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# Cash-holding Benefits and Their Influence on Seasoned Equity Offering Decisions

This study investigates the cash-holding motivations of issuers with excess cash. It aims to explain why these issuers choose to accumulate even more cash through stock issuances rather than utilize their existing surplus. I assess three competing cash-holding motivation hypotheses: whether issuers raise cash: (i) to fund the needs of future growth opportunities; (ii) for precautionary reasons; or (iii) to misuse it to maximize managerial benefits. I identify 480 issuers with pro-forma excess cash surpassing the seasoned equity offering size by considering a dataset of 3,438 issuers from 1996 to 2018. Results reveal that these issuers have stronger funding needs, and precautionary and agency-driven spending motivations, with precautionary reasons being the most dominant motivation. The results suggest that the benefits of cash-holding could motivate stock issuances.

**Key words:** SEOs; Cash-holding; Market timing; Precautionary motive; Funding needs; Agency spending.

In corporate finance, the pecking order theory emphasizes a preference for internal financing sources over external ones (Myers and Majluf, 1984). A key tenet of this theory is the wisdom of holding cash reserves to minimize dependence on external capital (Bates *et al.*, 2009; Almeida *et al.*, 2011; McLean, 2011; Bazrafshan, 2023; Bazrafshan and Tarazi, 2023). However, empirical observations in the corporate landscape reveal a perplexing trend. Many firms, despite already having considerable excess cash, opt to issue stocks seasoned equity offerings (SEOs); these firms are hereafter referred to as 'excess cash issuers'. Additionally, most of the proceeds are retained as cash in the issuance year and the following year. The practices of these firms call into question the practicality of the pecking order theory, and require further investigation.

After reviewing stock issuances by excess cash issuers, two critical findings emerge: (i) stocks are issued despite the existence of significant cash reserves; and (ii) there is a tendency to accumulate additional cash. Previous research emphasizes the role of 'timing' in the first decision, that is, firms exploit periods of overvalued stock to secure funds at a relatively lower cost (Baker and

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Wurgler, 2002; Kim and Weisbach, 2008; Denis and McKeon, 2021; Huang and Ritter, 2021). However, the rationale behind the second decision is less studied and remains unclear; and the motivations behind cash-holding may be multifarious. For example, cash might be retained to fund future growth, or for precautionary reasons, or even for managerial self-interest. This study examines the motivations of excess cash issuers, investigating whether the drive to raise additional capital through SEOs is solely related to advantageous market timing or if cash-holding motives are at play, and if so, which of these motivations takes precedence.

This study relies on the argument that a firm uses a 'window of opportunity' to raise funds at a relatively lower cost to enjoy more benefits from holding cash. I simultaneously consider the market-specific windows of opportunity resulting from a relatively overvalued stock price and firm-specific 'cash-holding benefits'. I offer three research hypotheses to assess the potential benefits of cash holding. First, having a pool of excess cash on hand can help position firms for financial success by ensuring that they have the necessary capital to fuel their growth. Walker and Yost (2008) and McLean (2011) argue that cash holding is simply a temporary parking of excess funds until future profitable investment opportunities arise. Consequently, cash holding can be a prudent strategy for firms' funding of future growth. Therefore, I hypothesize that the benefits of saving funds for future growth through cash holding may drive SEO decisions in excess cash issuers. Second, firms may raise cash for precautionary reasons. Bates *et al.* (2009), McLean (2011), and Almeida *et al.* (2011) suggest that firms strategically hold cash as a safeguard against potential financial distress stemming from unexpected adverse shocks. This precautionary measure is crucial for riskier firms with high cash flow volatility. Cash reserves can benefit these firms by ensuring the continuity of business operations even in scenarios with long-term meagre cash inflows. Therefore, I hypothesize that the precautionary benefits of cash holding may drive SEO decisions in excess cash issuers. Finally, agency theory may offer another motivation for firms to hold cash. Jensen (1986), Dittmar and Mahrt-Smith (2007), Harford *et al.* (2008), and Bazrafshan and Tarazi (2023) argue that cash, when not earmarked for operational or investment purposes, can be easily diverted by insiders for their own benefit. Therefore, excess cash is a vulnerable asset, susceptible to misuse for managerial personal gains. Dittmar and Mahrt-Smith (2007), Pinkowitz *et al.* (2006), and Fresard and Salva (2011) highlight that entrenched management prefers hoarding excess cash over distributing it to shareholders. Dittmar *et al.* (2003) also identify that firms in countries plagued by severe agency issues tend to accumulate more cash. Therefore, I hypothesize that the personal benefits of cash holding for managers may drive SEO decisions in excess cash issuers.

To conduct the investigations, I focus on excess cash issuers. These issuers tend to hold more cash than necessary for their immediate needs and also choose to accumulate even more cash through stock issuances rather than utilize their existing surplus. I separate the issuers whose pro-forma excess cash is greater than the SEO offer size. In gauging pro-forma excess cash, I follow DeAngelo *et al.*'s

(2010) method and calculate it as normal cash deducted from the post-SEO cash position without the SEO proceeds, while maintaining all previous decisions. I identify 480 excess cash issuers, with pro-forma excess cash exceeding the SEO offer size, out of a total sample of 3,438 issuers from 1996 to 2018.

In light of these predictions, this study employs a five-pronged empirical approach to examine the factors driving SEO decisions in excess cash issuers. I begin by examining whether excess cash issuers, when choosing to conduct SEOs, end up with more excess cash than other issuers. The results indicate that they do. In particular, these issuers tend to hold a majority of excess cash from SEO proceeds in the following year compared to other issuers, suggesting that cash holding is prevalent among excess cash issuers. The second examination assesses the impact of funding needs for future growth on driving SEOs in excess cash issuers. I measure future growth opportunities using the proxies 'long-term timing' (Kayhan and Titman, 2007), 'hot markets' (Alti, 2006), 'next two-year average of Tobin's Q' (Hubbard, 1998; Bazrafshan *et al.*, 2021), and 'next two-year average of sales growth' (Biddle *et al.*, 2009). The results show that future growth opportunities are associated with a higher likelihood of SEOs for excess cash issuers compared to non-issuers, non-excess cash issuers, and matched non-issuers with the same amount of excess cash. The third examination focuses on assessing the role of the precautionary motive in driving SEOs in excess cash issuers. I measure precautionary motivations using indicators such as R&D spending and cash flow volatility (Opler *et al.*, 1999; Bates *et al.*, 2009). The findings indicate that excess cash issuers' SEOs are more likely driven by precautionary motivations, compared to non-issuers, non-excess cash issuers, and matched non-issuers with the same amount of excess cash. The fourth investigation focuses on excess cash issuers' agency spending motivations by using two proxies for overinvestments. The results show that SEOs from excess cash issuers are more likely driven by managerial self-interest. Finally, I analyse the relative importance of all proxies associated with funding needs for future growth, precautionary measures, and agency spending in predicting the likelihood of an excess cash issuer conducting an SEO. The findings suggest that the decision to conduct an SEO is driven most by precautionary motives, followed by future growth opportunities and agency spending variables. This emphasizes the importance of holding cash for precautionary reasons as a vital predictor for excess cash issuers to execute timely SEOs.

This research contributes significantly to the existing literature on stock issuances and corporate cash management. First, while numerous studies (e.g., Jensen, 1986; Loughran and Ritter, 1995; Baker and Wurgler, 2002) have focused on market timing during stock issuance, this paper illustrates that cash holding motivations can coexist with market timing considerations. This study shows that issuers often consider the benefits of cash holding when deciding to issue stocks. Second, earlier research, such as that by DeAngelo *et al.* (2010) and Erel *et al.* (2012), posits that firms primarily issue stocks due to immediate cash needs. This study builds on these studies and shows that even if there is no immediate need for cash, strong motivations for issuing stocks are still linked to cash holdings from a longer-term

perspective. Furthermore, a detailed analysis of various cash holding motivations highlights a critical observation: the primary driver for firms to issue stocks for cash generation is precautionary considerations. This suggests that managers view SEOs as a risk-mitigating strategy, enhancing their ability to run firm operations with increased assurance. Finally, my results show that the market reacts more negatively to SEO announcements in excess cash issuers. My findings also provide evidence to elucidate the reasoning behind investors' adverse reactions to such SEOs, revealing that firms accumulate cash through stock issuances for precautionary reasons. This practice could potentially suppress stock prices, as investors might perceive these firms to be less growth-focused, instead prioritizing cash holding to be risk-averse, likely as a hedge against uncertainties.

## SAMPLE SELECTION, VARIABLE DEFINITIONS, AND DESCRIPTIVE STATISTICS

### *Sample and Data*

This research utilizes a dataset comprising the SEOs of common stock executed by US firms between January 1996 and December 2018. The primary source of this data is the Securities Data Corporation's Global New Issues database. From an initial pool of 7,812 SEOs, I narrowed down the dataset to focus on SEOs oriented towards cash accumulation, following the methodologies employed by Dittmar *et al.* (2020) and Autore *et al.* (2021). Consequently, secondary offerings, which predominantly involve insider stock sales and do not generate capital for firms, are excluded. The inclusion criteria for an SEO in this study require the availability of pertinent data on Compustat, stock return details from the Center for Research in Security Prices (CRSP), institutional ownership specifics from Thomson Reuters (13f), and a minimum firm asset value of $5 million in the year preceding the SEO. I excluded regulated utility firms (SIC codes 4900–4999), firms in the financial sector (SIC codes 6000–6999), and specific outliers with negative values for net assets, equity market value, or dividends. Following this rigorous filtering, the core dataset is 3,483 SEOs. Table 1 presents SEO distribution across years and industries. Panel A of Table 1 documents a notable peak in 2009 with 454 SEOs (13.03% of the dataset), tapering to 134 in 2018 (3.85% of the dataset). Panel B classifies the SEOs by industry, indicating that nearly 37% operate in manufacturing, with other sectors being less dominant. A total of 89,430 firm-year observations emerge from 1996 to 2018. To negate outlier influence, all data are winsorized at 1%.

