



Article

# Sentiment and Style: Evidence from Republican Managers

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**Abstract:** This study examines the relationship between corporate managers' political ideology and corporate leverage policies conditional on investor sentiment. Based on a minimum of 21,884 observations over the 1992–2008 period, the authors show that Republican managers significantly reduce leverage during periods of high investor sentiment. To the best of the authors' knowledge, this paper is the first to document that Republican managers are not swayed by the general tendency to increase leverage in high-sentiment periods. Overall, the empirical evidence from this study indicates that personal characteristics of managers have a consistent impact on corporate policies, providing support for the "behavioral consistency" theory. Further, the results of this study imply that internal and external stakeholders of a corporation should take into account manager personality in their decisions. For example, the board of a highly indebted company may consider hiring a conservative manager to reduce its financial risk.

**Keywords:** capital structure; leverage; Republican managers; investor sentiment; behavioral consistency

**JEL Classification:** G02; G31; G32



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## 1. Introduction

The goal of this study is to determine whether the corporate leverage decisions of Republican managers are affected by the state of investor sentiment. Our starting point is an influential study by Hutton et al. (2014), who identify Republican managers based on their individual campaign contributions to political parties. They present evidence that Republican managers pursue more conservative financial policies, such as lower leverage ratios. In this study, we employ the firm-level Republican index (REP) developed by Hutton et al. (2014) and examine whether it is consistently linked to lower leverage even when investor sentiment is high. To identify the periods of high and low investor sentiment, we use the investor sentiment index developed by Baker and Wurgler (2006, 2007) as the main measure and the University of Michigan consumer sentiment index as the robustness check.

Investor sentiment and personal characteristics of managers matter for investment and corporate decisions. The behavioral finance literature recognizes investor sentiment as a factor that introduces bias into investors' expectations of future firm performance. Studies show that firms respond to fluctuations in investor sentiment and its possible effect on market prices by changing their financing and investment decisions (Baker and Wurgler 2013). In particular, Oliver (2005) documents that, on average, firms increase leverage when market sentiment is high. In addition, there is a growing body of literature (see Cronqvist et al. 2012; Bonaparte et al. 2017; Hong and Kostovetsky 2012; Jiang et al. 2016) examining whether managers' personal characteristics and preferences have a consistent impact on their corporate financial decisions, known as the "behavioral consistency principle" (Wernimont and Campbell 1968).

To the best of our knowledge, this study is the first empirical investigation examining the behavioral consistency of Republican managers conditional on investor sentiment. We do so in the context of their financial leverage decisions. Prior research presents evidence that both investor sentiment and Republican Party affiliation separately affect leverage ratios across firms. However, it is not established yet whether the negative relationship between Republican Party affiliation and financial leverage persists at high levels of investor sentiment.

We use an unbalanced panel data at the firm-level, where the dependent variable is a measure of financial leverage. Our key variable of interest is the interaction variable between investor sentiment and REP. We employ a battery of control variables and also include industry fixed effects. As robustness checks, we take into account equity market timing and an alternative measure of investor sentiment in our panel regressions.

This paper contributes to several areas of the literature. In a broad sense, our paper contributes to the literature on the impact of investor sentiment on corporate decisions by documenting that firms significantly increase leverage during high-sentiment periods (Oliver 2005; McLean and Zhao 2014). However, the most important contribution of this paper is to the growing body of literature on the effect of the political preferences of managers on corporate outcomes (Rubin 2008; Di Giuli and Kostovetsky 2014; Hutton et al. 2014; Unsal et al. 2016; Francis et al. 2016; Elnahas and Kim 2017) by documenting the consistent conservative behavior of Republican managers toward leverage policies in periods of high sentiment.

The summary of our results are as follows. Analyzing corporate leverage decisions over the 1992–2008 period based on a minimum of 21,884 observations, we find that leverage tends to be higher in high-sentiment periods across all US firms, regardless of the political affiliation of managers. Next, we confirm the results of Hutton et al. (2014), who show that relatively more Republican firms have significantly lower levels of corporate debt over time. The most important result found in our study is the following: when we condition for high-sentiment periods in our tests, on average, Republican managers continue to act more conservatively by reducing debt levels during high-sentiment periods (as implied by a significant negative parameter estimate on the interaction variable between investor sentiment and REP). These findings support the “behavioral consistency principle”. This principle suggests that the personality of managers affects their personal and corporate decisions in a consistent way (Cronqvist et al. 2012; Chyz 2013; Cain and McKeon 2016).

We recognize the potential confounding effect of stock prices and outstanding shares in the conventional leverage ratios. To address this concern, we control for the equity market timing variable developed by Baker and Wurgler (2002) and find its coefficient to be negative and statistically significant. This result suggests that managers take advantage of the overvaluation of equity during periods of higher sentiment, which confirms the substitution effect documented by Cai et al. (2013). Further, we find that the Republican managers continue to behave significantly more conservatively in high-sentiment periods after controlling for the equity market timing variable. These results hold when sentiment is measured by the Baker and Wurgler’s investor sentiment index and by the University of Michigan Consumer Sentiment Index.

The rest of this paper proceeds as follows. Section 2 provides a review of the relevant literature. Section 3 describes the data, develops hypotheses, discusses how we construct the variables, and presents the empirical framework. Section 4 presents the estimation results and the robustness checks. Section 5 concludes the paper.

## 2. Literature Review

This study is related to the broad literature on investor sentiment. Research from behavioral finance shows that fluctuations in the market sentiment have an impact on managerial decisions regarding investments, as well as how the activities of corporations are financed (Baker and Wurgler 2013). For example, Grundy and Li (2010) document that corporate investment is significantly positively related to investor sentiment, suggesting

that managers make investment decisions that accommodate investor sentiment. In addition, [Grundy and Li \(2010\)](#) find that, as the investors' optimism increases, managers tend to increase the investment level more if they hold a larger fraction of shares of a firm.

Empirical evidence in the literature also points to the existence of a significant positive relationship between investor sentiment and financial leverage. This result can be explained as either due to higher managerial confidence being associated with higher consumer sentiment in the market ([Oliver 2005](#)) or to the lower costs of external finance observed during high-sentiment periods ([McLean and Zhao 2014](#)). ([McLean and Zhao 2014](#)) find that the cost of external finance (both for debt and equity) is lower in periods of strong economy and high investor sentiment. In their study, they use an expansion dummy and an increasing industrial production dummy to proxy for the strong economy. Further, they use the [Baker and Wurgler \(2006, 2007\)](#) investor sentiment index and the University of Michigan Consumer Sentiment Index to identify high sentiment periods. [Cai et al. \(2013\)](#) also examine the role of investor sentiment in capital structure decisions. They use the logarithm of the book-to-market ratio, the yield spread between BAA-rated and AAA-rated bonds, and the volatility of stock market returns as possible proxies of the market sentiment. In contrast to [McLean and Zhao \(2014\)](#), [Cai et al. \(2013\)](#) find that higher sentiment in the equity market is associated with lower levels of debt initial public offerings (DIPOs). However, this negative relationship is observed only for the subset of firms with high-yield DIPOs. This can be explained by managers preferring to issue more equity instead of high-yield debt in order to take advantage of over-valuation in equity prices fueled by high investor sentiment.

