“Inventory management, cost of capital and firm performance: evidence from manufacturing firms in Jordan”

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INVENTORY MANAGEMENT, COST OF CAPITAL AND FIRM PERFORMANCE: EVIDENCE FROM MANUFACTURING FIRMS IN JORDAN

Abstract

Several studies have examined the relationship between inventory management and firm performance. However, most of these studies ignore the impact of inventory types on the relationship. Moreover, the relationship is influenced by some factors such as cost of capital which has not been considered. This study examines the moderating effect of cost of capital on the relationship between inventory types and firm performance. The data of 48 firms for the period 2010–2016 which formed 279 firm-year observations were used in this study. With the use of Pearson correlation and panel Generalized Method of Moments (GMM) estimation, the findings show that inventory management with consideration of its types influence firm performance in the long term. In addition, it is also found that cost of capital moderates the relationship between inventory management and firm performance. However, the interaction between cost of capital and inventory types has different implications. It is suggested that firms should consider cost of capital when making decision on inventory types and align their inventory control to fit in to the changes in their business environment.

Keywords inventory, firm value, raw materials, finished goods, work-in-process, cost of capital

JEL Classification G3, G31, G32

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INTRODUCTION

The importance of managing inventories cannot be underestimated, especially for merchandizing and manufacturing firms, since it is the most difficult asset they must manage (Kolias et al., 2011), and has a significant influence on supply chain and firm performance (Jeremy F. Shapiro & Wagner, 2009). Due to its influence as driver of performance, different initiatives have been taken by firms to improve its efficiency and effectiveness (Eroglu & Hofer, 2011a), which include implementing initiatives on supply chain collaboration such as quick response and vendor-managed inventory (Waller et al., 1999), adopting just-in-time inventory management practice (Schwarz & Weng, 2000), employing postponement approaches (Garcia-Dastugue & Lambert, 2007), and applying supply chain software (Blankley et al., 2008).

In addition, as inventory management encompasses financing, purchasing and selling policies, their implementation involves contradictory functional objectives (Kolias et al., 2011). An instance is where the effort of the financial manager to minimize the level of inventory contradicts the effort of the marketing manager to minimize the possibility of inventory shortage. Therefore, inventory management entails the specification, retention and control of desired inventory level, on the one hand, and minimization of the total inventory cost, on the other hand. This means that the issue of inventory management lies on optimizing between understocking and overstocking cost. Inventory shortage indicates unfavorable demand and reduction in sales, while excessive inventories could result in cost of spoilage, breakage, obsolescence and deterioration, items storage, taxes and insurance, as well as the opportunity cost of investing in alternative capital (Kolias et al., 2011).

Moreover, empirical studies (Capkun et al., 2009; Canon, 2008; Eroglu & Hofer, 2011a, 2011b; Koumanakos, 2008; Sekeroglu & Altan, 2014) have shown evidence of a positive influence of an effective inventory management on firm performance. However, while most of these studies focused on effect of total inventories on firm performance, only very few (Capkun et al., 2009; Eroglu & Hofer, 2011a) considered the effect of inventory types on firm performance. Inventory types, which include raw material inventories (RMI), work-in-processing inventories (WIPI), and finished goods inventories (FGI) have different impact on firm performance. For instance, the unit value of RMI is lower than that of FGI, and there is uncertainty in the demand for FGI than that of RMI (Stock & Lambert, 2001). Thus, these significant differences among the inventory types result in their differential influences on performance of the firms (Capkun et al., 2009; Eroglu & Hofer, 2011a).

Since inventory management is a part of managing firm's liquidity problems, firms that are faced with liquidity constraints could have problems raising external finance (Kim et al., 1998). Due to this, their cost of capital turns out to be a vital issue. They must manage their assets by not worrying on the cost of financing its investments, or else, it may affect their firm performance. The assumption of pecking order theory of financing costs is that firms depend on internal financing and then if liquidity issue occurs, they seek external financing through equity issues and bond issues. As firm can seek capital from many financial markets, there is a need to benchmark corporate use of capital, and cost of capital is one of the ways to benchmark it (Bruner et al., 1998). Firms need to earn above this benchmark to create value for their investors. A typical method of assessing this cost of capital is using weighted average of the individual sources of capital (equity, debt and others). It cannot be denied that the trade-off theory that relates risks with returns makes financial managers contemplate whether distress costs related with high level of leverage could play a significant role when determining the form of required capital for the company.

