



Cash holding, trade credit and access to short-term bank finance



Gerhard Kling^{a,*}, Salima Y. Paul^b, Eleimon Gonis^c

^a Department of Financial and Management Studies, School of Oriental and African Studies, University of London, Thornhaugh Street, Russell Square, London WC1H 0XG, United Kingdom

^b University of Plymouth, United Kingdom

^c University of the West of England, Nationwide Building Society, United Kingdom

ARTICLE INFO

Article history:

Received 11 March 2013

Received in revised form 24 January 2014

Accepted 25 January 2014

Available online 3 February 2014

JEL classification:

G32

Keywords:

Cash holding

Trade credit

Bank finance

Working capital management

ABSTRACT

Since 1988, cash holding of the UK companies has increased from 10.6% to 16.4% of total assets. To explain this increase, we develop a panel vector autoregression and analyse the dynamics between cash holding and its closest substitutes, trade credit and short-term bank finance. Impulse response functions confirm the signalling theory, as trade credit facilitates access to bank finance. Firms experiencing liquidity shocks resort to cash or trade credit but not to bank finance. Cash holding improves access to trade credit. Additional cash and trade credit trigger a slowdown of the cash conversion cycle explained by agency theory. Cash-rich firms have accumulated more cash than predicted because of an unexpected decline in short-term debt, stressing the role of banks in explaining the increase in cash holding.

© 2014 Elsevier Inc. All rights reserved.

1. Introduction

Bates, Kahle, and Stulz (2009) show that average cash ratios, defined as cash and cash equivalents relative to total assets, of the US firms increased from 10.5% to 23.2% in the period from 1980 to 2006. We analyse the UK listed companies in the period from 1988 to 2008 and find an increase in average cash ratios from 10.6% to 16.4%. In contrast, Ferreira and Vilela (2004: 303) state that “it is not possible to identify any clear trend” in cash holding in EMU countries between 1987 and 2000. Yet their investigation period does not include the Dot-com bubble or the recent financial crisis. The literature on cash holding focuses on four motives determining the demand for cash: transaction, precaution, investment opportunities, and self-interest (Graham & Harvey, 2001; Harford, 1999; Harford, Mansi, & Maxwell, 2008; Keynes, 1936; Myers, 1977; Myers & Majluf, 1984). The motive driven view understates the importance of a supply-side explanation. Cash holding might increase due to a lack of alternative funding. The main characteristic of cash is its flexibility, as it is available instantaneously (Ang & Smedema, 2011). The closest substitutes in terms of instantaneous access are trade credit and short-term bank finance. Of course, reducing dividends or selling assets can provide liquidity – but these

options are not instantaneous and costly due to signalling effects and transaction costs (Keynes, 1936; Opler, Pinkowitz, Stulz, & Williamson, 1999).

This paper considers the demand and supply-side explanations of cash holding by analysing the dynamics between cash holding and its closest substitutes, trade credit and short-term bank finance. To capture a firm's short-term liquidity need, we determine the cash conversion cycle (CCC). We develop a panel vector autoregression (VAR) accounting for the complex interrelationships between cash holding, trade credit, short-term bank finance and liquidity needs. This novel method leads to three contributions: (1) distinguishing between the demand and supply-side of liquidity, (2) extending the dynamic model of cash holding, and (3) analysing the mismatch of expectations concerning access to short-term bank finance.

The literature on cash holding mainly relies on demand-side explanations (Opler et al., 1999); however, Bates et al. (2009) contend that there was no shift in the demand for cash that could explain the recent increase in cash holding. They argue that firm characteristics changed, increasing cash holding due to riskier cash flows, higher R&D intensity and lower working capital requirements (i.e. lower inventory and accounts receivable). Bates et al. (2009) do not consider the role of trade credit granted by suppliers and short-term bank finance. Both sources of short-term funding have declined sharply in the UK during the investigation period. Hence, the supply-side is essential in understanding the recent increase in cash holding. After specifying a panel

* Corresponding author. Tel.: +44 20 7898 4821.

E-mail address: gk17@soas.ac.uk (G. Kling).

VAR, we determine impulse response functions to differentiate between demand and supply-side effects. This provides insights into the dynamic relationships between cash holding, firms' liquidity needs, trade credit and short-term bank finance.

This paper extends the dynamic model of cash holding by incorporating additional lags based on information criteria (Opler et al., 1999; Ozkan, Ozkan, & N., 2004). Static models are biased because past cash holding affects current cash holding. Apart from improving the econometric validity of the model, we gain insights into the dynamic relationship between the demand and supply of liquidity. In particular, we specify a panel vector autoregression (VAR) with four dependent variables: cash holding, the CCC to capture a firm's liquidity need, trade credit and short-term bank finance. The literature on trade credit applies panel VARs to aggregated data (Nilsen, 2002). In contrast, our panel VAR refers to the firm-level and deals with the inherent endogeneity and firm heterogeneity by applying a system GMM estimation (Arellano & Bond, 1991; Ozkan et al., 2004). Granger causality tests show that the four variables are endogenous. Consequently, a single-equation approach suffers from an endogeneity bias (Opler et al., 1999; Ozkan et al., 2004). In particular, the liquidity need measured by the CCC is endogenous; hence, using the CCC as an explanatory variable without a time lag violates weak exogeneity (Deloof, 2001).

In spite of delivering accurate one-step ahead forecasts for the average firm, the model understates the rapid accumulation of cash by cash-rich firms defined as belonging to the 75-percentile in 1988. Hence, we impose a liquidity constraint, which states that cash holding has to be sufficient to cover net working capital given expected access to external finance. We show that cash-rich firms suffer from lower than expected access to external finance. Accordingly, the pronounced increase in cash holding can be explained by a mismatch of expectations, a novel finding.