This study is also related to the literature on the relationship between manager characteristics and corporate policies. Neoclassical economic theory assumes that decision-makers such as managers are rational and that their idiosyncratic behavior does not influence corporate outcomes. However, behavioral finance studies argue that idiosyncratic differences in managers' experiences will be reflected in their personal values and cognitive styles. Such differences will lead managers to make different choices, especially when they are faced with complex problems for which information and clear solutions are lacking. This is also known as the upper echelons theory developed by [Hambrick and Mason \(1984\)](#). Empirical evidence shows that managerial style is important in explaining the variation in firm capital structure, investment, compensation, and disclosure policies (see [Bertrand and Schoar 2003](#); [Bamber et al. 2010](#); [Graham et al. 2012](#)). More recently, studies have also shown that decision-makers' behavior is reflected in a consistent manner across various choice problems, known in psychology as the "behavioral consistency principle." For example, [Cronqvist et al. \(2012\)](#) find that CEOs behave consistently when they have to make leverage choices regarding the mortgages of their primary residencies and the debt ratios of their firms.

A number of studies show that personal political preferences significantly influence the financial decisions of individual investors ([Kaustia and Torstila 2011](#); [Bonaparte et al. 2017](#)), professional money managers ([Hong and Kostovetsky 2012](#)), firm managers ([Rubin 2008](#); [Di Giuli and Kostovetsky 2014](#); [Hutton et al. 2014](#)), and CEOs ([Unsal et al. 2016](#); [Francis et al. 2016](#); [Elnahas and Kim 2017](#)), as well as the forecasts of equity analysts ([Jiang et al. 2016](#)). In particular, [Hutton et al. \(2014\)](#) find that, on average, managers who make campaign contributions to the Republican Party choose more conservative corporate policies than Democratic and non-Republican managers. They document that firms with Republican managers have lower levels of corporate debt, lower capital and R&D expenditures, and less risky investments. In the short term, firms with Republican managers tend to have a lower return volatility and a higher profitability. The results reported by [Hutton et al. \(2014\)](#) are motivated by the argument that conservative values in the political domain translate to conservative actions in the corporate domain as well. In other words, being politically conservative (being affiliated with the Republican Party) suggests being fiscally conservative. [Hutton et al. \(2014\)](#) build their argument on the close link between political conservatism and fiscal conservatism by citing research results across multiple domains

(see paragraph one on page 1283 in Hutton et al. (2014) for the references). Among others, these studies show that conservative ideology is associated with greater ambiguity and risk aversion, a preference for financial security, and the avoidance of losses.

The study by Hutton et al. (2014) also rests on the assumption that individual risk preferences of managers will help drive the risk preferences of their organizations. There is actually empirical and theoretical support for these assertions from the management literature. Sitkin and Pablo (1992) postulate that individual characteristics of decision-makers predict risk-taking behavior. They distinguish between risk preferences, risk perceptions (judgment about the amount of risk involved in a decision), and risk propensity (inclination toward pursuing risky actions). Their analysis suggests that all three factors influence how much risk a given decision-maker is going to take in his or her decisions. They further express that “the composition of the group within which risk related decisions are made is one of the most prominently cited predictors of risk behavior (p. 13)”. Sitkin and Weingart (1995) further accentuate the role of risk propensity and risk preferences on decisions involving risk. They conduct two empirical studies to test the Sitkin and Pablo (1992) model and conclude that “[o]ur results provide support for the inclusion of risk perception and risk propensity as mediators of effects on risky decision behavior (p. 1586)”.

The effects of exogenous events are also examined in the corporate finance literature. Evidence shows that corporate managers may respond in a conservative manner to exogenous uncertainty-increasing events such as hurricanes (Dessaint and Matray 2017), terrorist attacks and mass shootings (Antonioni et al. 2017), the bankruptcies of local peers (Addoum et al. 2014), and the 9/11 terrorist attack and the 2008 Lehman Brothers’ bankruptcy (Hutton et al. 2014).

### 3. Data and Methodological Background

#### 3.1. Data Overview

The testing sample was created by merging three datasets on U.S. firms over the 1992–2008 period. The basis for the sample period and the sample of firms was the data on the political affiliation of managers in the U.S. This dataset was developed by Hutton et al. (2014) and can be accessed at <https://sites.google.com/site/danlingjiang/data-library> (the website of Dr. Danling Jiang, one of the co-authors of the Hutton et al. (2014) study, accessed on 1 June 2017). This dataset contains detailed annual information about the firm-level Republican index (*REP*) for each firm, identified by the GVKEY. More specifically, this dataset is developed by identifying the personal campaign contributions of the top five paid managers (based on the salaries reported in the ExecuComp database) at a given firm to political parties using the Federal Election Commission (the FEC) data. It has a total of 24,195 firm-year observations spanning the period 1992–2008. The monthly investor sentiment index was obtained from Dr. Jeffrey Wurgler, which is available at <http://people.stern.nyu.edu/jwurgler/> (accessed on 1 June 2017). Finally, the accounting data, needed in order to construct the leverage and other control variables, came from the Compustat Fundamental Annual table of the CRSP/Compustat Merged (CCM) database. As in Hutton et al. (2014), we excluded the firms that are classified as utilities (SIC 4900–4999) or financial services (SIC 6900–6999) because these industries are heavily regulated, and managers of firms in these industries have less control in their choice of financial leverage policies. The intersected data sample is a highly unbalanced panel dataset containing a total of 22,054 firm-year observations, and a total of 2335 distinct firms operating in 348 industries defined by 4-digit SIC codes. The mean number of distinct firms per year is 1295.

#### 3.2. Hypothesis Development

Following on the work of Hutton et al. (2014) and Oliver (2005), we investigated whether management style, identified by political party affiliation, plays a significant role in corporate leverage decisions during periods of high and low investor sentiment. We used the measure of fiscal conservatism developed by Hutton et al. (2014) based on the affiliation of managers with the Republican Party. Given the fiscal conservatism of

Republican managers documented in the literature, we expected to find that relatively more conservative managers adopt stricter debt policies, reflected on average by lower levels of corporate debt compared to less conservative managers. Furthermore, to the extent that managerial sentiment is affected by investor sentiment, we primarily expected to find a positive relationship between investor sentiment and corporate debt. We re-examined these anticipated associations as follows:

**Hypothesis 1.** *There exists a negative relationship between the degree of managerial fiscal conservatism and corporate leverage.*

**Hypothesis 2.** *There exists a positive relationship between investor sentiment and corporate leverage.*

The basic premise of our analysis is that the political preferences of managers extend to their firms' financial decisions. Similar to prior literature, we assumed that conservative managers tend to take on less debt and make less risky investments (see [Wilson 2013](#); [Kish et al. 1973](#); [Jost and Thompson 2000](#); [Jost et al. 2003](#); [Carney et al. 2008](#)) for more insights into and evidence of the behavior of conservative managers). As such, our goal was to examine the interaction between managerial conservatism (i.e., managerial fiscal conservatism) and investor sentiment in the context of the "behavioral consistency principle". This principle suggests that individuals tend to exhibit consistent behaviors across comparable situations ([Wernimont and Campbell 1968](#)).

