Favourable funding conditions: friend or foe of shipping M&As?

Article

Accepted Version

Favourable Funding Conditions: Friend or Foe of Shipping M&As?

Arman Gülnur[1] and Nikolaos Antypas[2]

[1]Department of Maritime Business Administration, Maritime Faculty, Bursa Technical University, Türkiye. [2]ICMA Centre, Henley Business School, University of Reading, UK. Email: arman.gulnur@btu.edu.tr.

Abstract Funding conditions do not remain the same. The corporate finance literature documents that variations in funding conditions, for instance in the form of shifts in interest rates, affect banks' and firms' access to capital, as well as investors' security pricing behaviour. The high levels of leverage in the shipping industry make it particularly susceptible to fluctuations in funding conditions, exerting a significant impact on shipping companies' investment decisions. In this paper, we examine the link between funding conditions and investment quality in the shipping industry, focusing on mergers and acquisitions (M&As). We employ the event study methodology to obtain acquirer returns around M&As announcement dates, and multivariate regression to reveal the link between M&As and funding conditions. By using 352 completed acquisitions announced by international shipping companies between 1987 and 2020, we find that shipping companies engage in less value-creating deals in favourable funding conditions; a finding that supports the capital rationing theory. We report that a unit increase in our measure of funding conditions, on average, reduces shareholder value by 1.2% during the deal announcement window. Higher profitability moderates the negative effect of favourable funding conditions on shareholder value. Uncertainty of economic policies in acquirer's nation is associated with even lower deal quality during times of favourable funding conditions, emphasising the inseparable relationship between the economic landscape and shipping. The paper contributes to the shipping M&As literature by showing that the macroeconomic environment can have a great impact on the outcomes of M&A deals, as well as company and deal characteristics. The paper offers several policy implications for shipping companies with M&As intentions, shipping investors, and banks that support shipping.

Keywords: Shipping finance, mergers and acquisitions, funding conditions, freight rates, economic policy uncertainty.

Acknowledgements
The authors would like to thank the Editor-in-Chief and anonymous reviewers for their constructive comments that help improve the quality of this paper.

1. Introduction

International shipping is an inherently capital-intensive industry. Shipping companies' average capital expenditures comprise 8% of their total assets, ranking shipping at the 8th percentile of all industries in investment intensity (Alexandridis et al. 2020). Inorganic investments such as M&As have also been a major growth force in the industry, with shipping companies spending more than $560bil for M&As over the past 10 years.[1]

The high asset tangibility and volatile equity environment have led shipping companies to finance large-scale investments with debt capital. Shipping companies' financial leverage ratio averages 40% (Drobetz et al. 2013), with the world's top 40 banks having $294.4bil exposure to the shipping industry as of 2019 (Petrofin, 2020).[2] The investment-driven industry nature and the overall reliance on debt render shipping companies vulnerable to financial distress costs, therefore corporate debt policy has direct impact on investment choice and planning (Alexandridis et al. 2020). Since capturing growth opportunities relies on the deployment of substantial capital, we can infer that availability and access to capital is a prerequisite for growth and, thus, financial success.

The corporate finance literature provides evidence that aggregate funding availability fluctuates over time (Becher, Jensen, and Liu 2020), affecting the lending capacity of banks (Bernanke and Blinder 1992) and market-wide security valuations (Acharya and Pedersen 2005). Firms are forced to downsize their investment plans during economic contractions due

[1] The figure is calculated using M&A data from Thomson SDC and includes all mergers and acquisitions that took place in the shipping industry over the period 2008-2018.
[2] The top three banks with the highest exposure to the shipping industry are BNP Paribas, KfW, and Exim Bank of China, with more than $50bil in total.

to restricted access to capital through higher interest rates, while they are simultaneously incentivised to retain investments with the highest expected net present value (NPV). On the contrary, companies increase their investments as capital becomes more accessible during economic expansion through lower interest rates, while they also tend to undertake riskier projects. Hence, it can be argued that the aggregate funding environment has distinct impact on both corporate investment selection and outcome.

The impact of funding conditions on investment policy can be magnified in the shipping industry due to its highly capital and debt intensive nature (Haider, Ou, and Pettit 2018), providing a fruitful testing ground to examine the relationship between funding environment and investment quality. To this end, we examine whether funding conditions affect investor reaction to M&A activity in the shipping industry. We focus exclusively on M&As for several reasons. First, M&As have been a prominent source of growth in shipping with the aim of achieving operational and financial synergies while enhancing acquirer market-share. Second, M&As are typically large investments that have direct and observable effects on firm value. Third, the announcements of M&A deals are unanticipated, which allows us to measure investor reaction to new information under different funding conditions. Fourth, the market can perceive the prevailing funding environment and adjust its reaction towards M&A deal announcements.

We utilise a sample of 352 completed acquisitions by publicly listed international shipping companies. We find a negative relationship between funding conditions and acquirer returns, suggesting that shipping companies tend to make less value-creating acquisitions under accommodative funding conditions. This preliminary result supports the capital rationing theory which posits that, while companies invest cautiously under a restrictive financing landscape, they become less vigilant and even undertake riskier projects when the pressure on funding conditions eases (Di Maggio and Kacperczyk 2017). In economic terms, we report that

a one standard deviation increase in our funding conditions measure which is the average directional changes in LIBOR rates[3], on average, decreases shareholder value by $12.5mil during the deal announcement window.[4]

We refine our analysis by considering the moderating effect of aggregate sector profitability on the relationship between funding conditions and acquisition returns. Contrary to our initial analysis, we show that deals in the most favourable funding conditions have a value increasing effect when occurring during a high industry-earnings period. The economic impact of this positive relationship is also considerable, as such deals increase shareholder value by $69mil on average during the announcement window, while a typical deal in our sample increases shareholder value by $29.1mil. This finding suggests that acquisitions undertaken in favourable funding conditions and in a high industry-earnings period create more than twice as much value as a typical deal. On the contrary, a deal that is negotiated under the most favourable funding conditions albeit in the lowest earning periods decreases shareholder value by $29.7mil on average. Our findings, collectively, suggest that favourable funding conditions can be a boon or bane to value creation via M&As depending on other macroeconomic factors. We argue that high earnings enable shipping companies to actively pursue increased market presence when funding conditions are favourable, while soliciting positive investor reactions.[5] This rationale of engaging in M&As could help mitigate the negative market reaction. In other words, investors are aware that deals in times of higher capital availability are more likely to increase shareholder value when the sector is profitable.

[3] See Section 3 for a detailed discussion on the construction of the funding conditions measure.
[4] It is important to note that deals in both favourable and unfavourable funding conditions increase value for their shareholders, with average returns of 0.9% and 2%, respectively. Our references to value destruction throughout the paper refer to the lower or higher value created in one set of conditions relative to alternatives, as deals do not destroy value on average in absolute terms.
[5] Despite the highly fragmented structure of the dry bulk and tanker industries, aiming at an increased presence in specific routes may still be desirable to investors.

We continue our exploration of the macroeconomic environment's moderating effects by investigating the impact of economic policy uncertainty.[6] We find that the negative relationship between favourable funding conditions and deal outcomes deteriorates when the deal is announced during times of high economic policy uncertainty. Specifically, we report that a deal occurring under the most favourable funding conditions and the highest uncertainty period decreases shareholder value by $61mil on average. We attribute this result to investors being considerably more cautious when the less vigilant corporate investments, during periods of higher capital availability, overlap with significant economic policy uncertainty. This result offers shipping companies clear policy implications, in terms of urging them to take the uncertain economic environment into consideration. Such awareness regards the downsides of a deal, undertaken in favourable funding conditions and high economic policy uncertainty.

Our study has several contributions to the M&A literature. Existing research has shown that, in the overall market, better funding conditions relate to value creation via M&As, especially for smaller acquirers (i.e., those with total assets below the median value of the entire sample) (Becher, Jensen, and Liu 2020). We show that shipping deals are deemed less value-creating when more capital is available, unless the overall sector is more profitable, as measured by the ClarkSea Index. We also contribute to the M&A literature by studying restructuring events as part of the macroeconomic environment, i.e., sectoral earnings and global economic policy uncertainty.[7] Specifically, we show that M&A outcomes in the shipping industry are affected by capital availability, sector profitability, and economic policy uncertainty. Finally, we contribute to the literature, studying the interaction of macroeconomic factors, such as the

[6] Defined here as the average of national indices showing the frequency of newspaper articles that involve the terms economic, policy, and uncertainty together (Baker, Bloom, Davis, 2016).
[7] See e.g., Bonaime et al (2018), Dinc and Erel (2013), Erel et al (2012).

interaction between funding conditions and global economic policy uncertainty and their combined impact on deal value creation.

Our study has policy implications for shipping companies involved in M&As. The significant link between funding conditions and acquirer returns highlights the importance of having solid motivations to undertake M&A investments. Investors in shipping companies remain doubtful as to whether engagement in deals under favourable funding conditions is value enhancing. Instead, they seek substantive justifications behind M&A deals, such as operational synergies or increasing market share. Shipping companies considering acquisitions when more capital is available are prone to generate less shareholder value; corporate leaders should be aware of the perils of readily available or inexpensive capital and review investment plans accordingly. The need for caution becomes stronger when access to capital is easy in times of uncertain economic policies. Investors in shipping companies are aware of the potential drawbacks of rapid growth in uncertain times. Conversely, when companies pursue M&A deals in high-income periods, investors are optimistic, and deals generate more shareholder value.

The rest of the paper is organised as follows: Section 2 reviews the related literature and sets a theoretical background. Section 3 presents the data and empirical methodology. Section 4 reports the results and discussions. Section 5 concludes the paper.

