



Hedge fund politics and portfolios



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ABSTRACT

Consistent with the well-documented relation between political orientation and psychological traits, hedge funds' political orientations are related to their portfolio decisions. Relative to politically conservative hedge funds, politically liberal hedge funds exhibit a preference for smaller stocks, less mature companies, volatile stocks, unprofitable companies, non-dividend paying companies, and lottery-type securities. Politically liberal hedge funds are also more likely to enter new positions or fully exit existing positions, and make larger adjustments to their U.S. equity market exposure. Our results suggest that psychological characteristics can influence the portfolio decisions of even those at the very top of the financial sophistication ladder.

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1. Introduction

Although it is well known that both institutional and individual investors' equity portfolios exhibit substantial heterogeneity, we have little understanding of what drives these differences.¹ One promising stream of research suggests that psychological characteristics—related to genetics or life experience—can help explain cross-sectional variation in portfolio and security selection decisions. Because research suggests that the role of psychological factors in financial decision making declines with investor sophistication, it is not surprising that most of the evidence linking psychological characteristics and investors' decisions is limited to relatively unsophisticated individual investors.² Nonetheless, a few recent studies suggest that psychological characteristics influence the decisions of some mutual funds and smaller, presumably less sophisticated, institutional investors. As Shu et al. (2012) point out in their examination of religious beliefs and mutual fund behavior, the link between professional money management and psychological characteristics is surprising because the competitiveness of the money management industry means that professional investors have a strong incentive to focus on performance maximiz-

ing strategies and such strategies should be invariant to managers' psychological characteristics.

It is well recognized, of course, that even if psychological characteristics influence the trading decisions of some investor groups, the asset pricing implications will be negligible as long as there is a sufficiently funded group of investors willing to exploit those whose decisions are influenced by non-performance related factors (e.g., Friedman, 1953; Fama, 1965). Because hedge funds are widely viewed as the most sophisticated investor class, they are the most likely candidate for this role.³ Consistent with this view, a number of recent studies suggest that hedge funds are better informed than other institutional investors (e.g., Sias et al., 2016; Cao et al., 2015a, b).

In addition, the incentives for maximizing performance are stronger for hedge funds than other institutions for at least two reasons. First, unlike most other institutional investors, hedge funds have performance-related incentive fees (historically 20% of profits). Second, hedge funds have the most sophisticated investor base—primarily consisting of pension funds, foundations, and very wealthy individuals.⁴ Getmansky et al. (2004) summarize the view

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¹ See, for example, Cesarini et al., 2010, Campbell, 2006, and Curcuru et al., 2009 for additional discussion.

² We review this literature in the next section.

³ It appears widely accepted that hedge funds are viewed as the most sophisticated investor group. For instance, Stein (2009) points out that, "Hedge funds are commonly thought of as the prototypical sophisticated investors..." Similarly, Brunnermeier and Nagel (2004) claim, "Hedge funds are among the most sophisticated investors—probably closer to the ideal of 'rational arbitrageurs' than any other class of investors."

⁴ A broad literature argues that hedge funds have the most sophisticated client base. For instance, Baquero (2005) note that hedge fund clients are limited to quali-

of hedge funds and market efficiency captured in the literature, “And if this self-correcting mechanism of the Efficient Markets Hypothesis is at work among any group of investors in the financial community, it surely must be at work among hedge-fund managers, which consists of a highly trained, highly motivated, and highly competitive group of sophisticated investment professionals.”

This study investigates whether psychological characteristics impact hedge funds’ security selection and portfolio decisions. The question is important for at least three reasons. First, hedge funds have grown to become an important force in equity markets, accounting for 10% of the average stock’s ownership and one-third of NYSE trading volume (Cao et al., 2015b). Second, as noted above, an extensive literature suggests that the effect of psychological characteristics declines with investor sophistication. Although there is nascent evidence that the investment decisions of some institutional investors (mutual funds and smaller institutional investors) are influenced by psychological characteristics, there is effectively no evidence of a systematic relation between hedge funds’ decisions and psychological characteristics.⁵ Given hedge funds are viewed as the most sophisticated investor class, our tests examine whether the impact of psychological characteristics runs to the very top of the financial sophistication ladder. Third, evidence that hedge fund managers’ decisions are influenced by psychological characteristics implies that we cannot be assured that even the most sophisticated investors are immune to these influences and will therefore correct mispricing caused by other, less sophisticated, investors.

Following several recent studies, we use individuals’ political orientations (as revealed through their political contributions) as an instrument for their psychological characteristics to test if sophisticated investors’ psychological characteristics influence their security selection and portfolio decisions. Specifically, more than 60 years of psychology and political science research demonstrates that political ideology is strongly related to psychological characteristics—relative to conservatives, liberals are more tolerant of ambiguity and uncertainty, more open to new experiences, have lower levels of fear, exhibit higher integrative complexity, and have lower needs for order, structure, and closure (e.g., Jost et al., 2003). Moreover, these psychological characteristics are strongly related to political ideology not only through environment (or nurture), but also through genetics (or nature), e.g., evidence reveals that both brain structure and brain processing differ between conservatives and liberals.

Given the well documented relation between political ideology and psychological characteristics, we hypothesize that politically conservative hedge funds’ long equity portfolios will, on average, exhibit less weight in securities with the most subjective valuations. Specifically, we focus on six security characteristics identified in previous work—the five characteristics identified by Baker and Wurgler (2006, p. 1648) that capture the “subjectivity of their valuation” and lottery-type securities as identified by Kumar et al. (2011). Further, we hypothesize that politically liberal hedge funds, relative to politically conservative hedge funds, will exhibit greater portfolio turnover, greater willingness to enter new

securities, greater willingness to completely exit existing positions, and greater willingness to adjust their exposure to U.S. equity markets.