The interaction between managerial conservatism and investor sentiment can present itself under three different scenarios, leading to three different versions for our next hypothesis. Despite being fiscally conservative in general, Republican managers may decide to issue more debt in periods of high sentiment, displaying behavioral inconsistency. They may do so to take advantage of the lower cost of external financing in periods of high sentiment. We may also observe the opposite behavior. To counterbalance potentially excessive leverage, engineered by overconfident managers in high-sentiment periods, Republican managers may reduce corporate debt further when the sentiment is high relative to periods when sentiment is low. In other words, they may behave fiscally conservative in general, but more fiscally conservative in high-sentiment periods. The third possibility is that Republican managers are unaffected by the level of sentiment, making similar financial leverage decisions in both low- and high-sentiment periods. It can be argued that findings supporting the last two scenarios would be an indication of Republican managers displaying behavioral consistency regardless of the sentiment period. We investigated which of these scenarios is empirically supported using an interaction variable between the measures of managerial conservatism and investor sentiment. The anticipated outcomes for this interaction variable (with the sign of the coefficient on the interaction variable given in parentheses) are:

**Hypothesis 3a.** *Republican managers increase debt in high-sentiment periods ( $\beta > 0$ ).*

**Hypothesis 3b.** *Republican managers act more fiscally conservative than general (i.e., have less leverage) in high-sentiment periods ( $\beta < 0$ ).*

**Hypothesis 3c.** *Republican managers adopt similar leverage policies in high- and low-sentiment periods ( $\beta = 0$ ).*

We primarily distinguished between high- and low-sentiment periods in our sample by using the [Baker and Wurgler \(2006, 2007\)](#) investor sentiment index (see Section 3.3 for more details). This index primarily captures investor optimism. Similar to the prior literature, as a robustness check, we also used the University of Michigan Consumer Sentiment Index, which mainly captures consumer sentiment.



### 3.3. Measure of Investor Sentiment

Baker and Wurgler (2006, 2007) construct two measures of investor sentiment using principal component analysis. The first measure of sentiment index is defined by the first principal component of residuals from the regression in which six investor sentiment proxies are used. These proxies are closed-end fund discount, NYSE share turnover, the number of IPOs, the average first-day return of IPOs, equity share in new issues, and dividend premium. For the second measure, the orthogonalized investor sentiment, each sentiment proxy is orthogonalized to several macroeconomic measures to remove any correlation with common economic fundamentals. Baker and Wurgler (2006) find that high investor sentiment predicts lower subsequent returns in the cross-section of stock returns, suggesting that investors may be overoptimistic. If that is the case, when investor sentiment is high, the views of the optimistic investors are more likely to be overoptimistic, resulting in overpriced stocks and lower subsequent returns.

Prior studies, such as Yu and Yuan (2011), Stambaugh et al. (2012), and Kim et al. (2014), define a high-sentiment period when the investor sentiment index is higher than the median of the investor sentiment index during a particular sample period. Similarly, we construct a binary variable for high- and low-sentiment periods ( $SED^{BW}$ ), using the median of the investor sentiment index during our sample period of 1992–2008. As noted earlier, our sample period is defined by the availability of the firm-level Republican Manager index developed by Hutton et al. (2014).  $SED^{BW}$  equals 1 if the annual investor sentiment is higher than the median value for the sample period of 1992–2008, and equals 0 otherwise. Both measures of investor sentiment (orthogonalized or not) result in the same periods of low and high investor sentiment for the sample period. A high sentiment according to the Baker and Wurgler investor sentiment index was recorded in our sample for the following eight years: 1992, 1993, 1994, 1996, 1997, 2000, 2001, and 2007. During our sample period, the original Baker–Wurgler investor sentiment index has a mean of 0.3402 and a median of 0.2324, with a standard deviation of 0.6391. Furthermore, its mean (median) for the high-sentiment period is 0.7922 (0.5716) and, for the low-sentiment period, it is  $-0.0616$  (0.0261).

### 3.4. Measures of Corporate Leverage

In order to examine the link between firm leverage and managerial conservatism, conditional on investor sentiment, we studied four measures of leverage using annual accounting data from the CRSP/Compustat Merged (CCM) database. We closely followed Hutton et al. (2014) in constructing our leverage measures, which are the total book debt-to-book assets ( $TDA$ ), the long-term book debt-to-book assets ( $LDA$ ), the total book debt-to-market assets ( $TDM$ ), and the long-term book debt-to-market assets ( $LDM$ ).

Here, we describe the construction of the dependent variables, where the abbreviations in the parentheses are the codes used in the CCM database unless otherwise defined. We derived  $TDA$  as the ratio of total debt (debt in current liabilities (DLC) + long-term debt (DLTT)) to total book assets (AT).  $LDA$  was the ratio of long-term debt (DLTT) to total book assets (AT). We computed  $TDM$  as the ratio of total debt (debt in current liabilities (DLC) + long-term debt (DLTT)) to the market value of assets (MVA). Here, MVA was the sum of the market value of equity (price-close (PRCC) multiplied by shares outstanding (CSHPRI)) plus debt in current liabilities (DLC), long-term debt (DLTT), and the liquidation value of preferred stock (PSTKL), minus deferred taxes and investment tax credit (TXDITC). Our final measure,  $LDM$ , was the ratio of long-term debt (DLTT) to the market value of assets (MVA).

Table 1 presents the descriptive statistics for the leverage ratios and political affiliation variable  $REP$  (see the next subsection for more details on  $REP$ ). For the period 1992–2008, the average firm has a mean total debt ratio of 21.02% as measured by  $TDA$  (or 19.90% as measured by  $TDM$ ) and a mean long-term debt ratio of 17.96% as measured by  $LDA$  (or 17.07% as measured by  $LDM$ ). Table 1 shows that there is a difference in the distributions of leverage ratios between low- and high-sentiment periods defined by the Baker–Wurgler

investor sentiment index. However, this difference is more pronounced for the leverage ratios standardized by the total book value of assets. For example, TDA on average is 21.61% for the high-sentiment period compared to 20.54% for the low-sentiment period, and the difference between the two means is statistically significant at the 5% level. The mean differences for LDA and TDM across the two periods of investor sentiment are statistically significant at the 5% and 10% level, respectively. The mean difference for LDM is not statistically significant (results are available upon request).

**Table 1.** Descriptive Statistics. This table presents the descriptive statistics on the dependent variables and the key explanatory variables in our study. REP is the firm-level Republican index developed by Hutton et al. (2014), taking values between 1 and 0. It captures the degree of the affiliation with the Republican Party at the firm-level and serves as a proxy for managerial fiscal conservatism. TDA is defined as the ratio of total book debt to book assets at the end of the fiscal year. LDA is the ratio of long-term book debt to book assets at the end of the fiscal year. TDM is defined as the ratio of total book debt to market value of assets, and LDM is the long-term book debt to market value of assets ratio at the end of the fiscal year. The sample period is 1992–2008. Sentiment measure ( $SED^{BW}$ ) equals 1 if the annual investor sentiment is higher than the median value of the Baker–Wurgler investor sentiment index for the sample period of 1992–2008, and equals 0 otherwise. Panel A presents the descriptive statistics for all states of investor sentiment. Panel B (C) presents the descriptive statistics when  $SED^{BW}$  equals 0 (1).

