Al-Madinah International University Journal (Majmaa)
Vol 56 Special Issue, 2026
eISSN: 2231-9735
Al-Madinah International University
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Manuscript Received Date: 09/08/26 | Manuscript Acceptance Date: 03/09/26 | Manuscript Published Date: 15/11/26

DOI: https://doi.org/10.63226/majmaa.v56i3.6117

أثر مراحل دورة حياة الأعمال على قراراتها المتعلقة بالاحتفاظ بالسيولة النقدية

[The Effect Of The Life Cycle Stages Of A Business On Its Cash Holding Decisions]

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الملخص

تهدف هذه الدراسة للبحث في أثر مرحلة دورة حياة الشركة على قراراتها في الاحتفاظ بالنقد. الدراسات السابقة درست وبشكل موسع محددات الاحتفاظ بالنقد للشركات، ومقدار النقد المحتفظ فيه، وأثار الاحتفاظ بالنقد على قرارات الشركة الأخرى. تسعى هذه الدراسة إلى تسليط الضوء وإعادة النظر على عامل مرحلة دورة حياة الشركة وأثرها على قرارات الشركة في الاحتفاظ بالنقد. ولدراسة هذا الأثر تم استخدام نموذج البيانات الزمنية المقطعية بطريقة التأثيرات العشوائية على عينة من 145 شركة غير مالية مدرجة في سوق الأوراق المالية في الأردن "بورصة عمان"، خلال الفترة من عام 2012 إلى عام 2023. بالإضافة لمراحل دورة حياة الشركة تم إضافة متغيرات تحكم شملت حجم الشركة والربحية والرافعة المالية للشركة. أظهرت النتائج أن الشركات في مرحلتي التأسيس والانحدار تحتفظ بمستويات نقد أقل، كما أظهرت النتائج أن الربحية لها أثر إيجابي ذو دلالة إحصائية وأن الرافعة المالية لها أثر سلبي ذو دلالة إحصائية على قرارات الشركة في الاحتفاظ بالنقد، في حين أن حجم الشركة ليس له أثر إحصائي على قرارات الشركة في الاحتفاظ بالنقد. النموذج البحثي ذو دلالة إحصائية عند مستوى 1%. وتُقدّم نتائج هذه الدراسة للشركات ومديريها رؤىً قيّمة حول كيفية إدارة وتخطيط مستوى السيولة النقدية اللازمة للشركة.

الكلمات المفتاحية: الاحتفاظ بالنقد، سياسة السيولة، دورة حياة الشركة، نموذج البيانات الزمنية المقطعية، سوق عمان المالي، الشركات غير المالية.

ABSTRACT

The purpose of this study is to investigate the effect of a firm's life cycle stage on its cash holding decisions. Although previous research has widely explored the determinants of corporate cash holdings, the amount of retained cash, and the broader implications of cash holding decisions on other company choices, this research is attempting to revisit and shed light on this important factor to explain how cash holding decisions are affected by the stage of the life cycle of a firm. To address this issue, the present study employs a random-effects panel data model applied to a sample of 145 non-financial firms listed on the Amman Stock Exchange between 2012 and 2023. Besides the life cycle stages, the analysis incorporates key control variables, including firm size, profitability, and financial leverage. The results indicate that firms in the introduction and decline stages hold significantly lower levels of cash. Moreover, the findings indicate that profitability has a significant positive effect and financial leverage has a significant negative association with cash holding decisions, while the size of the firm does not influence the decision to hold cash. The research model is significant at the 1% level. The results of this study provide firms and their managers with insight into how to manage and plan the level of cash they need to hold within the firm..

Keyword: *Cash Holding, Liquidity Policy, Firms' Life Cycle, Panel Data, Amman Stock Exchange, Non-financial firms. JEL Classification: G30, G32, C23, E32.*.

Introduction

Due to its importance to a firm's performance (i.e., innovation, competitiveness, and reducing refinancing risks), one of the most crucial choices faced by any corporation concerns the cash holding decision (Duong et al. 2020). Firms need to understand how much cash they should hold and, more importantly, when to hold it. In recent decades, global economic integration and financial crises have highlighted cash as a less risky strategic choice; therefore, firms worldwide have significantly increased their cash reserves (Amess et al., 2015). Based on this, the importance of studying cash holding in business is self-explanatory. The decision to hold cash constitutes a crucial decision for firms because it reflects a business plan, the work and financial strategy of corporate governance, and the internal and external environment of the business. Typically, managers favour cash holdings because they reduce refinancing risks and enhance their ability to act (Opler et al. 1999).