### *Description of Excess Cash Issuers*

To pinpoint excess cash issuers, I identify SEOs where pro-forma excess cash surpasses the SEO offer size. A notable 13.7% of the sample issuers, or 480 observations, retained pro-forma excess cash exceeding SEO proceeds during the SEO year.

TABLE 1

NUMBER OF SEASONED EQUITY OFFERINGS BY YEAR AND INDUSTRY

**Panel A: Number of SEOs by calendar year**

| Year | Number of sample SEOs | Percentage of sample |
|---|---|---|
| 1996 | 74 | 2.12% |
| 1997 | 120 | 3.45% |
| 1998 | 94 | 2.70% |
| 1999 | 132 | 3.79% |
| 2000 | 67 | 1.92% |
| 2001 | 103 | 2.96% |
| 2002 | 84 | 2.41% |
| 2003 | 101 | 2.90% |
| 2004 | 93 | 2.67% |
| 2005 | 64 | 1.84% |
| 2006 | 134 | 3.85% |
| 2007 | 104 | 2.99% |
| 2008 | 203 | 5.83% |
| 2009 | 454 | 13.03% |
| 2010 | 347 | 9.96% |
| 2011 | 193 | 5.54% |
| 2012 | 151 | 4.34% |
| 2013 | 189 | 5.43% |
| 2014 | 170 | 4.88% |
| 2015 | 132 | 3.79% |
| 2016 | 176 | 5.05% |
| 2017 | 164 | 4.71% |
| 2018 | 134 | 3.85% |
| Total | 3,483 | 100.00% |

**Panel B: Number of SEOs by industry**

| Industry | Number of sample SEOs | Percentage of sample |
|---|---|---|
| Agriculture | 518 | 14.87% |
| Mining | 105 | 3.01% |
| Construction | 749 | 21.50% |
| Manufacturing | 1,307 | 37.53% |
| Transportation | 162 | 4.65% |
| Wholesale | 4 | 0.11% |
| Retail | 451 | 12.95% |
| Finance | 162 | 4.65% |
| Service | 25 | 0.72% |

This table provides the distribution of 3,483 SEOs by year and industry over the sample period. The sample is from the Securities Data Corporation's Global New Issues database.

Pro-forma excess cash represents the difference between pro-forma cash and normal cash. Pro-forma cash is calculated by determining the post-SEO cash position by presuming the issuer has no offer proceeds and retains all non-SEO investment and financing choices. This method follows the approach introduced by DeAngelo *et al.* (2010), holding all other decisions fixed, which rules out asset sales or other security offerings to replace the SEO proceeds. I also determine the

normal cash amount using DeAngelo *et al.*'s (2010) method, which divides all industrial enterprises into: (i) three groups of equal size based on total book assets; and (ii) three groups of equal size based on market-to-book values (of assets). Each observation is classified into one of nine groups based on its relative size and market-to-book values. The normal cash amount for each two-digit SIC code is determined by calculating the median ratio across all firms in the nine groups within the given year.

Three dummy variables are used to measure excess cash issuers: *Xcash-F.DUM* equals one for excess cash issuers and zero for both non-excess cash issuers and non-issuer firms. *Xcash-I.DUM* equals one for excess cash issuers and zero for non-excess cash issuers (other issuers in my sample). *Xcash-B.DUM* equals one for excess cash issuers and zero for matched firms. The matched firms are non-issuer firms within the same two-digit SIC code, with the same amount of excess cash at the beginning of the SEO year, but without an SEO. These three dummies assess the excess cash issuers in comparison with the different reference groups used in each dummy. *Xcash-F.DUM* includes both non-excess cash issuers and non-issuers, potentially blending the behaviours of very different firms. *Xcash-I.DUM* isolates the effect of excess cash among issuers. Therefore, the comparison group (non-excess cash issuers) is more similar in nature, leading to a more specific comparison. *Xcash-B.DUM* assesses excess cash issuers compared to matched non-issuers with excess cash, highlighting the significance of the SEO decision among firms with the same amount of excess cash. Therefore, the use of different reference groups in each dummy sheds light on different aspects of the excess cash issuer's behaviour. A comprehensive description of all independent, dependent, and control variables is provided in Table 2.

*Summary Statistics*

Table 3 presents SEO announcement returns and cash positions for both the entire sample and the excess cash issuer subsample. The first four rows of Table 3 report SEO announcement returns. I employed two methods to compute these: cumulative abnormal returns (CARs) (e.g., Hadlock *et al.*, 2001; Akhigbe and Whyte, 2015) and cumulative SEO discount returns (CDRs) (e.g., Mola and Loughran, 2004; Akhigbe and Whyte, 2015). In CARs, abnormal returns are determined by deducting normal returns from actual returns. To ascertain normal returns, this study utilizes the market model outlined by Brown and Warner (1985) and MacKinlay (1997), with a window from −250 to −50 days prior to events. CDRs, an alternative event study method, are computed by summing the percentage change from the previous closing price across the event period. I selected event windows of (0, +1) and (−2, +2). For instance, the window (0, +1) represents the sum of daily abnormal returns over two days (the announcement day and the subsequent day), while the window (−2, +2) covers a five-day span around the announcement.

The first row of Table 3 indicates that CARs (0, +1) for the entire sample are –3.03%, aligning with prior findings (Akhigbe and Whyte, 2015; Deshmukh *et al.*, 2017). However, the negative magnitude of announcement returns for excess

TABLE 2

VARIABLE DEFINITIONS

| Variable | Definition |
|---|---|
| *Excess cash issuers* | SEOs where pro-forma excess cash surpasses the SEO offer size |
| *Pro-forma excess cash* | Difference between pro-forma cash and normal cash.<br>Pro-forma cash is calculated using the post-SEO cash position without the SEO proceeds, with all previous decisions in place: each issuer does not increase capital expenditure during or after the SEO but maintains the freed-up resources as cash balances.<br>Normal cash is determined by categorizing all industrial firms into (i) three equal-sized groups based on total book assets and (ii) three equal-sized groups based on the market-to-book values (of assets). Based on relative size and market-to-book values, each observation is assigned to one of nine groups. I measure a normal cash ratio for each two-digit standard industrial classification code and as the median ratio across all firms in the nine groups within the year in question (DeAngelo *et al*., 2010) |
| *Xcash-F.DUM* | Dummy variable that equals one for excess cash issuers and zero for both non-excess cash issuers and non-issuer firms |
| *Xcash-I.DUM* | Dummy variable that equals one for excess cash issuers and zero for non-excess cash issuers (other issuers in the sample) |
| *Xcash-B.DUM* | Dummy variable that equals one for excess cash issuers and zero for matched firms. The matched firms are non-issuer firms within the same two-digit SIC code, with the same amount of excess cash at the beginning of the SEO year, but without an SEO |
| *Timing* | Yearly timing component of *EFWAMB* as formulated by Kayhan and Titman (2007). The greater the yearly timing the more overvalued the stock price |
| *Long-term_timing* | Long-term timing component of *EFWAMB* as formulated by Kayhan and Titman (2007). The greater the number of long-term timing signals the greater the number of future growth opportunists |
| *HotMarket* | Number of IPOs. The greater the number of IPOs the greater the future growth opportunists in the entire market |
| $TQ_{t+1\&2}$ | Next two-year average of Tobin's Q, as used by Hubbard (1998), to assess future growth opportunities |
| $SG_{t+1\&2}$ | Represents next two-year average of sales growth, as used by Biddle *et al*. (2009), to evaluate future growth opportunities |
| *R&D/sales* | Research and development expenses. When R&D is missing, its value is zero. The greater the number of R&D/sales, the more precautions should be taken |
| *CF_ variance* | Coefficient of variation in a firm's quarterly cash flow over the past four years (16 quarters). The greater the variation, the more precautions need to be taken |
| *Overi-SG* | Positive residuals from investment regression equation (4), including $Sale\ Growth_{i,t-1}$,categorized as overinvestment |
| *Overi-TQ* | Positive residuals from investment regression equation (4), including $Tobin'sQ_{i,t-1}$, categorized as overinvestment. |
| *SEO proceeds* | Funds from the SEO proceeds divided by total funds. Total funds is all funds raised from different financing sources within one year, such as operation, stock issuances, debt issuances, investing and selling activities, and other sources. They are set to zero if they are negative |
| *MV(Market value)* | Firm's market value calculated as the sum of the market value of equity and the book value of short- and long-term debt divided by total assets |
| *CARs* | Cumulative abnormal returns surrounding the offer date (e.g., Masulis and Korwar, 1986; Hadlock *et al*., 2001; Akhigbe and Whyte, 2015), computed as the sum of daily abnormal returns over the day and the day following the SEO |

