

A LITERATURE REVIEW OF COMPANIES CASH HOLDINGS

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The purpose of this article is to investigate the scientific literature related to cash holdings of non-financial companies. We concentrated in our work on motives, determinants and theories of cash holding. The result of this study will enhance understanding of cash holding determinants and relevance of postulated theories in Romanian context. The main objective is to.

Keywords: cash holdings, trade-off theory, pecking order theory, agency costs, assets,

JEL classification: M40

Introduction

The cash holdings can be defined as those assets that a company holds in cash, as contrasting to property, shares, bonds, etc. By definition, the "cash and cash equivalents" item is the most liquid asset category on the balance sheet of any company. Companies need to hold cash and cash equivalents in order to run their day-to-day operations. Cash and cash equivalents item from balance sheet is the difference between cash inflows and cash outflows. For many reasons, cash outflows may exceed cash inflows and vice versa. Excessive outflows may generate shortage of liquidity, while excessive inflows could lead to an excessive cash position.

A cash shortage can be a serious problem, because will generate difficulties in complying short-term obligations, constraining the company to appeal costly external funding. A surplus of cash is less perceptible as a problem. But there are several valid reasons why a company should not hold on to excessive cash (For example interest income obtained for holding cash in the current bank account is lower than the returns that could potentially be realized if the cash would be invested in other intangible, tangible of financial assets). On the other hand, having a very large amount of cash available can produce some positive effects, such as the ability to react rapidly to investment opportunities and the resources to sustain financial position by using the cash as a safeguard.

Theoretical background of cash holdings – theories and motives

Some companies hold a significant portion of assets in cash, while other companies have cash shortage. There are several reasons for companies to hold cash: no payment delays in operating activity, the possibility to benefit from some favourable circumstances like – trade discounts and profitable investments, the possibility to make contingency payments in the case of the emergence of additional production orders or the access to certain financing facilities granted by some banks. Cash is at the same time, an unproductive element, which is why it must be well managed. This suppose speeding cash collection and slowing cash disbursements

There are both advantages and disadvantages of holding cash.

Table no. 1. – Advantages and disadvantages of cash holding

The level of cash balance	Advantages	Disadvantages
High level of cash balance	<ul style="list-style-type: none"> - Appearance of supplementary new order - Trade discounts for advance payment 	<ul style="list-style-type: none"> - Opportunity cost are the interest which would have been earned if the cash where invested
Low level of cash balance	<ul style="list-style-type: none"> - Avoiding opportunity cost of cash holding 	<ul style="list-style-type: none"> - Supplementary order costs - Supplementary cost of selling financial instruments - Debt costs

Source: N.Botnaru „Finanțele întreprinderii”, Prim Publishing House, Chișinău, 2008

Cash holdings have been studied by many authors from different perspectives. Academic literature on cash holdings has the roots in the work of Keynes (Keynes, 1936), who indicates two main benefits from holding cash: lower transaction costs from not having to liquidate assets when facing a payment and a valuable buffer to meet unexpected contingencies. Keynes also suggested three major motives for cash holdings: (1) the transactions motive, (2) the precautionary motive and (3) the speculative motive.

Companies have to balance short-term cash inflows and outflows since these are not perfectly matched. This is a transactions motive for holding cash. The companies hold an important part of their assets in the form of cash, in order to meet its transaction needs that would arise in the course of operating activity and regular business activities (Baum, Caglayan, Ozkan, & Talavera, 2004). The size of the cash reserve can be estimated by forecasting cash inflows and outflows and by preparing cash budgets.

The precautionary motive requires that a firm will accumulate cash to meet its unexpected contingencies that may arise, while the speculative motive argues that a firm will accumulate cash to take advantage of any attractive investment opportunities that may arise, for example in the takeover market. It is important to point out that most of non-financial companies do not hold cash for the purpose of speculation (Van Horne & Wachowicz, 2008). This is an attribute of financial companies. Other authors have mentioned other motives for holding cash. For example tax motive (Foley, Hartzell, & Titman, 2007), signalling motive (Harford, Mansi, & Maxwell, 2008) or agency motive (Al-Amarneh, 2013).

Tax motive takes into account the perspective of multinational companies which tend to hold large cash reserves in countries with lower taxes and therefore higher repatriation costs (Foley, Hartzell, & Titman, 2007). Signalling motive considers the manager perspective and information asymmetry between managers and shareholders. Agency motive refers to the separation of management and ownership. There is a clear incentive for managers (agent) to hold cash for their own interest at the expense of shareholders (principle), hence there is an agency motive for holding cash (Opler, Pinkowitz, Stulz, & Williamson, 1999).