Panel A: Whole Sample Period 1992–2008						
Variable	Nobs	Mean	Std Dev	Q1	Median	Q3
REP	22,033	0.2140	0.2468	0.0000	0.1200	0.4039
TDA	22,054	0.2102	0.1686	0.0514	0.2005	0.3261
LDA	21,982	0.1796	0.1587	0.0220	0.1610	0.2854
TDM	22,054	0.1990	0.2024	0.0265	0.1439	0.3041
LDM	21,982	0.1707	0.1848	0.0113	0.1164	0.2636
Panel B: Low-Sentiment Period						
REP	12,226	0.2091	0.2404	0.0000	0.1168	0.4015
TDA	12,226	0.2054	0.1688	0.0408	0.1957	0.3218
LDA	12,185	0.1772	0.1590	0.0141	0.1589	0.2832
TDM	12,226	0.1968	0.2040	0.0207	0.1409	0.3012
LDM	12,185	0.1702	0.1871	0.0076	0.1148	0.2630
Panel C: High-Sentiment Period						
REP	9807	0.2200	0.2544	0.0000	0.1277	0.4082
TDA	9828	0.2161	0.1682	0.0633	0.2079	0.3314
LDA	9797	0.1827	0.1582	0.0319	0.1645	0.2880
TDM	9828	0.2016	0.2004	0.0334	0.1475	0.3094
LDM	9797	0.1712	0.1819	0.0158	0.1186	0.2641

### 3.5. Measure of Political Affiliation

We used the firm-level Republican index (REP) developed by Hutton et al. (2014) to capture the level of managerial fiscal conservatism. Hutton et al. (2014) construct this index in multiple steps over the 1992–2008 period. First, they only consider the highest-paid five managers in a given firm at a given time using the annual salary levels reported in ExecuComp. Next, they assign a value of 1 to a manager if the manager makes personal campaign contributions only to the Republican Party and 0 otherwise during an election cycle. For a given manager, this dummy may change over time given the manager's decisions to contribute to different parties in different election cycles. In order to obtain a stable measure of political affiliation, Hutton et al. (2014) average the value of this dummy across all election cycles for a given manager, creating a single observation per manager for the whole sample period. To create REP, Hutton et al. (2014) aggregate this manager-level single observation across all of the managers in a given firm-year by assigning larger weights to the managers with larger compensation.

*REP* for a given firm takes values between 1 and 0, and it may change over time depending on who the managers of the firm are at a given time. If a firm has an index value of 1, this means that the managers in this firm are strongly affiliated with the Republican Party. If a firm has an index value of 0, this implies one of the following outcomes for the managers of this firm: (i) they do not contribute to political candidates, (ii) their political orientation is either moderate or Democratic, and (iii) their contributions are not captured by the Federal Election Commission (FEC), which is due to the fact that only the contributions above a certain threshold are required to be reported to the FEC. We adopted the definition and description of *REP* from Hutton et al. (2014) and also refer to firms with zero *REP* as non-Republican. Hutton et al. (2014) find a negative relationship between *REP* and corporate leverage. Therefore, we expected to find a negative significant coefficient estimate for *REP* in our estimations.

Referring to Table 1, for the whole sample period comprising 22,033 firm-year observations, *REP* has a mean value of 0.2140 and a median value of 0.1200, with a standard deviation of 0.2468. Table 1 shows a slight difference in the distributions of *REP* between low- and high-sentiment periods. For the high-sentiment period, comprising 9807 firm-year observations, the mean, median, and standard deviation are, respectively, 0.2200, 0.1277, and 0.2544. For the low-sentiment period, comprising 12,226 firm-year observations, the mean, median, and standard deviation are a little lower at 0.2091, 0.1168, and 0.2404, respectively.

### 3.6. Control Variables

The capital structure literature identifies a number of potential determinants of corporate leverage policies, which we also controlled for in our estimations (please see Titman and Wessels 1988; Cronqvist et al. 2012; Hutton et al. 2014). These determinants are the market-to-book ratio (*MtB*), firm size (*Size*), tangibility (*Tang*), and profitability (*Profit*). *MtB* can be used as a proxy for the Tobin's *Q*, and is defined as the ratio of the market value of assets (MVA) to the total assets (AT), where MVA is the sum of the market value of equity (price-close (PRCC) multiplied by shares outstanding (CSHPRI)) plus debt in current liabilities (DLC) and long-term debt (DLTT), and the liquidation value of preferred stock (PSTKL), minus deferred taxes and investment tax credit (TXDITC). Higher market-to-book ratios may be an indication of higher growth opportunities. Titman and Wessels (1988) argue that firms with sizable growth opportunities may find it more difficult to borrow externally because of the asset substitution effect. Therefore, we expected to find a negative relationship between *MtB* and corporate leverage.

*Size* is defined as a logarithm of total book assets (AT), and is a proxy for the firm size. We expected to find a positive relationship between firm size and debt because larger firms in general have easier access to capital markets, more diversified investments, and a lower risk of default relative to smaller firms. *Tang* is defined as the ratio of net property, plant, and equipment (PPENT) to total assets (AT). We expected to find a positive relationship between a firm's share of tangible assets and its leverage because these assets can be used as a collateral for loans. *Profit* is the ratio of operating income before depreciation (OIBDP) to total assets (AT). According to the pecking order theory of capital structure, profitability is expected to have a negative effect on leverage. For the sample period 1992–2008, firms have an average *MtB* of 1.79, a mean *Profit* ratio of 13.98%, a mean tangible assets ratio (*Tang*) of 29.64%, and a mean *Size*, measured by the book value of total assets, of USD 5082 million. Consistent with the capital structure literature, we used the one-year lagged control variables in our estimations.

### 3.7. Estimation Framework

To test how the managerial fiscal conservatism affects the leverage policies of firms contingent on investor sentiment, we used an unbalanced panel regression specification



that includes industry-fixed effects ( $\alpha_i$ ). We categorized the specific industries using 4-digit SIC codes. In particular, we estimated Equation (1):

$$LEV_{i,t} = \alpha + \beta_1 REP_{i,t} + \beta_2 SED_t^{BW} + \beta_3 REP_{i,t} \times SED_t^{BW} + \beta_4 MtB_{i,t-1} + \beta_5 Size_{i,t-1} + \beta_6 Profit_{i,t-1} + \beta_7 Tang_{i,t-1} + \alpha_i + \epsilon_{i,t} \quad (1)$$

where, for each firm  $i$  and time  $t$ ,  $LEV$  is the measure of annual corporate leverage (the total book debt-to-book assets ( $TDA$ ), the long-term book debt-to-book assets ( $LDA$ ), the total book debt-to-market assets ( $TDM$ ), or the long-term book debt-to-market assets ( $LDM$ )).  $REP$  is the firm-level Republican index developed by Hutton et al. (2014).  $SED^{BW}$  is the value of the sentiment dummy in year  $t$  based on the Baker–Wurgler investor sentiment index.