*(Continues)*

TABLE 2

CONTINUED

| Variable | Definition |
|---|---|
| | announcement. Abnormal returns are measured by the difference of the actual return minus the expected return. This study follows the market model described by Brown and Warner (1985) and MacKinlay (1997) to determine the expected return. I estimate the parameters of the following regression, using −50 to −250 days before the events to compute the expected returns |
| *CDRs* | Cumulative SEO discount returns surrounding the offer date (Mola and Loughran, 2004; Akhigbe and Whyte, 2015), computed as the sum of discount returns over the day and the day following the SEO announcement. Discount returns computed as the percentage change from the daily price to the previous day's closing price |
| *Funds burn* | Investments + ΔNoncash NWC + Cash Dividends |
| | Investments = For firms reporting format codes 1–3, Investments = Capital Expenditures (CAPX) + Increase in Investments (IVCH) + Acquisitions (AQC) + Uses of Funds Other (FUSEO) – Sale of Property (SPPE) – Sale of Investments (SIV). For firms reporting format code 7, Investments = CAPX + IVCH + AQC – SPPE – SIV – Investing Activities Other (IVACO) |
| | ΔNoncash NWC = ΔNWC – ΔCash |
| | ΔNWC = Change in Net Working Capital. For firms reporting format codes 1–3, ΔNWC = Working Capital Change Other (WCAPC) + Cash and Cash Equivalents Increase (Decrease) (CHECH). For firms reporting format code 7, ΔNWC = – Accounts Receivable Decrease (Increase) (RECCH) – Inventory Decrease (Increase) (INVCH) – Accounts Payable and Accrued Liabilities Increase (Decrease) (APALCH) – Income Taxes Accrued Increase (Decrease) (TXACH) – Assets and Liabilities Other Net Change (AOLOCH) + Cash and Cash Equivalents Increase (Decrease) (CHECH) – Change in Short-Term Investments (IVSTCH) – Financing Activities Other (FIAO) |
| | Cash Dividends = (Cash Flow Statement) (DV) |
| *Neg_ICF* | Equals one if the internal cash flow (ICF) is negative, and zero otherwise |
| | ICF = For firms reporting format codes 1–3, Income Before Extraordinary Items (IBC) + Extraordinary Items and Discontinued Operations (XIDOC) + Depreciation and Amortization (DPC) + Deferred Taxes (Changes) (TXDC) + Equity in Net Loss (Earnings) (ESUBC) + Sale of Property Plant and Equipment and Investments Gain (Loss) (SPPIV) + Funds from Operations Other (FOPO) + Sources of Funds Other (FSRCO). For firms reporting format code 7, ICF = IBC + XIDOC + DPC + TXDC + ESUBC + SPPIV + FOPO + Accounts Payable and Accrued Liabilities Increase (Decrease) (APALCH) |
| *Size* | Natural logarithm of total book assets measured at fiscal year-end |
| *Log age* | Natural logarithm of firm age, which is approximated as the number of years listed in Compustat before fiscal year-end |
| *Leverage* | Debt divided by book assets |
| *Price ratio* | Dummy for the ratio of the average stock price of the year to the offer price of the firm's most recent SEO |
| *Post-crisis dummy* | Dummy variable that equals one if the SEO date is post January 2011, zero otherwise |
| *Cash* | Cash and marketable securities |
| *ΔCash* | Cash changes, that is, the yearly change in cash from year *t*–1 to *t* |
| *Earnings* | Net income plus all noncash charges or credits, extraordinary items, and interest |
| *Interest* | Interest expenses |
| *Dividends* | Common dividend paid |

This table provides a detailed description of all independent, dependent, and control variables.

TABLE 3

SUMMARY STATISTICS

| | All issuers in sample | Excess cash issuers Pro-forma excess $cash_t$ > offer $size_t$ | Difference between excess cash issuers and all issuers |
|---|---|---|---|
| 1. CARs (0, +1) | –3.03% | –4.35% | –1.32%*** |
| 2. CARs (−2, +2) | –2.79% | –4.86% | –2.07%*** |
| 3. CDRs (0, +1) | –2.43% | –3.21% | –0.78%*** |
| 4. CDRs (−2, +2) | –1.84% | –3.38% | –1.54%*** |
| 5. Median SEO proceeds (millions of dollars) | 51.9 | 27.6 | –24.3*** |
| 6. Median SEO proceeds/ Total assets in year before SEO | 20.1% | 11.8% | –8.3%*** |
| 7. Log-total assets | 8.51 | 8.37 | –0.14 |
| 8. Median pro-forma cash/ Total assets | –-3.9% | 9.4% | 13.3%*** |
| 9. Median pro-forma excess cash/Total assets | –10.4% | 3.9% | 14.3%*** |
| *Median cash/Total assets* | | | |
| 10. In year before SEO | 7.2% | 10.1% | 2.9%*** |
| 11. In year of SEO | 13.3% | 18.4% | 5.1%*** |
| 12. In year after SEO | 8.8% | 15.2% | 6.4%*** |
| Difference between year before and year after SEO | 1.6%*** | 4.1%*** | |
| *Median excess cash/Total assets* | | | |
| 13. In year before SEO | –0.1% | 3.5% | 3.6%*** |
| 14. In year of SEO | 1.4% | 7.1% | 5.7%*** |
| 15. In year after SEO | 0.0% | 6.7% | 6.7%*** |
| Difference between year before and after SEO | 0.1%*** | 3.2%*** | |
| Sample percentage | 100% | 13.7% | |

This table presents SEO announcement returns and cash positions for both the entire sample and the excess cash issuer subsample. Data definitions for all variables are given in Table 2.

cash issuers is notably larger, at –4.35%. This pattern persists across other metrics of announcement returns and windows (0, +1) and (−2, +2), suggesting that excess cash issuers experience substantially more negative SEO announcement returns than average issuers.

Below, I observe that excess cash issuers raise fewer proceeds from SEOs. The median amount of SEO proceeds is $27.6 million, or 11.8% of total assets, in the year before the SEO. In contrast, for all issuers in my sample, this amount is $51.9 million, or 20.1% of total assets, in the year before the SEO. Additionally, excess cash issuers are typically smaller in size, as indicated by their log total assets.

In rows 8 and 9, the median amounts of pro forma cash and excess cash for the full sample are –3.9% and –10.4%, respectively. As expected, these values increase when isolating firms with excess cash issuers, to 9.4% and 3.9%. The subsequent rows illustrate cash and excess cash ratios in the years surrounding

SEOs, revealing that average issuers utilize excess cash reserves the year after an SEO, whereas excess cash issuers tend to retain more cash in the year following the SEO. I use a paired *t*-test to assess the statistical significance of mean differences between the two groups of issuers and the Wilcoxon Signed-Rank Test to evaluate the statistical significance of median differences. The results show that most of these differences are statistically significant at a level that is better than 1%.

## FINDINGS

### *Funds Needs for Future Growth Opportunities*

Firms seeking to exploit future growth opportunities frequently grapple with the challenge of obtaining the requisite funds. Issuing equity, particularly when their stocks are relatively overvalued, is one strategy they might consider. Overvalued stocks offer a 'window of opportunity'—a beneficial period during which the cost of equity capital is reduced. This study suggests that firms, even with excess cash, tend to issue stocks strategically during these overvalued stock windows to fund their future endeavours at a lower capital expense.

My empirical approach involves estimating the linear probability model suggested by Dittmar *et al*. (2020, Table 2). This model evaluates the effect of market timing on the probability of excess cash firms initiating an SEO and investigates the interaction between market timing and future growth opportunity variables. The regression equation is:

$$\begin{aligned} Excess\_cash\_issuers_{i,t} = {} & \beta_0 + \beta_1 Timing_{i,t} + \beta_2 Timing_{i,t} * Growth\_opportunities_{i,t} \\ & + \beta_3 Growth\_opportunities_{i,t} + \beta_4 Controls_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

where *Excess_cash_issuers* represents issuers with pro forma excess cash surpassing the SEO offer size. Three dummy variables are used to measure *Excess_cash_issuers*: *Xcash-F.DUM*, *Xcash-I.DUM*, and *Xcash-B.DUM*. *Timing* represents relatively overvalued stock levels. I measure *Timing* using a modified version of the weighted historical market-to-book ratio (*EFWAMB*) as formulated by Kayhan and Titman (2007). Baker and Wurgler (2002) first introduced *EFWAMB* to capture a weighted average of past market-to-book ratios, with the weights determined by the relative magnitude of external financing each year. Kayhan and Titman (2007) further refined this concept by separating *EFWAMB* yearly timing—which reflects overvalued stock levels in the given year—from long-term timing, which reflects future growth opportunities. Kayhan and Titman (2007) comprehensively describe the variables used to separate these two components of *EFWAMB*. Future growth opportunities ($Growth\_opportunities_{i,t}$) are measured using four proxies. First, long-term timing (*long-term_timing*), a metric introduced by Kayhan and Titman (2007), measures future growth opportunities as reflected in stock price. Second, hot market (*Hotmarket*) is

measured by the number of IPOs, with a higher number of IPOs indicating greater future growth opportunities in the market (Alti, 2006; DeSantola *et al.*, 2023). Third, next two-year average of Tobin's Q ($TQ_{t+1\&2}$), a metric used by Hubbard (1998) and Bazrafshan *et al.* (2021), assesses future growth opportunities. Fourth, next two-year average of sales growth ($SG_{t+1\&2}$), a metric used by Biddle *et al.* (2009), evaluates future growth opportunities. Following Dittmar *et al.* (2020), Huang and Ritter (2021), and Denis and McKeon (2021), I include the following control variables that may influence the likelihood of conducting an SEO: anticipated funds burn rate, anticipated negative internal cash flow (ICF), leverage, size, age, price ratio, and post-crisis dummy. Data definitions for all variables are provided in Table 2. In all regressions henceforth, unless otherwise specified, I add firm, industry, and year fixed effects to control for heterogeneity. Standard errors are double-clustered at the firm and year levels to control for heteroskedasticity (Petersen, 2009). In the regressions where *Xcash-B.DUM* is a dependent variable, I do not include fixed effects since the sample is limited to firms in the same industry and the same year.

Table 4 presents the results of my analysis across 11 columns. In the first four columns, *Xcash-F.DUM* is used as the dependent variable. The next four columns use *Xcash-I.DUM* as the dependent variable, and the final three columns use *Xcash-B.DUM* as the dependent variable. The estimated coefficients for *Timing* are positive and mostly statistically significant at better than 10%. This implies that the probability of excess cash firms initiating an SEO increases with relatively overvalued stock prices. The coefficients of the interaction term of *Timing* with future growth opportunity proxies are positive and mostly statistically significant. In economic terms, the future growth opportunity effect is substantial. However, the results vary depending on which dummy variable measures excess cash issuers. For example, in column (1), when *Xcash-F.DUM* is the dependent variable, a 100% increase in the average *Timing* results in at least an 8.6% increase in the likelihood of SEOs for excess cash issuers, compared to both non-excess cash issuers and non-issuers. However, if *long-term_timing* is at its mean level, the likelihood increases to 11.7%. A lower trend is observed in columns (5)–(8) for *Xcash-I.DUM* as the dependent variable. For example, in column (5), a 100% increase in the average *Timing* leads to at least a 3.1% increase in the likelihood of SEOs for excess cash issuers compared to non-excess cash issuers. However, if *long-term_timing* is at its mean level, the likelihood increases to 4.6%, suggesting a more nuanced difference between these issuers. However, these effects are more substantial in column (9) when *Xcash-B.DUM* is the dependent variable. Here, a doubling of the average *Timing* leads to at least a 20.4% increase in the likelihood of SEOs for excess cash issuers compared to matched non-issuers. However, if *long-term_timing* is at its mean level, the likelihood increases to 34.9%. These variations highlight the differing dynamics among excess cash issuers when compared to various reference groups. Taken together, the higher likelihoods associated with future growth indicate that the benefits of saving funds for future growth through cash holding play a critical role in driving SEO decisions among excess cash issuers.