The long-term performance of the firm which is in terms of growth and survival relies on the funds availability from the providers of capital (Ram, 2008). If the funds are used for running the businesses, focus must be specifically on managing its current liabilities. If the funds are expensive because of high individual components of cost of capital or managing it becomes difficult due to erratic supply or scarcity of funds, levels of distress would hugely occur when there is lower level of costs or when there is huge availability of funds. Therefore, the aim of this study is to examine the moderating effect of cost of capital in the relationship between inventory management and firm performance. This is to investigate whether there is causal effect on the relationship between inventory management and firm performance with the consideration of cost of capital as a moderator.

The remainder of this paper firstly focused on the literature review and the development of the hypotheses, then, it presents the research methodology which include the statistical model and testing procedures. The report of the empirical results is given with discussions on the findings. Finally, conclusion was made with provision of implications, limitations and suggestions for future studies.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

1.1. Inventory management and firm performance

As it has been stated earlier, only few empirical studies examine the effect of inventory types on firm performance and all have been carried out in developed economy (Capkun et al., 2009; Eroglu & Hofer, 2011a). These empirical studies show a depth perception into the causes and implications of RMI, WIPI, and FGI since they depend on firm-level data to ascertain the relationship between inventory management and firm performance. This perception is in contrast with other studies that view inventory management through optimization models to achieve optimal inventory decisions (Chopra & Meindl, 2004; Miller & de Matta, 2008; Shapiro, 2007; Shapiro & Wagner, 2009) or as a monolithic entity by estimating its underlying cost structure and testing its theoretical models (Chikán, 1996; Holly & Turner, 2001; Humphreys et al., 2001; Sensier, 2003; Tsoukalas, 2011).

Lieberman et al. (1999) examine what determines RMI, WIPI, and FGI of firms in the automobile industry and the findings indicate that different factors determined each type of inventory. Some of these determinants as identified by different studies include supply chain management (Dehning et al., 2007), process choice (Safizadeh & Ritzman, 1997), and just-in-time inventory techniques (Cachon & Olivares, 2010; Claycomb et al., 1999). In addition, several studies (Cannon, 2008; Chen et al., 2005; Kolias et al., 2011; Koumanakos, 2008; Swamidass, 2007; Vastag & Whybark, 2005) have examined the implications of different inventory management practices, behavior or techniques on firm performance. Though, only a very few studies clearly differentiate among the inventory types (i.e., RMI, WIPI and FGI). Bernard and Noel (1991) examine whether inventory disclosure predict sales and earnings by splitting inventories into RMI, WIPI and FGI. They found different significant results among the inventory types. This is an indication that RMI, WIPI and FGI are different systematically based on their determinants and influence on operational and financial performance.

Chen et al. (2005) examine the inventories of listed American manufacturing firms between 1981 and 2000, and found that RMI and WIPI decline each year during these periods, but FGI did not decline. Capkun et al. (2009) examine the relationship between inventory and performance of US-based manufacturing firms for the period 1980 to 2005 with 52,254 firm-year observations. Their findings indicate that total inventories, RMI, WIPI and FGI significantly influenced performance of firms in the manufacturing industries. Though, their influence varies but RMI have the most vital influence on firm performance proxied by profit margins and earnings before interest and tax.

The study of Eroglu and Hofer (2011a) explicitly examines inventory types and firm performance, using data of 885 firms from 27 US manufacturing industries, for the period 2003 to 2008 and resulted in 4121 firm-year observations. With the use of vector autoregressive and vector error correction models, their findings indicate that the level of inventory and firm performance relationship differs across the industries based on the inventory types. They also found that RMI have the most vital influence on firm performance compared with WIPI and FGI. In addition, the intertemporal interactions that exist among the types of inventory showed that RMI and FGI asymmetrically influence each other over the periods. They conclude that each inventory types may have both direct and indirect influence on firm financial performance. This means that the influence of a certain inventory type on firm performance can be mediated by any other inventory type.