The main objective here was to examine how leverage decisions are affected by the political affiliation of managers, a proxy for managerial fiscal conservatism, conditional on investor sentiment. Therefore, the model included an interaction variable between the investor sentiment dummy and the firm-level Republican index ( $REP \times SED^{BW}$ ). This interaction term was the main variable of interest in our study. The control variables in Equation (1) are the prior year's market-to-book ratio ( $MtB$ ), size ( $Size$ ), profitability ( $Profit$ ), and tangibility ( $Tang$ ).<sup>1</sup>

## 4. Results

### 4.1. Main Results

We present the results obtained for  $TDA$  and  $LDA$  in Panels A and B and for  $TDM$  and  $LDM$  in Panels C and D of Table 2. Model (1) employs the framework described in Hutton et al. (2014) using only the firm-level Republican index ( $REP$ ) as the main explanatory variable along with the control variables. Similar to Hutton et al. (2014), we find significant negative coefficient estimates for  $REP$ . Therefore, we confirm the results obtained by Hutton et al. (2014) that state that there is a negative relationship between the degree of the affiliation with the Republican Party (i.e., managerial fiscal conservatism) and the level of corporate leverage at the firm level. This result lends support to Hypothesis 1.

We test Hypothesis 2 under Model (2) by accounting for the investor sentiment along with the standard control variables. Similar to Oliver (2005), we find a significant positive relationship between investor sentiment and the level of corporate leverage, as measured by  $TDA$ ,  $LDA$ , and  $TDM$ . For these three leverage proxies, the coefficient estimate is economically and statistically significant at the 1% and 5% level.  $TDA$ ,  $LDA$ , and  $TDM$  are, respectively, 1.05, 0.42, and 0.64 percentage points higher in high-sentiment periods relative to low-sentiment periods. The coefficient estimate for  $LDM$  is statistically insignificant. For this particular sample, our analysis provides support for Hypothesis 2 based on three leverage proxies ( $TDA$ ,  $LDA$ , and  $TDM$ ).

Model (3) presents the results obtained from estimating Equation (1). The coefficient on our variable of interest,  $REP \times SED^{BW}$ , is negative and statistically significant for all leverage proxies at the 5% and the 10% level. On average, a one-standard-deviation increase in  $REP$  leads to a 0.35 percentage point decrease in  $TDA$ , a 0.33 percentage point decrease in  $LDA$ , a 0.45 percentage point decrease in  $TDM$ , and a 0.47 percentage point decrease in  $LDM$  in high-sentiment periods. We obtain these economic magnitudes by multiplying the coefficient estimates of the interaction variable in Model (3) of Table 2 (−0.0136 for  $TDA$ , −0.0130 for  $LDA$ , −0.0175 for  $TDM$ , and −0.0184 for  $LDM$ ) with the standard deviation of  $REP$  in high-sentiment periods (0.2544). To provide a comparison, in response to the one-standard-deviation increase in  $REP$ , we report a 0.47 percentage point decrease in  $LDM$  in the high-sentiment period, and Hutton et al. (2014) report a 0.83 percentage point decline based on the data from the whole sample period. The results we obtain for this particular sample period and dataset provide support for Hypothesis 3b, showing that Republican managers are more fiscally conservative in high-sentiment periods defined by the Baker–Wurgler sentiment index compared to the rest of the managers in the sample.

Table 2 presents the results for panel estimations (under Models 1 through 3) using Equation (1):

$$LEV_{i,t} = \alpha + \beta_1 REP_{i,t} + \beta_2 SED_t^{BW} + \beta_3 REP_{i,t} \times SED_t^{BW} + \beta_4 MtB_{i,t-1} + \beta_5 Size_{i,t-1} + \beta_6 Profit_{i,t-1} + \beta_7 Tang_{i,t-1} + \alpha_i + \epsilon_{i,t}$$

The dependent variable, *LEV*, is corporate leverage defined by the total book debt to book assets ratio (TDA), long-term book debt to book assets ratio (LDA), total book debt to market value of assets ratio (TDM), and long-term book debt to market value of assets ratio (LDM) over the 1992–2008 period. *REP* is the firm-level Republican index developed by Hutton et al. (2014), taking values between 1 and 0. It captures the degree of the affiliation with the Republican Party at the firm-level and serves as a proxy for managerial fiscal conservatism. Sentiment measure ( $SED^{BW}$ ) equals 1 if the annual investor sentiment is higher than the median value of the Baker–Wurgler investor sentiment index for the sample period of 1992–2008, and equals 0 otherwise. The market-to-book ratio (*MtB*) is defined as the ratio of market value of assets (MVA) to total assets (AT). MVA is the sum of the market value of equity (price-close (PRCC) \* shares outstanding (CSHPRI)) plus debt in current liabilities (DLC) and long-term debt (DLTT), and the liquidation value of preferred stock (PSTKL), minus deferred taxes and investment tax credit (TXDITC). *Size* is the logarithm of total book assets (AT). Tangibility (*Tang*) is defined as the ratio of net property, plant, and equipment (PPENT) to total assets (AT). Profitability (*Profit*) is defined as the ratio of operating income before depreciation (OIBDP) to total assets (AT).

It is important to note that the tenor of the results does not change when we use firm-fixed effects and Fama–French industry definitions in the estimations (these results are available upon request). We further note that, due to issues with data availability, we are not able to distinguish between the cost channel (McLean and Zhao 2014) and the managerial overconfidence channel (Oliver 2005) as potential factors behind the documented positive relationship between sentiment and leverage.

**Table 2.** Investor Sentiment, Republican Managers, and Financial Leverage.

	Panel A: TDA				Panel B: LDA			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
<i>REP</i>	−0.0107 *** (−2.62)		−0.0046 (−0.85)	−0.0039 (−0.72)	−0.0116 *** (−2.95)		−0.0055 (−1.06)	−0.0047 (−0.92)
$SED^{BW}$		0.0105 *** (5.67)	0.0136 *** (5.57)	0.0124 *** (5.12)		0.0042 ** (2.38)	0.0072 *** (3.07)	0.0060 ** (2.57)
$REP \times SED^{BW}$			−0.0136 * (−1.85)	−0.0122 * (−1.67)			−0.0130 * (−1.84)	−0.0116 * (−1.65)
<i>MtB</i>	−0.0090 *** (−16.40)	−0.0092 *** (−16.71)	−0.0092 *** (−16.67)	0.0040 *** (3.57)	−0.0081 *** (−15.20)	−0.0081 *** (−15.38)	−0.0081 *** (−15.32)	0.0059 *** (5.51)
<i>Size</i>	0.0219 *** (31.83)	0.0221 *** (32.24)	0.0223 *** (32.26)	0.0248 *** (34.79)	0.0171 *** (25.88)	0.0170 *** (25.82)	0.0172 *** (25.96)	0.0199 *** (29.06)
<i>Profit</i>	−0.1402 *** (−16.09)	−0.1433 *** (−16.47)	−0.1422 *** (−16.32)	−0.1242 *** (−14.15)	−0.1260 *** (−15.07)	−0.1280 *** (−15.33)	−0.1269 *** (−15.17)	−0.1078 *** (−12.80)
<i>Tang</i>	0.1001 *** (13.00)	0.0947 *** (12.31)	0.0966 *** (12.51)	0.0969 *** (12.61)	0.0932 *** (12.63)	0.0899 *** (12.18)	0.0919 *** (12.41)	0.0922 *** (12.51)
$MtB_{efwa}$				−0.0060 *** (−13.58)				−0.0064 *** (−15.04)
N.obs	21,955	21,976	21,955	21,955	21,884	21,905	21,884	21,884
N. industries	348	348	348	348	348	348	348	348
Adj. R-square	38.20%	38.28%	38.30%	38.82%	36.12%	36.11%	36.15%	36.81%

Table 2. Cont.