TABLE 4

FUNDS NEEDS FOR FUTURE GROWTH OPPORTUNITIES

| | *Xcash-F.DUM* | *Xcash-F.DUM* | *Xcash-F.DUM* | *Xcash-F.DUM* | *Xcash-I.DUM* | *Xcash-I.DUM* | *Xcash-I.DUM* | *Xcash-I.DUM* | *Xcash-B.DUM* | *Xcash-B.DUM* | *Xcash-B.DUM* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* | *11* |
| $Timing_t$ | 0.086* | 0.080* | 0.096* | 0.072* | 0.031* | 0.024 | 0.030 | 0.021 | 0.204** | 0.194*** | 0.268** |
| | (1.86) | (1.63) | (1.93) | (1.77) | (1.68) | (1.51) | (1.40) | (1.39) | (2.35) | (2.57) | (2.49) |
| $Timing_t$ * *Long-term_timing*$_t$ | 0.031*** | | | | 0.015* | | | | 0.145*** | | |
| | (3.33) | | | | (1.77) | | | | (5.38) | | |
| *Long-term_timing*$_t$ | 0.022* | | | | 0.018 | | | | 0.180** | | |
| | (1.84) | | | | (1.48) | | | | (2.06) | | |
| $Timing_t$* *HotMarket*$_t$ | | 0.138*** | | | | 0.081** | | | | | |
| | | (3.89) | | | | (2.09) | | | | | |
| *HotMarket*$_t$ | | 0.174** | | | | 0.138 | | | | | |
| | | (2.27) | | | | (1.01) | | | | | |
| $Timing_t$ * $TQ_{t+1\&2}$ | | | 0.024** | | | | 0.019 | | | 0.055** | |
| | | | (2.30) | | | | (0.29) | | | (2.08) | |
| $TQ_{t+1\&2}$ | | | –0.041* | | | | –0.006 | | | –0.028** | |
| | | | (–1.87) | | | | (–0.42) | | | (–2.24) | |
| $Timing_t$ * $SG_{t+1\&2}$ | | | | 0.017* | | | | 0.004* | | | 0.031*** |
| | | | | (1.79) | | | | (1.68) | | | (2.83) |
| $SG_{t+1\&2}$ | | | | 0.006 | | | | –0.005 | | | –0.005 |
| | | | | (1.50) | | | | (–0.92) | | | (–0.43) |
| *Funds burn*$_{t+1}$ | 1.157*** | 1.028*** | 0.995*** | 1.014*** | 0.509*** | 0.432*** | 0.471*** | 0.475*** | 1.556*** | 1.676*** | 1.993*** |
| | (5.56) | (6.98) | (6.25) | (5.86) | (2.91) | (2.74) | (2.72) | (2.77) | (11.81) | (11.31) | (11.25) |
| *Funds burn*$_{t+2}$ | 0.145* | 0.053* | 0.186* | 0.171* | 0.019* | 0.028* | 0.021* | 0.025* | 0.572*** | 0.531*** | 0.468*** |
| | (1.58) | (1.66) | (1.80) | (1.89) | (1.90) | (1.74) | (1.67) | (1.71) | (4.73) | (4.95) | (4.61) |
| *Neg_ICF*$_{t+1}$ | 0.541** | 0.556*** | 0.498*** | 0.532*** | 0.144** | 0.143*** | 0.129*** | 0.154*** | 0.684*** | 0.627*** | 0.547*** |
| | (2.41) | (3.58) | (2.93) | (2.69) | (2.28) | (2.71) | (2.59) | (2.85) | (2.86) | (3.08) | (3.66) |
| *Neg_ICF*$_{t+2}$ | –0.001 | –0.027 | 0.018 | 0.012 | 0.018* | 0.023* | 0.021* | 0.024* | 0.141* | 0.149* | 0.186** |
| | (–0.19) | (–0.66) | (1.04) | (1.11) | (1.93) | (1.91) | (1.80) | (1.75) | (1.68) | (1.74) | (2.10) |
| *Leverage*$_t$ | 0.091* | 0.097** | 0.101*** | 0.091*** | 0.002 | 0.003 | 0.002 | –0.002 | –0.731*** | –0.784*** | –0.551** |
| | (1.90) | (2.38) | (3.28) | (2.92) | (0.19) | (0.10) | (0.17) | (–0.24) | (–2.58) | (–2.80) | (–1.99) |

*(Continues)*

TABLE 4

CONTINUED

| | *Xcash-F.DUM* | *Xcash-F.DUM* | *Xcash-F.DUM* | *Xcash-F.DUM* | *Xcash-I.DUM* | *Xcash-I.DUM* | *Xcash-I.DUM* | *Xcash-I.DUM* | *Xcash-B.DUM* | *Xcash-B.DUM* | *Xcash-B.DUM* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* | *11* |
| $Size_t$ | 0.056* | 0.068 | 0.054* | 0.051* | –0.001 | 0.008 | –0.001 | –0.001 | 0.135*** | 0.137*** | 0.148*** |
| | (1.77) | (1.19) | (1.73) | (1.86) | (–0.23) | (0.15) | (–0.26) | (–0.07) | (3.61) | (3.71) | (3.56) |
| $Log\_age_t$ | –0.032** | –0.245*** | –0.064** | –0.049** | –0.084 | –0.072 | –0.077 | –0.078 | –0.244*** | –0.175*** | –0.212*** |
| | (–1.97) | (–2.67) | (–2.32) | (–2.18) | (–0.80) | (–0.51) | (–0.84) | (–0.93) | (–2.65) | (–3.31) | (–3.12) |
| $Price\ ratio_t$ | 0.205* | 0.157** | 0.171* | 0.187** | 0.004 | 0.007* | 0.004 | 0.006* | 0.477** | 0.447** | 0.456*** |
| | (1.88) | (2.08) | (1.93) | (2.09) | (1.20) | (1.79) | (1.46) | (1.67) | (2.42) | (2.56) | (2.58) |
| $Post\text{-}crisis\ dummy_t$ | –0.006 | –0.005 | –0.005 | –0.005 | 0.049 | 0.043 | 0.052 | –0.008 | 0.001 | –0.001 | –0.001 |
| | (–1.12) | (–1.18) | (–1.05) | (–1.10) | (0.35) | (0.40) | (0.33) | (–0.09) | (0.04) | (–0.08) | (–0.39) |
| Firm, industry and year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | No | No |
| Observations | 89,430 | 89,430 | 78,962 | 78,962 | 3,483 | 3,483 | 3,185 | 3,185 | 960 | 836 | 836 |

This table presents the results of the effect of future growth opportunity variables on the probability of excess cash firms initiating an SEO. In the first four columns, *Xcash-F.DUM* is the dependent variable. In the next four columns *Xcash-I.DUM* is the dependent variable, and in the final three columns *Xcash-B.DUM* is the dependent variable. Future growth opportunities are measured using four proxies: (i) long-term timing (*long-term_timing*), (ii) hot market (*Hotmarket*), (iii) next two-year average of Tobin's Q ($TQ_{t+1\&2}$), and (iv) next two-year average of sales growth. In the regressions where *Xcash-B.DUM* is the dependent variable, fixed effects are not included since the sample is limited to firms in the same industry and the same year. Data definitions for all variables are given in Table 2. *t*-statistics reported in parentheses are based on standard errors clustered at firm and year levels. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Each model specification includes firm, industry, and year fixed effects.

When it comes to the control variables, the results vary slightly depending on which dummy variable measures excess cash issuers. When *Xcash-F.DUM* is the dependent variable, the coefficients for *Funds burn, Neg_ICF, Leverage, Size*, and *Price ratio* are positive and mostly statistically significant. This suggests that higher future funds consumption, lack of internal funds, more debt, larger firm size, and higher stock prices are associated with a higher likelihood of SEOs for excess cash issuers compared to both non-excess cash issuers and non-issuers. Conversely, the coefficient for *Age* is negative and statistically significant, indicating that younger firms are more likely to be excess cash issuers. The *post-crisis dummy* variable is statistically insignificant, suggesting that the post-crisis period does not significantly impact the probability of excess cash firms initiating an SEO. When *Xcash-I.DUM* is the dependent variable, which assesses excess cash issuers compared to non-excess cash issuers, the significance of most control variables diminishes. Only future funds consumption, lack of internal funds, and stock price remain statistically significant at the 10% level. This indicates that when comparing excess cash issuers solely to non-excess cash issuers, fewer variables are strong predictors, suggesting a more nuanced difference between these groups.

When *Xcash-B.DUM* is the dependent variable, assessing SEO decisions in excess cash issuers compared to matched firms with similar levels of excess cash, most control variables improve their statistical significance. The direction of effects remains the same, except for *Leverage*. For *Xcash-B.DUM*, lower debt is associated with a higher likelihood of SEOs for an excess cash issuer. This suggests that excess cash issuers may rely more on stock issuances due to limited credit options compared to their matched non-issuers. In contrast, for *Xcash-F.DUM*, higher debt is associated with a higher likelihood of SEOs for excess cash issuers compared to both non-excess cash issuers and non-issuers. This may indicate that these issuers use stock issuances to balance their capital structure, managing their equity levels to optimize financial stability (Walker and Yost, 2008; Autore *et al.*, 2009). The differing results from the three dummy variables highlight the importance of the reference group in determining the factors that drive SEO decisions among excess cash issuers.

*Precautionary Motives*

Bates *et al.* (2009), Almeida *et al.* (2011), and McLean (2011) argue that many firms face risks they cannot hedge or are hesitant to utilize derivatives for hedging. Such firms might need a larger cash buffer to mitigate operational risks or prevent financial distress and default. Therefore, the precautionary motive is a pivotal driver of cash demand. According to the pecking order theory, companies are predicted to retain cash from internal cash flow. However, some companies fail to generate adequate cash flow. This study posits that if the benefits of precautionary cash holdings surpass the costs of issuing shares, such firms might issue shares to accumulate cash reserves, especially during favourable periods.