2. A concise literature review and theoretical background

Shipping companies utilise M&As as a quick path to growth. The literature on shipping M&As broadly focuses on factors that drive consolidation (Fusillo 2009) and value creation around the deal announcement date (Alexandrou, Gounopoulos, and Thomas 2014). M&As in the shipping industry create value for both acquirer and target shareholders, with a significant share of the gains accruing to the latter (Panayides and Gong 2002, Syriopoulos and Theotokas 2007, Merikas, Polemis, and Gounopoulos 2011, Alexandrou, Gounopoulos, and Thomas 2014).

More recently, Alexandridis et al. (2020) have shown that shipping companies with excess leverage are less likely to perform M&As, deploy less cash as a payment method, acquire smaller targets, but make better acquisitions in terms of value creation. While Alexandridis et al. (2020) consider the impact of firm-level financial constraints on M&As by focusing on individual acquirer capital structures, we postulate that aggregate funding availability affects deal planning and implementation decisions, which, in turn, affect acquirer returns. In other words, previous studies have shown the microeconomic impact of financial constraints on deal outcomes in the shipping industry, while the number of studies investigating the impact of similar macroeconomic constraints remains limited.

The literature reports that aggregate capital availability, indicated by interest rates, is not stable across time (Becher, Jensen, and Liu 2020). In fact, funding conditions fluctuate substantially over time, affecting bank lending patterns (Jiménez et al. 2012, Bernanke and Blinder 1992) and stock market returns (Acharya and Pedersen 2005, Brunnermeier and Pedersen 2008). Under unfavourable funding conditions, banks become reluctant to lend, leaving companies with limited access to capital and, consequently, missed investment opportunities. In contrast, favourable funding conditions facilitate corporate access to capital, allowing more companies to pursue positive NPV investments, while banks tend to grant more loans to risky firms with fewer collateral requirements (Jiménez et al. 2014). When lending terms are looser, it becomes easier for companies to borrow debt capital to finance their riskier investments, aiming at higher returns. This can eventually lead to lower positive aggregate NPV in their projects because of higher risk profile (Di Maggio and Kacperczyk 2017). This is consistent with the capital rationing theory (Hoshi, Kashyap, and Scharfstein 1991, Biddle and Gilles 2006, Becher, Jensen, and Liu 2020) which posits that in unfavourable funding conditions, companies focus only on the most value-enhancing deals as access to capital is limited and, as a result, companies have limited ability in financing all positive NPV projects. As capital constraints

are relaxed, firms start pursuing investments of lower NPV. Easy access to capital may also magnify potential agency problems, since self-interested managers might prioritise their interests over those of the shareholders and make investment decisions that are not in the best interest of the company (Jensen and Meckling 1976).

The potential impact of funding conditions on M&A outcomes in shipping is twofold. First, favourable funding conditions may help shipping companies pursue value-enhancing deals that could be foregone under more restrictive funding environments (Becher, Jensen, and Liu 2020). Second, an easy-money period might incentivise shipping companies, which are otherwise financially constrained (Drobetz et al. 2013), to make rushed and risky M&A deals before capital access tightens again in the near future (Adra, Barbopoulos, and Saunders 2020). Thus, shipping companies may view favourable funding conditions as a rare opportunity to overcome their financial constraints and pursue inorganic growth (Di Maggio and Kacperczyk 2017). This risk-seeking behaviour of shipping companies may be viewed adversely by investors, resulting in less positive or even negative abnormal returns around the deal announcement day. Collectively, these arguments suggest that aggregate capital availability is of a pivotal importance in the shipping M&A market.

In shipping, high freight rates are shown to be linked to increases in M&A activity with a 50% correlation between shipowner earnings and deal values (Alexandridis and Singh 2016). The heightened M&A activity in such periods is consistent with both neoclassical and behavioural explanations of merger waves (Harford, 2005, Rhodes-Kropf and Viswanathan, 2004). In both cases, shipping companies pursue M&As to reorganise the consolidation level in the industry after an improvement in freight rates and to take advantage of oversupply of liquidity and temporary misvaluations. If the relationship between funding conditions and acquirer returns is negative, high freight rates might alleviate the negative reaction from the market. On the contrary, high sector earnings may strengthen a potentially positive relationship between

funding conditions and acquirer returns since this allows more financially constrained companies to participate in M&A markets (Becher, Jensen, and Liu 2020).

Recent studies from the literature on M&As suggest that acquirers tend to be more cautious when devising M&A plans in uncertain periods (Bhagwat, Dam, and Harford 2016, Nguyen and Phan 2017, Bonaime, Gulen, and Ion 2018, Gregoriou et al. 2021). Economic policy uncertainty poses a significant risk to M&A activities since target standalone valuation and expected deal synergies are vulnerable to overall market uncertainty. Adra, Barbopoulos, and Saunders (2020) examine the impact of monetary policy uncertainty on a wide range of M&A outcomes through *real options*. The real options framework views irreversible investments as financial call options that can be exercised now or be postponed to a later time in the future (Dixit and Pindyck 1994). In a highly uncertain environment, companies wait for new information and adjust their investment plans accordingly. However, if a company exercises the real option and undertakes an investment when uncertainty is higher, it faces a significant business risk. Adra, Barbopoulos, and Saunders (2020) find that higher uncertainty is a predictor of value destruction for acquirers. Furthermore, the negative effects of monetary policy uncertainty on acquirer returns are evident in times of monetary expansion since investors across markets display caution while reacting to M&A announcements in those periods (Di Maggio and Kacperczyk 2017, Adra, Barbopoulos, and Saunders 2020). Davis (2016) argues that, there were several periods in which global economic policy uncertainty was more pronounced. For example, Brexit triggered heightened global economic policy uncertainty, with its complicated negotiations and possible consequences for trade dynamics and investment strategies worldwide. In 2015, China's economy experienced a growth rate of 6.9%, marking the slowest growth observed over the past 25 years[8]. The unexpected slow growth was noticed for its impact since China is seen as a significant force in the global

[8] China economic growth slowest in 25 years, "https://www.bbc.com/news/business-35349576"

economy. September 11 attacks, invasion of Iraq, and the global financial crisis of 2008-9 are other periods in which global economic policy uncertainty is heightened.

Economic policy uncertainty could be related to the shipping industry in several ways. First, shipping is in itself a volatile industry where freight rates and vessel values remain unpredictable, rendering deal timing an important factor of success (Alexandridis et al. 2018). Along with the uncertainty embedded in the shipping industry, economic policy uncertainty may add another layer of risk (Su et al. 2019) affecting deal outcomes. Second, demand for shipping is a derived demand (Panayides 2006) thus any changes in international trade policies could affect the profitability of shipping companies. An example of this transmission mechanism could be the following: during times of high economic policy uncertainty, governments may adjust their international trade strategies in favour of local producers, depressing the number of imports, and thus curtailing demand for shipping services. In this case, the economic prospects of the shipping sector deteriorate due to lower demand, and so do the prospects of M&As. Therefore, economic uncertainty could make shipping investors even more pessimistic on deal-making during favourable funding conditions, when firms tend to undertake more risk, leading to even more adverse market reaction around deal announcements.

Overall, funding conditions, economic policy uncertainty, and the dynamics of the shipping industry highlight a web of factors that affect the outcomes of M&A deals. As evidenced in the extant literature, the impacts of funding conditions on M&A outcomes are multifaceted and they can be even more intricate in the shipping industry. Therefore, understanding the impact of aggregate capital availability on shipping M&As remains a key research question. Moreover, the high correlation between freight rates and heightened M&A activity underscores the need to establish a possible relationship between funding conditions and M&As when the acquirer has strong motivations to pursue inorganic investment. As economic policy uncertainty

emerges as a significant source of risk in M&As, its specific implications for shipping require comprehensive exploration. The next section explains our data and methodology in achieving our pursuit.

3. Data and Methodology

Our dataset covers 352 completed acquisitions announced by international shipping companies between 1987 and 2020, recorded in Thomson One Securities Data Corporation (SDC) database. We follow Alexandrou, Gounopoulos, and Thomas (2014) and classify our sample into three composite industries: i) Freight transportation group including 242 deals by acquirers in the industries 4412, 4424 and 4449, ii) Passengers, Ferries, Marinas and Services group including 47 deals by acquirers in the industries 4481, 4482, 4489, 4492, 4493, 4499, iii) Marine Cargo Handling group including 63 deals by acquirers in the industry 4491.

We require acquirer companies to be public, and we exclude spin-offs, recapitalisations, self-tenders, exchange offers, and repurchases from our sample. We do not impose any restrictions regarding deal size,[9] while target companies can be either public or private. We merge the deals with accounting and stock return data from Compustat Global and North America.

We test whether funding conditions influence how the market reacts to a particular deal announcement via the following ordinary least squares (OLS) model:

$$CAR_{i,t} = \alpha_{10} + \alpha_{11}(Funding\ conditions) + \alpha_{12}Z_{i,y-1} + \varepsilon_{13} \quad \text{(Eq. 1)}$$

where $CAR_{i,t}$ is the cumulative abnormal returns company i for a deal that is announced in year t. The CARs are estimated for a 3-day announcement window (-1, +1) using the standard

[9] The sample size in shipping M&As studies is inherently restricted by data unavailability. The most comprehensive shipping M&As study to date, Alexandrou et al. (2014), does not impose any restrictions to the sample apart from the requirement of the acquirer company being public.

market model (Brown and Warner 1985). The parameters of the model are estimated from day -255 to -45 relative to the deal announcement day. While the reliability of our findings may be affected by the arbitrary selection of event window, as evidenced by the existing literature, managing confounding effects becomes difficult when longer event windows are used (McWilliams and Siegel 1997). Therefore, we use a shorter event window to capture the most significant effect of acquisition announcements. The α vectors represent the intercept (α_{10}), the coefficient for funding conditions (α_{11}), and the coefficients for the control variables (α_{12}); ε_{13} is the error term of the model.

