>0.10288</td>
<td>1.115</td>
</tr>
</tbody>
</table>

In the accompanying part, the regression analyses were utilized to determine the effect of working capital management on Malaysian SMEs. The study develops
three models using ROA, NOP, and ROE as the dependent variables. Table 3 presents the regression models of the three different sets of control variables. Effect of working capital management on SMEs profitability was estimated using panel data analysis. The regression analyses were run to determine the presence of autocorrelation in the data, using Durbin-Watson (DW) statistics. The results demonstrate the nonappearance of autocorrelation in the data. The D-W values ranges between 1.413 and 1.55, where Makridakis and Wheelwright (1978) consider D-W esteem in the range of 1.5 and 2.5 as an adequate level showing the absence of autocorrelation issue. Some of these values are fairly lower than 1.5, yet since the threshold shows that score lower than 1.0 may probably one to bring about issues, these scores are yet accepted.

Table 3. Regression analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1 DV= ROA Pooled OLS</th>
<th>Model 2 DV= NOP Pooled OLS</th>
<th>Model 3 DV= ROE Pooled OLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.691234</td>
<td>0.109417</td>
<td>-0.065214</td>
</tr>
<tr>
<td>DAR</td>
<td>-0.000362 (0.0123)**</td>
<td>-0.006156 (0.0046)*</td>
<td>-0.000260 (0.6177)</td>
</tr>
<tr>
<td>DAP</td>
<td>0.000308 (0.0249)**</td>
<td>-0.001218 (0.5540)</td>
<td>0.000186 (0.0467)**</td>
</tr>
<tr>
<td>ITID</td>
<td>-5.25E-05 (0.3391)</td>
<td>-0.001993 (0.0159)**</td>
<td>-0.000243 (0.2213)</td>
</tr>
<tr>
<td>CCC</td>
<td>-1.50E-05 (0.0398)**</td>
<td>0.002464 (0.0006)*</td>
<td>-0.000156 (0.3571)</td>
</tr>
<tr>
<td>SGW</td>
<td>-0.000114 (0.5592)</td>
<td>0.000666 (0.8195)</td>
<td>9.79E-05 (0.8892)</td>
</tr>
<tr>
<td>LEV</td>
<td>-2.37E-05 (0.9251)</td>
<td>-0.005056 (0.1824)</td>
<td>-0.000395 (0.6646)</td>
</tr>
<tr>
<td>LGSZ</td>
<td>-0.001807 (0.4433)</td>
<td>0.037408 (0.2906)</td>
<td>0.008020 (0.3463)</td>
</tr>
<tr>
<td>R-square</td>
<td>0.514224</td>
<td>0.465678</td>
<td>0.435845</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.552331</td>
<td>1.413746</td>
<td>1.533632</td>
</tr>
<tr>
<td>F-statistic</td>
<td>0.027671**</td>
<td>0.000341*</td>
<td>0.800546</td>
</tr>
<tr>
<td>Hausman Test</td>
<td>2.124977 (0.9079)</td>
<td>1.778621 (0.9389)</td>
<td>8.229889 (0.2217)</td>
</tr>
</tbody>
</table>

The results of the estimated coefficients are showed in Table 3. A look at Model 1 results indicates a negative relation between DAR, ITID and CCC. With the ROA variables are significant at 5% significance level except for ITID which is insignificant. The result indicates that an increase in DAR and CCC will result in lower profitability of the SMEs which is measured by ROA. These findings of the study are consistent with that of Garcia-Teruel et al., (2007), Gul et al. (2013), Dinku (2013) and Ali (2015) among others.
Moreover, the result also shows that days account payable (DAP) has a positive effect on SMEs profitability, this indicates that the later the Malaysian SMEs pay their bills to their suppliers will tend to increase their profit. The finding is in line with that of Dinku (2013) who examine the Ethiopian SMEs and finds that day in account payable is positively related to the profitability of the SMEs. For the control variables, leverage, sales growth, and size, the coefficients are negative and insignificant. This implies that leverage, sales growth, and size do not influence SMEs profitability in Malaysia. As a result, under model 1 (ROA), this relationship has accepted the null Hypothesis 1: H0, Hypothesis 2: H0, Hypothesis 3: Ha, Hypothesis 4: H0, and rejected the null Hypothesis 3: H0.