My empirical approach involves estimating the linear probability model introduced by Dittmar *et al.* (2020, Table 2), incorporating both precautionary and timing variables. The regression equation is:

$$Excess\_cash\_issuers_{i,t} = \beta_0 + \beta_1 \text{Timing}_{i,t} + \beta_2 Timing_{i,t} * \text{Precautionary}_{i,t} + \beta_3 \text{Precautionary}_{i,t} + \beta_4 Controls_{i,t} + \varepsilon_{i,t} \quad (2)$$

where *Excess_cash_issuers* represents issuers with pro forma-excess cash surpassing the SEO offer size. Three dummy variables are used to measure *Excess_cash_issuers*: *Xcash-F.DUM*, *Xcash-I.DUM*, and *Xcash-B.DUM*. *Timing* represents overvalued stock levels. As defined in the previous section, *Timing* is the yearly timing component of *EFWAMB* as formulated by Kayhan and Titman (2007). To measure precautionary motives, I use two different proxies that have been used in prior studies (e.g., Opler *et al*., 1999; Han and Qiu, 2007; Bates *et al*., 2009; McLean, 2011): R&D spending (*R&D/sales*) and cash flow volatility (*CF_variance*). These prior studies contend that the likelihood of experiencing financial distress is higher in firms with high R&D spending. Additionally, firms with high cash flow volatility have less reliable internal cash flows and are more likely to suffer negative liquidity shocks, thereby facing higher operational risks (Opler *et al*., 1999; Bates *et al*., 2009). Following Dittmar *et al*. (2020), Huang and Ritter (2021), and Denis and McKeon (2021), I select the following control variables that may influence the likelihood of conducting an SEO: anticipated funds burn rate, anticipated negative ICF, leverage, size, age, and price ratio. Data definitions for all variables are given in Table 2.

Table 5 presents the results of my analysis across six columns. In the first two columns, *Xcash-F.DUM* is used as the dependent variable. The next two columns use *Xcash-I.DUM* as the dependent variable, and the final two columns use *Xcash-B.DUM* as the dependent variable. Table 5 shows that the estimated coefficients of *Timing* are positive and mostly statistically significant at better than 10%, similar to the results in Table 4. These findings suggest that overvalued stock prices increase the probability of excess cash firms conducting an SEO. The interaction terms of *Timing* with precautionary proxies are positive and statistically significant at better than 5%. The economic significance is substantial. For example, in column (1), where *Xcash-F.DUM* is the dependent variable, a 100% increase in the average *Timing* results in a 9.2% increase in the likelihood of SEOs for excess cash issuers compared to both non-excess cash issuers and non-issuers. However, if R&D spending is at its mean level, the likelihood increases to 28.7%. In column (5), where *Xcash-B.DUM* is the dependent variable, doubling of the average *Timing* leads to a 27.1% increase in the likelihood of SEOs for excess cash issuers compared to matched non-issuers, and with mean-level R&D spending, the likelihood rises to 75.8%. These findings suggest that both timing and precautionary motives are important drivers of excess cash issuers.

### *Agency Spending Motives*

In this study, I examine the role of agency spending, which can be attributed to managerial negligence and excessiveness, in driving the SEO decisions of excess cash issuers. Han and Qiu (2007), Bates *et al*. (2009), Denis and Sibilkov (2010), Fresard and Salva (2010), and McLean (2011) argue that managers tend to favour liquid assets due to their accessibility, minimal oversight, and considerable discretion. In addition, the conversion of firm stocks into liquid assets through SEOs can

TABLE 5

PRECAUTIONARY MOTIVES

| | *Xcash-F.DUM* | *Xcash-F.DUM* | *Xcash-I.DUM* | *Xcash-I.DUM* | *Xcash-B.DUM* | *Xcash-B.DUM* |
|---|---|---|---|---|---|---|
| | *1* | *2* | *3* | *4* | *5* | *6* |
| $Timing_t$ | 0.092* | 0.086* | 0.031 | 0.029 | 0.271** | 0.218** |
| | (1.92) | (1.65) | (1.41) | (1.51) | (2.21) | (2.47) |
| $Timing_t$ * *R&D* /$sales_t$ | 0.195*** | | 0.036** | | 0.487*** | |
| | (2.74) | | (2.07) | | (5.39) | |
| *R&D* /$sales_t$ | 0.025* | | 0.002 | | 0.286*** | |
| | (1.69) | | (0.72) | | (3.12) | |
| $Timing_t$ * *CF_ variance*$_t$ | | 0.281** | | 0.130** | | 0.514*** |
| | | (2.12) | | (2.25) | | (2.86) |
| *CF_ variance*$_t$ | | 0.066 | | 0.019 | | 0.175** |
| | | (1.14) | | (1.19) | | (2.05) |
| *Funds burn*$_{t+1}$ | 1.054*** | 1.109*** | 0.419** | 0.457*** | 1.874*** | 1.523*** |
| | (6.81) | (5.97) | (2.41) | (2.72) | (11.53) | (11.30) |
| *Funds burn*$_{t+2}$ | 0.167** | 0.136* | 0.027* | 0.035* | 0.518*** | 0.605*** |
| | (2.03) | (1.84) | (1.86) | (1.66) | (5.18) | (5.04) |
| *Neg_ICF*$_{t+1}$ | 0.511*** | 0.515** | 0.136*** | 0.153*** | 0.576*** | 0.489*** |
| | (3.06) | (2.29) | (2.99) | (2.73) | (3.71) | (3.03) |
| *Neg_ICF*$_{t+2}$ | 0.014 | 0.018 | 0.024** | 0.019* | 0.167** | 0.152* |
| | (1.21) | (0.57) | (2.01) | (1.81) | (2.16) | (1.87) |
| *Leverage*$_t$ | 0.117*** | 0.087** | 0.004 | –0.001 | –0.614** | –0.774*** |
| | (3.67) | (1.98) | (0.46) | (–0.17) | (–2.24) | –2.73) |
| *Size*$_t$ | 0.060* | 0.052* | –0.009 | –0.003 | 0.158*** | 0.126*** |
| | (1.82) | (1.67) | (–0.06) | –0.21) | (3.54) | (3.81) |
| *Log_age*$_t$ | –0.025** | –0.030** | 0.018 | –0.020 | –0.214*** | –0.257*** |
| | –2.09) | (–2.14) | (0.27) | (–0.48) | –3.07) | (–2.82) |
| *Price ratio*$_t$ | 0.167* | 0.190** | 0.008* | 0.007* | 0.416*** | 0.505*** |
| | (1.88) | (2.01) | (1.74) | (1.69) | (2.64) | (2.59) |
| *Post-crisis dummy*$_t$ | –0.005 | –0.007 | –0.001 | 0.001 | –0.001 | –0.002 |
| | (–1.02) | (–1.19) | (–0.08) | (0.26) | (–0.25) | (–0.61) |
| Firm, industry, and year fixed effects | Yes | Yes | Yes | Yes | No | No |
| Observations | 89,430 | 89,430 | 3,483 | 3,483 | 960 | 960 |

This table presents the results of the effect of precautionary motives on the probability of excess cash firms initiating an SEO. To measure precautionary motives, I use two different proxies: R&D spending (*R&D/sales*) and cash flow volatility (*CF_variance*). In the first two columns, *Xcash-F.DUM* is the dependent variable. In the next two columns *Xcash-I.DUM* is the dependent variable, and in the final two columns *Xcash-B.DUM* is the dependent variable. In the regressions where *Xcash-B.DUM* is the dependent variable, fixed effects are not included since the sample is limited to firms in the same industry and the same year. Data definitions for all variables are given in Table 2. *t*-statistics reported in parentheses are based on standard errors clustered at firm and year levels. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Each model specification includes firm, industry, and year fixed effects.

be appealing to managers as it affords them greater discretionary spending. Consequently, if managers believe they can misuse SEO proceeds for personal benefit, they may be motivated to issue stocks at favourable times, even when sufficient internal funds are available, as the increased liquidity provides more opportunities for discretionary spending.

My empirical approach involves estimating the linear probability model introduced by Dittmar *et al.* (2020, Table 2), incorporating both agency spending and timing variables. The following regression equation is used:

$$Excess\_cash\_issuers_{i,t} = \beta_0 + \beta_1 \text{Timing}_{i,t} + \beta_2 \text{Timing}_{i,t} * Overinvestement_{i,t+1} + \beta_3 Overinvestement_{i,t+1} + \beta_4 Controls_{i,t} + \varepsilon_{i,t} \quad (3)$$

where *Excess_cash_issuers* represents issuers with pro forma excess cash surpassing the SEO offer size. Three dummy variables are used to measure *Excess_cash_issuers*: *Xcash-F.DUM*, *Xcash-I.DUM*, and *Xcash-B.DUM*. *Timing* represents overvalued stock levels. As defined in the previous section, *Timing* is the yearly timing component of *EFWAMB* as formulated by Kayhan and Titman (2007). The variable of interest in equation (3) is $Overinvestement_{i,t+1}$, which refers to excess investment in year $t+1$. Biddle *et al.* (2009) developed a model to determine the optimal investment base for growth opportunities, suggesting that surpassing this threshold increases the likelihood of agency-driven spending. I adopt their regression model:

$$Investment_{i,t} = \alpha_0 + \alpha_1 Sale\ Growth_{i,t-1} or\ TobinsQ_{i,t-1} + \varepsilon_{i,t+1} \quad (4)$$

Here, $Sale\ Growth_{i,t-1}$ is a proxy for firm investment opportunities, reflecting the average change in sales from year $t$–2 to $t$–1 for each industry year based on a two-digit SIC code industry classification. $Tobin'sQ_{i,t-1}$ is also frequently used as a proxy for growth (Hubbard, 1998), reflecting the average Tobin's Q in year $t$–1 for each industry year based on the two digit SIC code industry classification. $Investment_{i,t}$ represents actual investment in year $t$, including capital expenditure, R&D, acquisition expenditure, and cash receipts from property sales, scaled by average total assets. Positive residuals from this equation indicate overinvestment. I choose the control variables that may influence the likelihood of conducting an SEO: anticipated funds burn rate, anticipated negative ICF, size, leverage, age, and price ratio. Data definitions for all variables are given in Table 2.