A mortgage-backed shipping finance transaction is typically based on LIBOR plus a spread, constituting the main interest expense of shipping companies[10]. Following Jensen and Moorman (2010) and Becher, Jensen, and Liu (2020), we use directional changes in LIBOR rates to reflect the impact of funding conditions on M&As outcomes in the shipping industry. Directional change in interest rates have been shown to reveal changes in the availability and cost of capital (Jensen, Mercer, and Johnson 1996). They are also dynamic in nature since shifts in LIBOR rates have implications on both current and future investments. Furthermore, LIBOR rates are broadly available to shareholders, allowing us to explore whether directional changes in the rates impact the way shareholders perceive a deal announcement. LIBOR rates are also exogenous to corporate decisions since companies are not able to affect changes in the rates (Becher, Jensen, and Liu 2020), while changes in LIBOR rates will typically have a direct influence on how shipping companies devise their financing and investment policies.

To define aggregate funding conditions, we first detect directional changes in monthly LIBOR[11] rates. When the most recent change is an increase (decrease), funding conditions are

[10] "Are shipowners ready for higher interest rates?", Drewry Research, June 2018.

[11] Using Federal Reserve Policy rates instead of LIBOR does not change the direction of our results.

viewed as unfavourable (favourable). When we do not observe a change in the monthly rates, funding conditions are considered as unchanged. Second, a dummy variable is introduced where favourable, unchanged, and unfavourable funding conditions take the values of 1, 0, and –1, respectively. Finally, a continuous variable for funding conditions is generated as the average of the dummy variable over the twelve months prior[12] to the acquisition announcement date (acquisition negotiation period).

Next, we investigate if industry earnings have a significant impact on the association between funding conditions and acquirer CARs. We use the ClarkSea Index as a proxy for industry earnings in the shipping industry[13]:

$$CAR_{i,y} = \alpha_{30} + \alpha_{31}(Funding\ conditions * ClarkSea) + \alpha_{32}(Funding\ conditions) + \alpha_{33}(ClarkSea) + \alpha_{34}Z_{i,y-1} + \varepsilon_{35} \quad \text{(Eq. 2)}$$

The ClarkSea is a cross-sectoral earnings index showing the average earnings in $/day for the tanker, dry bulk, and the liner industry. The index is weighed by the number of vessels in each of the industries. We calculate the natural logarithm of the average monthly index values over the twelve months prior (acquisition negotiation period) to the acquisition announcement date.

In a further exploration of the association between funding conditions and acquirer CARs, we also account for economic policy uncertainty:

$$CAR_{i,y} = \alpha_{20} + \alpha_{21}(Funding\ conditions * GEPU) + \alpha_{22}(Funding\ conditions) + \alpha_{23}(GEPU) + \alpha_{24}Z_{i,y-1} + \varepsilon_{25} \quad \text{(Eq. 3)}$$

We follow Adra, Barbopoulos, and Saunders (2020) and employ the Global Economic Policy Uncertainty Index (hereafter GEPU Index) developed by Baker, Bloom, and Davis (2016) as a

[12] Changing the time-span of funding conditions prior to an acquisition announcement does not affect our results.
[13] Albertijn et al. (2011) and Drobetz et al. (2013) use ClarkSea Index as a measure of variability in earnings and as a macroeconomic determinant of leverage, respectively.

proxy for monetary policy uncertainty. The GEPU Index is a GDP-weighted average of national economic policy uncertainty indices for 21 countries.[14] Each individual national index shows the frequency of newspaper articles in a particular country that involves the terms economy, policy, and uncertainty. Following Adra, Barbopoulos, and Saunders (2020) and we measure GEPU in the month that the deal is announced.[15]

[TABLE 1 NEAR HERE]

The control variables in Eqs. (1-3) are deal and company-specific characteristics that have been shown to affect acquirer CARs. As deal-specific characteristics, we include toehold since the literature suggests that abnormal returns to acquirers around the announcement dates are higher if the acquirer owns a toehold prior to the takeover offer (Renneboog and Vansteenkiste 2019). We also control for deal attitude, since hostile offers tend to be inversely associated with acquirer returns (Schwert 2000). We include a cross-border indicator, as acquirer companies are inclined to pay more market entry premium while acquiring a foreign target (Alexandrou, Gounopoulos, and Thomas 2014). Short-run returns to acquirer companies are higher in tender offers. Therefore, we also include a tender deal dummy in our models (Bouwman, Fuller, and Nain 2009). We further control for the publicly listed status of target since acquisitions of public targets are broadly associated with lower acquirer returns (Fuller, Netter, and Stegemoller 2002). We also control for the method of payment since acquisitions that are financed by cash tend to experience higher abnormal returns (Travlos 1987). We include a diversification dummy to account for the fact that diversifying deals are shown to be value-

[14] These countries are Australia, Brazil, Canada, Chile, China, Colombia, France, Germany, Greece, India, Ireland, Italy, Japan, Mexico, the Netherlands, Russia, South Korea, Spain, Sweden, the United Kingdom, and the United States. Our sample covers all the represented countries except Colombia.

[15] The data for Global Economic Policy Uncertainty Index starts since 1997, leaving 40 deals excluded from our regressions.

destroying (John and Ofek 1995). To control for the liquidity of the market for M&As and market concentration, we include M&A liquidity and Herfindahl-Hirschman Index (HHI) (Uysal 2011). We also include company size to control for the negative impact of company size on acquirer returns (Moeller, Schlingemann, and Stulz 2004). Since high levels of financial leverage may restrict managers' ability to allocate resources for negative NPV investments, we include acquirer leverage (Harrison, Hart, and Oler 2014). We also include cash holdings, since acquisitions by cash-rich companies tend to be value destroying (Harford, Klasa, and Walcott 2009). We further include profitability (Adra, Barbopoulos, and Saunders 2020, Alexandrou, Gounopoulos, and Thomas 2014) and market-to-book ratio (Moeller, Schlingemann, and Stulz 2005). Since the literature suggests that dividend-paying companies experience less negative acquirer returns in acquisitions due to less information asymmetry, we include a dividend payer dummy (Turki 2019). Finally, we include acquirer runup to account for bidder overvaluation (Faccio and Masulis 2005).

Table 1 presents the descriptive statistics for our sample. CARs have an average of 0.014, which shows that M&A deals are value-enhancing for acquirer shareholders in the shipping industry. Average funding conditions is -0.098, implying that our sample deals are negotiated under relatively unfavourable funding conditions. This statistic shows a contrast to Becher, Jensen, and Liu (2020) who report a positive average value for funding conditions. A possible explanation of this divergence could be the idiosyncratic dynamics of the shipping industry. Figure 1 shows funding conditions and ClarkSea Index over time, along with the two periods where M&A activity was more pronounced. The first notable peak in M&A activity takes place in the shipping-boom period between 2004 and 2008, when the industry demonstrated high earning levels. However, the second period of increased M&A activity shows a stark contrast to the earlier M&A wave. The rebound in the following years in M&A activity can be broadly explained by low asset valuations and more financial distress (Alexandridis and Singh 2016),

along with the intention of seeking efficiency improvements (Alexandrou, Gounopoulos, and Thomas 2014, Kang et al. 2015). Despite different motivations, both increased M&A-activity periods occurred in unfavourable funding conditions, which justifies the negative average funding conditions statistic in our sample. GEPU index averages 4.679, which shows that the announcements of our sample deals are made in a relatively low economic policy uncertainty environment (Adra, Barbopoulos, and Saunders 2020). Average ClarkSea Index is 9.611. This implies that our sample deals are negotiated under low-earnings periods on average, which supports the notion that low earning levels may lead shipping companies to pursue improvements in operational efficiency (Alexandrou, Gounopoulos, and Thomas 2014, Fusillo 2009). This pattern between freight rates and M&A activity is also evident in global shipping alliances as well. Specifically, Ju et al. (2023) find that low freight rates induce shipping alliances, while benign market conditions lead shipping companies to be more individualistic. Overall, the evidence underscores the substantial effect of freight rates on the consolidation move in the shipping industry.

[FIGURE 1 NEAR HERE]

4. Empirical Results and Discussion

4.1. Funding conditions and acquirer CARs

Table 2 shows the acquirer CAR regressions with the *funding conditions*[16] as the main treatment variable. In the first model, we only include funding conditions as the independent variable. In the second and third models, we control for deal and company specific characteristics. In models IV to VI, we follow the same procedure, with the funding conditions variable being replaced by two dummy variables. Funding tercile 2 (3) takes a value of 1 if the

[16] We do not include year-fixed effects in any of our models since they are highly correlated with our funding conditions measure.

12-month average of the directional changes in LIBOR rates lies within the second (third) tercile. This structure allows us to see which segment of funding conditions distribution drives the association between funding conditions and acquirer CARs more.[17]

[TABLE 2 NEAR HERE]

Starting with the first model, there is a negative and significant association between funding conditions and acquirer CARs. In other words, investors perceive deals under favourable funding conditions as less value-creating. The funding conditions coefficient remains significant after controlling for deal and company characteristics. This finding corroborates the capital rationing theory (Biddle and Gilles 2006) which posits that a company with limited access to capital selects the highest NPV deals only. As funding conditions become favourable, firms start including deals of lesser NPV values in their investment plan. Becher, Jensen, and Liu (2020) argue that easy access to capital may intensify agency problems, which are especially prevalent in M&As, eventually leading to value-destroying deals. Alternatively, restrained access to capital potentially mitigates agency costs, forcing companies to pursue the most valuable deals only. In fact, Alexandridis et al. (2020) link firm-level financial constraints and deal outcomes by finding that financially constrained (non-constrained) shipping acquirers make better (worse) deals measured by acquirer CARs. In a similar vein, Nejadmalayeri and Rosenblum (2022) find that investors react positively to the M&A announcements of financially distressed firms. Our findings, in conjunction with the literature, suggest both internally and externally imposed financial constraints have a distinct impact on investor evaluation of shipping M&As.[18]

[17] We follow this procedure in the rest of the paper as well.