	Panel C: TDM				Panel D: LDM			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
<i>REP</i>	−0.0307 *** (−6.57)		−0.0226 *** (−3.65)	−0.0213 *** (−3.48)	−0.0272 *** (−6.25)		−0.0184 *** (−3.19)	−0.0172 *** (−3.02)
<i>SED<sup>BW</sup></i>		0.0064 *** (3.01)	0.0104 *** (3.72)	0.0083 *** (3.01)		0.001 (0.49)	0.0051 ** (1.99)	0.0033 (1.30)
<i>REP × SED<sup>BW</sup></i>			−0.0175 ** (−2.07)	−0.0150 * (−1.80)			−0.0184 ** (−2.35)	−0.0163 ** (−2.10)
<i>MtB</i>	−0.0178 *** (−28.20)	−0.0179 *** (−28.44)	−0.0179 *** (−28.34)	0.0059 *** (4.69)	−0.0152 *** (−25.87)	−0.0153 *** (−26.02)	−0.0153 *** (−25.92)	0.0061 *** (5.13)
<i>Size</i>	0.0258 *** (32.74)	0.0253 *** (32.25)	0.0261 *** (32.85)	0.0305 *** (37.62)	0.0208 *** (28.37)	0.0202 *** (27.63)	0.0208 *** (28.22)	0.0248 *** (32.83)
<i>Profit</i>	−0.2825 *** (−28.31)	−0.2870 *** (−28.76)	−0.2839 *** (−28.44)	−0.2513 *** (−25.15)	−0.2393 *** (−25.79)	−0.2424 *** (−26.12)	−0.2397 *** (−25.82)	−0.2106 *** (−22.64)
<i>Tang</i>	0.0941 *** (10.68)	0.0876 *** (9.92)	0.0920 *** (10.41)	0.0926 *** (10.59)	0.0941 *** (11.48)	0.0899 *** (10.96)	0.0939 *** (11.42)	0.0943 *** (11.59)
<i>MtB<sub>efwa</sub></i>				−0.0108 *** (−21.59)				−0.0097 *** (−20.69)
N.obs	21,955	21,976	21,955	21,955	21,884	21,905	21,884	21,884
N. industries	348	348	348	348	348	348	348	348
Adj. R-square	43.76%	43.66%	43.79%	44.98%	41.95%	41.83%	41.96%	43.09%

*MtB<sub>efwa</sub>*, the “external finance weighted-average” market-to-book ratio, is later added to Equation (1) under Model 4. *MtB<sub>efwa</sub>* is defined using Equation (2):  $MtB_{efwa,i,t} = \sum_{s=0}^{t-1} \frac{(e_s + d_s)}{\sum_{r=0}^{t-1} (e_r + d_r)} MtB_{i,s}$ . Here, *e* and *d* are annual measures of net equity and net debt issued from each firm, calculated using Equation (3),  $e_{i,t} = \frac{(\Delta BookEquity_{i,t} - \Delta RetainedEarnings_{i,t})}{TotalAssets_{i,t}}$ , and Equation (4),  $d_{i,t} = \frac{TotalAssets_{i,t} - (\Delta BookEquity_{i,t} - \Delta RetainedEarnings_{i,t})}{TotalAssets_{i,t}}$  based on COMPUSTAT annual measures of book equity, retained earnings, and total assets. The summations are taken starting at the IPO year or the first year of COMPUSTAT data if the stock IPO year is missing. All accounting variables are calculated at the end of the fiscal year and are lagged. All of the models include fixed effects for industries identified by four-digit SIC codes and intercepts (not presented to save space). \*, \*\*, \*\*\* denote statistical significance at the 10%, 5%, and 1% level, respectively.

## 4.2. Robustness Checks

### 4.2.1. External Finance Weighted-Average Market-to-Book Ratio

Baker and Wurgler (2002) show that cross-firm variation in the market-to-book ratio (*MtB*) is not sufficient to capture the effect of market valuations on corporate leverage decisions. In addition to including *MtB* in the leverage regressions, they also control for the historical measure of *MtB* weighted by the amounts of external finance, referred to as “the external finance weighted-average market-to-book ratio”. This weighted market-to-book ratio is also often referred to as *market timing*. It quantifies managers’ tendency to issue equity at high stock prices and to repurchase equity at low stock prices, and enters into the regressions as “historical within-firm variation in market-to-book” (p. 17). Baker and Wurgler (2002) document a strong negative relationship between leverage (debt-to-asset ratio) and this historical measure, which implies a persistent impact of market timing on firms’ capital structure. They suggest that this negative relationship is caused by managers issuing more equity when the valuations are high and less equity when the valuations are low (please see Baker and Wurgler (2013) for a more detailed debate on the implications of this evidence). Similar to Baker and Wurgler (2002), for a given firm-year, the “external finance weighted-average” market-to-book ratio, hereafter *MtB<sub>efwa</sub>*, is defined as:

$$MtB_{efwa,i,t} = \sum_{s=0}^{t-1} \frac{(e_s + d_s)}{\sum_{r=0}^{t-1} (e_r + d_r)} MtB_{i,s} \quad (2)$$

where *e* and *d* are annual measures of net equity and net debt issued from each firm, calculated using Equations (3) and (4) and COMPUSTAT annual measures of book equity, retained earnings, and total assets. The summations are taken starting at the IPO year or the first year of COMPUSTAT data if the stock IPO year is missing.

$$e_{i,t} = \frac{(\Delta BookEquity_{i,t} - \Delta RetainedEarnings_{i,t})}{TotalAssets_{i,t}} \quad (3)$$

$$d_{i,t} = \frac{TotalAssets_{i,t} - (\Delta BookEquity_{i,t} - \Delta RetainedEarnings_{i,t})}{TotalAssets_{i,t}} \quad (4)$$

We report the coefficient estimate on the “external finance weighted-average” market-to-book ratio under Model 4 in Table 2. The variable  $MtB_{efwa}$  has a statistically significant negative coefficient in all of the panels, suggesting that managers do take advantage of higher valuations when making capital structure decisions. Additionally, under Model (4), the coefficient on  $REP \times SED^{BW}$  remains negative and significant for all leverage proxies at the 5% and 10% level. As expected, there is a reduction in the coefficient estimate of the interaction variable due to the introduction of the market timing variable. On average, we find that a one-standard-deviation increase in  $REP$  leads to a 0.31 percentage-point decrease in  $TDA$ , a 0.30 percentage point decrease in  $LDA$ , a 0.38 percentage point decrease in  $TDM$ , and a 0.41 percentage point decrease in  $LDM$  in high-sentiment periods. We obtain these economic magnitudes by multiplying the coefficient estimates of the interaction variable in Model (4) of Table 2 (−0.0122 for  $TDA$ , −0.0116 for  $LDA$ , −0.0150 for  $TDM$ , and −0.0163 for  $LDM$ ) with the standard deviation of  $REP$  in high-sentiment periods (0.2544). Table 2 presents evidence that, relative to the rest of the managers in the sample, Republican managers are more fiscally conservative and remain so even when firms tend to increase leverage due to a heightened investor sentiment. Overall, the evidence from Table 2 provides support for Hypothesis 3b.