Table 6 presents the results of my analysis across six columns. In the first two columns, *Xcash-F.DUM* is used as the dependent variable. The next two columns use *Xcash-I.DUM* as the dependent variable, and the final two columns use *Xcash-B.DUM* as the dependent variable. In Table 6, the estimated coefficients for *Timing* are positive and statistically significant at the 10% level or better, consistent with the results in Tables 4 and 5. These findings suggest that overvalued stock prices increase the probability of excess cash firms initiating a SEO. The interaction terms of *Timing* with precautionary proxies are also positive and mostly statistically significant at the 10% level or better. In economic terms, in column (1), where *Xcash-F.DUM* is the dependent variable, a 100% increase in the average *Timing* results in a 7.4% increase in the likelihood of SEOs for excess cash issuers compared to both non-excess cash issuers and non-issuers. Furthermore, if there is an intention to overinvest, the likelihood increases to

TABLE 6

AGENCY SPENDING MOTIVES

| | *Xcash-F.DUM* | *Xcash-F.DUM* | *Xcash-I.DUM* | *Xcash-I.DUM* | *Xcash-B.DUM* | *Xcash-B.DUM* |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| $Timing_t$ | 0.074* | 0.061* | 0.028 | 0.031 | 0.265** | 0.248** |
| | (1.71) | (1.74) | (1.52) | (1.32) | (2.20) | (2.48) |
| $Timing_t$ * $Overi\text{-}SG_{t+1}$ | 0.021* | | 0.018 | | 0.094*** | |
| | (1.88) | | (0.42) | | (2.74) | |
| $Overi\text{-}SG_{t+1}$ | 0.008 | | –0.022 | | 0.042* | |
| | (0.54) | | (–0.09) | | (1.79) | |
| $Timing_t$ * $Overi\text{-}TQ_{t+1}$ | | 0.017* | | 0.006 | | 0.162*** |
| | | (1.72) | | (0.83) | | (2.65) |
| $Overi\text{-}TQ_{t+1}$ | | 0.001 | | 0.041 | | 0.072** |
| | | (0.82) | | (0.78) | | (2.04) |
| $Funds\ burn_{t+1}$ | 1.186*** | 1.163*** | 0.315*** | 0.409*** | 1.707*** | 1.681*** |
| | (6.38) | (6.44) | (2.86) | (2.67) | (12.50) | (11.85) |
| $Funds\ burn_{t+2}$ | 0.148* | 0.126* | 0.022* | 0.025* | 0.538*** | 0.543*** |
| | (1.66) | (1.93) | (1.83) | (1.70) | (3.86) | (4.38) |
| $Neg\_ICF_{t+1}$ | 0.479** | 0.485** | 0.154*** | 0.129*** | 0.736*** | 0.736*** |
| | (2.50) | (2.13) | (2.98) | (2.87) | (3.14) | (2.71) |
| $Neg\_ICF_{t+2}$ | –0.003 | –0.003 | 0.022* | 0.019* | 0.151* | 0.128* |
| | (–0.19) | (–0.20) | (1.76) | (1.91) | (1.66) | (1.84) |
| $Leverage_t$ | 0.091** | 0.093** | –0.006 | –0.001 | –0.660*** | –0.821*** |
| | (2.37) | (2.12) | (–0.17) | (–0.19) | (–2.75) | (–2.42) |
| $Size_t$ | 0.045* | 0.056 | –0.001 | –0.001 | 0.139*** | 0.119*** |
| | (1.69) | (1.50) | (–0.16) | (–0.14) | (3.89) | (3.82) |
| $Log\_age_t$ | –0.031** | –0.027** | 0.064 | –0.023 | -0.256*** | –0.201*** |
| | (–1.97) | (–2.21) | (0.50) | (–0.27) | (–2.40) | (–2.93) |
| $Price\ ratio_t$ | 0.207** | 0.200** | 0.007* | 0.008* | 0.443** | 0.490** |
| | (2.21) | (2.16) | (1.90) | (1.95) | (2.56) | (2.46) |
| $Post\text{-}crisis\ dummy_t$ | –0.005 | –0.005 | –0.001 | 0.004 | 0.001 | –0.001 |
| | (–1.28) | (–1.08) | (–0.21) | (0.38) | (0.04) | (–0.31) |
| Firm, industry, and year fixed effects | Yes | Yes | Yes | Yes | No | No |
| Observations | 89,430 | 89,430 | 3,483 | 3,483 | 960 | 960 |

This table presents the results of the effect of agency spending on the probability of excess cash firms initiating an SEO. Overinvestment is measured by positive residuals from equation (4). In the first two columns, *Xcash-F.DUM* is the dependent variable. In the next two columns, *Xcash-I.DUM* is the dependent variable, and in the final two columns *Xcash-B.DUM* is the dependent variable. In the regressions where *Xcash-B.DUM* is the dependent variable, fixed effects are not included because the sample is limited to firms in the same industry and the same year. Data definitions for all variables are given in Table 2. *t*-statistics reported in parentheses are based on standard errors clustered at firm and year levels. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Each model specification includes firm, industry, and year fixed effects.

9.5%. In column (5), where *Xcash-B.DUM* is the dependent variable, a 100% increase in the average *Timing* results in a 26.5% increase in the likelihood of SEOs for excess cash issuers compared to matched non-issuers. If there is an intention to overinvest, this likelihood rises to 35.9%. The higher likelihoods associated with overinvestment intentions indicate that agency spending plays a critical role in driving SEO decisions among excess cash issuers.

## ROBUSTNESS TESTS

*Cash Raising Motivations and Probability of Excess Cash Issuers*

As we have seen, there is a significant and positive relationship between excess cash issuers and the funds needed for future growth opportunities, precautionary measures, and agency spending. This final test aims to rank the relative importance of these motivations in determining the probability of being excess cash issuers. To determine the probability of SEOs for excess cash issuers precisely and maintain accuracy, I employ two methodologies: (i) a method resembling that proposed by DeAngelo *et al.* (2010), which evaluates the probability of excess cash firms initiating an SEO within a year; and (ii) a method akin to that introduced by Chen *et al.* (2019), which calculates the fitted probability from the estimated value originating from equation (1), accounting for the anticipated fund burn rate, expected negative ICF, leverage, size, age, and price ratio.

Table 7 presents the results in two separate panels. Panel A presents the probability of firms that have favourable cash holding motivations and favourable timing opportunities being excess cash issuers. Conversely, Panel B presents the probability of firms that have unfavourable cash holding motivations and adverse timing opportunities being excess cash issuers.

In Panel A, the first scenario highlights that when *Timing* ranks in the top quintile and other cash motivation variables maintain neutrality, both the probability and fitted probability of excess cash issuers stand at 18% and 20%, respectively. In the different scenarios, for firms positioned in the topmost quintiles of both *Timing* and *R&D/sales*, these probabilities surge to 31% and 29%. Similar outcomes are observed for the highest quintiles of *Timing* and *CF_variance*. However, when considering the topmost quintiles of *Timing* combined with future growth opportunities proxies, the likelihood of excess cash issuers rises marginally. The probabilities, though, remain unchanged or even diminish when merging the highest quintiles of *Timing* with agency spending proxies. These findings suggest that precautionary motives are a more powerful predictor of excess cash issuers than other cash motives.

Panel B reveals that firms in the lowest quintile of *Timing*, with all other cash motivation variables at neutral levels, have probabilities and fitted probabilities of excess cash issuers at 8% and 7% respectively. However, these percentages decrease notably for firms that are focused on precautionary measures compared to those emphasizing future growth opportunities and agency spending. This underscores the importance of weighing precautionary motives more heavily when predicting excess cash issuers. Such conclusions are consistent with McLean's (2011) findings, which emphasize the dominant role of precautionary motives in share issuance cash savings.

*Value of SEO Proceeds in Excess Cash Issuers*

In this section, I assess the value investors attach to cash proceeds from stock issuances, focusing particularly on whether this value differs for excess cash

TABLE 7

CASH-RAISING MOTIVATIONS AND THE PROBABILITY OF BEING AN EXCESS CASH ISSUER

| | *Timing* | *Long-term_timing* | *HotMarket* | $TQ_{t+1\&2}$ | $SG_{t+1\&2}$ | *R&D /sales* | *CF_ variance* | *Overi-$SG_{t+1}$* | *Overi-$TQ_{t+1}$* | *Probability of excess cash issuer *100 (%)* | *Fitted probability of excess cash issuer *100 (%)* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Panel A: Probability of SEO for issuers with excess cash in the lowest decile of cash-raising motivations** | | | | | | | | | | | | |
| Scenario 1 | Highest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | 18% | 20% | |
| Scenario 2 | Highest quintile | Highest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | 25% | 26% | |
| Scenario 3 | Highest quintile | Neutral | 1 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | 22% | 23% | |
| Scenario 4 | Highest quintile | Neutral | Neutral | Highest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | 24% | 25% | |
| Scenario 5 | Highest quintile | Neutral | Neutral | Neutral | Highest quintile | Neutral | Neutral | Neutral | Neutral | 21% | 19% | |
| Scenario 6 | Highest quintile | Neutral | Neutral | Neutral | Neutral | Highest quintile | Neutral | Neutral | Neutral | 31% | 29% | |
| Scenario 7 | Highest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Highest quintile | Neutral | Neutral | 30% | 31% | |
| Scenario 8 | Highest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Highest quintile | Neutral | 19% | 17% | |
| Scenario 9 | Highest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Highest quintile | 18% | 16% | |
| **Panel B: Probability of SEO for issuers with excess cash in the highest decile of cash-raising motivations** | | | | | | | | | | | | |
| Scenario 1 | Lowest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | 8% | 7% |
| Scenario 2 | Lowest quintile | Lowest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | 8% | 9% |
| Scenario 3 | Lowest quintile | Neutral | 1 | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | 9% | 8% |