[18] For brevity, we do not include a discussion about the control variables as their impact is found to be largely in line with the literature.

Shipping is used to financial constraints (Drobetz et al. 2013). Since overleveraged companies are less likely to engage in M&As (Alexandridis et al. 2020), shipping firms may view favourable funding conditions as a once-in-a-lifetime opportunity to pursue M&As (Di Maggio and Kacperczyk 2017). However, a volatile funding environment may limit the opportunity window to pursue a deal, obliging shipping companies to make rushed and risky deals that experience a backlash from the market. In fact, out of the 151 acquirers in our sample, 54 actively pursued M&As only during times of favourable funding conditions. This suggests that more than 35% of our sample companies are only able or interested in M&A deals when the funding environment is benign. If an easy-money regime is the main motivation for those companies, investors may, in turn, be vindicated for doubting the deal is value-enhancing.[19]

In economic terms, we find that a one standard deviation increase in funding conditions is associated with a decrease of $12.5mil in shareholder value around the acquisition announcement.[20] The magnitude of the effect is economically significant for acquirer shareholders, considering the typical deal in our sample increases shareholder wealth by $29.1mil. In the univariate test in model IV, we show that the negative association between funding conditions and CARs manifests during the most favourable capital availability times. We report economically and statistically significant results even after controlling for deal and company characteristics. In economic terms, we find that shareholder value decreases by $31.2mil when a deal is negotiated during the most favourable funding conditions.[21]

4.2. Industry-level earnings, funding conditions and acquirer CARs

[19] This result has clear policy implications not only for shipping companies but also for commercial banks that support the shipping industry. The decisions of banks on lending terms and capital availability significantly affect companies' strategic decisions to involve in M&A deals. The fact that shipping companies exhibit less corporate vigilance calls for banks to consider another risk factor when lending to shipping companies.

[20] The figure is based on the full specification in model III in Table 2.

[21] The figure is based on the full specification in model VI in Table 2.

In this section, we analyse whether industry earnings have a moderating effect on the negative relationship between funding conditions and acquirer CARs. We argue that higher sector earnings levels allow shipping companies to pursue market share during favourable market conditions, while soliciting positive investor reactions. This justification of seeking M&A deals might moderate the overall backlash from the investors presented in our baseline results. In Table 3, we investigate this channel by including an interaction term between funding

[TABLE 3 NEAR HERE]

conditions and the ClarkSea Index. Panel A reports the coefficient estimates of acquirer CAR regressions for all sample companies. Given that the ClarkSea Index accounts for only the freight transportation group, we repeat our tests in Panel B by including only the freight transportation group which is covered by the ClarkSea Index. [22]

Starting with the first model in Panel A, we find the funding conditions coefficient to still be negative and significant, while the ClarkSea Index is statistically insignificant.[23] However, we report a positive and significant coefficient for the interaction term. This finding implies that industry earnings have indeed a moderating effect on the negative association between funding conditions and acquirer CARs. We link this new finding to the neoclassical and behavioural explanations of merger waves that result from improvements to an industry's economic environment. Specifically, we argue that high-earnings periods allow shipping companies to improve their motivations for pursuing M&As, as synergies and growth capture are more likely when the overall sector is doing well**.** Specifically, shipping companies may utilise M&As to

[22] The reason we still report the tests in Panel A is that the non-ship owning industries can still be affected by earning levels in the ship owning industry. Furthermore, Alexandrou et al. (2014) include the Baltic Dry Index, a much less comprehensive proxy for earnings levels, in their likelihood of merger models that comprise all subsectors in the shipping industry.

[23] The interpretation of the main effects is not insightful in the presence of an interaction term since they directly depend on the values of each other. For instance, the isolated impact of funding conditions in Table 3 can only be extracted when ClarkSea equals to 0, i.e., when the interaction term disappears from the model. Since the variable ClarkSea cannot take a value of 0 (See Table 1), average isolated inferences cannot be drawn.

complement organic growth, establish operating and financial synergies, enhance market share, and diversify their asset base. Considering the cyclical nature of the shipping industry, deals satisfying the above goals could accelerate company growth profitably. The superior motives to execute deals during high earnings periods appear to alleviate the agency costs and subpar deal planning that seems prevalent during times of high capital availability.

In models II and III, we also control for deal and company characteristics. The interaction term remains both economically and statistically significant, reaffirming our inferences on the moderating effects of sector profitability. In models IV to VI, our analysis shows that the middle tercile of funding conditions is negatively associated with acquirer CARs, but without statistical significance. However, we show that the indicator of the most favourable funding conditions is negative and statistically significant. These results reiterate earlier results according to which the negative relationship between acquirer CARs and funding conditions is broadly driven by the deals undertaken during the phase of the most favourable funding conditions. The two interaction terms in models IV to VI show that the ClarkSea index has a moderating effect on funding conditions; however, its impact is both statistically and economically stronger in the most favourable funding conditions regimes. This result shows that investor reaction is best, in deals announced during the most favourable both funding and sector conditions.

In Panel B of Table 3, we repeat our analysis by excluding non-shipowning companies. The funding conditions coefficient increases in economic significance across all models. The middle tercile of funding conditions in models IV to VI becomes significant in all three models, which was not the case in Panel A. This result shows that even in relatively favourable funding conditions, the market reaction tends to be negative in the ship-owning industry. Unsurprisingly, the interaction term between funding conditions and ClarkSea becomes both economically and statistically more significant. This suggests ship-owning companies can

mitigate the decreasing effect of favourable funding conditions if the deal is undertaken in a high earnings period. In models IV to VI, interaction terms become significant, with funding tercile 3 * ClarkSea being slightly more significant.

Figure 2 shows the predictive margins of acquirer CARs against funding conditions and the ClarkSea Index. The figure shows that deals negotiated under the least favourable funding conditions and in the lowest earnings periods experience the highest CARs, which equals to $81mil increase in shareholder value on average during the announcement window. This result suggests shipping acquirers are more careful in selecting targets when both funding and sector conditions are in the least auspicious phases. However, as funding conditions improve, value creation via M&As deteriorates at a great pace. In fact, the average deal that is negotiated under the most favourable funding conditions and in the lowest earnings period results in a decrease of $29.7mil in shareholder value. This figure supports our argument that favourable funding conditions is a necessary but insufficient factor of success in pursuing M&As.

[FIGURE 2 NEAR HERE]

4.3. Funding conditions, economic policy uncertainty, and acquirer CARs

In this section, we test whether economic policy uncertainty influences market reactions under different funding conditions. Table 4 shows the acquirer CAR regressions with an interaction term between the funding conditions measure and GEPU Index. The first model in Table 4 provides an insightful perspective on the relationship between funding conditions and acquirer CARs. We report that when economic policy uncertainty is accounted for, the sign of funding conditions turns positive. Furthermore, the interaction term between funding conditions and GEPU is found to be negative and significant. This new evidence implies that deals undertaken in a favourable funding environment and during times of high economic uncertainty have a decreasing effect on acquirer returns around the announcement window. It appears that

companies pursuing M&As during periods of high uncertainty expose themselves to an additional source of macroeconomic risk. The interaction term remains significant when we control for company and deal characteristics.

[TABLE 4 NEAR HERE]

In columns IV to VI, we report that the adverse effect of economic policy uncertainty is magnified in the most favourable funding conditions. This result echoes findings in Adra, Barbopoulos, and Saunders (2020) who show that the negative impact of uncertainty on M&A outcomes is particularly focused in periods of monetary expansion. The dynamics of the shipping industry can also explain our results. Specifically, maritime transportation carries over 80% of the volume of international trade (UNCTAD, 2021), rendering the shipping industry an integral part of the global economy. This close association between shipping and global product markets renders the shipping industry vulnerable to material changes in economic policies. For instance, Kilian (2009) finds that shipping freight rates are associated with the world economic activity and the demand for global commodities. Furthermore, high economic policy uncertainty may manifest itself in governments altering their international trade strategies, which is reflected on the level of imports and exports, and thus on the shipping industry. Given freight rates are a significant determinant of the level of investment in the shipping industry (Drobetz, Janzen, and Requejo 2019), it appears that global economic policy uncertainty accentuates the negative relationship between acquirer CARs and favourable funding conditions. Combining these arguments with our results, we argue that investors in shipping companies seem to display caution when reacting to deals in an uncertain environment, where funding conditions might become unfavourable in the near future.

In Figure 3, we plot the linear prediction of acquirer CARs against different values of funding conditions and the GEPU index. It appears that shipping companies are more selective when

choosing targets, and they focus only on the value-enhancing deals in an uncertain and unfavourable funding environment. Specifically, we show that a typical deal in our sample increases shareholder value by $95mil in an uncertain environment and unfavourable funding conditions. However, as funding conditions improve, shareholder gains gradually disappear, and, eventually, turn negative. When the risk-seeking behaviour is coupled with a highly uncertain environment, companies experience a backlash from the market. In economic terms, we report that a deal in the most favourable funding conditions and in the most uncertain environment decreases shareholder value by $61mil on average during the announcement window.

The findings hold important policy implications for shipping companies. The shipping industry, being an integral part of the global economy, is particularly vulnerable to economic policy changes. Global economic policy uncertainty amplifies the negative relationship between acquirer returns and favourable funding conditions. This leads us to conclude that investors of shipping companies tend to be cautious when reacting to deals. The results suggest that shipping companies should carefully assess the impact of economic policy uncertainty on planned deals and their outcomes.