This study investigates a case study concerning cash holding decisions. It aims to develop an understanding of how companies that modify their cash holding, rely on their position within the business life cycle, to understand how firms select their level of cash holdings throughout the various stages of their life cycle, by revisiting this issue on a different time set where firms go thought a period that include a pandemic, to provide better understanding on the how firms adjust their cash holding.

Firms in Jordan should pay more attention to cash holding decisions, as the secondary debt market in Jordan is relatively small and not as active as the equity market (Alzoubi 2016), which limits the dependency on debt in Jordan; that situation puts an extra burden on firms to obtain funds and forces them to manage their cash holding more efficiently.

Following, the paper will be organised as following; section 2 will cover the literature review about the topic; in section 3, the data and methodology to conduct this research will be introduced; then, in section 4, the results will be presented; later, we will discuss the findings in section 5; finally, section 6 will conclude this paper.

The Research Problem

Holding cash is one of the most important financial decisions for companies, as the company must balance the benefits of liquidity with the costs associated with holding excess cash. Although cash reserves reduce financing risks and financial distress, high cash holdings increase opportunity costs, as the company does not invest the money in potentially profitable investment opportunities. Therefore, understanding the factors influencing companies' cash holding decisions is very important for effective financial management.

Due to the importance of cash retention, previous studies have focused extensively on examining its determinants. However, the role of the company's life cycle has not received sufficient attention, despite the importance of the stages of the company's life cycle in explaining the differences in company characteristics and financial decisions. Firms at different stages of their life cycle may face different financing needs and conditions, which may consequently influence their cash holding decisions.

Studies examining the relationship between corporate life cycle stages and cash holdings are still very limited, and only one study has been conducted in Jordan. Therefore, further research with more recent data and updated evidence is needed to provide updated evidence on whether cash holding decisions vary across firms' life cycle stages. Therefore, this study examines non-financial firms listed on the Amman Stock Exchange over the period 2012–2023 to investigate whether corporate life cycle stages represent a significant determinant of firms' cash holding decisions.

The Research Question

This research attempts to answer an important question related to the effect of the stage in the corporate life cycle on cash holding choices, which is: How do firms' life cycle stages affect cash holding decisions among non-financial firms listed on the Amman Stock Exchange?

The Objective of the Study

To examine the effect of firms' life cycle stages on cash holding decisions among non-financial firms listed on the Amman Stock Exchange.

The Importance of the Study

Understanding cash holdings in all their aspects helps managers, shareholders, and stakeholders in firms understand how to manage cash holdings and make important, thoughtful, and sound financial decisions, which in turn is reflected in the economy. Since the level of cash holdings is important in assessing the liquidity of companies and their ability to repay debts, analysing the company's financial decisions, and indicating the possibility of mismanagement of funds, and its close relationship with investment decisions, this enables stakeholders like investors and creditors to make important decisions regarding companies.

This research explains the function of a potentially significant variable to help managers to identify the level of cash holdings needed at each level of the life cycle of business in Jordanian firms. (Amess et al., 2015; Alzoubi, 2016; Chireka,2020).

The Research Concepts

Cash holding represents the amount of cash and cash equivalents held by the firms, which also represents the liquidity available to the firm.

Firms' life cycle represents the stage of the firm in its life span; the life span of a firm involves four stages: firms start with the introduction stage, followed by the growth stage, then enter into the maturity stage, and finally, the decline stage.

The Research Boundaries

Objective boundaries: This research covers the effect of the firms' life cycle stages on cash holding decisions, by studying how firms adjust their cash holding at different stages in their life.

Locative boundaries: This research is applied to non-financial firms in Jordan.

Time boundaries: This research covers the period from 2012 to 2023.

Methodological boundaries: This research adopts panel data analysis using the random effects technique, and also applies statistical tests including the Likelihood ratio test and the Hausman test.