#### 4.2.2. Alternative Measure of Sentiment

In this section, we investigate whether our results are robust to a different measure of sentiment. In particular, similar to the prior literature, we use the survey data from the University of Michigan that measures consumer sentiment in the economy (University of Michigan Consumer Sentiment Index (MCSI)) instead of investor sentiment. This index is derived from a monthly survey of U.S. consumer confidence levels conducted by the University of Michigan. It is based on approximately 500 telephone surveys that gather information on consumer expectations regarding the overall economy, and, as such, it is an index that reflects changes in consumer attitudes concerning future economic conditions. Given that the consumer sentiment index has consistently outperformed other measures in anticipating changes in GDP with a lead of six-to-nine months, it is used as a leading economic indicator (Weiss 2003; Charoenrook 2005).

We follow the same procedure as before and construct a binary variable for the consumer sentiment ( $SED^{MCSI}$ ) that equals 1 if the annual consumer sentiment is higher than the median value for the sample period 1992–2008, and equals 0 otherwise. A high sentiment according to MSCI in our sample is recorded for the following eight years: 1994–2000, and 2004. During our sample period, the original consumer sentiment measure has a mean of 90.95 and a median of 89.60, with a standard deviation of 10.96. The mean (median) for high consumer sentiment periods is 99.31 (99.20), and, for low consumer sentiment periods, it is 83.51 (87.50).

We report the results for  $TDA$  and  $LDA$  in Panels A and B and for  $TDM$  and  $LDM$  in Panels C and D of Table 3. We note that the Model (1) results remain the same across Tables 2 and 3 since the sample is defined using the Republican managers dataset. The results obtained based on Model (2) in Table 3 show that the parameter estimate on the sentiment dummy is positive and statistically significant for  $TDA$ ,  $LDA$ , and  $TDM$  at the 1% level and for  $LDM$  at the 10% level. Overall, the results obtained for Model (2) provide strong evidence in favor of managers increasing corporate leverage during high-sentiment periods. Estimations for Models (3) and (4) using the MSCI index provide similar outcomes to those obtained using the Baker–Wurgler investor sentiment index. For Model (3), the parameter estimate on the interaction term ( $REP \times SED^{MCSI}$ ) is negative and statistically significant at the 1% level for  $LDM$ , at the 5% level for  $TDM$ , and at the 10% level for  $TDA$ . With the inclusion of the equity market timing proxy ( $MtB_{efwa}$ ) in Model (4), the parameter estimate on the interaction term ( $REP \times SED^{MCSI}$ ) remains negative for all leverage proxies, but statistically significant only for  $TDM$  and  $LDM$  at the

10% and 5% levels, respectively. The results obtained from Models (3) and (4) in Table 3 lend moderate support to Hypothesis 3b, further pointing to the behavioral consistency of Republican managers.

Table 3 presents the results for panel estimations (under Models 1 through 3) based on the following modified version of Equation (1):

$$LEV_{i,t} = \alpha + \beta_1 REP_{i,t} + \beta_2 SED_t^{MCSI} + \beta_3 REP_{i,t} \times SED_t^{MCSI} + \beta_4 MtB_{i,t-1} + \beta_5 Size_{i,t-1} + \beta_6 Profit_{i,t-1} + \beta_7 Tang_{i,t-1} + \alpha_i + \epsilon_{i,t}$$

The dependent variable, *LEV*, is corporate leverage defined by the total book debt to book assets ratio (TDA), long-term book debt to book assets ratio (LDA), total book debt to market value of assets ratio (TDM), and long-term book debt to market value of assets ratio (LDM) over the 1992–2008 period. *REP* is the firm-level Republican index developed by Hutton et al. (2014), taking values between 1 and 0. It captures the degree of the affiliation with the Republican Party at the firm-level and serves as a proxy for managerial fiscal conservatism. Sentiment measure ( $SED^{MCSI}$ ) equals 1 if the annual consumer sentiment is higher than the median value of the University of Michigan Consumer Sentiment Index (MCSI) for the sample period of 1992–2008, and equals 0 otherwise. The market-to-book ratio (*MtB*) is defined as the ratio of the market value of assets (MVA) to total assets (AT). MVA is the sum of the market value of equity (price-close (PRCC) \* shares outstanding (CSHPRI)) plus debt in current liabilities (DLC) and long-term debt (DLTT), and the liquidation value of preferred stock (PSTKL), minus deferred taxes and investment tax credit (TXDITC). *Size* (*Size*) is the logarithm of total book assets (AT). Tangibility (*Tang*) is defined as the ratio of net property, plant, and equipment (PPENT) to total assets (AT). Profitability (*Profit*) is defined as the ratio of operating income before depreciation (OIBDP) to total assets (AT).

**Table 3.** Consumer Sentiment, Republican Managers, and Financial Leverage.

	Panel A: TDA				Panel B: LDA			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
<i>REP</i>	−0.0107 *** (−2.62)		−0.0059 (−1.07)	−0.0058 (−1.06)	−0.0116 *** (−2.95)		−0.0074 (−1.40)	−0.0073 (−1.40)
$SED^{MCSI}$		0.0185 *** (10.01)	0.0213 *** (8.73)	0.0196 *** (8.04)		0.0121 *** (6.80)	0.0144 *** (6.13)	0.0125 *** (5.36)
$REP \times SED^{MCSI}$			−0.0123 * (−1.67)	−0.0096 (−1.31)			−0.0101 (−1.43)	−0.0073 (−1.03)
<i>MtB</i>	−0.0090 *** (−16.40)	−0.0093 *** (−17.00)	−0.0093 *** (−16.95)	0.0036 *** (3.21)	−0.0081 *** (−15.20)	−0.0083 *** (−15.63)	−0.0082 *** (−15.56)	0.0056 *** (5.20)
<i>Size</i>	0.0219 *** (31.83)	0.0227 *** (33.03)	0.0230 *** (33.12)	0.0254 *** (35.53)	0.0171 *** (25.88)	0.0175 *** (26.48)	0.0178 *** (26.68)	0.0204 *** (29.66)
<i>Profit</i>	−0.1402 *** (−16.09)	−0.1447 *** (−16.66)	−0.1434 *** (−16.48)	−0.1257 *** (−14.34)	−0.1260 *** (−15.07)	−0.1295 *** (−15.52)	−0.1282 *** (−15.34)	−0.1093 *** (−12.99)
<i>Tang</i>	0.1001 *** (13.00)	0.0897 *** (11.64)	0.0915 *** (11.84)	0.0921 *** (11.96)	0.0932 *** (12.63)	0.0857 *** (11.59)	0.0876 *** (11.81)	0.0882 *** (11.95)
<i>MtB<sub>efwa</sub></i>				−0.0059 *** (−13.31)				−0.0063 *** (−14.80)
N.obs	21,955	21,976	21,955	21,955	21,884	21,905	21,884	21,884
N. industries	348	348	348	348	348	348	348	348
Adj. R-square	38.20%	38.47%	38.49%	38.99%	36.12%	36.23%	36.26%	36.90%