[FIGURE 3 HERE]

5. Conclusion

In this paper, we provide evidence that funding conditions play an integral role in shipping M&As, with directly measurable outcomes. Our findings suggest that shipping companies tend to perform less value-creating deals under favourable funding conditions. Along with the evidence from the literature, we argue that shipping companies could pursue rushed and risky acquisitions to take advantage of potentially temporary favourable funding conditions. The negative impact of favourable funding conditions on the market reaction deepens when a deal

is announced during times of high economic policy uncertainty. However, when favourable funding conditions are coupled with a positive outlook for the shipping sector, deals are viewed as value-enhancing. Our findings have direct policy implications for shipping companies that are willing to make acquisitions, their shareholders, and banks supporting the shipping industry. However, the generalisability of these findings is subject to certain limitations. For example, a relatively small sample size may not fully reflect the pricing behaviour of shipping investors under different funding conditions. Furthermore, our choice of LIBOR rates as the main indicator of aggregate funding conditions may oversimplify the complexity of shipping finance transactions. A further study could take a broader approach to define funding conditions with alternative measures in the shipping industry. This study also opens up new avenues for future research that explore financing and dividend policies of shipping companies. Different funding conditions will likely affect how shipping companies raise capital or pay out dividends.

References

Acharya, Viral V., and Lasse Heje Pedersen. 2005. "Asset pricing with liquidity risk." *Journal of Financial Economics* 77 (2):375-410. doi: https://doi.org/10.1016/j.jfineco.2004.06.007.

Adra, Samer, Leonidas G. Barbopoulos, and Anthony Saunders. 2020. "The impact of monetary policy on M&A outcomes." *Journal of Corporate Finance* 62:101529. doi: https://doi.org/10.1016/j.jcorpfin.2019.101529.

Alexandridis, George, Nikolaos Antypas, Arman Gulnur, and Ilias Visvikis. 2020. "Corporate financial leverage and M&As choices: Evidence from the shipping industry." *Transportation Research Part E: Logistics and Transportation Review* 133:101828. doi: https://doi.org/10.1016/j.tre.2019.101828.

Alexandridis, George, Manolis G. Kavussanos, Chi Y. Kim, Dimitris A. Tsouknidis, and Ilias D. Visvikis. 2018. "A survey of shipping finance research: Setting the future research

agenda." *Transportation Research Part E: Logistics and Transportation Review* 115:164-212. doi: https://doi.org/10.1016/j.tre.2018.04.001.

Alexandridis, George, and Manish Singh. 2016. "Mergers and Acquisitions in Shipping." In *The International Handbook of Shipping Finance: Theory and Practice*, edited by Manolis G. Kavussanos and Ilias D. Visvikis. London: Palgrave Macmillan.

Alexandrou, George, Dimitrios Gounopoulos, and Hardy M. Thomas. 2014. "Mergers and acquisitions in shipping." *Transportation Research Part E: Logistics and Transportation Review* 61:212-234. doi: https://doi.org/10.1016/j.tre.2013.11.007.

Baker, Scott R., Nicholas Bloom, and Steven J. Davis. 2016. "Measuring Economic Policy Uncertainty*." *The Quarterly Journal of Economics* 131 (4):1593-1636. doi: 10.1093/qje/qjw024.

Becher, David, Tyler K. Jensen, and Tingting Liu. 2020. "Acquisitions and funding conditions." *Journal of Corporate Finance* 65:101760. doi: https://doi.org/10.1016/j.jcorpfin.2020.101760.

Bernanke, Ben S., and Alan S. Blinder. 1992. "The Federal Funds Rate and the Channels of Monetary Transmission." *The American Economic Review* 82 (4):901-921.

Bhagwat, Vineet, Robert Dam, and Jarrad Harford. 2016. "The Real Effects of Uncertainty on Merger Activity." *The Review of Financial Studies* 29 (11):3000-3034. doi: 10.1093/rfs/hhw061.

Biddle, Gary C., and Hilary Gilles. 2006. "Accounting Quality and Firm-Level Capital Investment." *The Accounting Review* 81 (5):963-982.

Bonaime, Alice, Huseyin Gulen, and Mihai Ion. 2018. "Does policy uncertainty affect mergers and acquisitions?" *Journal of Financial Economics* 129 (3):531-558. doi: https://doi.org/10.1016/j.jfineco.2018.05.007.

Bouwman, Christa H. S., Kathleen Fuller, and Amrita S. Nain. 2009. "Market Valuation and Acquisition Quality: Empirical Evidence." *The Review of Financial Studies* 22 (2):633-679.

Brown, Stephen J., and Jerold B. Warner. 1985. "Using daily stock returns: The case of event studies." *Journal of Financial Economics* 14 (1):3-31. doi: https://doi.org/10.1016/0304-405X(85)90042-X.

Brunnermeier, Markus K., and Lasse Heje Pedersen. 2008. "Market Liquidity and Funding Liquidity." *The Review of Financial Studies* 22 (6):2201-2238. doi: 10.1093/rfs/hhn098.

Di Maggio, Marco, and Marcin Kacperczyk. 2017. "The unintended consequences of the zero lower bound policy." *Journal of Financial Economics* 123 (1):59-80. doi: https://doi.org/10.1016/j.jfineco.2016.09.006.

Dixit, Avinash K., and Robert S. Pindyck. 1994. *Investment under Uncertainty*: Princeton University Press.

Drobetz, Wolfgang, Dimitrios Gounopoulos, Andreas Merikas, and Henning Schröder. 2013. "Capital structure decisions of globally-listed shipping companies." *Transportation Research Part E: Logistics and Transportation Review* 52:49-76. doi: https://doi.org/10.1016/j.tre.2012.11.008.

Drobetz, Wolfgang, Malte Janzen, and Ignacio Requejo. 2019. "Capital allocation and ownership concentration in the shipping industry." *Transportation Research Part E: Logistics and Transportation Review* 122:78-99. doi: https://doi.org/10.1016/j.tre.2018.09.010.

Faccio, Mara, and Ronald W. Masulis. 2005. "The Choice of Payment Method in European Mergers and Acquisitions." *The Journal of Finance* 60 (3):1345-1388.

Fuller, Kathleen, Jeffry Netter, and Mike Stegemoller. 2002. "What Do Returns to Acquiring Firms Tell Us? Evidence from Firms That Make Many Acquisitions." *The Journal of Finance* 57 (4):1763-1793.

Fusillo, Mike. "Structural Factors Underlying Mergers and Acquisitions in Liner Shipping." *Maritime Economics and Logistics* 11, no. 2 (2009): 209–26. https://doi.org/10.1057/mel.2009.3.

Gregoriou, Andros, Binh Duy Nguyen, Tung Duy Nguyen, Huong Le, and Robert Hudson. 2021. "Economic policy uncertainty and cross-border mergers and acquisitions." *International Review of Financial Analysis* 78:101911. doi: https://doi.org/10.1016/j.irfa.2021.101911.

Haider, Jane, Zhirong Ou, and Stephen John Pettit. 2018. "Predicting Corporate Failure for Listed Shipping Companies." Maritime Economics and Logistics 21 (3): 415–38. https://doi.org/10.1057/s41278-018-0101-4.

Harford, Jarrad, Sandy Klasa, and Nathan Walcott. 2009. "Do firms have leverage targets? Evidence from acquisitions." *Journal of Financial Economics* 93:1-14. doi: 10.1016/j.jfineco.2008.07.006.

Harrison, Jeffrey, Matthew Hart, and Derek Oler. 2014. "Leverage and acquisition performance." *Review of Quantitative Finance and Accounting* 43 (3):571-603.

Hoshi, Takeo, Anil Kashyap, and David Scharfstein. 1991. "Corporate Structure, Liquidity, and Investment: Evidence from Japanese Industrial Groups." *The Quarterly Journal of Economics* 106 (1):33-60.

Jensen, Gerald R., Jeffrey M. Mercer, and Robert R. Johnson. 1996. "Business conditions, monetary policy, and expected security returns." *Journal of Financial Economics* 40 (2):213-237. doi: https://doi.org/10.1016/0304-405X(96)89537-7.

Jensen, Gerald R., and Theodore Moorman. 2010. "Inter-temporal variation in the illiquidity premium." *Journal of Financial Economics* 98 (2):338-358. doi: https://doi.org/10.1016/j.jfineco.2010.05.008.

Jensen, Michael C., and William H. Meckling. 1976. "Theory of the firm: Managerial behavior, agency costs and ownership structure." *Journal of Financial Economics* 3 (4):305-360. doi: https://doi.org/10.1016/0304-405X(76)90026-X.

Jiménez, G., S. Ongena, J. L. Peydró, and J. Saurina. 2014. "Hazardous times for monetary policy: What do twenty-three million bank loans say about the effects of monetary policy on credit risk-taking?" *Econometrica* 82 (2):463-505. doi: 10.3982/ECTA10104.

Jiménez, Gabriel, Steven Ongena, José-Luis Peydró, and Jesús Saurina. 2012. "Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications." *American Economic Review* 102 (5):2301-26. doi: 10.1257/aer.102.5.2301.

John, Kose, and Eli Ofek. 1995. "Asset sales and increase in focus." *Journal of Financial Economics* 37 (1):105-126. doi: https://doi.org/10.1016/0304-405X(94)00794-2.

Ju, Huizhu, Qingcheng Zeng, Hercules Haralambides, and Yimeng Li. 2023. "An investigation into the forces shaping the evolution of global shipping alliances." *Maritime Policy & Management*:1-20. doi: 10.1080/03088839.2023.2180549.

Kang, Hyung Koo, Grace W.Y. Wang, Hee-Seok Bang, and Su-Han Woo. 2015. “Economic Performance and Corporate Financial Management of Shipping Firms.” Maritime Economics and Logistics, May. https://doi.org/10.1057/mel.2015.8.

Kilian, Lutz. 2009. "Not All Oil Price Shocks Are Alike: Disentangling Demand and Supply Shocks in the Crude Oil Market." *The American Economic Review* 99 (3):1053-1069.