The Research Procedures and Tools

The data for this research are secondary data collected from the Amman Stock Exchange website. Then, the research variables have been estimated from these secondary data and used to find the effect of firms' life cycle stage on cash holding decisions by applying panel data analysis.

Literature Review

Given the importance of continuing research and investigation concerning the issues of cash holding, corporate life cycle stages are an important dimension whose importance has been proven in business and the economy; however, contemporary literature has neglected to study their impact on firms' cash holdings, so this research aims to investigate how the life stage of a firm will affect its cash holding decisions.

Cash holdings offer numerous advantages to corporations. Keynes (1934) classified these benefits into three main motives: Firstly, the *transaction cost motivation*: cash holding reduces transaction costs and increases funds; therefore, a firm does not need to liquidate its assets to achieve required payments. Secondly, the *precautionary motivation*: a corporation facing difficulty in obtaining external financing (or if the cost of external financing is too expensive) can use the held cash to finance its investments and daily activities. Thirdly, the *speculative motivation*, in which a corporation's investment in short-term assets provides it with interest income (Opler et al. 1999).

Furthermore, in line with the Pecking Order Theory introduced by Myers and Majluf (1984), firms typically prefer to use internal financing before turning to debt or equity; however, such preferences may differ across countries (Chen, 2004).

Cash is widely used as a preventive method to confront future emergencies; however, despite such benefits, cash holding entails opportunity costs, whereby funds which could be invested in profitable projects remain idle (Al-Najjar, 2013; Alzoubi, 2019). Additionally, the agency theory perspective highlights the risk of managerial misuse of cash reserves for personal benefit, creating conflicts with shareholder interests (Hardinto et al., 2022).

Given the significance of cash holdings, previous financial literature has extensively examined their determinants, motivations, and implications for firm valuation and corporate decisions.

Research has demonstrated that in cases where corporate governance is robust, shareholders are protected, market access is limited, and external financing is costly, the value of cash holdings is higher. Conversely, ineffective governance reduces the incentives to hold cash (Jensen, 1986). Moreover, cash holding decisions influence other strategic choices, including investment, capital structure, and debt repayment (Alzoubi, 2013; Alzoubi, 2016; Aftab et al., 2018; Chireka, 2020).

Despite these insights, limited attention has been paid to the role of the corporate life cycle in shaping cash holding policies, even though evidence suggests that both life cycle stages and liquidity management are crucial to firm performance and economic growth.

Firms' cash holdings have been the focus of significant scholarly attention: scholars have investigated the reasons for these holdings, the factors that determine them, and the costs associated with holding cash for both firms and the economy. Smith (1776) suggests that the interests of the owner and manager may diverge, serving as an early discussion leading to agency theory. Subsequently, Keynes (1936) identified three motives for holding money: *speculative motive, transaction motive, and precautionary motive*. These motivations stress the function of money in facilitating transactions, meeting unforeseen demands and facilitating time-limited opportunities.

Furthermore, Jensen (1986) developed the free cash flow hypothesis, which argues that available liquid funds can increase the agency problem, wherein managers within organisations may receive the benefits of any transactions rather than the shareholders. Additionally, more contemporary research has verified that high cash holdings are likely to

result in inefficiency, resource waste, and lower returns (Brush et al., 1999; Wang, 2010; Gu and Baizrakhmanov, 2016). Further, the Pecking Order Theory (Myers and Majluf, 1984) posits that firms will use internal funding sources (such as retained earnings and cash flow) before resorting to debt or equity, which further highlights the crucial role of cash in financial decision-making.

In the late 1990s, research focused on investigating the possible triggers of cash holdings, such as firm size, leverage, profitability, cash flows, and dividend policy.

This research has contributed to expanding the current understanding of cash-holding behaviour by firm-specific and financial variables. Motivated by the aforementioned literature, the objective of this research concerns an examination of an additional potential determinant (rather than the conventional determinants) that could have a significant impact on cash holdings.

To identify the stage of a firm's life cycle, Dickinson (2011) uses cash flow patterns to classify the stages of a firm's life cycle. The findings suggest that although this approach is simple, it remains robust and avoids the distributional assumptions associated with univariate or composite measures. Hasan (2018) examined the relationship between organisational capital and life cycle stages. The results demonstrated that firms with substantial organisational capital are more likely to be in the introduction stage, while those with minimal organisational capital are typically positioned in the maturity and growth stages.