Overall, the findings suggest that SMEs in Malaysia are relying much on short-term trade financing to finance their operations as DAP positively related to the profitability of SMEs. Management of SMEs can also shorten DAR, and CCC to increase the profitability of the firm. Moreover, we can also say that by sustaining a minimum CCC, and DAR companies will be able to better maximize their sales which will improve the profitability.

The result from the regression shows that using NOP as the dependent variable, DAR, DAP, and ITID are all negatively related to the profitability of SMEs. DAR is significant at 1% confidence level, ITID is significant at 5% level, but DAP is found not to be significant. To increase the net operating profit, the SMEs need to reduce the level of their account receivables, inventory and account payables. In contrast with the previous result mentioned under model 1 (ROA), now CCC has a positive and significant relation with net operating profit, with a significant level of 1%. This shows that an increase in CCC will result to increase the net operating profit of the SMEs suggesting that the SMEs are using short-term assets and liabilities efficiently to generate more profit. But on the other hand, the longer the CCC, the higher the need for short-term financing. Overall, the results are consistence with the findings of Shah and Sana (2006) and Jacob (2014).

Table 3 summarizes the estimated coefficients from the regression analysis, a negative relation is found in DAR, ITID, and CCC. However, the three variables are not statistically significant in measuring their effects on SMEs profitability using ROE as a proxy. DAR has a positive relation with ROE and statistically significant at 5% confidence level. This implies that an increase in the level of SMEs account payables will result with an increase in the company’s profitability. This is similar to previous findings; all control variables are insignificant under ROE also. Therefore, this paper accepted the null Hypothesis 1: H0, Hypothesis 2: H0, Hypothesis 3: Ha, Hypothesis 4: H0, and rejected the null Hypothesis 3: H0. It is interesting to note that, the findings of this study in the aspect of ROE supports Hong et al., (2011). In this respect, Hong et al. (2011) investigate the relationship between working capital and profitability in Brazil. Their study finds that day’s inventory does not have any statistical evidence when measured with ROE as a measure of profitability. We can further argue that ROE is not a good proxy for SMEs profitability as compared to ROA and NOP. It is somewhat seen as a
measure of the return shareholders get from the company and is not directly having an impact on the company’s operational activities like ROA and NOP. Therefore, we can say that ROE is not relatively a good measure of SMEs profitability compared to ROA & NOP.

Conclusion and Recommendation

Here, the paper summarizes the key contribution of the study and concludes the empirical results. The motivation behind this study is to empirically provide experimental confirmation on the effect of working capital administration on the profitability of SMEs in Malaysia. The research question of this study was aimed at finding whether working capital management can influence the profitability of Malaysian SMEs. The findings of this study confirm what has been found in other studies for large companies and as well as for the SME companies, that there is a significant link between the working capital components and performance of SMEs in Malaysia. This signifies that effective working capital management has an important effect on SMEs profitability in Malaysian SMEs.

Generally, the results of this study show that there is a negative relationship between working capital management (DAR, ITID, and CCC) and SMEs profitability measures (ROA and ROE). The result also, revealed that a positive effect of NOP on CCC. Furthermore, the findings show positive relationship between DAP and SMEs productivity (ROA and ROE) but having a negative relation with NOP. Overall, the outcomes are consistent with the findings of Garcia-Terur et al. (2007); Gul et al. (2013); Dinku (2013); Shah and Sana (2006); Jacob (2014).

