



## Corporate cash holdings in the shipping industry

Meike Ahrends<sup>a</sup>, Wolfgang Drobetz<sup>a,\*</sup>, Nikos K. Nomikos<sup>b</sup>

<sup>a</sup> Faculty of Business Administration, Hamburg University, Moorweidenstraße 18, 20148 Hamburg, Germany

<sup>b</sup> Cass Business School, City, University of London, 106 Bunhill Row, London EC1Y 8TZ, United Kingdom



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### ABSTRACT

We examine the corporate cash holdings of listed shipping companies. Shipping firms hold more cash than similar firms in other asset-heavy industries. Higher cash holdings in the shipping industry are not attributable to firm- or country-level characteristics, but rather to the higher marginal value of cash. Shipping firms value an additional dollar of cash higher than matched manufacturing firms, regardless of their financial constraints status, but depending on their cultural background and the cyclical nature of their expansion opportunities. Less procyclical shipping firms have a higher marginal value of cash, and this valuation effect is most pronounced in bad times of the business cycle when external capital supply tends to become scarce. Overall, it appears that shipping companies are more conservative than their peers in managing their cash positions.

### 1. Introduction

Cash holdings and other liquid assets have always been important for the strategic decisions of shipping companies. For example, in May 2007, well before the outbreak of the global financial crisis, Navios Maritime Holdings Inc. purchased the Belgian maritime transport company Kleimar N.V. for \$165.6 million in cash to get hold of Capesize and Panamax vessels used in the transportation of cargoes to China. More recently, Maersk Line acquired Hamburg Süd for €3.7 billion on a cash and debt-free basis in December 2016 to capture additional market share at times when poor conditions in the liner industry forced some rivals to underinvest. In May 2017, Scorpio Tankers and Navig8 Product Tankers announced their merger, which will create the world's largest product tanker player. In a first step, Scorpio Tankers will acquire four tanker vessels from Navig8 for \$42.2 million in cash, net of assumed debt. This cash, working as bridge financing, will form part of the balance sheet of the combined firm to signal financial strength.<sup>1</sup>

The extant literature identified several motives for corporations to hold cash, which can explain the use of cash in the above examples from the shipping industry. For example, by using cash to make payments firms can save on transaction costs associated with having to liquidate assets. Miller and Orr (1966) document that brokerage costs induce firms to hold more liquid assets. Myers and Majluf (1984) argue that in the presence of asymmetric information, raising external financing is more costly than using internal funds, which makes it optimal for firms to hold a certain level of cash to meet their investment requirements.

Another motive for firms to reserve cash is to hedge the risk of future cash shortfalls, which is known as the precautionary motive for cash holdings. Opler et al. (1999) show that firms tend to hold more liquid assets if the average cash flow volatility of their industry is higher. Mikkelsen and Partch (2003) document that firms that persistently hold large cash reserves do not underperform when compared with their peer firms. These studies suggest that firms use internally generated funds to hedge against future cash flow uncertainty and increase their cash holdings in response to increases in cash flow volatility. Supporting this hedging argument,

\* Corresponding author.

E-mail address: [wolfgang.drobetz@uni-hamburg.de](mailto:wolfgang.drobetz@uni-hamburg.de) (W. Drobetz).

<sup>1</sup> For detailed empirical evidence on merger and acquisition (M&A) activities in the shipping industry, see Andreou et al. (2012) and Alexandrou et al. (2014).

Almeida et al. (2004) show that financially constrained firms save more cash during bad business cycle periods than their unconstrained peers. Similarly, Han and Qiu (2007) directly examine the link between a firm's cash holdings, cash flow uncertainty, and financial constraints and find that financially constrained firms have a stronger tendency to increase cash holdings when experiencing an upturn in cash flow volatility.<sup>2</sup>

Motivated by the specific features that characterize firms operating in the shipping sector, in this study we extend the empirical evidence on corporate cash holdings by looking at the case of shipping companies. Shipping firms operate in an environment with a high degree of asymmetric information, face high cash flow and business (covariance) risks, and tend to work with high financial as well as operating leverage.<sup>3</sup> Empirical evidence suggests that these characteristics are related to high corporate cash holdings (Opler et al., 1999; Ferreira and Vilela, 2004; Ozkan and Ozkan, 2004).

In addition, raising external capital became more difficult for shipping companies following the 2007–2009 financial mortgage crisis since banks' borrowing facilities for asset-based lending have been shrinking due to stricter bank regulation (Albertijn et al., 2011). The increased dependence of shipping firms on direct financing through the capital markets has created a challenging environment for shipping companies which will likely also impact their cash holdings. For example, on an aggregate basis, Bessler et al. (2011) observe a correlation between changes in cash holdings and changes in net equity. They show that firms tend to issue larger volumes of equity when adverse selection costs are temporarily low to build up or preserve cash reserves.