By construction, we focus on portfolio and security characteristics with no direct link to politics.⁶ That is, we do not claim political orientation is the source of causality. Rather, based on a well-established psychology and political science literature, political orientation is the instrument we use to identify the nature of hedge fund managers’ psychological characteristics. Fig. 1 captures the framework for our research question. Specifically, we hypothesize that psychological characteristics (which are a function of both nature and nurture) influence both political orientation and portfolio decisions and, as a result, hedge fund managers’ political orientations are related to their security selection and portfolio decisions.⁷

Our empirical tests provide the first systematic evidence that hedge fund managers’ psychological characteristics influence their security selection and portfolio characteristics. On average, politically liberal hedge funds’ long-equity portfolios contain a greater weight in more speculative stocks—smaller stocks, younger companies, more volatile stocks, unprofitable companies, non-dividend paying companies, and lottery-type stocks—relative to their politically conservative counterparts. Politically liberal hedge funds, on average, are also more likely to completely liquidate an equity position or enter a new equity position and exhibit a greater willingness to adjust their exposure to U.S. equity markets.

The relation between political orientation and portfolio characteristics is both statistically and economically meaningful—for our broadest tests, the effect size ranges from 12% to 24% of the standard deviation of the cross-sectional variation across hedge fund portfolios. For instance, the value-weighted mean market capitalization of securities held by politically liberal hedge funds averages 0.22 standard deviations smaller than value-weighted mean market capitalization of securities held by politically conservative hedge funds. Moreover, the evidence is stronger when more clearly isolating the variation in portfolio preferences related to psychological characteristics by using stricter definitions of political conservatism, controlling for fund characteristics (e.g., fund age), controlling for manager characteristics (e.g., manager age), or controlling for both manager and fund characteristics simultaneously. Additional tests reveal no evidence that the relation between hedge funds’ political orientations and their security selection and portfolio decisions is related to hedge funds attempting to “buy” performance via political contributions.

Our results may appear surprising given the view that hedge funds use sophisticated valuation models. Nonetheless, recent work demonstrates that hedge funds’ long equity portfolios exhibit a tremendous amount of cross-sectional heterogeneity. Sias et al. (2016) report, for example, that more than 95% of hedge fund pairs have less than 10% overlap in their long equity portfolios. Our results suggest that psychological factors can help explain this cross-sectional variation in hedge funds managers’ security selection and portfolio decisions.

In sum, our goal is straightforward: testing whether the investor group at the top of the financial sophistication ladder—those investors who are expected to systematically correct mispricing due to less-sophisticated investors’ non-performance maximizing trades—are immune to the influence of psychological characteristics. As pointed out by Cesarini et al. (2010), the relation between psychological characteristics and portfolio decisions may reflect

fied investors who, “...have sophisticated understanding of financial markets...” and pension funds with at least \$25 million in assets. Similarly, Brav (2008) note that, “...hedge funds avoid the Investment Company Act of 1940 by having a relatively small number of sophisticated investors.” Further, Akbas (2015) use flows to hedge funds as a measure of ‘smart money’ and find that smart money appears to attenuate mispricing while dumb money (flows to mutual funds) magnify mispricings.

⁵ Hong and Kostovetsky (2012) examine mutual funds’ political donations and portfolio political characteristics (e.g., holdings in politically sensitive industries such as tobacco). They also include a small sample of hedge funds in their study (see their Table 8). We discuss differences between their study, other related papers, and our study in the next section.

⁶ For example, we do not examine corporate social responsibility or exposure to “sin” stocks.

⁷ Recent studies use this same framework to examine the relation between corporate managers’ political donations and corporate decisions (Hutton, 2014) or equity analysts’ political donations and their forecasts (Jiang, 2016).

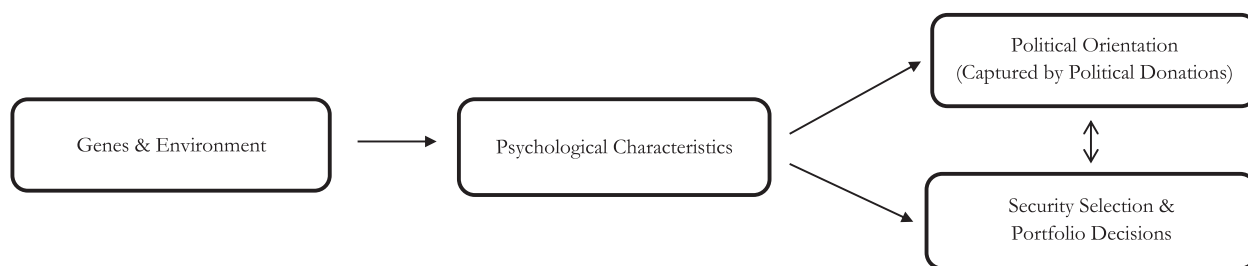


Fig. 1. Research question framework. The figure displays how both genes and environment determine psychological characteristics which, in turn, drive both political orientation and security selection and portfolio decisions.

how psychological characteristics influence risk preferences, views of expected returns, or behavioral biases. Moreover, psychological characteristics may impact decisions as a result of both risk aversion and ambiguity aversion.⁸ Following these authors, we do not hypothesize about the specific mechanism(s) that cause psychological characteristics to influence decisions (e.g., differences in risk aversion versus differences in behavioral biases). Rather we focus on testing if there is evidence that psychological characteristics influence the decisions of even the most sophisticated investor group.