By examining the determinants of corporate cash holdings, it has been reported that firms with greater growth opportunities tend to hold more cash, while firms with easy access to capital markets or strong credit ratings hold smaller balances. Furthermore, firms with superior performance tended to maintain higher levels of cash (Opler et al., 1999). Also, it has been found that cash holding decisions are not significantly influenced by firm size or growth opportunities: they are driven by liquidity, leverage, and cash flow. However, profitability and dividend payments were found to be positively associated with cash holdings (Alzoubi, 2013). Culture can also influence cash holding decisions; firms located in Confucian regions in China consistently hold higher cash balances (regardless of governance quality), which suggests that cultural norms play a significant role in shaping financial decisions (Deng and Zeng, 2025).

Some evidence on how life cycle stages affect cash holding decisions has been provided, including the analysis of how life cycle stages affect cash holding decisions in Jordan. The results indicated a significant negative relationship in the maturity and decline

stages, with leverage and firm size also negatively correlated with cash retention. By contrast, profitability and dividends were positively associated with cash holdings, while no significant relationship was observed during the introduction and growth stages (Alzoubi, 2019). Another potential impact of a company's life cycle on its cash holdings is presented by Chireka (2020); their results show that cash holdings are positively correlated with firm size, firm profitability, and cash balances from previous years. Additionally, leverage, liquid asset substitutes and investment opportunities have a significant and negative impact on firms' cash holdings.

More evidence on the potential impact of the life cycle on cash holdings was presented by Rehman et al. (2021), who analysed dynamic cash adjustments across life cycle stages. The findings indicated that firms in the growth stage hold the highest levels of cash, while those in the decline stage maintain the lowest. The authors suggested that firms in the growth stage accumulate cash reserves to avoid costly external financing. Companies in the maturity and shakeout stages have greater cash balances; however, there was no relationship between companies in the introduction/growth stages and the size of their cash policies (Midiastuty et al., 2023). Firms hold less cash during the initial stages and increase their balances as they progress toward maturity. Financial distress was more prevalent in companies in the start-up and growth phases (compared to those in the maturity phase), and financially distressed firms consistently maintained lower levels of cash. The same study also reported significant variations in observed versus target cash, the determinants of target cash, and the overall value of cash holdings across life cycle stages (Ngo et al., 2023).

As a firm's life cycle stages present a contemporary factor to explain corporate cash holding decisions, this paper attempts to investigate this issue by examining how firms will change the level of cash they hold based on what stage they reach in their life cycle.

Firms' cash-holding policies are influenced not only by firm-specific characteristics but also by their stage in the life cycle. In the introduction stage, limited reputation and restricted access to external financing require firms to rely on internal funds, thereby reducing cash retention (Kallunki & Silvola, 2008; Chireka, 2020). Primarily, during the growth stage, firms prioritise expansion and finance investments through internal cash, which limits retained balances (Myers & Majluf, 1984; Alzoubi, 2019). In the maturity stage, firms have greater access to external financing, making it costly to maintain large cash balances due to opportunity costs (Alzoubi, 2019; Chireka, 2020). Finally, in the decline stage, declining sales and profitability reduce cash reserves, while reliance on external financing further decreases

available cash (Alzoubi, 2019). This study has two advantages over Alzoubi (2019), a larger number of observations have been used, and it also covers a more recent period, which includes a normal course of business, the COVID-19 pandemic, and the post-pandemic period. By revisiting the effect of the life cycle on cash holding decisions under different market conditions, we will achieve a better understanding of cash holding decisions.

H 1.1: Firms in the introduction stage are expected to hold lower levels of cash compared with firms in other life cycle stages.

H 1.2: Firms in the growth stage are expected to exhibit different cash holding behaviour compared with firms in other life cycle stages.

H 1.3: Firms in the maturity stage are expected to maintain lower cash holdings due to improved access to external financing.

H 1.4: Firms in the decline stage are expected to hold lower levels of cash as a result of deteriorating operating performance and financing constraints.