These motives are the foundation of three theories in the field of corporate finance which can explain which characteristic of the firm has an influence on cash holdings, namely the trade-off theory, pecking order theory and agency theory (Opler, Pinkowitz, Stulz, & Williamson, 1999). Many papers have been aimed to study the determinant factors of company' cash level within the theoretical background of these three alternative models. Some of these studies have been performed in developed economies, while other studies have been performed in countries with emerging economies.

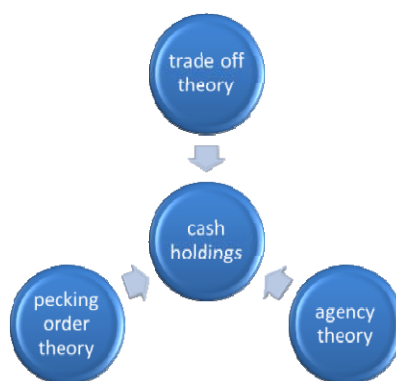


Fig. 1 – corporate finance theories that explain company cash holdings

Under *trade-off theory*, in the case of cash holdings, it was concluded that there is an optimal cash level which results from balancing marginal benefits and marginal costs of cash holding. Cash-holdings generate costs and benefits and are very important in financing the growth opportunities of the firm (Saddour, 2006). The main cost is the opportunity cost of capital invested in cash instead of in other assets with a higher return. The main benefits of cash holdings are the smaller transaction costs (there is no need to sell assets for cash payments), a smaller risk of suffering financial distress and the possibility to develop investment projects that could not be carried out without these funds owing to the existence of financial constraints. This theory suggests that companies have two motives for holding cash: transaction cost and the precautionary motive. The transaction-cost refers to the fact that firms hold cash because external funds is more costly than retaining existing cash (external

financing involves financial costs associated to the amount of capital raised). The precautionary motive refers to the fact that firms may reduce their investments when they face cash deficiencies (Chen & Chuang, 2009).

In opposition with trade-off theory, *the pecking order theory*, also called financial hierarchy theory sustain that there is no optimal level of cash, and cash just acts as a safeguard between retained earnings and investment needs. In addition, because of information asymmetry, the cost of external financing for investment projects is higher than the cost of internal financing. Therefore, companies tend to use internally generated cash before they seek external financing. Consequently, this theory assumes a financing hierarchy followed by companies in order to finance new investments: first internal funds, then debt, and finally equity. This order of preference is a way to minimize or avoid the cost of asymmetric information as well as other financing costs.

The third theory is *agency theory* (free cash flow theory) of Jensen (1986), which suggests that managers prefer to hold cash rather than paying dividends to shareholders because it increases the level of assets they control and their flexibility to pursue their own objectives. The agency relationship is a result of the separation between management and ownership of the company. There are some advantages of this separation, including the ability of ownership to change without impacting operations, and the possibility of hiring experts to act as managers. But because a company's cash-holding policy is a matter of managerial discretion, the level of cash holdings raises concerns when managers do not act in the best interests of shareholders (Ferreira, Custodio, & Raposo, 2005).



Fig. 2 – motives, theories and determinants of cash holdings

Determinants of cash holdings

Based on academic literature, several firm's characteristics, such as size, financial leverage, ownership structure, growth opportunities, cash flows, and other, have been identified as determinant factors of cash holdings. Next we will analyse these firms characteristics based on the three theories mentioned above.

- *Firm size*

Firm size is usually measured as natural logarithm of total assets. The impact of firm size on cash holdings is theoretically ambiguous. For example, the advocates of trade-off theory argue that because of scale economies it is expected a negative impact of firm size on cash holdings (Faulkender, 2002). On the other hand, larger firms are in a better position to accumulate cash as they are presumably more profitable (Ozkan & Ozkan, 2004). The alternative hypothesis is that cash holding are positively related to firm size.

- *Leverage*

The leverage is a measure of financial risk and it is considered to have an impact on company cash holdings. Regularly the leverage is defined as the ratio of long-term debts to total assets. Under trade-off theory it is expected a negative relation between cash-holdings and leverage ratio. A series of empirical studies confirmed a decline of cash levels when companies increase their financial leverage (Opler, Pinkowitz, Stulz, & Williamson, 1999), (Ozkan & Ozkan, 2004).