All these studies have been carried out in developed economy where there is an innovative system of trading. This is not the case in developing economies where there is a high level of capital market imperfection (i.e., agency costs and informational asymmetries), unavailability of internal finance, high financing costs, or inaccessibility to capital markets (Baños-Caballero et al., 2014; Baños-Caballero et al., 2010; Fazzari et al., 1988; Greenwald et al., 1984; Jensen & Meckling, 1976; Myers & Majluf, 1984). All these factors are indications that the effect of inventory management on firm performance in a developing economy may be different from the results from developed economies. Therefore, there is a need to examine the relationship between inventory management and firm performance with the

Table 1. List of firms and industries

No	Industry	Number of firms
1.	Pharmaceuticals & biotechnology	6
2.	Food producers	8
3.	Household goods & home construction	5
4.	Construction and materials	7
5.	General industrial	2
6.	Industrial metals and mining	5
7.	Personal goods	5
8.	Leisure goods	1
9.	Electronic and electrical equipment	4
10.	Industrial engineering	3
11.	Oil and gas producers	2
	Total	48

consideration of inventory types in a developing economy. Based on all the arguments, this study hypothesized that inventory types have relationship with firm performance as follows:

H1a: Firm's total inventory is positively related with firm performance.

H2a: Firm's RMI is positively related with firm performance.

H3a: Firm's WIPI is positively related with firm performance.

H4a: Firm's FGI is positively related with firm performance.

1.2. Inventory management, cost of capital and firm performance

One of the factors identified to affect firm performance in developing economy is high financing costs. Firms need to finance and invest in their assets such as inventories over the time to improve their performance, but they need to consider the cost of raising capital before making any decision on financing or investing in any assets. On the other hand, based on finance theory, firm value must be perceived through its expected cash flows and to achieve these cash flows, there is a need for the firm to raise capital. However, costs are attached if capital is raised through shareholders, bondholders and through other securities.

From the perspective of a firm, cost of capital is a cornerstone to attract a shareholder to a firm (Kitagawa & Gotoh, 2011). From the perspective of an investor, cost of capital is the minimum return an investor is expected to get for providing the capital. This is in line with the general belief that maximizing shareholder wealth is the goal of a firm. Cost of capital is used as a yardstick by some firms to affirm that their objectives and goals have been met, and according to Giddy (1981), a firm needs to attain funds at the lowest cost in order to be successful.

In other words, for a firm to improve its firm value and achieve a viable financial soundness, one of the vital things to put into consideration is that cost of capital must be lower than the cash flows generated through firm's operations. Thus, it is imperative to identify cost of capital as a vital variable that influences firm performance. Furthermore, the assumption of contingency theory is that firms do not apply a system all the time (Islam & Hu, 2012; Scott & Cole, 2000). Their processes and structures are shaped based on the environment they operate in (Flynn, Huo, & Zhao, 2010). Therefore, firms must align their structures and systems to fit with their environmental contingencies in order to improve firm performance (De Ven et al., 1985; Flynn et al., 2010; Milgrom & Roberts, 1988; Venkatraman & Prescott, 1990).

This study uses cost of capital as a moderating variable to examine the relationship between inventory types and firm performance. Also, this interaction between inventory management, cost of capital and their influence on firm performance provide the major theme of this study. Based on all these arguments, this study assumes the following hypotheses:

H1b: The relationship between total inventory and firm performance is moderated by cost of capital.

H2b: The relationship between RMI and firm performance is moderated by cost of capital.

H3b: The relationship between WIPI and firm performance is moderated by cost of capital.

H4b: The relationship between FGI and firm performance is moderated by cost of capital.

2. DATA ENVIRONMENT AND VARIABLE DESCRIPTION

2.1. Data environment

The population of this study is the manufacturing firms in Jordan. The basis for chosen manufacturing industry is due to the rapid changing in the manufacturing environment. Moreover, beside the government service sector, manufacturing sector is the second to contribute mostly to the GDP of Jordan. The data of 48 manufacturing firms listed on the Amman Stock Exchange for the period 2010–2016 were applied for this study. Due to some missing data after sorting, 279 firm-year observations were finally applied. The number of firms and their industry used in this study is depicted in Table 1 above:

2.2. Variables measurement

The dependent variable of this study is firm performance and it is proxied by firm value. The use of firm value as a proxy for firm performance is to measure firm performance in the long term. Most studies use profitability as a measure of firm performance or firm value. However, according to Samiloglu and Demirgunes (2008), profitability serves as a short-term measure of firm performance, and its role as a measure of firm soundness is skeptical partially because of its manipulability. A long-term measure of firm performance is firm value. The control of inventory which is part of firm working capital allows firms to adapt easily to variation in economic environments and improve its economic added value (Havoutis, 2003). Efficient inventory management helps in increasing free cash flows used in valuing firm, therefore it maximizes firm value (Berk et al., 2009).

Therefore, firm value is measured as enterprise value divided by Earnings before interest, taxes, depreciation and amortization (EV/EBITDA). Enterprise value is measured as Equity Value + T otal Debt – Cash & Cash Equivalents + Preferred Stock + Minority Interest. The independent variables are Total Inventory, RMI, WIPI and FGI.