The Research Methodology

The initial population consisted of 147 non-financial firms listed on the Amman Stock Exchange during the period 2012–2023. Two firms were excluded from the analysis because they exhibited extremely high leverage ratios that were substantially different from the rest of the sample and could distort the regression results, as these two firms have leverage ratios exceeding 200% due to negative equity, and they suffer from accumulated losses for several years that consume their equity. Consequently, the final sample consisted of 145 firms, yielding unbalanced 1,348 firm-year observations.

The analysis focuses on how firms adjust their cash holding decisions throughout the distinct stages of the business life cycle. It should be noted that financial firms are excluded because the amount of cash they hold is primarily shaped by regulatory requirements. To achieve this objective, panel data regression analysis is employed to assess variations in cash holdings across life cycle stages. The panel data analysis is conducted to capture both time and cross-sectional dimensions. Three techniques of panel data analysis were used; ordinary least squares, fixed effects, and random effects. Then, the Likelihood ratio test and the Hausman test to determine the most fitted model among them. The results of these tests, shown in Table 3, reveal that the most fitted model to be used is the random effects model.

The dependent variable in this research is the cash ratio (CASH), which is measured as cash and cash equivalents divided by total assets. This variable reflects the firm’s liquidity

position and has been used extensively in the relevant literature to examine cash holding behaviour (Opler et al., 1999; Alzoubi, 2013; Alzoubi, 2019; Chireka, 2020).

The independent variables are the stages of the corporate life cycle, identified according to the cash flow patterns methodology of Dickinson (2011). While the original classification consists of five stages, Alzoubi (2019) merged the shake-out and decline stages into a single stage, resulting in the four stages employed by this study. Each stage is represented by a dummy variable that equals 1 when the firm meets the specified cash flow pattern, and 0 if it does not. The stages are defined as follows:

- **Introduction stage (I):** Firms in the introduction stage are generally characterised by limited operating performance, low market reputation, and a greater dependence on external financing. At this stage, firms invest heavily in establishing operations and pursuing future growth opportunities while generating insufficient internal funds to support these activities. Consequently, if the firm has the following: operating cash flow is negative, investing cash flow is negative, and financing cash flow is positive, then, following Dickinson (2011), firms exhibiting this cash flow pattern are classified in the introduction stage. This stage is also associated with a higher need for resources and organisational development (Hasan, 2018; Rehman et al., 2021).

- **Growth stage (G):** During the growth stage, firms begin generating positive operating cash flows as business activities expand and revenues increase. Nevertheless, substantial investments are still required to support expansion and exploit growth opportunities. As a result, if the firm has the following: investing cash flow remains negative, while firms continue relying on external financing to sustain growth, leading to positive financing cash flow. Then, according to Dickinson (2011), firms are classified in the growth stage when operating cash flow is positive, investing cash flow is negative, and financing cash flow is positive. Firms at this stage typically focus on expansion and future development (Rehman et al., 2021).

- **Maturity stage (M):** The maturity stage is characterised by stable operations, established market positions, and stronger internal cash-generating ability. Firms continue investing in their operations; however, investment intensity is generally lower than in the growth stage. Due to their financial stability and reduced dependence on external financing, financing cash flow becomes negative. Following Dickinson (2011), firms are classified in the maturity stage if the firm has the following: operating cash flow is positive, investing cash flow is negative, and financing cash flow is negative. Mature

firms generally possess stronger organisational structures and greater financial stability (Hasan, 2018).

- **Decline stage (D):** Firms in the decline stage experience weakening operating performance, lower profitability, and reduced growth opportunities. Consequently, operating cash flow tends to become negative. At the same time, firms may dispose of assets or reduce investments to generate liquidity, resulting in positive cash flow from investing. In accordance with Dickinson (2011), if the firm has the following; negative operating cash flow and positive investing cash flow are classified in the decline stage. Consistent with Alzoubi (2019), the shake-out and decline stages are combined into a single category in this study. Firms in this stage generally face financial challenges and lower growth prospects (Chireka, 2020; Rehman et al., 2021).

In addition to life cycle stages, the model controls for several firm-specific variables known to affect cash holdings. Firm size (SIZE) is measured as the natural logarithm of total assets; profitability (PROF) is measured as return on assets (calculated as net income after tax divided by total assets); and leverage (LEV) is measured as the ratio of total liabilities to total assets.