  

	Panel C: TDM				Panel D: LDM			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
<i>REP</i>	−0.0307 *** (−6.57)		−0.0211 *** (−3.35)	−0.0210 *** (−3.37)	−0.0272 *** (−6.25)		−0.0172 *** (−2.94)	−0.0172 *** (−2.96)
$SED^{MCSI}$		0.0088 *** (4.15)	0.0137 *** (4.90)	0.0105 *** (3.79)		0.0039 * (1.95)	0.0087 *** (3.32)	0.0058 ** (2.25)
$REP \times SED^{MCSI}$			−0.0206 ** (−2.44)	−0.0157 * (−1.87)			−0.0205 *** (−2.61)	−0.0161 ** (−2.08)
<i>MtB</i>	−0.0178 *** (−28.20)	−0.0180 *** (−28.52)	−0.0179 *** (−28.43)	0.0058 *** (4.56)	−0.0152 *** (−25.87)	−0.0154 *** (−26.09)	−0.0153 *** (−26.00)	0.0060 *** (5.02)
<i>Size</i>	0.0258 *** (32.74)	0.0256 *** (32.37)	0.0264 *** (33.06)	0.0308 *** (37.72)	0.0208 *** (28.37)	0.0204 *** (27.71)	0.0211 *** (28.39)	0.0250 *** (32.90)



Table 3. Cont.

<i>Profit</i>	−0.2825 *** (−28.31)	−0.2874 *** (−28.81)	−0.2842 *** (−28.47)	−0.2517 *** (−25.19)	−0.2393 *** (−25.79)	−0.2429 *** (−26.18)	−0.2401 *** (−25.86)	−0.2110 *** (−22.69)
<i>Tang</i>	0.0941 *** (10.68)	0.0857 *** (9.68)	0.0898 *** (10.13)	0.0909 *** (10.36)	0.0941 *** (11.48)	0.0884 *** (10.75)	0.0921 *** (11.17)	0.0930 *** (11.40)
<i>MtB<sub>efwa</sub></i>				−0.0108 *** (−21.48)				−0.0096 *** (−20.59)
N.obs	21,955	21,976	21,955	21,955	21,884	21,905	21,884	21,884
N. industries	348	348	348	348	348	348	348	348
Adj. R-square	43.76%	43.68%	43.82%	44.99%	41.95%	41.84%	41.98%	43.09%

*MtB<sub>efwa</sub>*, the “external finance weighted-average” market-to-book ratio, is later added to Equation (1) under Model 4. *MtB<sub>efwa</sub>* is defined using Equation (2):  $MtB_{efwa,i,t} = \sum_{s=0}^{t-1} \frac{(e_s + d_s)}{\sum_{r=0}^{t-1} (e_r + d_r)} MtB_{i,s}$ . Here, *e* and *d* are annual measures of net equity and net debt issued from each firm, calculated using Equation (3),  $e_{i,t} = \frac{(\Delta BookEquity_{i,t} - \Delta RetainedEarnings_{i,t})}{TotalAssets_{i,t}}$  and Equation (4),  $d_{i,t} = \frac{TotalAssets_{i,t} - (\Delta BookEquity_{i,t} - \Delta RetainedEarnings_{i,t})}{TotalAssets_{i,t}}$  based on COMPUSTAT annual measures of book equity, retained earnings, and total assets. The summations are taken starting at the IPO year or the first year of COMPUSTAT data if the stock IPO year is missing. All accounting variables are calculated at the end of the fiscal year and are lagged. All of the models include fixed effects for industries identified by four-digit SIC codes and intercepts (not presented to save space). \*, \*\*, \*\*\* denote statistical significance at the 10%, 5%, and 1% level, respectively.

## 5. Discussion and Conclusions

This study investigates whether managerial fiscal conservatism (proxied by an affiliation with the Republican Party) is consistently related to lower levels of corporate leverage by taking investor sentiment into account. It does so by following the behavioral consistency literature, which shows that the personal attributes of managers have an impact on their corporate decisions. Our study draws the party affiliation data of managers from Hutton et al. (2014), which limits the sample period to 1992–2008. We run a battery of tests using unbalanced panel estimations with industry fixed effects and make use of two different sentiment measures that are widely used in the literature (Baker and Wurgler (2006, 2007) investor sentiment index and the University of Michigan Consumer Sentiment Index).

We first confirm two important findings from the previous literature. Similar to Oliver (2005), we find that corporate managers are influenced by investor sentiment in that they significantly increase financial leverage in high-sentiment periods. We also confirm the findings reported by Hutton et al. (2014) that relatively more conservative firms, identified by using the Republican Party affiliation of their top managers, have significantly lower levels of corporate debt over time. Our main contribution is the finding that, in contrast to the general trend, firms run by Republican managers significantly decrease leverage in high-sentiment periods. These results suggest that Republican managers remain behaviorally consistent even when investor sentiment is high. In addition, we document that managers also take advantage of the equity market timing effect as the decline in debt is affected by the historical measure of the market-to-book ratio weighted by external finance developed by Baker and Wurgler (2002). As such, we are able to capture a similar substitution effect as in Cai et al. (2013).

Our results demonstrate the importance of behavioral traits and situational influences in corporate decision making. It is important for governments, boards, investors, and analysts to keep in mind that managers’ decisions are influenced not only by the economic and financial data but also by what happens around them (e.g., sentiment) and their personality. Furthermore, these stakeholders need to keep in mind that the effect of personality traits on corporate decision making is strong and persistent. However, this is not necessarily problematic. For example, an investor who wants to find the least risky company in a given sector may target companies run by conservative managers. Similarly, the board of directors of an overly indebted company may want to add a conservative manager to the management team to rein in excessive leverage. Regulators may also use the results of this study. Even though we exclude the stocks in the financials sector, bank regulators may still consider exploring the role of manager characteristics on bank leverage decisions.

This study has some limitations. We do not examine the effect of the Donald Trump presidency on our results. There is anecdotal and systematic evidence that the Republican Party and what it means to be a conservative changed under Donald Trump's presidency (Gonyea 2020; Hopkins and Noel 2022). The possibility exists that being affiliated with the Republican Party may not capture the same conservative values as it did before due to the presidency of Donald Trump. Furthermore, some conservative executives may have shifted their donations away from the Republican Party due to the new direction of the party. This may further affect the relationship between the affiliation with the Republican Party and the conservative values. Another limitation is that our study does not examine whether shareholders in aggregate benefit from managers bringing their personality traits into corporate decisions. For example, to the extent that the cost of external finance is lower during high-sentiment periods (McLean and Zhao 2014), we hope that future research examines whether Republican managers act in the best interests of their shareholders by not increasing leverage in high-sentiment periods.

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## Note

- <sup>1</sup> We acknowledged that firms do not set the level of leverage in isolation. They consider factors such as debt maturity, debt choice, and covenant decisions while they make leverage decisions (see Belkhir et al. 2016; Boubaker et al. 2017).

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