2. Background

2.1. Political ideology and psychological characteristics

There is voluminous evidence dating back at least 65 years (e.g., Adorno et al., 1950) of a robust relation between psychological characteristics and political attitudes. For example, in a meta-analysis of 88 samples in 12 countries with over 22,800 cases, Jost et al. (2003) find strong evidence (i.e., all relations are statistically significant at the 1% level) that politically conservative individuals are less tolerant of ambiguity, exhibit lower integrative complexity, are less open to new experiences, avoid uncertainty, and exhibit a stronger need for order, structure, and closure. Consistent with this evidence, research (e.g., Kam and Simas, 2010) also demonstrates that individuals' tolerance for risk is strongly related to political ideology in that liberals are willing to accept greater risk than conservatives.⁹

A large body of political science research also demonstrates that Republicans are much more likely than Democrats to be conservative and Democrats are more likely than Republicans to be liberal. For example, a liberal-conservative scale is much more important than age, education, income, gender, marital status, union membership, and religion in predicting party membership (e.g., Abramowitz and Saunders, 2006).¹⁰ Jost (2006) reports that respondents' self-placement on an ideological liberal-conservative

scale explains "...85% of the statistical variation in self-reported voting behavior over the last 32 years." Moreover, both the polarization between conservatives and liberals and the relation between political ideology and party membership have dramatically increased since the 1970s (see Abramowitz and Saunders, 2006, 2008).

Traditionally, environmental factors have been assumed to drive political ideology (e.g., Campbell et al., 1960). For instance, parents, families, teachers, and peers all contribute to an individual's political orientation (e.g., Settle et al., 2011). A number of studies in the past decade, however, provide evidence that political orientation is as much nature as nurture, i.e., political orientation, at least in part, is literally in our DNA. For instance, evidence (e.g., Alford et al., 2005; Settle et al., 2009) demonstrates that identical twins (who share 100% of their DNA) exhibit more similar political beliefs than fraternal twins (who, on average, share 50% of their DNA). Moreover, evidence indicates liberals and conservatives differ in brain structure. For example, Kanai et al. (2011) find (via MRI brain scans) that subjects identifying themselves as conservatives had larger right amygdalae (the part of the brain associated with emotional processing including fear processing) and subjects identifying themselves as liberals had larger anterior cingulate cortex (the part of the brain associated with monitoring uncertainty and conflict). The authors successfully classify more than 70% of participants as liberal or conservative based solely on grey matter volume of these two brain regions. Other studies (e.g., Amodio et al., 2007; Schreiber et al., 2013 and Ahn et al., 2014) find meaningful differences in the manner in which conservatives' and liberals' brains function. Moreover, recent advances have begun to identify the specific genetic markers associated with political conservatism and liberalism (e.g., Hatemi, et al., 2011). In a recent interview, John Hibbing (Foundation Regents University Professor at the University of Nebraska) estimates that 40–50% "of our political beliefs seem to have a basis in genetics."¹¹

If hedge fund managers' underlying psychological characteristics influence their decisions, then this literature suggests that hedge fund managers' political orientation will impact both the securities they select and their portfolio characteristics. Specifically, we hypothesize that more politically conservative hedge fund managers will tend to have less exposure to stocks with greater uncertainty—smaller stocks, younger companies, more volatile stocks, unprofitable companies, and lottery-type securities—than their more politically liberal counterparts. Moreover, we expect that more politically liberal hedge fund managers will exhibit a greater willingness to enter and exit security positions and to adjust their exposure to U.S. equities than their more politically conservative counterparts.

⁸ Risk aversion refers to situations with known probabilities (e.g., an urn contains 50 red balls and 50 blue balls) whereas ambiguity aversion refers to situations with unknown probabilities (e.g., an urn contains 100 balls, but one does not know the number of red or blue balls).

⁹ Kam and Simas (2010) create a risk acceptance index based on a battery of questions—some of which are financially-oriented. For example, the authors ask "Suppose you were betting on horses and were a big winner in the third or fourth race. Would you be more likely to continue playing or take your winnings? (Definitely continue playing; Probably continue playing; Not sure; Probably take my winnings; Definitely take my winnings). Other questions, however, focus on non-financial risk, e.g., based on a seven point scale, subjects indicate their relative agreement with the following two statements, "You should be cautious about making major changes in your life" versus "You will never achieve much in life unless you act boldly."

¹⁰ Jiang et al. 2016 provide additional discussion of the evidence linking party identification and political conservatism/liberalism.

¹¹ See <http://www.livescience.com/4454-political-preference-genetic.html>.

2.2. Psychological characteristics and financial decisions

A number of recent studies suggest that individual investors' psychological characteristics impact their investment decisions.¹² For instance, individuals who experience low stock returns during their lives are less likely to enter equity markets, expect lower future stock returns, and allocate less to equities (Malmendier and Nagel, 2011). Similarly, investors who grew up during the depression, entered the job market during poor economic conditions, or grew up in lower socioeconomic status exhibit a preference for value stocks (Cronqvist et al., 2015).

Recent research also demonstrates evidence of a strong genetic component to individual investors' financial decision making. For instance, a number of studies that compare decisions of identical versus fraternal twins suggest that 20%–30% of variation in financial decision making is determined by genetics (see Cesarini et al., 2009; Barnea et al., 2010; Cesarini et al., 2010, 2012; Cronqvist et al., 2015). Moreover, recent neurobiological studies have identified specific genetic markers associated with financial risk taking (e.g., Zhong et al., 2009; Dreber et al., 2009; Kuhnen et al., 2013). In fact, the same gene (DRD4-7R) has been associated with both increased financial risk taking (Kuhnen and Chiao, 2009) and political liberalism (Settle et al., 2010).

Although most work relating psychological or cultural characteristics to investment decisions focuses on individual investors, two recent studies examine the relation between institutional investors' decisions and their managers/employees' psychological characteristics. Consistent with evidence (e.g., Halek and Eisenhauer (2001)) that Catholics are more likely to gamble than Protestants, Shu et al., (2012) report that "Catholic" mutual funds (e.g., those located in primarily Catholic areas) tend to exhibit higher turnover and more aggressive trading than "Protestant" mutual funds. Similarly, Kumar et al., (2011) find that smaller institutional investors located in primarily Catholic areas are more likely to hold lottery-type stocks than institutions located in primarily Protestant areas.