This study will employ the adapted model proposed by Alzoubi (2019) to examine the influence of a firm's life cycle stages on its cash holdings.

$$CASH_{i,t} = \alpha + B_1 I_{i,t} + B_2 G_{i,t} + B_3 M_{i,t} + B_4 D_{i,t} + B_5 SIZE_{i,t} + B_6 PROF_{i,t} + B_7 LEV_{i,t} + \varepsilon_{i,t} \quad (1)$$

To estimate the results, the data needed have been collected from the Companies' Guides, that covers the study period; these Companies' Guides are published by the Amman Stock Exchange on their website.

Results

Table 1 provides a descriptive analysis of the study variables. It shows a wide range in the research variables, reflecting the diversity in the size and age of the firms within the study sample.

Table 1: The Descriptive Results

Variables	CASH	I	G	M	D	SIZE*	PROF	LEV
Mean	9.56%	15%	13%	45%	12%	102.36	-0.30%	40.94%
Median	4.85%	0	0	0	0	27.17	1.31%	33.97%

Minimum	0.00%	0	0	0	0	0.32	-195.99%	0.10%
Maximum	87.59%	1	1	1	1	2,145.12	84.01%	179.63%
Standard deviation	12.92%	0.36	0.34	0.50	0.33	255.14	14.12%	29.93%

* Numbers presented here are in millions of Jordanian dinars. Jordanian Dinar has a fixed exchange rate with the US Dollar of 1.42 US dollars for one Jordanian Dinar.

From Table 1, we can notice that, on average, firms hold about 9.50% of their assets in the form of cash; they also have an average dependency on debt of about 40%; firms on average made losses of 0.30% during the study period, and the majority of firms are in their maturity stage.

Table 2 comprises the correlation matrix of the thesis variables across the entirety of the selected period. Regardless of being positive or negative, all correlated coefficients are small (below 0.8), which indicates that multicollinearity is not present. As additional proof, the Variance Inflation Factor (VIF) test reported values less than 10, further reinforcing that multicollinearity is not a concern.

Table 2: Correlation Matrix

	CH	I	G	M	D	SIZE	PROF	LEV
CH	1.0000 (0.0000)							
I	-0.0603 (0.0270)	1.0000 (0.0000)						
G	-0.0112 (0.6814)	-0.1650 (0.0000)	1.0000 (0.0000)					
M	0.0456 (0.0940)	-0.3872 (0.0000)	-0.3501 (0.0000)	1.0000 (0.0000)				
D	-0.0187 (0.4928)	-0.1606 (0.0000)	-0.1452 (0.0000)	-0.3429 (0.0000)	1.0000 (0.0000)			
SIZE	-0.1285 (0.0000)	-0.0786 (0.0039)	0.0385 (0.1580)	0.2833 (0.0000)	-0.2462 (0.0000)	1.0000 (0.0000)		
PROF	0.1904 (0.0000)	-0.1463 (0.0000)	0.0458 (0.0929)	-0.0113 (0.0000)	-0.1940 (0.0000)	0.2825 (0.0000)	1.0000 (0.0000)	
LEV	-0.3080 (0.0000)	0.1478 (0.0000)	0.0076 (0.7802)	-0.0713 (0.0105)	0.0382 (0.1613)	0.2611 (0.0000)	-0.2932 (0.0000)	1.0000 (0.0000)

The numbers in parentheses are the values of the P-value.

Table 3 displays the regression findings. The likelihood ratio and the Hausman tests showed that the random effects model provided the best specification. The findings indicate a significant negative effect in both the introduction and decline stages on firms' cash holdings, which supports Hypotheses 1.1 and 1.4. Firms at the introduction stage are financially constrained because they are weak in the market; therefore, they rely heavily on their available cash reserves. Additionally, due to their declining revenues, reduced profitability, and loss of financial strength, firms in the decline stage hold less cash. The growth and maturity stages produced no statistically significant effect, indicating that cash policies during these stages may be driven by other strategic factors.