This paper has the following structure: section two reviews the literature on the relationship between cash holding, trade credit, access to short-term bank finance and the CCC; section three discusses the dataset and construction of variables; section four introduces the

panel VAR and shows our findings followed by robustness checks and concluding remarks.

2. Literature review

2.1. The motive-driven view of cash holding

Empirical studies use net working capital, which includes trade credit, as an explanatory variable (e.g. Ferreira & Vilela, 2004; Opler et al., 1999). Yet, the literature does not consider the role of trade credit as a source of external funding explicitly. In contrast, the literature on the relationship between trade credit and access to bank finance discussed in the next section largely ignores the role of cash holding. Consequently, it seems to be essential to combine both strands of the literature and analyse the demand and supply-side of liquidity. The literature on cash holding identifies the following theories: transaction cost theory, information asymmetry between debt and equity holders, and agency costs due to a conflict of interest between shareholders and managers.

Transaction cost theory argues that transaction costs due to converting cash substitutes into cash justify cash holding (Keynes, 1936; Miller & Orr, 1966; Tobin, 1956). There are several hypotheses related to the transaction cost theory highlighted by Opler et al. (1999). Some of these hypotheses refer to long-term decision making not relevant for meeting short-term liquidity needs due to the lack of instantaneous access. For instance, the asset sales of diversified companies and the reduction of dividend payments cannot substitute cash holding in the short-term (Ang & Smedema, 2011). Information asymmetry between debt and equity holders could explain cash holding. Myers and Majluf (1984) contend that securities might be undervalued by outsiders due to the lack of access to information. R&D expenses serve as a proxy for projects with a high degree of information asymmetry. As we focus on the instantaneous availability of cash and its closest substitutes, R&D expenses and some forms of external finance (e.g. equity issues) are not a relevant option to meet short-term

Table 1

Descriptive statistics.

Cash holding (*cash*) is defined as cash and cash equivalents relative to total assets. Short-term bank finance (*S*) is the ratio of short-term bank finance and total assets. Trade credit (*tc*) refers to the ratio of accounts payable and total assets. Liquidity (*liquid*) is measured by the cash conversion cycle CCC (see Eq. (1)). Growth refers to the annual growth rate in sales. The return on assets (*ROA*) is defined as earnings before interest and taxes divided by adjusted total assets (total assets excluding cash). Pre-tax cost of debt (*i*) is determined based on interest expenses and debt. Firm size (*size*) refers to the natural logarithm of total assets. The measure for cash flow volatility (*risk*) is the variation coefficient of cash flows in a three-year window. Bank finance relative to total debt determines the variable bank. The interest coverage (*cover*) is defined as earning before interest and taxes relative to interest expenses. Financial leverage (*L*) refers to total debt relative to total assets. Panel C summarises the components of the CCC (see Eq. (1)), namely inventory relative to cost of goods sold (*inv_cogs*), accounts receivable relative to revenues (*ar_rev*) and accounts payable relative to cost of goods sold (*ap_cogs*). Panel D shows the components of profitability, the cost-income ratio (*k*) and capital turnover (*T*). The table shows the number of observations (Obs), the mean, standard deviation (Std. Dev.), minimum, maximum and the change in percent based on the median and mean from 1988 to 2008.

Variable	Obs	Mean	Std. Dev.	Min	Max	Median change	Average change
Panel A: endogenous variables							
<i>cash</i>	14,073	0.158	0.154	0.006	0.481	71.0%	54.7%
<i>S</i>	13,801	0.228	0.124	0.062	0.453	−23.6%	−18.4%
<i>tc</i>	13,803	0.118	0.082	0.019	0.271	−48.7%	−34.8%
<i>liquid</i>	13,105	0.212	0.146	0.017	0.497	−25.3%	−15.6%
Panel B: control variables							
<i>growth</i>	12,511	0.160	0.269	−0.184	0.732	−15.3%	−13.4%
<i>ROA</i>	13,977	−0.013	0.263	−0.643	0.243	−66.7%	−133.1%
<i>i</i>	12,116	0.101	0.065	0.032	0.251	−28.0%	−20.3%
<i>size</i>	14,631	10.721	1.966	7.877	14.028	−0.8%	−1.6%
<i>risk</i>	14,515	0.930	0.931	0.136	3.077	139.2%	106.5%
<i>bank</i>	6518	0.255	0.324	0.001	0.880	−72.2%	−13.1%
<i>cover</i>	12,776	7.086	22.219	−32.000	53.329	−68.6%	−73.5%
<i>L</i>	14,622	0.156	0.143	0.000	0.417	0.0%	10.6%
Panel C: components of the cash conversion cycle							
<i>inv_cogs</i>	14,444	0.090	0.088	0.000	0.249	−85.1%	−55.3%
<i>ar_rev</i>	13,730	0.210	0.116	0.057	0.450	1.5%	10.6%
<i>ap_cogs</i>	13,714	0.107	0.055	0.034	0.208	−28.7%	−19.5%
Panel D: components of profitability (ROA)							
<i>k</i>	13,704	1.024	0.272	0.780	1.715	7.9%	21.3%
<i>T</i>	13,490	2.063	1.474	0.192	4.785	−53.4%	−40.3%

Download English Version:

<https://daneshyari.com/en/article/5084839>

Download Persian Version:

<https://daneshyari.com/article/5084839>

[Daneshyari.com](https://daneshyari.com)