2.3. Psychological characteristics and hedge funds' portfolio and security selection decisions

Although recent work finds evidence of a link between psychological characteristics and the security selection and portfolio decisions of mutual funds or smaller institutional investors, the relation between psychological characteristics and hedge funds' decisions remains largely uninvestigated. As noted in the introduction, however, hedge funds fundamentally differ from other types of institutions. First, hedge funds are at the top of the financial sophistication ladder and a large body of work suggests that the influence of psychological factors declines with investor sophistication (e.g., Grinblatt and Keloharju, 2001; Vissing-Jorgensen, 2003; Feng and Seasholes, 2005; Dhar and Zhu, 2006; Kao, 2007; Barone and Magilke, 2009; Liu et al., 2010; Seru et al., 2010; Victoravich, 2010; List, 2011). Thus, even if psychological characteristics influence the investment decisions of some mutual funds and smaller institutions, it does not imply that psychological characteristics influence the decisions of the most sophisticated investor group—hedge funds. Moreover, the impact of psychological characteristics on some investors' decisions will have negligible asset pricing implications as

long as a sufficiently funded group of traders who are immune to these influences exploit the trades of less sophisticated investors (including mutual funds and smaller institutions). Moreover, hedge funds have grown to become a very important market participant accounting for 10% of the average stock's ownership and one-third of NYSE volume (Cao et al., 2015). In sum, understanding whether hedge funds' decisions are related to their managers' psychological characteristics is critical to understanding how markets function.¹³

An additional advantage of focusing on hedge funds is that hedge fund managers have much greater freedom in their security selection and portfolio decisions than other institutional investors. Hedge funds, for instance, are much more willing than other institutions to deviate from benchmarks (e.g., Sias et al., 2016). Thus, hedge fund portfolios likely reflect their managers' own views more so than other types of institutions. A mutual fund with a small capitalization benchmark, for example, will hold small capitalization stocks regardless of the manager's psychological characteristics.

As far as we are aware, only one previous study has examined the relation between political orientation and institutional investors' investment decisions.¹⁴ In an interesting study, Hong and Kostovetsky (2012) find that politically liberal mutual funds are less likely to hold socially irresponsible securities (e.g., stocks with low KLD scores for community activities, diversity, employee relations, and environmental records) and securities from politically sensitive industries (e.g., tobacco) than politically conservative mutual funds. Although their study focuses on mutual funds, they include one table (Table 8) that includes a very brief analysis of hedge fund holdings.

There are several important differences between Hong and Kostovetsky (2012) work and our study. First, they investigate the relation between institutions' political orientation and a political issue—the social responsibility/irresponsibility of the underlying company. Thus, as the authors point out, the relation between institutional investors' political orientation and social responsibility could result from either political values (e.g., a politically liberal fund manager believes it is inherently wrong to hold a tobacco stock) or because political orientation reflects managers' psychological characteristics and their resulting view of the risk-return characteristics of politically sensitive stocks (e.g., a politically liberal fund is more likely than a politically conservative manager to view a tobacco stock as a poor expected return to risk option). Alternatively, *by design*, we investigate the relation between hedge funds' political orientations and security and portfolio characteristics that have no direct link to political orientation. For instance, there is no political belief that would cause a politically liberal hedge fund to hold more non-dividend paying stocks or exhibit a greater willingness to enter new securities and exit existing positions relative to a politically conservative hedge fund. In short,

¹³ As noted in the introduction, it appears widely accepted (e.g., Brunnermeier and Nagel, 2004; Stein, 2009) that hedge funds are viewed as the most sophisticated investor class. Nonetheless, there is anecdotal evidence that some hedge fund managers believe that psychological factors (negatively) influence their decisions. Petersen (2014) reports, for example, that Tudor "...employs clinical and academic psychologist Brett Steenbarger, PhD, who specializes in trader psychology and short-term therapies, to coach Tudor portfolio managers and traders."

¹⁴ Agarwal (2014) examine hedge fund managers' contributions to non-profit charities (note that political donations are not charitable contributions). Specifically, the authors focus on how hedge fund managers' charitable contributions influence the managers' attention to the fund, the fund flows, and the fund returns. In addition, Lu (2016) examine the relation between hedge fund managers' attention to their funds and marriage and divorce. Although both of these studies provide interesting evidence of hedge fund manager behavior, neither study examines the fundamental economic question evaluated in our study: whether a hedge fund managers' psychological characteristics influence their security selection and portfolio decisions. Bodnaruk and Simonov (2016) find interesting evidence of cross-sectional variation in Swedish mutual fund managers' loss aversion and their behavior.

¹² Although we focus on the role of psychological characteristics on investors' decisions, a related literature examines whether CEOs' decisions are influenced by their psychological characteristics. For instance, CEOs who enter the job market during a recession or grew up during the depression make more conservative management decisions (e.g., lower leverage and more diversification) and CEOs with prior military experience pursue more aggressive corporate policies (e.g., Schoar and Zuo, 2016; Malmendier et al., 2011).

because we focus on security selection and portfolio decisions that have no direct link to politics, our results suggest that the relation between political donations and investment decisions reflects underlying differences in psychological characteristics rather than political views.

Second, the authors find little evidence of a meaningful relation between *hedge funds'* holdings of politically sensitive securities/industries and political donations—of the 20 tests reported in their Table 8, 17 do not differ meaningfully from zero at the 5% level or better.¹⁵ In contrast, we find strong support for the hypothesis that psychological characteristics influence hedge fund managers' decisions. For example, in our strictest tests—controlling for both hedge fund manager characteristics and hedge fund characteristics—our results are statistically significant at the 5% level or better in every case.