Table 3: Regression Results

Variables	Coefficient	t-Statistic
C	0.1481**	2.1687
I	-0.0123*	-1.6416
G	-0.0007	-0.0907
M	-0.0008	-0.1304
D	-0.0157**	-2.0011
SIZE	-0.0017	-0.4189
PROF	0.0417**	2.4259
LEV	-0.0570***	-4.6456
Observations	1,348	
R-squared	3.58%	
Adjusted R-squared	3.07%	
F-statistic	7.1038***	
Likelihood Ratio Test	1,911.0269***	
Hausman Test	9.3648	

Notes: The dependent variable is cash ratio (CASH). The independent variables are the introduction stage (I), the growth stage (G), the maturity stage (M), the decline stage (D), the firm's size (SIZE), the firm's profitability (PROF), and leverage (LEV). C is the constant. Asterisks indicate significant levels, where *** represents a 1% significance level, ** represents a 5% significance level, and * represents a 10% significance level.

Regarding the control variables, firm size was insignificant, indicating that company size does not influence cash holding decisions among Jordanian firms. However, profitability showed a positive significant relationship with cash holding, and leverage was found to be significant and negatively associated with cash holdings. The positive correlation with profitability suggests that more profitable firms will be able to accumulate cash from their

operations and will allow them to have more cash. On the other hand, the negative relationship with leverage reflects firms' reliance on debt financing as an alternative to holding excess liquidity; firms that can obtain debt financing will be less dependent on cash and will hold less cash compared to firms with less access to debt.

Finally, the overall model was statistically significant at the 1% level, indicating that the included variables capture meaningful patterns in firms' cash holding behaviour. Adjusted R-squared is low due to the adoption of the random effects model; the random effects model focuses on how changes in explanatory variables are associated with changes in the outcome within and between units. It assumes the observed explanatory variables and unobserved unit-specific effects are not correlated. In essence, the unobserved unit-specific effect explains some of the variation in the outcome, but is not associated with any of the observed explanatory variables (Gayle and Lambert, 2018).

Discussion

From the regression results, we found that firms at their introduction stage hold less cash, indicated by the negative sign, as firms at this stage are unable to access external sources of financing, since they are new and do not have a strong reputation. Also, at this stage, firms are still unable to generate much profit. As a result, firms will use all available cash. With very limited cash entering the firm and the heavy use of cash during this stage, firms will consume most of the cash they have, which explains the negative relationship. This result is consistent with Alzoubi (2019) and Rehman et al. (2021).

At the next stage, when firms enter the growth stage, they will be able to generate more profit, and they can also access external sources of financing. At the same time, the need for cash will increase significantly to support the growth of the firm at this stage, which explains the insignificant effect of this stage on cash holding. This insignificant effect of the growth stage on cash holding decisions is in line with Alzoubi (2019).

Similar to the growth stage, there is an insignificant effect of the maturity stage on cash holding decisions, which can also be explained by the fact that firms can generate more cash and can easily access external sources of financing, and at the same time, they require a large amount of cash to support and maintain the firm at this stage, meaning that it is indifferent for the firm to hold cash; any cash available inside the firm will be used to support the firms activities, and if the firm needs more cash it can obtain that cash easier through the financial market.

At the decline stage, firms tend to hold less cash, as the profit declining, access to external financing becomes limited, and the need for resources increases. Firms will consume the available cash they have, and with the limited sources to fill that consumption, firms will have low balance of cash. That explains this negative relationship between the decline stage and cash holdings. This significant negative relationship is consistent with Chireka (2020).

Regarding the controlling variables, the significant positive relationship between profitability and cash holdings has been observed, as profitable firms can accumulate cash generated by business activities and generate cash internally for their operations, resulting in higher cash balances. This result is consistent with Alzoubi (2019). Additionally, the significant negative relationship between leverage and cash holding indicates that firms with the ability to get debt can depend less on cash; as firms with access to debt will get their needs of funds from this source instead of holding cash with an opportunity cost, this result is in line with the results of Ozkan & Ozkan (2004) and Alzoubi (2013). Finally, size shows an insignificant effect on cash holding decisions, indicating that there are no benefits or costs of the firm's size in determining the amount of cash to be held.

The results of this research show similarity to Alzoubi (2019); this similarity indicates that, even during a period that involved unusual events such as the COVID-19 pandemic, firms were consistent in their cash holding policies, as in normal market conditions.