*(Continues)*

TABLE 7

CONTINUED

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Panel B: Probability of SEO for issuers with excess cash in the highest decile of cash-raising motivations** | | | | | | | | | | | |
| Scenario 4 | Lowest quintile | Neutral | Neutral | Lowest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | 6% | 6% |
| Scenario 5 | Lowest quintile | Neutral | Neutral | Neutral | Lowest quintile | Neutral | Neutral | Neutral | Neutral | 7% | 9% |
| Scenario 6 | Lowest quintile | Neutral | Neutral | Neutral | Neutral | Lowest quintile | Neutral | Neutral | Neutral | 2% | 4% |
| Scenario 7 | Lowest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Lowest quintile | Neutral | Neutral | 1% | 3% |
| Scenario 8 | Lowest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Lowest quintile | Neutral | 10% | 12% |
| Scenario 9 | Lowest quintile | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Neutral | Lowest quintile | 10% | 11% |

This table presents the relative importance of funds' need for growth opportunities, precautionary measures, and agency spending in determining the probability of being an excess cash issuer. This probability is calculated using two methods: (i) a method similar to that used by DeAngelo *et al.* (2010), which estimates the probability of excess cash firms initiating an SEO within a given year; and (ii) a method similar to that used by Chen *et al.* (2019), which estimates the fitted probability from the estimated value derived from equation (1), after controlling for anticipated funds' burn rate, expected negative ICF, leverage, size, age, and price ratio. Panel A presents firms that possess favourable cash-holding motivations alongside favourable timing opportunities. Panel B presents firms that have unfavourable cash holding motivations and face adverse timing opportunities. Data definitions for all variables are given in Table 2.

issuers. I posit that if investors perceive SEO proceeds as being misused for the personal benefit of managers or not aligned with the company's best financial interests, the relationship between SEO proceeds usage and firm value will be negative. Conversely, if investors believe that the SEO proceeds will help the company generate more value, the relationship between SEO proceed usage and firm value will be positive.

To determine SEO proceed usage, I first track the allocation of SEO proceeds into cash and then assess how investors perceive the value of these cash proceeds, following the approach outlined by Schlingemann (2004). This focus on cash proceeds aligns with two key premises. First, the majority of SEO proceeds are typically held as cash in the year of issuance (Walker and Yost, 2008; Hertzel and Li, 2010; Kim and Weisbach, 2008; DeAngelo *et al*., 2010). Second, investors' valuation of cash hinges on their expectations of how it will be employed (Pinkowitz *et al*., 2006; Dittmar and Mahrt-Smith, 2007; Fresard and Salva, 2010). Consequently, investors assign a higher value to cash proceeds when they believe it will be invested in value-creating activities. To measure investor valuations, I employ the methodology developed by Fama and French (1997), and as utilized in previous research (e.g., Pinkowitz *et al*., 2006; Dittmar and Mahrt-Smith, 2007; Fresard and Salva, 2010). The regression equation is as follows:

$$\begin{aligned} MV_{i,t} = {} & \beta_0 + \beta_1 \Delta cash_{i,t} + \beta_2 \Delta cash_{i,t} * SEO\,proceeds_{i,t} \\ & + \beta_3 \Delta cash_{i,t} * SEO\,proceeds_{i,t} * Xcash - F.DUM_{i,t} + \beta_4\, Xcash - F.DUM_{i,t} \\ & + \beta_5 SEO\,proceeds_{i,t} + \beta_6 Controls_{i,t} + \varepsilon_{i,t} \end{aligned} \tag{5}$$

where $MV_{i,t}$ is the firm's market value, $\Delta cash_{i,t}$ refers to the yearly change in cash from year $t$–1 to $t$, and $SEO\,proceeds_{i,t}$ represents the proportion of total SEO proceeds to total funds from all sources. Funds raised from operations, stock issuances, debt issuances, investing and selling activities, and other sources within one year are used to calculate total funds. To measure excess cash issuers, I use the dummy variable of *Xcash-F.DUM*, which equals one for excess cash issuers and zero for both non-excess cash issuers and non-issuer firms. The control variables include *Earnings,* $\Delta$*L2 Earnings,* $\Delta$*2 Earnings, R&D,* $\Delta$ *L2 R&D,* $\Delta$*2 R&D, Interest,* $\Delta$ *L2 Interest,* $\Delta$*2 Interest,* $\Delta$*L2 Assets,* $\Delta$*2 Assets, Dividends,* $\Delta$ *L2 Dividends,* $\Delta$*2 Dividends,* $\Delta$*2 MV*, and *Timing*. $\Delta L2$ denotes a change in variable X for firm $i$ over year $t$–2 to year $t$, whereas $\Delta 2$ represents the change in variable X from year $t$ to year $t+2$. All control variables are standardized by the book value of total assets. Data definitions for all variables are given in Table 2.

The first column of Table 8 reports the results for the primary specifications to estimate the impact of cash changes on market value. The second column augments the baseline regression by incorporating a measure of SEO proceeds. The interaction of $\Delta cash_{i,t} * SEO\,proceeds_{i,t}$ uncovers the value of the cash proceeds. Column (3) augments the specification in column (2) by including an indicator variable of excess cash issuers. The coefficient of the triple interaction

TABLE 8

VALUE OF STOCK ISSUANCES

| | Dependent variable: *Firm Value* | | |
|---|---|---|---|
| Δ*Cash* | 1.274*** | 1.178*** | 1.190*** |
| | (17.58) | (25.40) | (18.39) |
| Δ*Cash * SEO Proceeds* | | 0.691*** | 0.544*** |
| | | (5.91) | (3.99) |
| Δ*Cash * SEO Proceeds * Xcash-F.DUM* | | | –0.938*** |
| | | | (–5.31) |
| *Xcash-F.DUM* | | | –0.498*** |
| | | | –3.60) |
| *SEO Proceeds* | | –0.452 | –0.417* |
| | | (–1.46) | (–1.57) |
| *Earnings* | 1.167*** | 1.008*** | 1.163*** |
| | (3.65) | (6.58) | (7.63) |
| Δ*L2 Earnings* | 0.741*** | 0.682*** | 0.702*** |
| | (9.19) | (10.16) | (10.52) |
| Δ*2 Earnings* | –0.485*** | –0.382*** | –0.421*** |
| | (–8.11) | (–7.22) | (–7.96) |
| *R&D* | 13.879*** | 15.046*** | 16.130*** |
| | (37.02) | (53.02) | (36.12) |
| Δ*L2 R&D* | 1.044*** | 1.394*** | 1.473*** |
| | (6.07) | (12.34) | (10.08) |
| Δ*2 R&D* | 3.620*** | 0.788*** | 0.795*** |
| | (8.78) | (10.09) | (9.26) |
| *Interest* | 2.501*** | 2.673*** | 2.815*** |
| | (2.77) | (3.56) | (3.76) |
| Δ*L2 Interest* | –3.532*** | –2.953** | –2.784** |
| | (–4.22) | (–2.08) | (–2.92) |
| Δ*2 Interest* | 3.159*** | 2.790*** | 3.023*** |
| | (20.28) | (10.71) | (11.66) |
| Δ*L2 Assets* | 0.499** | 0.477*** | 0.512*** |
| | (2.26) | (9.58) | (10.37) |
| Δ*2 Assets* | 0.621*** | 0.177*** | 0.210*** |
| | (5.99) | (9.10) | (10.84) |
| *Dividends* | 15.867*** | 6.090*** | 6.869*** |
| | (74.74) | (30.03) | (34.04) |
| Δ*L2 Dividends* | –3.513*** | –4.770*** | –4.454*** |
| | (–15.49) | (–33.70) | (–31.38) |
| Δ*2Dividends* | 3.789*** | 1.433*** | 1.719*** |
| | (23.12) | (11.02) | (13.23) |
| Δ*2 M/B* | –0.268** | –0.375*** | –0.590*** |
| | (–2.52) | (–6.43) | (–4.27) |
| *Timing* | 0.819*** | 0.828*** | 0.808*** |
| | (15.59) | (13.87) | (15.08) |
| Firm, industry, and year fixed effects | Yes | Yes | Yes |
| Observations | 63,516 | 63,516 | 63,516 |

This table presents the estimated value investors place on the stock issuance of excess cash issuers. The dependent variable is the firm's value, which is calculated as the sum of the market value of equity and the book value of short- and long-term debt divided by total assets. The dummy variable *Xcash-F.*DUM measures cash issuers, and equals one for excess cash issuers and zero for both non-excess cash issuers and non-issuer firms. Δ*L2* denotes a change in variable X for firm *i* over year *t*–2 to year *t*, whereas Δ2 represents the change in variable X from year *t* to year $t + 2$. All control variables are standardized by the book value of total assets. Data definitions for all variables are given in Table 2. *t*-statistics that are reported in parentheses are based on standard errors clustered at the firm and year levels. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Each model specification includes firm, industry, and year fixed effects.

variable ($\Delta cash_{i,t}$*$SEO\,proceeds_{i,t}$*$Xcash - F.DUM_{i,t}$) reveals the value of the cash proceeds in excess cash issuers.

The results show that the coefficients for cash changes are consistently positive and align with previous research findings (Pinkowitz *et al.*, 2006; Fresard and Salva, 2010). Notably, the coefficients for the interaction between cash changes and stock issuances are positively significant at the 1% level. The economic significance of stock issuance effects is substantial. For instance, in column (2), the value of $1 of cash for a firm is $1.17, which increases to $1.86 when considering cash proceeds. This suggests that cash proceeds are more likely to be directed towards value-enhancing endeavours, driving shareholders to assign higher values to cash changes. In third column of Table 8, the coefficients of triple interaction are consistently negative and statistically significant at the 1% level. Specifically, the coefficient of the triple interaction is greater than the magnitude of the coefficient of the double interaction, implying that the high value of the cash proceeds disappears for excess cash issuers. In economic terms, the value of $1 of cash proceeds for excess cash issuers is $0.79. So, the potential positive impact of cash proceeds is nullified for excess cash issuers. This suggests that investors attach a significantly lower value to cash proceeds among excess cash issuers.