Table 2. Variables measurement

No	Variables	Connotation	Measurement	Sources
1.	Firm Performance	FV	(Equity Value + Total Debt– Cash & Cash Equivalents + Preferred Stock + Minority Interest)/EBITDA	Bhullar and Bhatnagar (2013), Lifland (2011)
2.	Total Inventory	INV	Average of total inventory for the year divided by total sales for the year	Capkun et al. (2009), Eroglu and Hofer (2011a)
3.	Raw Material Inventories	RMI	Average of RMI for the year divided by total sales for the year	Capkun et al. (2009), Eroglu and Hofer (2011a)
4.	Working-in-Process Inventories	WIPI	Average of WIPI for the year divided by total sales for the year	Capkun et al. (2009), Eroglu and Hofer (2011a)
5.	Finished Goods Inventories	FGI	Average of FGI for the year divided by total sales for the year	Capkun et al. (2009), Eroglu and Hofer (2011a)
6.	Cost of Capital	WACC	Weighted Average cost of capital = After tax weighted cost of debt + Weighted cost of equity	Estrada (2000), Nenkov (2012)
7.	Firm Size	SIZE	Natural logarithm of sales	Inmyxai and Takahashi (2010), Yang and Chen (2009)
8.	Financial Leverage	LEV	Total debt divided by total capital	Akintoye (2008), Dhaliwal et al. (2006)
9.	Beta Coefficient	β	Constant term	
10.	Error term	ε	Error term	

Meanwhile, the moderating variable is Cost of Capital and control variables include Firm Size and Financial Leverage. Table 2 below depicts the measurement of the variables of this study.

The hypotheses were estimated with the following models:

$$FV_{it} = \beta_o + \beta_1 \cdot INV_{it} + \beta_2 \cdot RMI_{it} + \\ + \beta_3 \cdot WIPI_{it} + \beta_4 \cdot FGI_{it} + \beta_5 \cdot SIZE_{it} + \\ + \beta_6 \cdot LEV_{it} + \varepsilon_{it}, \quad (1)$$

$$FV_{it} = \beta_o + \beta_1 \cdot INV_{it} + \beta_2 \cdot RMI_{it} + \\ + \beta_3 \cdot WIPI_{it} + \beta_4 \cdot FGI_{it} + \beta_5 \cdot SIZE_{it} + \\ + \beta_6 \cdot LEV_{it} + \beta_7 \cdot WACC \cdot INV_{it} + \\ + \beta_8 \cdot WACC \cdot RMI_{it} + \beta_9 \cdot WACC \cdot WIPI_{it} + \\ + \beta_{10} \cdot WACC \cdot FGI_{it} + \varepsilon_{it}. \quad (2)$$

Equation (1) indicates a direct relationship between inventory types and firm performance to test hypotheses H1a to H4a, while the equation (2) indicates the relationship between inventory types and firm performance with the introduction of the interactive term (i.e., moderating variables) to test hypotheses H1b to H4b. Therefore, to examine the assumed models, Pearson correlation and panel Generalized Method of Moments (GMM) was applied.

3. ANALYSIS AND FINDINGS

3.1. Summary statistics

The summary of descriptive statistics of the variables is shown in Table 3 below.

Firm value shows a mean of 83%, which implies that the firms have a very robust value for these periods examined. The average of total inventory is 48%, indicating a low total inventory during these periods. Meanwhile, finished goods are with the average of 129% for the periods, indicating that firms involve in a very high finished goods inventories during the periods. Raw materials inventories and work-in-processing inventories are on the average of 82% and 94% respectively for the periods, implying that the firms incur huge purchase of raw materials that resulted to increase in work-in-process. This also lead to increase in finished goods inventory for the periods. The cost of capital is on average 13% for the period, indicating that the cost of raising capital for the firms is quite high during these periods. Firm size showed a mean of 9.11%, which implies that the size of the firms on average increases to 9.11% during these periods. The mean of the leverage indicates that financial debt is used to finance 28.12% of the total assets.

3.2. Correlation matrix

Table 4 below shows the correlation coefficient which indicates the degree of linear relationship between the variables.