Conclusion

This research investigated the relationship between the life cycle stages of companies and their cash holding decisions, to understand how the life stage of a firm can affect its plan to hold cash, by analysing a sample of 145 non-financial firms listed on the Amman Stock Exchange between 2012 and 2023. Via its use of the random-effects panel analysis, this research identified a statistically significant decrease in cash holdings during the introduction and decline stages of a firm's life cycle, whereas there was a less significant impact during the growth and maturity phases.

Leverage was negatively correlated with cash holdings, while profitability was positively correlated, indicating that more profitable firms will have and hold more cash, as they can generate sufficient internal funds to support their operations, while firms with greater access to debt financing tend to maintain lower cash balances, as external financing can substitute for internal liquidity, whereas size had no significant effect among the control variables. These results indicate the direct relevance of life cycle aspects in corporate cash management decisions; therefore, this study guides financial managers concerning how they

should plan their liquidity policies. Future research could extend the study to other markets and employ longer time frames to ascertain whether these relationships remain consistent in diverse economic and institutional settings.

Recommendations

Based on the findings, financial managers are advised to consider the firm's life cycle stage when making cash holding decisions, particularly during the introduction and decline stages, where cash holdings decrease significantly.

The findings also indicate a positive relationship between profitability and cash holdings. Therefore, managers should consider firm profitability when evaluating cash holding decisions, as more profitable firms tend to maintain higher cash levels.

For highly leveraged firms, which rely more on external financing and maintain lower cash levels, managers are advised to maintain strong relationships with banks and financing institutions by meeting payment obligations and financing terms.

Future research could extend the sample beyond the 145 non-financial firms listed on the Amman Stock Exchange to other emerging or developed markets and examine a longer period beyond 2012–2023 to assess the relationship between life cycle stages and cash holding decisions across different economies and over time.

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TRANSLITERATION

a. Consonant

Arabic	Latin	Example	
		Arabic	Latin
ء	ʾ	فَأْرٌ	faʾrun
أ	(a,i,u)	أَحكَام	aḥkām
ب	b	بَابٌ	bābun
ت	t	تَمْرٌ	tamr
ث	th	ثَلاَثَ	thalātha
ج	j	جَبَلٌ	Jabal
ح	ḥ	حَدِيث	ḥadīth
خ	kh	خَالِدْ	khālid
د	d	دِين	dīn
ذ	dh	مَذهَب	madhhab
ر	r	رَاهِبٌ	rāhib
ز	z	زَكِي	zakī
س	s	سَلاَم	salām
ش	sh	شَرَبَ	sharaba
ص	ṣ	صَدْرٌ	ṣodrun
ض	ḍ	ضَار	ḍār
ط	ṭ	طَهُرَ	ṭahura
ظ	Ẓ	ظَهْرٌ	ẓhohr
ع	ᶜ	عَبْدٌ	ᶜabdun
غ	gh	غَيبٌ	ghayb
ف	f	فَاتِحَةٌ	Fātihah
ق	q	قَبَسٌ	qabas
ك	k	كِتَابٌ	kitāb

ل	l	لَيلٌ	layl
م	m	مُنِير	munīr
ن	n	نِقَابٌ	niqāb
و	w	وَعَدَ	waᶜada
ه	h	هَدَفٌ	hadaf
ي	y	يُوسُف	Yūsuf

b. Short Wovel

Arabic	Latin	Example	
		Arabic	Latin
ـَ	a	كَتَبَ	kataba
ـِ	i	عَلِمَ	ᶜalima
ـُ	u	غُلِبَ	ghuliba

c. Long Wovel

Arabic	Latin	Example	
		Arabic	Latin
ا ، ى	ā	عَالَمَ ، فَتَى	ᶜālam , fatā
ي	ī	عَلِيم ، دَاعِي	ᶜalīm , dāᶜī
و	ū	عُلُوم ، اُدعُو	ᶜulūm , ʼudᶜū

d. Diphthong

Arabic	Latin	Example	
		Arabic	Latin
أَو	aw	أَولَاد	aulād
أَيّ	ay	أَيَّام	ayyam
إِيّ	iy	إِيَّاكَ	iyyāka