Third, the relation between institutional investors' (both mutual funds and hedge funds) political donations and the *political* characteristics of the underlying securities could represent, at least in part, a clientele effect.¹⁶ Institutions with a politically liberal investor base may attempt to ingratiate themselves with clients by both giving to Democratic causes (even if they do not inherently support such causes) and investing in socially responsible companies. Consistent with this interpretation of Hong and Kostovetsky (2012) results, Hong and Kacperczyk (2009) find evidence that some institutional investors avoid “sin” stocks (which have overlap with socially irresponsible stocks) due to social norms and Agarwal et al. (2014) find that hedge fund managers' donations to non-profit charities is motivated, in part, as an attempt to attract additional capital and clients.

In contrast, because the characteristics we focus on are non-political metrics of valuation subjectivity identified in the finance literature, our results are unlikely to be driven by hedge funds' attempting to appeal to clients with their security selection decisions. It is possible, of course, that clientele effects arise as a result of the link between political beliefs and psychological characteristics. For instance, it is possible that politically conservative clients are repulsed by hedge funds that hold stocks with highly subjective valuations. Such effects, however, would not change our conclusion—our evidence suggests hedge fund managers' decisions are influenced by their psychological characteristics (regardless of whether their clients' decisions are also influenced by the same psychological characteristics).

3. Data

Security characteristics are from the Center for Research in Security Prices (CRSP) monthly data files and Compustat quarterly files. Hedge funds' quarterly equity holdings between March 2000 and December 2012 come from Thomson Reuters data derived from hedge funds' 13(f) filings.¹⁷ Our sample includes all ordinary shares (CRSP share code 10 or 11) from the New York Stock Exchange (NYSE), American Stock Exchange (Amex), and Nasdaq with adequate CRSP and Compustat data. We require hedge funds to hold at least 25 ordinary securities with adequate data to be included in the sample. Political contributions are from the Federal Election Committee (FEC) website (www.fec.gov) that provides data on all federal political contributions since 1979.

¹⁵ The studies are not directly comparable because we focus on different variables and differences in samples (e.g., our sample is 162% larger than their sample).

¹⁶ In addition, we believe this is especially unlikely in our case (that focuses on stock characteristics related to speculative nature), however, as evidence (e.g., Credit Suisse, 2014) suggests that more than 85% of hedge fund clients and assets are institutional.

¹⁷ All institutions (including hedge funds) with more than \$100 million in equity ownership must report their equity holdings consisting of either more than 10,000 shares or \$200,000 in value.

We use a proprietary list of hedge funds filing 13(f) reports provided by Thomson Reuters.¹⁸ Because 13(f) reports are filed at the company level (e.g., long equity holdings of all Tudor hedge funds are reported in the same 13(f) report) and our examination of holdings is based on the 13(f) data, in general, we use the terms “hedge fund” and “hedge fund firm” interchangeably for ease of exposition. (We do not use these terms interchangeably when we examine the relation between portfolio characteristics and fund characteristics, e.g., Section 4.4). The Thomson Reuters 13(f) data only include hedge funds' long equity positions and ignore short positions and derivatives (recent work suggests option positions account for a very small portion of hedge fund portfolio value).¹⁹ Although this means we do not examine hedge funds' entire portfolios, it does not bias our tests. That is, we hypothesize that, relative to politically liberal hedge funds, politically conservative hedge funds will exhibit a stronger preference for more conservative securities in their *long-equity portfolios*.²⁰

In addition, small positions (less than 10,000 shares and \$200,000) are not required to be reported in 13(f) filings and small hedge funds (less than \$100 million in 13(f) securities) are not required to file 13(f) reports. Moreover, the SEC sometimes allows institutions to file confidentially.²¹ Nonetheless, the 13(f) data provide distinct snapshots of hedge funds' long equity portfolios and do not suffer from self-selection biases.²²

We construct the hedge fund political contribution dataset from the FEC's detailed files on individual political contributions. The FEC provides information on all individual's federal political contributions from 1979–2012 to both political committees and candidates. Consistent with Cao et al., (2015), the hedge fund sample is relatively small prior to 2000. Specifically, March 2000 is the first quarter where we can identify at least 100 hedge funds that meet our sample criteria. Thus, we limit the contribution data to 1999–2012. Federal law requires that political donation recipients use “best efforts” to collect donor's personal information including name, address, occupation, and employer for any individual that contributes more than \$200 (cumulatively over a calendar year) to a committee or candidate. As a result, the employer field is non-missing in more than 87% of observations for the FEC database in our sample period.

We merge hedge fund names in the Thomson Reuters 13(f) filings database with reported employers from the FEC individual contribution database.²³ Following Hong and Kostovetsky (2012) we classify hedge funds' political affiliations based on the FEC individual donor donations, i.e., the hedge funds' political orientations can, and often do, represent multiple individuals donating from one hedge fund. We differ from Hong and Kostovetsky

¹⁸ See Sias (2016) for additional detail.

¹⁹ For example, Aragon and Martin (2012) report (see their Table 2) that the dollar value of securities underlying the options account for less than 5% of their total equity value of hedge funds filing 13(f) reports.

²⁰ Unlike long equity holdings, the relation between political orientation and hedge funds' short positions is theoretically ambiguous. More conservative hedge funds, for instance, may take a larger short position on companies with more subjective valuations because they view such firms as a poor risk-reward choice. Alternatively, more conservative hedge funds may take a larger short position in companies with less subjective valuations because the hedge fund managers believe they better understand fundamental value (and deviations from fundamental values) for securities with less subjective valuations.

²¹ Agarwal et al. (2013) report, however, that the vast majority of hedge fund positions (96%, inferred from their Table I) are not confidential.