The variance inflation factor (VIF) to test whether multicollinearity exist in the variables shows that the largest VIF is 4.321 (RAW), implying that the sample has no multicollinearity, since none of the VIF is up to 10 (Hair et al., 2006; Studenmund, 1997). The findings indicate that firm value has a negative correlation with total inventorying (–0.075), finished goods inventories (–0.075), raw materials inventories (–0.055), and work-in-progressing inventories (–0.059) at 10% significant level, respectively. Meanwhile, firm value is also negatively correlated

Table 3. Summary of statistics

Variables	Obs	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
FV	279	0.824728	7.544923	1755.833	–1703.667	193.9178	–2.457681	65.44530
INV	279	0.481628	0.288145	9.574803	2.468753	0.806576	7.036885	69.33405
FGI	279	1.294413	1.170095	9.484252	1.975311	0.969339	4.540718	34.17111
RAW	279	0.816975	0.822093	4.162252	1.521583	0.435863	1.925806	15.33962
WIP	279	0.938801	0.903958	5.801325	2.135926	0.574192	2.981008	22.55412
WACC	279	0.126708	0.097790	0.846268	0.009330	0.106536	3.032776	16.07514
SIZE	279	9.116953	9.234643	15.34680	2.833213	1.879533	0.055398	4.911069
LEV	279	0.281150	0.227291	10.18233	–62.54151	4.112869	–12.81557	197.4008

Table 4. Correlation matrix

Variables	FV	INV	FIG	RAW	WIP	WACC	LEV	SIZE
FV	1.000							
INV	–0.075*	1.000						
FGI	–0.087*	0.891	1.000					
RAW	–0.055*	0.176	0.600	1.000				
WIP	–0.059*	0.239	0.632	0.957	1.000			
WACC	–0.020**	0.016**	0.064*	0.109	0.151	1.000		
LEV	0.000***	0.014**	0.009***	–0.006***	–0.025**	0.016**	1.000	
SIZE	–0.016**	–0.253	–0.237	–0.066*	–0.190	–0.106	0.063*	1.000

Note: significance levels are at 1% (***), 5% (**) and 10% (*).

with cost of capital (–0.020) and firm size (–0.016) at 5% significant level, respectively. However, firm value and financial leverage are positively correlated at 1% significant level.

3.3. Regression analysis using GMM estimation

Table 5 depicts the regression analysis using GMM estimation. The R-squared is 18.25% (0.182512), which indicates that the independent variables only explained 18.25% variations in firm value. Total inventory shows insignificant relationship with firm value (at b = 0.020, p > 0.827), which indicates that total inventory of the firms does not directly influence their firm value. Finished goods inventories and firm value have a positive significant relationship (at b = 0.374, p < 0.01). This indicates that finished goods inventories positively influence firm value. Raw materials inventories and firm value are positively related (at b = 2.356, p < 0.01, which implies that raw material inventories have positive influence on firm value. Work-in-processing inventories and firm value are positively related (at b = 2.141, p < 0.01), which implies that work-processing has a positive influence on firm value. Financial leverage is negatively related with firm value (at b = –0.169, p < 0.01), while firm size is not significant with firm value.

Table 6 above shows the inclusion of cost of capital as the moderating variable between inventory management and firm value. The R-squared depicts 43%, indicating that with the moderating effect of cost of capital, the independent variables explained 43% fluctuations in firm value during the periods examined. Total inventory has a positive significant relationship with firm value with the inclusion of cost of capital (at b = –0.338, p < 0.01). This is an indication that cost of capital moderates the

Table 5. Inventory types and firm value

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	2.261	0.887	2.548	0.011
INV	0.020	0.090	0.219	0.827
FGI	0.374	0.146	2.569	0.011**
RMI	2.356	0.734	3.208	0.002***
WIPI	2.141	0.561	3.814	0.000***
LEV	–0.169	0.042	–3.990	0.000***
SIZE	–0.216	0.407	–0.531	0.595
R-squared	0.182512	Mean dependent var		1.844483
Adjusted R-squared	0.164412	S.D. dependent var		1.393054
S.E. of regression	1.273397	Sum squared resid		439.4375
Durbin-Watson stat	1.395096	J-statistic		271.0000
Instrument rank	8	Prob (J-statistic)		0.000000

Note: Significance levels are at 1% (***), 5% (**) and 10% (*).