## CONCLUSION

This study provides an insightful analysis of the motives underlying stock issuance decisions in firms with excess cash, broadening the understanding of corporate finance behaviours. I assess three cash holding hypotheses in excess cash issuers: whether issuers raise cash to retain it: (i) to fund future growth opportunities; (ii) for precautionary reasons; or (iii) to misuse it to maximize managerial benefits. This research identifies that among issuers with pro-forma excess cash surpassing the offer size, precautionary motives are most influential in increasing the probability of excess cash firms initiating an SEO. Therefore, excess cash issuers are more likely to issue stock as a means to hedge against future uncertainties and potential financial distress through precautionary cash holding. In addition, these issuers often save funds for future growth, suggesting strategic foresight in securing funds for future expansion through cash holding, but this is a secondary motivator. Agency spending also drives SEO decisions among excess cash issuers, but it is identified as the least important motivator.

The results of this study build on the traditional view that firms issue stocks primarily to satisfy immediate cash needs (DeAngelo *et al.*, 2010) and show that even if there is no immediate need for cash, long-term cash benefits remain the main motivation for stock issuances. These results shift the perspective from viewing stock issuances merely as immediate cash flow solutions to considering them as strategic cash decisions for risk mitigation and future growth funding. The implications of this study are manifold. For practitioners, understanding the importance of precautionary motives can provide clarity on the corporate

financial strategies of excess cash issuers. Investors and stakeholders can better anticipate firm behaviours, refining their evaluations of stock issuances in light of these motives.

## REFERENCES


Akhigbe, A. and A. M. Whyte (2015), 'Stock Issuance Announcement Returns and Internal Capital Market Efficiency', *Journal of Corporate Finance*, Vol. 31, pp. 271–83.

Almeida, H., M. Campello, and M. S. Weisbach (2011), 'Corporate Financial and Investment Policies When Future Financing is Not Frictionless', *Journal of Corporate Finance*, Vol. 17, No. 3, pp. 675–93.

Alti, A. (2006), 'How Persistent is the Impact of Market Timing on Capital Structure?', *The Journal of Finance*, Vol. 61, No. 4, pp. 1681–710.

Autore, D. M., T. Jones, T. Kovacs, and D. R. Peterson (2021), 'Confidential Marketing in Seasoned Equity Offers', *Journal of Corporate Finance*, Vol. 68, 101975.

Baker, M. and J. Wurgler (2002), 'Market Timing and Capital Structure', *The Journal of Finance*, Vol. 57, No. 1, pp. 1–32.

Bates, T. W., K. M. Kahle, and R. M. Stulz (2009), 'Why Do US Firms Hold So Much More Cash Than They Used To?', *The Journal of Finance*, Vol. 64, No. 5, pp. 1985–2021.

Bazrafshan, E. (2023), 'Implications of Internal Funds Surplus for Determining Agency Spending of SEO Proceeds and Timing Incentives', *Financial Markets, Institutions & Instruments*, Vol. 32, No. 4, pp. 133–69.

Bazrafshan, E. and A. Tarazi (2023), 'Cash Shortfall, SEO Offer Size, and SEO Announcement Returns', *The European Journal of Finance*, Vol. 29, No. 5, pp. 567–82.

Bazrafshan, E., A. J. Marcus, and H. Tehranian (2021), 'CEOs versus the Board: Implications of Strained Relations for Stock Liquidity', *Global Finance Journal*, Vol. 48, 100538.

Biddle, G. C., G. Hilary, and R. S. Verdi (2009), 'How Does Financial Reporting Quality Relate to Investment Efficiency?', *Journal of Accounting and Economics*, Vol. 48, Nos 2–3, pp. 112–31.

Brown, S. J. and J. B. Warner (1985), 'Using Daily Stock Returns: The Case of Event Studies', *Journal of Financial Economics*, Vol. 14, No. 1, pp. 3–31.

Chen, Y. W., R. K. Chou, and C. B. Lin (2019), 'Investor Sentiment, SEO Market Timing, and Stock Price Performance', *Journal of Empirical Finance*, Vol. 51, pp. 28–43.

DeAngelo, H., L. DeAngelo, and R. M. Stulz (2010), 'Seasoned Equity Offerings, Market Timing, and the Corporate Lifecycle', *Journal of Financial Economics*, Vol. 95, No. 3, pp. 275–95.

Denis, D. J. and S. B. McKeon (2021), 'Persistent Negative Cash Flows, Staged Financing, and the Stockpiling of Cash Balances', *Journal of Financial Economics*, Vol. 142, No. 1, pp. 293–313.

Denis, D. J. and V. Sibilkov (2010), 'Financial Constraints, Investment, and the Value of Cash Holdings', *The Review of Financial Studies*, Vol. 23, No. 1, pp. 247–69.

DeSantola, A., P. I. Zhelyazkov, and B. L. Hallen (2023), 'Windows versus Waves of Opportunity: How Reputation Alters Venture Capital Firms' Resource Mobilization', *Strategic Management Journal*, Vol. 45, No. 2, pp. 301–32.

Deshmukh, S., K. J. Gamble, and K. M. Howe (2017), 'Informed Short Selling Around SEO Announcements', *Journal of Corporate Finance*, Vol. 46, pp. 121–38.

Dittmar, A. and J. Mahrt-Smith (2007), 'Corporate Governance and the Value of Cash Holdings', *Journal of Financial Economics*, Vol. 83, pp. 599–634.

Dittmar, A., R. Duchin, and S. Zhang (2020), 'The Timing and Consequences of Seasoned Equity Offerings: A Regression Discontinuity Approach', *Journal of Financial Economics*, Vol. 138, No. 1, pp. 254–76.

Dittmar, A., J. Mahrt-Smith, and H. Servaes (2003), 'International Corporate Governance and Corporate Cash Holdings', *Journal of Financial and Quantitative analysis*, Vol. 38, No. 1, pp. 111–33.

Erel, I., R. C. Liao, and M. S. Weisbach (2012), 'Determinants of Cross-border Mergers and Acquisitions', *The Journal of Finance*, Vol. 67, No. 3, pp. 1045–82.

Fama, E. F. and K. R. French (1997), 'Industry Costs of Equity', *Journal of Financial Economics*, Vol. 43, No. 2, pp. 153–93.

Fresard, L. and C. Salva (2010), 'The Value of Excess Cash and Corporate Governance: Evidence from US Cross-listings', *Journal of Financial Economics*, Vol. 98, No. 2, pp. 359–84.

Hadlock, C. J., M. Ryngaert, and S. Thomas (2001), 'Corporate Structure and Equity Offerings: Are There Benefits to Diversification?', *The Journal of Business*, Vol. 74, No. 4, pp. 613–35.

Han, S. and J. Qiu (2007), 'Corporate Precautionary Cash Holdings', *Journal of Corporate Finance*, Vol. 13, No. 1, pp. 43–57.

Harford, J., S. A. Mansi, and W. F. Maxwell (2008), 'Corporate Governance and Firm Cash Holdings in the US', *Journal of Financial Economics*, Vol. 87, No. 3, pp. 535–55.

Hertzel, M. G. and Z. Li (2010), 'Behavioral and Rational Explanations of Stock Price Performance around Stock Issuances: Evidence from a Decomposition of Market-to- book Ratios', *Journal of Financial and Quantitative Analysis*, Vol. 45, No. 4, pp. 935–58.

Huang, R. and J. R. Ritter (2021), 'Corporate Cash Shortfalls and Financing Decisions', *The Review of Financial Studies*, Vol. 34, No. 4, pp. 1789–833.

Hubbard, R. (1998), 'Capital-market Imperfections and Investment', *Journal of Economic Literature*, Vol. 36, pp. 193–225.

Jensen, M. C. (1986), 'Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers', *The American Economic Review*, Vol. 76, No. 2, pp. 323–29.

Kayhan, A. and S. Titman (2007), 'Firms' Histories and Their Capital Structures', *Journal of Financial Economics*, Vol. 83, No. 1, pp. 1–32.

Kim, W. and M. S. Weisbach (2008), 'Motivations for Public Equity Offers: An International Perspective', *Journal of Financial Economics*, Vol. 87, No. 2, pp. 281–307.

Loughran, T. and J. R. Ritter (1995), 'The New Issues Puzzle', *The Journal of Finance*, Vol. 50, No. 1, pp. 23–51.

MacKinlay, A. C. (1997), 'Event Studies in Economics and Finance', *Journal of Economic Literature*, Vol. 35, No. 1, pp. 13–39.

McLean, R. D. (2011), 'Share Issuance and Cash Savings', *Journal of Financial Economics*, Vol. 99, pp. 693–715.

Mola, S. and T. Loughran (2004), 'Discounting and Clustering in Seasoned Equity Offering Prices', *Journal of Financial and Quantitative Analysis*, Vol. 39, No. 1, pp. 1–23.

Myers, S. C. and N. S. Majluf (1984), 'Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have', *Journal of Financial Economics*, Vol. 12, pp. 187–221.

Opler, T., L. Pinkowitz, R. Stulz, and R. Williamson (1999), 'Antecedents and Implications of Cash Holdings', *Journal of Financial Economics*, Vol. 52, pp. 3–46.

Petersen, M. A. (2009), 'Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches', *The Review of Financial Studies*, Vol. 22, No. 1, pp. 435–80.

Pinkowitz, L., R. Stulz, and R. Williamson (2006), 'Does the Contribution of Corporate Cash Holdings and Dividends to Firm Value Depend on Governance? A Cross-country Analysis', *The Journal of Finance*, Vol. 61, No. 6, pp. 2725–51.

Schlingemann, F. P. (2004), 'Financing Decisions and Bidder Gains', *Journal of Corporate Finance*, Vol. 10, No. 5, pp. 683–701.

Walker, M. D. and K. Yost (2008), 'Seasoned Equity Offerings: What Firms Say, Do, and How the Market Reacts', *Journal of Corporate Finance*, Vol. 14, No. 4, pp. 376–86.