²² A number of recent studies use 13(f) data to examine hedge fund long equity holdings, e.g., Brunnermeier and Nagel (2004), Griffin and Xu (2009), Blume and Keim (2016), Boyson et al. (2013), Ben-David et al. (2012), and Agarwal et al. (2013). See Agarwal et al. (2013) for evidence of the self-selection biases inherent in non-13(f) hedge fund databases.

²³ We use machine matching for initial matches and hand-clean any non-perfectly matched observations to ensure accuracy.

sky, however, in that we remove any donation where the donor—based on the reported occupation—appears unlikely to play a role in influencing the portfolio and security selection decisions at the hedge fund (e.g., office administrator or lawyer).²⁴ Thus, for our initial tests, we classify hedge funds as politically conservative or liberal based on all donations (over the entire 1999–2012 period) associated with any manager or employee (e.g., founder or analyst) who may influence the fund's security selection and portfolio decisions. For readers concerned about pooling donations within each hedge fund company (following Hong and Kostovetsky), in later tests we focus only on donations of hedge fund managers (e.g., founder).²⁵

Our *initial* tests focus on the broadest sample of hedge funds and the broadest definition of political conservativeness. Specifically, we define hedge fund companies as “Liberal” if more than 50% of the total dollar value of their donations is to Democrats and “Conservative” if more than 50% of the total dollar value of their donations is to Republicans. Much of our analysis, however, is based on a stricter definition of political conservatism—we define a hedge fund as “Strong Liberal” if they give at least 70% of the total dollar value of their donations to Democrats and “Strong Conservative” if they give at least 70% to Republicans.²⁶

Our final sample consists of 10,438 hedge-fund quarter observations based on 12,056 total donations from the managers and employees of 494 unique hedge fund companies with contributions totaling \$42,072,503. (We also gather data on hedge fund characteristics and manager characteristics—these data are discussed in Sections 4.4 and 4.5, respectively).

The limits associated with the data (e.g., that both 13(f) reports and political donations are at the fund company level rather than the fund level or that 13(f) data excludes small hedge funds) add noise to our tests. This issue is inherent in nearly all studies attempting to link institutional manager characteristics and their security selection and portfolio decisions. Clearly, for example, not all mutual funds (Shu et al., 2012) or smaller institutional investors (Kumar et al., 2011) located in Boston have 100% Catholic employees or investors. In short, the limits associated with the data add noise and reduce the power of our tests. Consistent with this interpretation, our results are generally stronger when we (1) limit the sample to managers' donations and (2) control for manager and fund characteristics.

Panel A in Table 1 reports the time-series descriptive statistics of hedge fund classifications across the 52 quarters in our sample (March 2000–December 2012). On average, we identify portfolio holdings for 201 hedge funds each quarter with approximately 45% classified as Liberal hedge funds and 55% classified as Conser-

vative hedge funds. Moreover, on average, nearly four out of five hedge funds are classified as either Strong Liberal or Strong Conservative (third to last row in Panel A). The last two rows in Panel A reports the time-series descriptive statistics for the cross-sectional median number of securities held and long-equity portfolio size across hedge funds. The typical hedge fund in our sample holds 59 stocks worth \$405 million.

Panels B and C report descriptive statistics regarding donations across the 246 Liberal hedge funds and the 248 Conservative hedge funds, respectively. Panel B reveals that the average Liberal hedge fund makes 23.7 donations—18.5 donations to Democrats totaling \$63,439 and 5.2 donations to Republicans totaling \$12,948 (over the 1999–2012 period). These values, however, are skewed—the median fund (second column) makes five Democratic contributions and one Republican contribution over this period totaling \$8350 to Democrats and \$1450 to Republicans. Similarly, Panel C reveals that the median Conservative hedge fund gives \$7333 to Republicans in four donations and \$250 to Democrats in a single donation.

4. Empirical results

The method we employ to examine whether psychological characteristics influence hedge funds' decisions follows several recent studies that use political donations to infer psychological characteristics of CEOs and equity analysts.²⁷ Given conservatives' lower tolerance for ambiguity, integrative complexity, new experience, uncertainty, and stronger desire for order and structure, we focus on six security characteristics that previous work identifies as capturing valuation subjectivity. The first five characteristics are those used by Baker and Wurgler (2006) to capture a stock's subjective valuation—market capitalization, age, volatility, profitability, and dividends.²⁸ We recognize that these characteristics are related (e.g., profitable companies are more likely to pay a dividend). Directly analogous to Baker and Wurgler, however, we simply use these characteristics to identify stocks with more speculative valuations. We measure size as the natural logarithm of market capitalization, age as the number of months the stock has been listed on CRSP, and volatility as the standard deviation of monthly returns over the previous year (for stocks with at least nine monthly returns). We define profitable companies as those that exhibit positive net income and dividend paying stocks as those that paid a dividend in the previous year. We use indicator variables to identify profitable and dividend paying companies. Appendix A provides details of the construction of all variables.

The sixth characteristic is lottery-type securities as first identified by Kumar (2009). Specifically, we identify securities with above median residual volatility, below median price, and above median idiosyncratic skewness as lottery-type securities following and Kumar et al., (2011).²⁹ Residual volatility and residual skew-

²⁴ The ten most frequently deleted occupations in order from most to least common are: attorney, lawyer, software developer, general counsel, accountant, programmer, human resources, technology consultant, marketing, and graphic designer. Positions such as office administrator, morale manager, etc., are also deleted but are much less common. Nonetheless, our results remain intact when including these observations.

²⁵ We compute political orientation from hedge fund managers' donations over the entire sample period (following Hong and Kostovetsky (2012)). This is necessary because, as shown below, the typical hedge fund gives relatively few donations over time. Because we use political donations as a proxy for political orientation it makes sense to use the entire sample to minimize measurement error. Implicit in this methodology, however, is the assumption that political orientation does not switch between Strong Liberal and Strong Conservative over the sample period. To the extent that this assumption is violated, it reduces the power of our tests.