McWilliams, Abagail, and Donald Siegel. 1997. "Event studies in management research: Theoretical and empirical issues." *Academy of management journal* 40 (3):626-657.

Merikas, Andreas, Dionysios Polemis, and Anna Triantafyllou. 2011. "Mergers And Acquisitions In The Shipping Industry". *Journal of Applied Business Research (JABR)* 27 (4):9-22. https://doi.org/10.19030/jabr.v27i4.4653.

Moeller, Sara B., Frederik P. Schlingemann, and René M. Stulz. 2004. "Firm size and the gains from acquisitions." *Journal of Financial Economics* 73 (2):201-228. doi: https://doi.org/10.1016/j.jfineco.2003.07.002.

Moeller, Sara B., Frederik P. Schlingemann, and René M. Stulz. 2005. "Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave." *The Journal of Finance* 60 (2):757-782.

Nejadmalayeri, Ali, and Aaron Rosenblum. 2022. "Distressed acquirers and the bright side of financial distress." *International Review of Financial Analysis* 83:102303. doi: https://doi.org/10.1016/j.irfa.2022.102303.

Nguyen, Nam H., and Hieu V. Phan. 2017. "Policy Uncertainty and Mergers and Acquisitions." *The Journal of Financial and Quantitative Analysis* 52 (2):613-644.

Panayides, Photis, and Xihe Gong. 2002. "The Stock Market Reaction to Merger and Acquisition Announcements in Liner Shipping." *Maritime Economics and Logistics* 4:55-80. doi: 10.1057/palgrave/ijme/9100030.

Panayides, Photis M. 2006. "Maritime Logistics and Global Supply Chains: Towards a Research Agenda." *Maritime Economics & Logistics* 8 (1):3-18. doi: 10.1057/palgrave.mel.9100147.

Renneboog, Luc, and Cara Vansteenkiste. 2019. "Failure and success in mergers and acquisitions." *Journal of Corporate Finance* 58:650-699. doi: https://doi.org/10.1016/j.jcorpfin.2019.07.010.

Schwert, G. William. 2000. "Hostility in Takeovers: In the Eyes of the Beholder?" *The Journal of Finance* 55 (6):2599-2640. doi: https://doi.org/10.1111/0022-1082.00301.

Su, Chi-Wei, Kai-Hua Wang, Qi Shao, and Ran Tao. 2019. "Are there bubbles in the shipping freight market?" *Maritime Policy & Management* 46 (7):818-830. doi: 10.1080/03088839.2019.1619946.

Syriopoulos, Theodore, and Ioannis Theotokas. 2007. "Value creation through corporate destruction? Corporate governance in shipping takeovers." *Marit. Pol. Mgmt.* 34:225-242. doi: 10.1080/03088830701342973.

Travlos, Nickolaos G. 1987. "Corporate Takeover Bids, Methods of Payment, and Bidding Firms' Stock Returns." *The Journal of Finance* 42 (4):943-963. doi: 10.2307/2328300.

Turki, Aymen. 2019. " Dividend Policy And Stock Acquisition Announcement Returns: A Test Of Asymmetric Information Theory." *Journal of Financial Research* 42 (1):115-145. doi: https://doi.org/10.1111/jfir.12164.

Uysal, Vahap B. 2011. "Deviation from the target capital structure and acquisition choices." *Journal of Financial Economics* 102 (3):602-620. doi: https://doi.org/10.1016/j.jfineco.2010.11.007.

Appendix. Variable definitions

CARs	Acquirer's cumulative abnormal returns over the event window around announcement day 0. The announcement event window is [-1, +1].
Funding dummy	A dummy variable takes a value of 1 (-1) if the most recent change in monthly LIBOR rates is a decrease (increase). The variable takes a value 0 if no change is observed in the rates.
Funding conditions	The average of Funding dummy over the twelve months prior (acquisition negotiation period) to the acquisition announcement date.
Funding tercile 1	A dummy variable takes a value of 1 if the values lie within the first tercile of Funding conditions.
Funding tercile 2	A dummy variable takes a value of 1 if the values lie within the second tercile of Funding conditions.
Funding tercile 3	A dummy variable takes a value of 1 if the values lie within the third tercile of Funding conditions.
GEPU Index	Natural logarithm of Global Economic Policy Uncertainty Index from https://www.policyuncertainty.com/global_monthly.html
ClarkSea Index	The average of the natural logarithm of Clarksea Index values over the twelve months prior (acquisition negotiation period) to the acquisition announcement date.
Toehold	A dummy variable takes a value of 1 if an acquirer has an ownership stake in the target company of 5% or more prior to the acquisition announcement.
Attitude	A dummy variable takes a value of 1 if the deal attitude is recorded as "Friendly" on SDC.
Cross-border	A dummy variable takes a value of 1 if cross-border flag is recorded as "Y" on SDC.
Tender	A dummy variable takes a value of 1 if tender flag is recorded as "Y" on SDC.
Public target	A dummy variable takes a value of 1 if the publicly listed status of the target is recorded as "Public" on SDC.
All other	A dummy variable takes a value of 1 if the payment method is recorded as 100% other/unknown on SDC.

All cash	A dummy variable takes a value of 1 if the payment method is recorded as 100% cash on SDC.
All stock	A dummy variable takes a value of 1 if the payment method is recorded as 100% stock on SDC.
Diversifying	A dummy variable takes a value of 1 if the target does not share the same SIC code with the acquirer.
M&A liquidity	The ratio of total deal value to total assets in a given industry and year.
HHI	The sum of squared terms of the market share percentage of companies in a given industry and year.
Size	Natural logarithm of book value of total assets.
Leverage	The ratio of short- and long-term debt to book value of total assets.
Cash	The ratio of cash and cash equivalents to book value of total assets.
Profitability	The ratio of operating income before depreciation to book value of total assets.
Market-to-book	The ratio of the market value of assets to book value of total assets.
Dividend payer	A dummy variable takes a value of 1 if the company pays dividends in a given year.
Acquirer runup	Acquirer's annual stock return measured in the previous year of acquisition announcement.

Table 1. Descriptive statistics.

	N	Mean	St. Dev.	Min	Max
CARs	352	0.014	0.048	-0.099	0.204
Funding conditions	352	-0.098	0.478	-1,000	1,000
GEPU index	313	4.679	0.409	3.888	5.876
ClarkSea	346	9.611	0.413	9.112	10.591
Toehold	352	0.110	0.313	0,000	1,000
Attitude	352	0.980	0.139	0,000	1,000
Cross-border	352	0.439	0.496	0,000	1,000
Tender	352	0.019	0.139	0,000	1,000
Public target	352	0.082	0.274	0,000	1,000
All other	352	0.759	0.428	0,000	1,000
All cash	352	0.198	0.399	0,000	1,000
All stock	352	0.042	0.201	0,000	1,000
Diversifying	352	0.679	0.467	0,000	1,000
M&A liquidity	349	0.033	0.042	0.000	0.138
HHI	352	0.545	0.270	0.000	1.000
Size	338	6.667	1.639	2.235	9.791
Leverage	346	0.333	0.190	0.000	0.799
Cash	346	0.120	0.115	0.001	0.625
Profitability	346	0.105	0.060	-0.109	0.289
Market-to-book	308	1.348	0.637	0.536	4.977
Dividend payer	352	0.877	0.327	0,000	0,000
Acquirer runup	335	0.190	0.558	-1.313	3.005

The descriptive statistics show the number of firm-year observations, the mean, standard deviation, minimum, and maximum value of each variable. Deal and accounting data are collected from SDC and Compustat, respectively. All variables apart from dummies are winsorized at the upper and lower one percentile levels. See Appendix 1 for variable definitions.

Table 2. Funding conditions and acquirer CARs.

	I	II	III	IV	V	VI
Funding conditions	-0.012***	-0.012**	-0.012**			
	(0.004)	(0.004)	(0.005)			
Funding tercile 2				-0.000	-0.004	-0.001
				(0.006)	(0.006)	(0.006)
Funding tercile 3				-0.015***	-0.014**	-0.015**
				(0.005)	(0.006)	(0.006)
Toehold		-0.007	-0.014*		-0.007	-0.014*
		(0.009)	(0.008)		(0.009)	(0.007)
Attitude		0.032**	0.036*		0.031**	0.027**
		(0.013)	(0.014)		(0.012)	(0.013)
Cross-border		0.004	0.008		0.004	0.009
		(0.004)	(0.005)		(0.005)	(0.005)
Tender		-0.018	-0.008		-0.015	-0.003
		(0.021)	(0.021)		(0.021)	(0.022)
Public target		0.056*	0.033*		0.029*	0.032*
		(0.016)	(0.017)		(0.016)	(0,017)
All cash		0.009	0.006		0.009	0.006
		(0.007)	(0.007)		(0.007)	(0.007)
All stock		0.023	0.024		0.024	0.024
		(0.022)	(0.022)		(0.022)	(0.022)
Diversifying		-0.009*	-0.010*		-0.009*	-0.009
		(0.005)	(0.005)		(0.005)	(0.005)
M&A liquidity		0.131*	0.137*		0.126*	0.132*

		(0.067)	(0.073)		(0.066)	(0.072)
HHI		0.018*	0.028**		0.018*	0.026**
		(0.009)	(0.010)		(0.009)	(0.010)
Size			-0.003*			-0.003*
			(0.001)			(0.001)
Leverage			0.025			0.027
			(0.017)			(0.017)
Cash			-0.001			-0.005
			(0.024)			(0.024)
Profitability			-0.012			-0.006
			(0.048)			(0.047)
Market-to-book			-0.001			-0.001
			(0.005)			(0.005)
Dividend payer			-0.019*			-0.019*
			(0.010)			(0.010)
Acquirer runup			-0.002			-0.003
			(0.005)			(0.005)
C	0.012***	-0.033**	0.002	0.019***	-0.024*	0.009
	(0.002)	(0.014)	(0.025)	(0.004)	(0.014)	(0.024)
N	352	348	306	352	348	306
P-value	0.006	0.008	0.000	0.006	0.008	0.001
Adj. R^2 (%)	1.11	6.71	10.59	1.63	6.64	10.86

The table shows the impact of the funding conditions on acquirer returns around the deal announcement. Estimated p-values are clustered at company level and standard errors are given in parentheses. Statistical significance levels of 10%, 5%, 1% are denoted with *, **, ***, respectively.