Theoretical and Managerial Implications of the Study

First of all, the results of the study show that WCM has an effect on the profitability of Malaysian SMEs. However, the main problems that face SMEs are the lack of or limited access to finance, which results in the management of working capital very critical to the both the existence and profitability of their firms. This study suggests SMEs managers to better manage their working capital because of the better the management of their working capital the lower the need for borrowings. Secondly, the results of this study suggest that SMEs managers can improve the profitability of their firms by reducing their CCC which is the components of DAR, ITID and DAP to a reasonable minimum. On the other hand, SMEs can take a long period to pay their suppliers as far as that will not harm their relationship with the suppliers. Moreover, stakeholders such as lenders can also benefit from this study by considering SMEs working capital policies to understand the going concern of SMEs profitability in the future so as to strengthen their internal control for credit risk of SMEs and to decide whether they continue to give credit to the SMEs. Such knowledge will contribute to a realistic understanding of SMEs in Malaysia and its implications. Students who have a propensity to learned
working capital management may be in a more constructive position to recognize opportunities and take the necessary action to make them advantageous.

Firstly, limited availability of data was the main limitations of this paper as it relies on and makes used of only the data provided by Companies Commission of Malaysia (CCM) database. In addition, there are a lot of missing data in most of the companies which limit the overall sample to 66 companies. Secondly, this study focused mainly on Malaysian SMEs. Further research should be conducted especially when the Companies Commission of Malaysia (CCM) database is expanded to examine the effects of working capital management on SMEs profitability in Malaysian by extending the sample size. Moreover, this study only examines receivables, inventories, payable and cash as components of working capital. Other components of working capital such as market securities, net trade cycle and also another external variable can also be analyzed for their influence on SMEs profitability. A comparative analysis can also be done between Malaysia and other countries in order to identify country-specific factors on the effect of working capital on the profitability of SMEs.

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Wpływ Zarządzania Kapitałem Pracy na Rentowność MŚP w Malezji

Streszczenie: Artykuł analizuje wpływ zarządzania kapitałem obrotowym na rentowność w MŚP Malezji pod kątem czynników kontrolnych mierzonych wielkością firmy, dźwignią finansową i wzrostem sprzedaży. Wtórne dane zostały uzyskane z Komisji Firm Malezji, bazy danych dla 66 MŚP w Malezji w latach 2006-2012. W analizie zastosowano regresję danych panelowych. Wyniki empiryczne wykazały negatywny wpływ narzędzi zarządzania kapitałem obrotowym: rotacja zapasów w dniach, należności z tytułu dni płatniczych i cykl konwersji gotówki do pośrednikach świadczeń MŚP, zwrot z kapitału własnego i zwrot z aktywów. Wyniki wykazały również pozytywny wpływ operacji netto. Ponadto, badanie wykazało również pozytywny wpływ zobowiązań z tytułu płatności w dniach na zwrotę aktywów i zwrotu kapitałów własnych MŚP, co jednak ma negatywny wpływ na zysk netto z działalności operacyjnej. Wyniki badania sugerują, że rentowność malezyjskich MŚP zależy od Zarządzania kapitałem obrotowym. Wyniki sugerują, że rentowność malezyjskich MŚP zależy od skutecznego zarządzania kapitałem obrotowym. Artykuł ten stanowi dowód empiryczny na temat wpływu kapitału obrotowego na malezyjskie MŚP.

Słowa kluczowe: kapitał obrotowy, zarządzanie kapitałem obrotowym, MŚP, rentowność, Malezja.

運營資本管理對馬來西亞中小企業盈利能力的影響

摘要：本文考察了由企業規模、槓桿率和銷售額增長所控制的控制因素，運營資金管理對馬來西亞中小企業盈利能力的影響。二手數據被馬來西亞公司委員會淹沒，該數據庫為馬來西亞66家中小型企業提供了2006-2012年間的數據庫。分析中應用了面板數據回歸。實證結果表明，運營資金管理措施（股票周轉天數，應收帳款周轉天數，中小企業收益中介機構的現金周轉週期（股本報酬率（ROE）和資本收益率）的負面影響）結果也確立了淨營業額現金轉換週期利潤，同時也揭示了天應付帳款對中小企業資產收益率和股本回報率的正向影響，但對淨營業利潤有負面影響，這表明馬來西亞中小型企業的盈利能力依賴於有效結果表明馬來西亞中小型企業的盈利能力取決於有效的運營資本管理，為運營資本對馬來西亞中小型企業的影響提供了實證依據。

關鍵詞工作：資本，運營資本管理，中小企業，盈利能力，馬來西亞