Finally, another major characteristic of the shipping industry is its high degree of asset tangibility. On the one hand, due to the implementation of fair value accounting, vessel price risks have become more visible and integrated into a comprehensive corporate risk management process (Albertijn et al., 2011). On the other hand, modern commercial ships are highly industry-specific assets, and asset tangibility does not necessarily imply asset redeployment (Shleifer and Vishny, 1992; Campello and Giambona, 2013).<sup>4</sup> Drobetz et al. (2016a) document that the high asset-specificity of vessels affects the ability of shipping firms to raise external capital, which in turn affects their investment activity even during benign liquidity conditions. Their empirical findings emphasize the importance of excess cash holdings, particularly in periods of crisis. While the post-crisis decline in investment activity was particularly severe in the shipping industry, excess cash holdings of some firms shipping offered financial flexibility and helped mitigate the negative effects.<sup>5</sup>

Using propensity score matching, we construct a matched sample consisting of 144 globally listed shipping firms paired with manufacturing firms that are most similar. Shipping firms hoard more cash than their manufacturing matches in almost every year of our sample period, their average cash holdings being almost three times higher. Using standard target cash regressions, we find that these differences in the level of cash are not driven by firm- or country-level characteristics. Instead, an explanation is that shipping firms exhibit a higher market value of an additional dollar of cash than matched manufacturing firms. We find that shipping firms value an additional dollar of cash significantly higher than their peers in the manufacturing sector. We note that, while our valuation results for manufacturing firms are driven by financial constraints, all shipping firms, independent of their financial status, tend to have problems accessing the capital markets and thus have a higher marginal value of cash. Moreover, including Hofstede's (2001) cultural dimensions into our baseline regression shows that shipping firms value cash higher when they originate from a country with lower individualism and higher uncertainty avoidance scores. Overall, it seems that shipping firms are more conservative on how they manage their cash holdings relative to their peer group.

Finally, the higher marginal value of cash for shipping firms can also be attributed to the cyclicity of their growth opportunities. Successions of good times with easy access to capital markets and bad times with limited capital market access are a key characteristic of the shipping industry. Supporting evidence in Ahrends et al. (2016), we find that shipping firms with less procyclical expansion opportunities have a higher marginal value of cash, especially in bad times of the business cycle when external capital supply becomes scarce. We show that low correlation shipping firms have a higher marginal value of cash because they use it for investment and effectively have higher investments out of their cash holdings. This benefit of cash holdings for shipping firms with less procyclical expansion opportunities creates a novel motive for precautionary savings. In particular, cash serves as a corporate hedging device in the shipping industry, e.g., building up a 'war chest' to ensure the ability of 'asset players' to acquire vessels at fire sale prices during periods of industry weakness. The availability of cash provides a cushion that protects firms from underinvestment and allows increasing the market share during market-wide downturns (Ahrends et al., 2016). This is an important motive since asset play creates the opportunity for significant profits, which often compensate for the lackluster profit margins from operating in the freight market (Thanopoulou, 2010).

<sup>2</sup> We note two alternative views on why companies should hold cash. The first one is related to agency costs (Jensen, 1986). Several studies (Harford, 1999; Kalcheva and Lins, 2007; Harford et al., 2008; Tong, 2011) find that high excess cash holdings are manifestations of agency problems in firms where managers use cash holdings for their own benefit and to undertake value-decreasing acquisitions. Repatriation of cash for the purposes of optimizing tax liabilities may be another motive; this may be the case for international conglomerates that diversify their operations so as to arbitrage differences in tax regimes across various jurisdictions (Foley et al., 2007; Pinkowitz et al., 2012). However, the same would not apply to shipping companies, which operate in an environment where tax liability is assessed based on a tonnage tax system or are given special dispensations against paying tax.

<sup>3</sup> These special characteristics of the shipping industry are discussed in Albertijn et al. (2011), Alizadeh and Nomikos (2011), Drobetz et al. (2012, 2013), Nomikos et al. (2013), Kaloutsidi (2014), Papapostolou et al. (2014), Greenwood and Hanson (2015), and Drobetz et al. (2016b), among others.

<sup>4</sup> Computing the fire sale discount as the difference between the transacted price of an arrested vessel and the counterfactual price from a hedonic model, Franks et al. (2015) estimate an average fire sale discount of 26% compared with ships of similar age and use. While half of this fire sale discount is driven by market illiquidity, they show that the other half is due to low maintenance of vessels and is concentrated in low valued vessels and corrupt ports.

<sup>5</sup> Drobetz et al. (2016a) use a multi-equation model that incorporates all sources and uses of funds and examine what shipping firms do with an additional dollar of cash flow. While their findings also emphasize the strategic importance of cash in the shipping industry (e.g., an additional dollar of cash flow is added partly to cash holdings rather than paid out as dividends), they do not estimate the market value of cash on firms' balance sheets.

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