Table 3. Funding conditions, ClarkSea Index, and acquirer CARs.

Panel A. Coefficient estimates of acquirer CARs for the whole sample companies

	I	**II**	**III**	**IV**	**V**	**VI**
Funding conditions	-0.261*	-0.264**	-0.244**			
	(0.115)	(0.109)	(0.116)			
Clarksea	0.003	0.007	0.005	-0.015	-0.012	-0.014
	(0.005)	(0.006)	(0.007)	(0.008)	(0.008)	(0.009)
Funding conditions*Clarksea	0.025**	0.026**	0.024**			
	(0.011)	(0.011)	(0.011)			
Funding tercile 2				-0.212	-0.237	-0.213
				(0.161)	(0.160)	(0.167)
Funding tercile 3				-0.244*	-0.294**	-0.293**
				(0.134)	(0.126)	(0.141)
Funding tercile 2*Clarksea				0.021	0.024	0.022
				(0.016)	(0.016)	(0.017)
Funding tercile 3*Clarksea				0.023*	0.029**	0.029**
				(0.013)	(0.012)	(0.015)
Toehold		-0.009	-0.015*		-0.010	-0.016**
		(0.008)	(0.008)		(0.008)	(0.007)
Attitude		0.033***	0.028**		0.034***	0.029**
		(0.011)	(0.012)		(0.011)	(0.012)

Cross-border		0.004	0.008		0.004	0.008
		(0.005)	(0.005)		(0.005)	(0.005)
Tender		-0.017	-0.004		-0.015	0.001
		(0.021)	(0.021)		(0.021)	(0.021)
Public target		0.033**	0.033*		0.033**	0.032*
		(0.016)	(0.017)		(0.016)	(0.017)
All cash		0.010	0.006		0.010	0.006
		(0.007)	(0.007)		(0.007)	(0.008)
All stock		0.021	0.023		0.022	0.023
		(0.022)	(0.022)		(0.022)	(0.022)
Diversifying		-0.010**	-0.011*		-0.010*	-0.096*
		(0.007)	(0.005)		(0.005)	(0.005)
M&A liquidity		0.148**	0.146		0.143**	0.140*
		(0.068)	(0.075)		(0.068)	(0.075)
HHI		0.018*	0.026**		0.097*	0.025**
		(0.010)	(0.011)		(0.086)	(0.011)
Size			-0.003*			-0.003*
			(0.001)			(0.001)
Leverage			0.026			0.027
			(0.018)			(0.018)
Cash			-0.000			-0.001
			(0.025)			(0.025)
Profitability			-0.000			0.009
			(0.050)			(0.050)
Market-to-book			-0.001			-0.001
			(0.005)			(0.005)
Dividend payer			-0.019**			-0.020**
			(0.010)			(0.010)
Acquirer runup			-0.003			-0.003
			(0.005)			(0.005)
C	-0.016	-0.104*	-0.048	0.166	0.097	0.147
	(0.056)	(0.061)	(0.077)	(0.085)	(0.086)	(0.092)
N	344	340	301	344	340	301
P-value	0.022	0.000	0.000	0.050	0.001	0.002
Adj. R^2 (%)	1.81	7.77	11.23	1.71	7.37	11.24

Panel B. Coefficient estimates of acquirer CARs for shipowner companies only

	I	**II**	**III**	**IV**	**V**	**VI**
Funding conditions	-0.393***	-0.368***	-0.342***			
	(0.123)	(0.113)	(0.124)			
Clarksea	0.005	0.013	0.012	-0.021**	-0.014	-0.015
	(0.007)	(0.008)	(0.009)	(0.010)	(0.010)	(0.011)
Funding conditions*Clarksea	0.039***	0.036***	0.034***			
	(0.012)	(0.011)	(0.012)			
Funding tercile 2				-0.325*	-0.353**	-0.337*
				(0.181)	(0.177)	(0.189)
Funding tercile 3				-0.349**	-0.366**	-0.348**
				(0.150)	(0.140)	(0.148)
Funding tercile 2*Clarksea				0.034*	0.036**	0.035*
				(0.018)	(0.018)	(0.019)
Funding tercile 3*Clarksea				0.034**	0.036**	0.034**

				(0.015)	(0.014)	(0.015)
Toehold		-0.011	-0.017*		-0.012	-0.018*
		(0.011)	(0.009)		(0.010)	(0.010)
Attitude		0.033***	0.033**		0.036***	0.037***
		(0.011)	(0.013)		(0.010)	(0.011)
Cross-border		0.009	0.010		0.008	0.009
		(0.006)	(0.006)		(0.006)	(0.006)
Tender		-0.038	-0.031		-0.035	-0.024
		(0.024)	(0.025)		(0.024)	(0.024)
Public target		0.038*	0.041*		0.036*	0.039*
		(0.020)	(0.024)		(0.020)	(0.022)
All cash		0.011	0.008		0.012	0.008
		(0.008)	(0.008)		(0.008)	(0.008)
All stock		0.020	0.019		0.020	0.019
		(0.028)	(0.027)		(0.029)	(0.029)
Diversifying		-0.005	-0.010		-0.003	-0.008
		(0.006)	(0.006)		(0.006)	(0.007)
M&A liquidity		0.084	-0.053		0.084	0.055
		(0.006)	(0.091)		(0.091)	(0.097)
HHI		0.018	0.027		0.016	0.022
		(0.016)	(0.019)		(0.015)	(0.018)
Size			-0.003*			-0.003*
			(0.002)			(0.002)
Leverage			0.001			0.002
			(0.030)			(0.021)
Cash			-0.021			-0.022
			(0.030)			(0.029)
Profitability			-0.038			-0.033
			(0.057)			(0.056)
Market-to-book			0.003			0.004
			(0.007)			(0.006)
Dividend payer			-0.009			-0.011
			(0.010)			(0.010)
Acquirer runup			0.001			0.001
			(0.006)			(0.006)
C	0.039	-0.162**	-0.120	0.226**	0.108	0.147
	(0.070)	(0.073)	(0.094)	(0.104)	(0.107)	(0.113)
N	235	232	199	235	232	199
P-value	0.011	0.001	0.013	0.001	0.000	0.004
Adj. R^2 (%)	3.33	7.61	7.53	4.24	7.83	8.81

The table shows the impact of the funding conditions and ClarkSea Index on acquirer returns around the deal announcement. Estimated p-values are clustered at company level and standard errors are given in parentheses. Statistical significance levels of 10%, 5%, 1% are denoted with *, **, ***, respectively.

Table 4. Funding conditions, GEPU Index, and Acquirer CARs.

	I	II	III	IV	V	VI
Funding conditions	0.138***	0.115**	0.019*			
	(0.045)	(0.055)	(0.055)			
GEPU	-0.011*	-0.011	-0.007	0.007	0.005	0.010
	(0.006)	(0.007)	(0.007)	(0.009)	(0.009)	(0.010)
Funding conditions*GEPU	-0.031***	-0.027**	-0.025**			
	(0.009)	(0.012)	(0.012)			
Funding tercile 2				0.063	0.056	0.052
				(0.085)	(0.094)	(0.094)
Funding tercile 3				0.159**	0.127*	0.150**
				(0.064)	(0.067)	(0.065)
Funding tercile 2*GEPU				-0.012	-0.012	-0.011
				(0.018)	(0.020)	(0.020)
Funding tercile 3*GEPU				-0.037***	-0.030**	-0.035**
				(0.013)	(0.145)	(0.014)
Toehold		-0.007	-0.013		-0.008	-0.013*
		(0.008)	(0.008)		(0.008)	(0.007)
Attitude		0.036***	0.029*		0.037***	0.031**

		(0.013)	(0.014)		(0.013)	(0.014)
Cross-border		0.002	0.007		0.002	0.007
		(0.005)	(0.006)		(0.005)	(0.006)
Tender		-0.028	-0.012		-0.025	-0.007
		(0.021)	(0.020)		(0.020)	(0.020)
Public target		0.043**	0.036**		0.040**	0.032*
		(0.018)	(0.017)		(0.018)	(0.017)
All cash		0.005	0.006		0.004	0.005
		(0.008)	(0.008)		(0.008)	(0.008)
All stock		0.014	0.020		0.015	0.021
		(0.022)	(0.021)		(0.023)	(0.022)
Diversifying		-0.013**	-0.012*		-0.013**	-0.011
		(0.005)	(0.006)		(0.006)	(0.006)
M&A liquidity		0.157**	0.144*		0.142**	0.123
		(0.069)	(0.075)		(0.069)	(0.075)
HHI		0.029***	0.032***		0.028***	0.031***
		(0.010)	(0.011)		(0.010)	(0.011)
Size			-0.002			-0.002
			(0.001)			(0.002)
Leverage			0.032*			0.036*
			(0.018)			(0.020)
Cash			0.012			0.014
			(0.026)			(0.027)
Profitability			0.018			0.028
			(0.057)			(0.056)
Market-to-book			-0.003			-0.003
			(0.005)			(0.005)
Dividend payer			-0.017			-0.019
			(0.109)			(0.010)
Acquirer runup			-0.001			-0.002
			(0.005)			(0.005)
C	0.070***	0.017	0.028	-0.016	-0.055	-0.051
	(0.032)	(0.036)	(0.045)	(0.042)	(0.044)	(0.056)
N	312	308	284	312	308	284
P-value	0.001	0.000	0.000	0.000	0.000	0.000
Adj. R^2 (%)	2.09	9.67	11.7	2.57	9.27	12.01

The table shows the impact of the funding conditions and GEPU Index on acquirer returns around the deal announcement. Estimated p-values are clustered at company level and standard errors are given in parentheses. Statistical significance levels of 10%, 5%, 1% are denoted with *, **, ***, respectively.