Table 6. Inventory types, cost of capital and firm value

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	0.352	1.334	0.265	0.792
INV	0.338	0.118	–2.869	0.004***
FGI	1.946	0.390	4.984	0.000***
RAW	1.812	1.123	1.613	0.108
WIPI	4.205	0.997	–4.219	0.000***
LEV	–0.121	0.047	–2.601	0.009***
SIZE	0.657	0.593	1.107	0.269
INV*WACC	–3.077	0.662	4.651	0.000***
FIG*WACC	15.850	2.522	–6.284	0.000***
RAW*WACC	–1.678	5.735	–0.292	0.770
WIPI*WACC	–16.912	5.618	3.010	0.002***
R-squared	0.429979	Mean dependent var		1.844483
Adjusted R-squared	0.408630	S. D. dependent var		1.393054
S.E. of regression	1.071267	Sum squared resid		306.4125
Durbin-Watson stat	1.648592	J-statistic		27.59233
Instrument rank	12	Prob (J-statistic)		0.000000

Note: Significance levels are at 1% (***), 5% (**) and 10% (*).

relationship between total inventory and firm value at 1% significant level. Cost of capital positively moderates the relationship between finished goods inventories and firm value (at $b = 1.946$, $p < 0.01$). The relationship between work-in-processing inventories and firm value is negatively moderated by cost of capital (at $b = -4.205$, $p < 0.01$). However, the relationship between raw materials inventories and firm value, and firm size and firm value, respectively, are not moderated by cost of capital. Financial leverage and firm value are significantly and negatively moderated by cost of capital (at $b = -0.121$, $p < 0.01$). The interaction between total inventory and cost of capital is negatively significant (at $b = -3.077$, $p < 0.01$). Also, the interaction between finished goods inventories and firm value is positively significant (at $b = 15.850$, $p < 0.01$). Moreover, work-in-processing and firm value have significant and positive interaction (at $b = 16.912$, $p < 0.01$). However, raw materials inventories and firm value have insignificant interaction.

4. DISCUSSION

In the regression of equation (1), which is used to test hypotheses H1a to H4a, total inventory has insignificant relationship with firm value which is used as a proxy for firm performance. The plausible reason can be traced to inefficient decision making on inventory management by firms which then affect the impact of total inventory on firm performance. Therefore, based on the insignificant relationship, hypothesis H1a is rejected. The other inventory types (i.e., finished goods, work-in-processing, and raw materials inventories) have a significant and positive relationship with firm performance. Therefore, hypotheses H2a to H4a are accepted. The plausible reason can be traced to the fact that each inventory types have different implications on firm performance, and effective decision on them can enhance firm performance. The result is consistent with past studies (Capkun et al., 2009; Eroglu & Hofer, 2011a).

Equation (2) is used to test the moderating effect of cost of capital on the relationship between inventory management and firm performance. The regression of the model using GMM shows that cost of capital moderates the relationship between inventory management and firm performance. This can be observed through the R-squared and the coefficients of the variables that change drastically due to the inclusion of cost of capital as a moderating factor in the relationship. Furthermore, the direct relationship between total inventory and firm performance is insignificant in the first equation, but with the inclusion of cost of capital in the second equation the relationship became significant. This is an indication that cost of capital has a vital implication on both inventory management and firm performance. In addition, the cost of capital has influence on all the inventory types except raw materi-

als inventory. This means that the fluctuation in raw material inventories is not affected by the changes in cost of capital. However, the fluctuation in total inventory and work-in-processing inventories is affected by the changes in cost of capital due to their interaction. The higher the changes in cost of capital, the higher the negative effect on total inventory and work-in processing inventories. Moreover, finished good inventories increase with any changes in cost of capital.

Based on the result of the regression, while hypotheses H1b, H3b and H4b are accepted, hypothesis H2b is rejected.

CONCLUSION

This study examines the impact of the moderating role of cost of capital on the relationship between inventory management and performance of manufacturing firms listed in Jordan. The uniqueness of the study is the consideration of the moderating effect of cost of capital, inventory types, and firm value as a proxy for firm performance in a developing economy such as Jordan. The data of 48 firms for the period 2010–2016 which formed 279 firm-year observations were used in this study. With the use of Pearson correlation and panel GMM estimation, the findings show that inventory management with consideration of its types influences firm performance in the long term. In addition, it is also found that cost of capital moderates the relationship between inventory management and firm performance. However, the interaction between cost of capital and inventory types have different implications.

The implications of this study are that firms need to put the effect of cost of capital before making decision on inventory control. Also, they need to align their inventory types to fit in to changes in their business environment. Managing inventory effectively must be a necessity for managers due to its influence on firm performance and the costs that could be incurred if it is not managed optimally. However, there are other factors that influence the inventory management and firm performance especially in developing economy due to financial constraints. Further study can consider these factors and their impact on the relationship.

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