- *Cash flows*

Under trade off theory cash flows are seen as a substitute of cash. Substantial cash flows reduce the need for holding cash so a negative relation between cash holdings and cash flows is

expected (Shah, 2011). Under pecking order theory, companies that have higher cash flows are expected to hold larger amounts of cash as a resource of internal funds. So a positive relation between cash holdings and cash flows is expected (Ozkan & Ozkan, 2004) (Ferreira, Custodio, & Raposo, 2005).

- *Cash flow volatility*

Firms with unstable cash flows are confronting more risks of running out of cash in some periods. Volatility as a measure of uncertainty or unstable cash flows is usually the value of deviations from mean cash flows of a given firm scaled by the mean cash flow of that firm. Firms with more volatile cash flows face a higher probability of experiencing cash shortages due to unexpected cash flow deterioration. Thus, cash flow uncertainty should be positively related with cash holdings (Ferreira & Vilela, 2004).

- *Bank debt*

According to Ferreira and Vilela, the European firms have a closer relationship with banks in opposition to Anglo-Saxon firms. In their opinion banks are in a better position to evaluate the company's credit position. Thus, it is expected that firms that rely in bank loans as major source of financing are less likely to experience agency and asymmetric information problems associated with other kinds of debt. So the companies that use more bank debt hold less cash. On the other hand Pinkowitz and Williamson (1999) suggest that in Japan banks encourage firms to maintain large cash balances in order to extract rents from firms or to lower their costs of monitoring. Thus, the relationship between bank debt and cash holdings is ambiguous.

- *Liquid assets or net working capital*

Net working capital to assets ratio will is often used as the proxy for liquid assets substitutes. Liquid assets include inventories, accounts receivable less accounts payable. The trade-off theory predicts that firms with more liquid assets are expected to hold less cash. These negative relations are supported by a series of empirical paper (Ogundipe, Ogundipe, & Ajao, 2012)

- *Investment opportunity*

A proxy for the investment opportunity is market to book ratio. It is expected a positive relation between investment opportunity and cash holdings. Theory predicts that firms with better investment opportunities have greater financial distress costs because the positive NPV of these investments disappears (almost entirely) in case of bankruptcy. In this case, firms with better investment opportunities will keep higher levels of cash to avoid financial distress (Ferreira & Vilela, 2004)

- *Dividends payment*

According to trade-off theory a company can raise additional fund by cutting dividend instead of going to the market or bank, therefore a company which pays dividends is expected to hold less cash.

- *Ownership and governance factors*

A series of studies have examined the relationship between governance factors and cash holdings (Chen & Chuang, 2009), (Chen, 2008), (Kusnadi, 2011), (Kuan, Li, & Liu, 2012), (Dittmar & Mahrt-Smith, 2007). These studies revealed that governance factors have a major impact on cash policies. Under agency theory, which is a behavioural theory, a higher level of cash holdings provides managers with greater discretion. Managers tend to retain more because they can obtain more private benefits from liquid assets (Chen, 2008).

Macroeconomic factors and cash holdings

Taking a closer look to the academic literature on cash holdings, we identify two main categories of factors which can influence the company cash holdings. One category consists of macroeconomic environment factors, the other category consist in firm specific characteristics factors. The three theories mention above explain which characteristic of the firm has an influence on cash holdings.

Cash holdings in non-financial sector are influenced by the status of economy. In times of recession the cash could be a good way to ride out the storm without having to ask existing shareholders or the bank for extra funding. That is the reason for which big companies tend to increase their cash holdings in periods of crisis (Yurdagul & Sánchez, 2013).

For example, according to Wall-Street Journal, during the recession of 2007–2009, 10 large high-tech companies generated \$68.5 billion in additional cash, compared with only \$13.5 billion that was generated by the other 65 high-tech companies that are part of the S&P 500 Stock Index. From the end of 2007 to the end of 2009, the 10 richest tech companies increased their cash levels by 48% to \$210 billion. The other 65 tech companies listed in the S&P 500 upped their cash only 13% in the same

period, to \$118 billion. The percentage of cash being held by each of these companies is much larger than the 10% average being held by the 500 largest nonfinancial companies (Worthen, 2010).