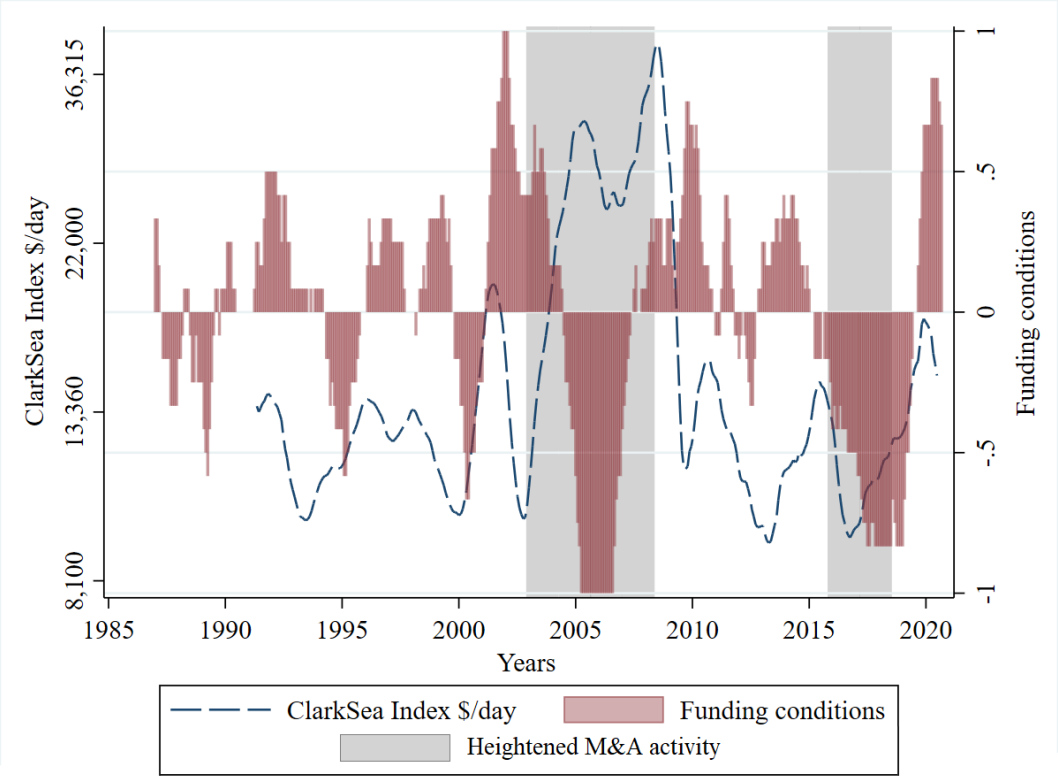

Figure 1. Funding conditions and ClarkSea Index over time.

The figure plots the moving average funding conditions and ClarkSea Index, along with the heightened M&A periods. In each month, we calculate the average of the natural logarithm of ClarkSea Index and directional changes in monthly LIBOR rates in the previous twelve-month period.

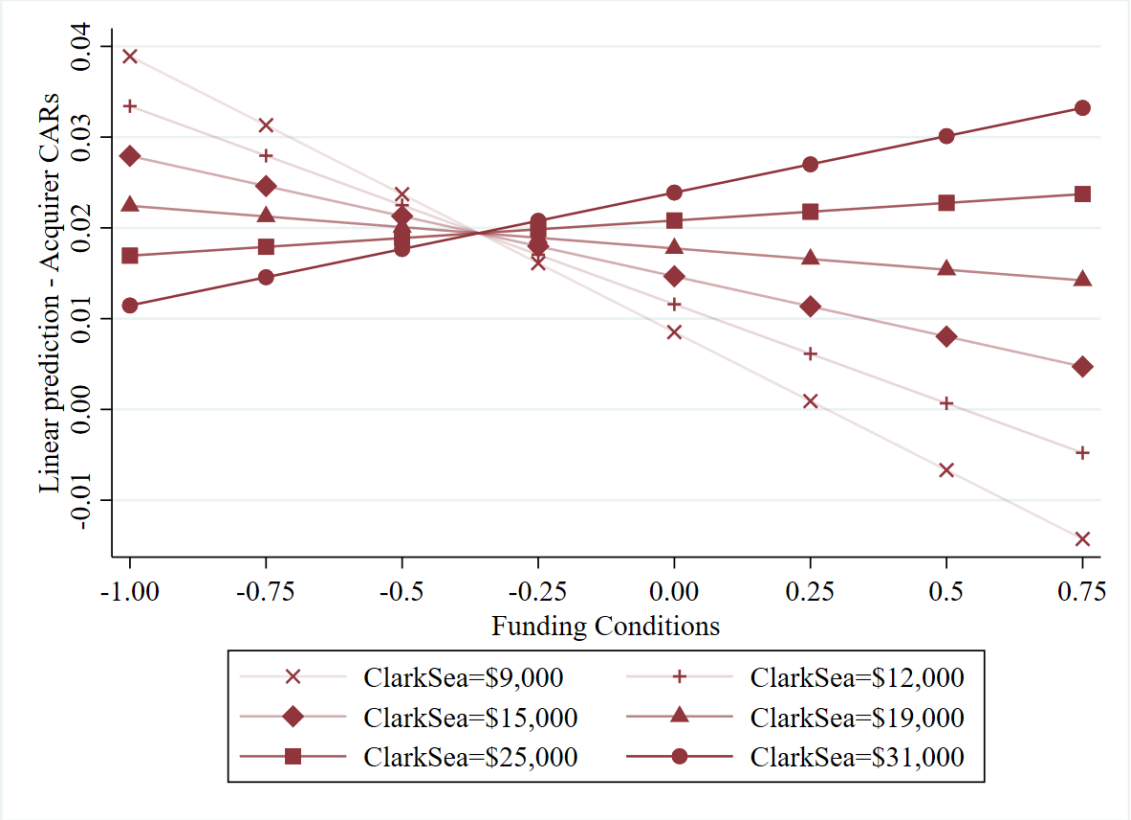

Figure 2. Predictive margins of acquirer CARs against funding conditions and ClarkSea.

The figure plots the linear prediction of acquirer CARs for the interaction term Funding conditions*Clarksea in Table 3, Panel B, column III. The y- and x-axes show the values of acquirer CARs and funding conditions, respectively. The lines in the plot area represent different values of ClarkSea index.

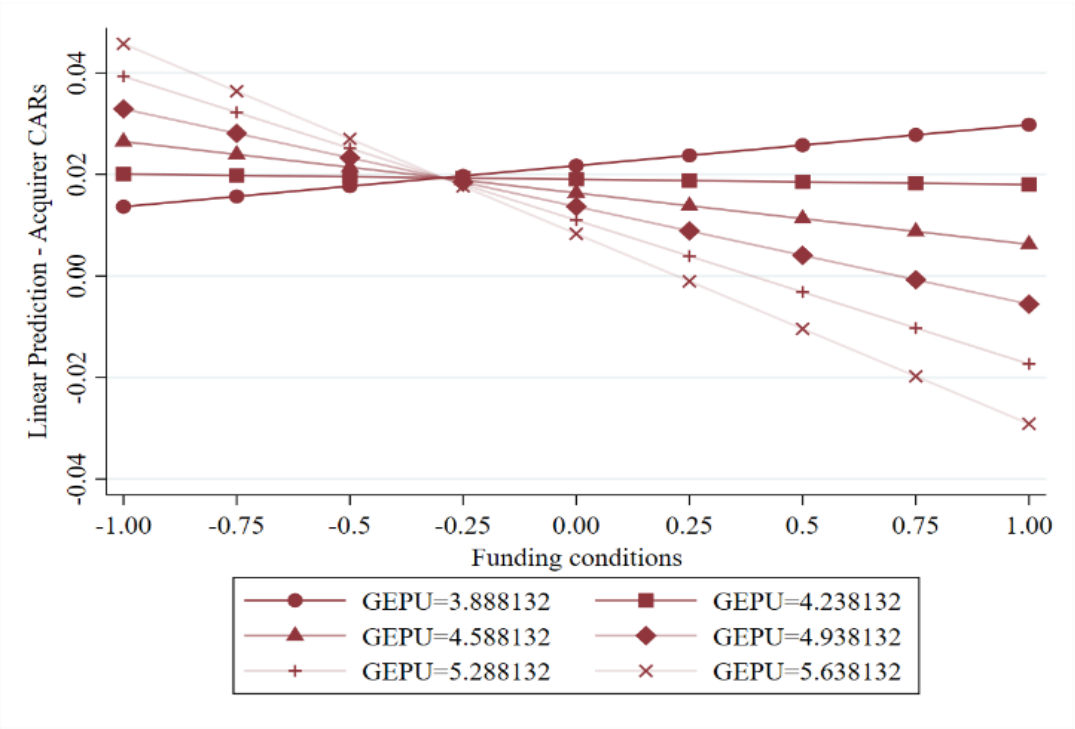

Figure 3. Predictive margins of acquirer CARs against funding conditions and GEPU Index.

The figure plots the linear prediction of acquirer CARs for the interaction term Funding conditions*GEPU in Table 4, column III. The y- and x-axes show the values of acquirer CARs and funding conditions, respectively. The lines in the plot area represent different values of GEPU Index.