²⁶ We use three criteria to identify the political affiliation of the donations to committees. First, the majority of committees report their political party (76.7% of the observations in our sample). If the committee does not list a political party, we define the political party of the donation as the political party of the candidate the committee supports (9.8% of the observations in our sample). Finally, if a committee does not list a unique candidate it supports, we define the committee's party affiliation as the party of the candidate to whom the committee made the largest donation (the remaining 13.6% of observations in our sample).

²⁷ Hutton et al. (2014) use political orientation (as identified by their political donations) to measure the fiscal conservatism of CEOs. Consistent with the hypothesis that political ideology reflects psychological characteristics that in turn influence CEOs' financial decisions, the authors find that companies managed by politically conservative CEOs have lower debt, lower capital expenditures, lower R&D expenditures, and less risky investments. Similarly, Jiang et al. (2016) find that politically conservative equity analysts (as identified by their political donations) make more conservative forecasts and earnings revisions.

²⁸ Baker and Wurgler (2006) argue that these five “salient characteristics” are monotonically related to a stock's “subjectivity of their valuation.” The authors note that the other measures they consider, such as book to market ratios, have (theoretically and empirically) non-monotonic relations with subjectivity.

²⁹ We use the lottery-type stock definition from Table 6 of Kumar et al. (2011). In their main results, the authors do not include the Kumar (2009) low price filter to identify lottery-type securities in institutional investors' portfolios because institutions' prudent man constraints may deter institutions from holding low priced securities. Because hedge funds have much greater freedom in their security selection than other institutions, we include the price filter.

Table 1
Hedge fund political donations descriptive statistics.

	Mean	Median	Minimum	Maximum
Panel A: Time-series descriptive statistics ($n = 52$ quarters, March 2003–December 2012)				
Number of hedge funds	201	205	104	302
%Liberal	45.30%	45.44%	41.49%	50.95%
%Conservative	54.70%	54.56%	49.05%	58.51%
%Strong Liberal	34.93%	34.85%	31.38%	39.85%
%Strong Conservative	42.97%	42.26%	36.09%	48.03%
%Strong (either)	77.90%	78.41%	73.24%	80.69%
Median number of stocks held	57	59	46	69
Median long-equity port. value	\$405M	\$405M	\$200M	\$661M
Panel B: Cross-sectional descriptive statistics ($n = 246$ Liberal hedge fund companies)				
Number of donations	23.70	7.00	1	595
Number Republican donations	5.22	1.00	0	174
Number Democrat donations	18.48	5.00	1	533
Total Republican donations	\$12,948	\$1450	\$0	\$787,099
Total Democrat donations	\$63,439	\$8350	\$200	\$1,979,707
Panel C: Cross-sectional descriptive statistics ($n = 248$ Conservative hedge fund companies)				
Number of donations	25.11	5.00	1	528
Number Republican donations	16.09	4.00	1	366
Number Democrat donations	9.02	1.00	0	408
Total Republican donations	\$71,760	\$7333	\$500	\$2920,800
Total Democrat donations	\$22,116	\$250	\$0	\$1,692,148

The table presents descriptive statistics of 494 hedge fund companies whose managers and employees made political donations over the 1999–2012 sample period. The first row in Panel A reports the time-series descriptive statistics for the number of hedge funds in the sample each quarter. The next two rows report the time-series descriptive statistics regarding the fraction of hedge fund companies classified as Liberal (>50% of total donations to Democrats) and Conservative (>50% of total donations to Republicans). The next three rows report the fraction of hedge funds classified as Strong Liberal (>70% of total donations to Democrats), Strong Conservative (>70% of total donations to Republicans), and strong either (>70% of total donations to one party). The last two rows in Panel A report the time-series descriptive statistics of the cross-sectional median number of stocks held and long-equity portfolio value for hedge funds. Panel B reports cross-sectional descriptive donation statistics for the 246 Liberal hedge funds. Panel C reports analogous statistics for the 248 Conservative hedge funds in our sample.

ness are based on daily returns over the previous six months, price is observed at quarter end, and medians are based on all securities in the CRSP daily files with adequate data (see Appendix A for additional details). As with profitable and dividend-paying companies, we use an indicator variable for lottery-type securities.

We also investigate hedge funds' turnover, entry trades, exit trades, and change in total equity holdings based on the hypothesis that politically conservative hedge funds' greater aversion to change and need for structure will result in lower turnover, less willingness to enter new positions, less willingness to fully liquidate existing positions, and a more constant allocation to U.S. equity markets than their politically liberal counterparts. We define turnover as the minimum of the dollar value of the hedge fund's total purchases or sales within a quarter scaled by the fund's beginning of quarter portfolio value. We use the product of beginning of quarter prices and changes in shares held to estimate the value of purchases or sales following Ben-David et al., (2012). We winsorize turnover at the 1 and 99 percent levels each quarter to minimize the impact of outliers.

We define each hedge fund-quarter's enter ratio as the number of securities hedge fund k enters in a quarter (i.e., held at the end of the quarter but not the beginning) scaled by the number of securities hedge fund k holds at the end of the quarter (thus, the enter ratio ranges from 0 to 1). Analogously, we define each hedge fund-quarter's exit ratio as the number of securities hedge fund k completely liquidates in a quarter (i.e., held at the beginning of the quarter but not the end) scaled by the number of securities the fund holds at the beginning of the quarter (thus, the exit ratio ranges from 0 to 1).