Table no. 3 – Companies that accumulated cash during the financial crises

Company	Cash 2007 Billion \$	Cash 2009 Billion \$	variation %	Investment
CISCO	22,7	39,6	74,4%	Acquired Starent and Tandberg
MICROSOFT	21,1	36,1	71,1%	Microsoft used cash reserves to develop a search engine to compete with Google's.
APPLE	18,4	24,8	34,8%	Apple is using its funds to develop the iPad and to acquire a mobile-advertising company in order to compete more effectively with Google
GOOGLE	14,2	24,5	72,5%	Expanded into mobile phones and computer operating system
ORACLE	8,4	20,8	147,6%	Aquired Sun Microsystem

Source – Wall Street Journal – *Gap Widens Between Tech Richest and the Rest*, by Ben Worthen, March 16, 2010

These companies used cash for funding external and internal investments at a time when many other companies are in financial difficulties (see table no. 3). Cash provides operating and strategic flexibility. Because of uncertainty of the economy, considerable cash holding permit the companies to assume risks that smaller companies can't afford.

Professor Erik Brynjolfson of MIT comments, "*Cash has become king to an even greater extent than in the past because of the credit crunch. A company with a lot of cash is in a disproportionately strong position now than it would be in normal times*" (Worthen, 2010).

Macroeconomic factors have been the subject of research of authors such as Baum & co (2004), Rizwan (2012), Song and Lee (2012), Pinkowitz, Stulz, & Williamson (2013), etc.

Baum et.al (2004) studied the effects of macroeconomic volatility on non-financial firms' cash holding behaviour. They demonstrated that an increase in macroeconomic volatility will cause the cross-sectional distribution of firms' cash-to-asset ratios to narrow. They test this prediction on a panel of non-financial firms, covering the period 1957–2000, and find that as macroeconomic uncertainty increases, firms behave more homogeneously. In opposition, when the macroeconomic environment is more stable, firms have more latitude to behave idiosyncratically, leading to a broadening of the cross-sectional dispersion of firms' cash-to-asset ratios (Baum, Caglayan, Ozkan, & Talavera, 2004).

When the macroeconomic environment is uncertain the companies demand for cash increases, due to the fact that external financing became difficult to obtain (Rizwan, 2012). A series of studies investigated the impact of financial crises on company's cash holdings.

Song and Lee (2012) examined how the Asian financial crisis affects the long-term liquidity management policies of Asian firms by investigating their cash holdings before and after the crisis. They find that the median cash ratio remains stable in the early 1990s and suddenly increases after the crisis of 1997-1998. The Asian firms increase cash holdings by decreasing investment activities such as capital expenditures or M&As. The reason for this increase is that the Asian firms become more conservative in investing and cash holding policies after they experience macroeconomic shocks. Financial crisis has changed the cash holding policies of the companies and has a long-term effect (Song & Lee, 2012).

A similar study was conducted for US companies by Pinkowitz, Stulz, Williamson (2013). They investigated whether the cash holdings of American companies are unusually high after the financial crisis compared to before and whether the change in these cash holdings can be explained by poor investment opportunities, excessive regulation and tax reasons. (Pinkowitz, Stulz, & Williamson, 2013). They find that American companies hold more cash after the crisis than companies with similar characteristics in the late 1990s. They called cash holdings that cannot be explained by cash holding patterns from the late 1990s "abnormal cash holdings". They showed that abnormal cash holdings increased, but for different reasons from the late 1990s to before the crisis and from before the crisis to after the crisis.

Macroeconomic factors of cash holdings have been also studied by Curtis, Gurin and Mehkari (2014). Using a panel American firms over 1960-2007, their preliminary paper documents several aspects of companies cash holdings. They showed that cash holdings after a period of decline, have been increasing considerably since the 1980s. They also identified inflation as the main driver of changes in the time-series of cash holdings.

Concluding remarks

The review carried out in this paper has concentrated on the main issues in the literature on company cash holdings. In the last 50 years, the subject of company cash holdings has been studied by many researchers. Numerous empirical studies and theoretical papers examined various facets of cash holdings.

However, this review has highlighted three major issues regarding company cash holdings: theories, motives and determinants of cash holdings.

Company cash-holding policies can be explained by economic and behavioural theory. Economic theory includes trade-off theory and financial hierarchy theory, and behavioural theory is basically agency theory.

The trade-off theory of cash holdings suggests that firms have two motives for holding cash: transaction cost and the precautionary motive. The financial hierarchy theory of cash holdings suggests that there is no optimal level of cash holdings and because of information asymmetry, the cost of external financing for investment projects is higher than the cost of internal financing. Thus, firms tend to use internally generated cash before they seek external financing. According to the agency literature, a higher level of cash holdings provides managers with greater power of decision.

The literature on cash holdings also gives considerable attention to the motives and determinants for holding cash. Specific firm characteristics that have been found to influence cash holdings include: firm size, leverage, cash flows, cash flows volatility, dividend payments, etc. The impact of firm characteristic on cash holdings is ambiguous.

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