To examine hedge funds' willingness to adjust their U.S. equity exposure, we follow Ben-David et al. (2012) and compute the percent change in equity holdings for each fund-quarter as the total dollar value of their trades (beginning of quarter price times the difference between the number of split-adjusted shares held at the end of the quarter and the number of shares held at the beginning of the quarter summed over all securities) scaled by the dollar value of their equity portfolio at the beginning of the quarter.³⁰ For example, a fund that has a \$200 M beginning of quarter equity portfolio, purchases \$30 M in equities, and sells \$10 M in equities, has a 10% change in exposure to U.S. equity markets $((30-10)/200)$. We winsorize the variable at the 5th and 95th percentiles each quarter following Ben-David, Franzoni, and Moussawi. Because we hypothesize that politically liberal hedge funds are more willing to make adjustments to their equity exposure than politically conservative hedge funds, we focus on the absolute value of the ratio (denoted the absolute percent change in equity holdings).

Each quarter we compute each hedge fund's portfolio characteristics as the fund's weighted average of the underlying security characteristics. For instance, if a hedge fund held only two stocks—\$100 in a non-dividend paying stock that had been listed on CRSP for 12 months, and \$900 in a dividend paying stock that had been listed on CRSP for 24 months, the fund's portfolio age would be 22.8 months (i.e., $(100/1000) \times 12 + (900/1000) \times 24$) and the fund's portfolio dividend "indicator" would be 0.9 (i.e., $(100/1000) \times 0 + (900/1000) \times 1$).

³⁰ We use beginning of quarter prices times the number of shares traded over the quarter to ensure that changes in ownership reflect trades rather than returns.

Table 2
Descriptive statistics for security characteristics.

	Mean	Median	Minimum	Maximum
Panel A: Time-series descriptive statistics of mean portfolio characteristics				
Natural log capitalization	22.311	22.353	21.828	22.690
Age (number of months)	275.876	273.675	221.750	314.969
Return volatility (standard deviation)	0.120	0.108	0.079	0.200
%Profitable	0.811	0.825	0.697	0.882
%Dividend paying	0.486	0.489	0.392	0.548
Lottery-type stocks	0.081	0.085	0.030	0.117
Turnover	0.320	0.324	0.261	0.356
Enter ratio	0.372	0.372	0.293	0.438
Exit ratio	0.363	0.363	0.283	0.441
%Change equity holdings	0.160	0.153	0.117	0.272
Panel B: Time series descriptive statistics of cross-sectional standard deviation of portfolio characteristics				
Natural log capitalization	1.111	1.091	0.930	1.281
Age (number of months)	101.915	101.978	80.054	120.482
Return volatility (standard deviation)	0.030	0.024	0.017	0.067
%Profitable	0.139	0.137	0.107	0.172
%Dividend paying	0.219	0.216	0.201	0.262
Lottery-type stocks	0.094	0.097	0.047	0.125
Turnover	0.175	0.175	0.155	0.208
Enter ratio	0.185	0.184	0.163	0.235
Exit ratio	0.181	0.178	0.160	0.205
%Change equity holdings	0.121	0.116	0.093	0.197

For each hedge fund quarter observation we compute the weighted characteristics of individual securities held by the fund. Panel A reports the time-series descriptive statistics ($n = 52$ quarters, March 2000–December 2012) of the cross-sectional mean hedge fund portfolio characteristics in our sample. For instance, the cross-sectional average natural logarithm of market capitalization of securities held in hedge fund portfolios averages 22.311 and ranges from 21.828 (in March 2003) to 22.690 (in December 2012). Panel B reports the time-series descriptive statistics of the cross-sectional standard deviation of portfolio characteristics across the hedge funds in our sample. On average, our sample consists of 201 hedge fund companies each quarter (see Table 1). Detailed variable definitions are given in Appendix A.

For ease of exposition, we use the term “more conservative” to describe portfolios with less exposure to securities with the characteristics previous work identifies as reflecting the subjectivity of valuation, lower turnover, lower propensity to enter and exit securities, and more constant exposure to U.S. equities.³¹

Panel A in Table 2 reports the time-series descriptive statistics for the mean hedge fund portfolios’ characteristics. Given the characteristics of securities in the market vary over time, it is not surprising that the results reveal substantial variation over time in mean portfolio characteristics, e.g., the volatility of the average security in the market (and the average security in hedge funds’ portfolios) was greater in December 2008 than December 2006.

Because, as shown in Table 2, mean portfolio characteristics change over time, each quarter we standardize (i.e., rescale to zero mean, unit standard deviation) portfolio characteristics across all hedge funds in our sample. This eliminates the time-series variation in mean values and allows for easy interpretation of the coefficients. Specifically, a value of 1 (–1) indicates the hedge fund’s portfolio characteristic is one standard deviation larger (smaller) than that of the average hedge fund that quarter. Because the portfolio characteristics are standardized, we also report (in Panel B), the time-series descriptive statistics for the cross-sectional standard deviation of the raw portfolio characteristics across hedge funds. For instance, the cross-sectional standard deviation of portfolio “Age” across hedge funds averages 102 months.

³¹ The characteristics identified by previous work to capture the subjectivity of valuation do not necessarily correspond directly to risk measures, e.g., a dividend paying stock may have a higher beta than a non-dividend paying stock. We do not claim these measures directly capture risks. Rather, we select these metrics because previous work identifies them as indicators of the degree of subjectivity and political science/psychology literature demonstrates that liberals are more tolerant of ambiguity and uncertainty, more open to new experiences, have lower levels of fear, exhibit higher integrative complexity, and have lower needs for order, structure, and closure.

Our empirical analysis begins by comparing security characteristics for both the broader (Liberals versus Conservatives) and stricter (Strong Liberals versus Strong Conservatives) definitions of political orientation. We then examine differences when: (1) limiting the sample to hedge funds’ entry and exit trades, (2) excluding large donors, (3) controlling for fund characteristics, (4) limiting the sample to funds where the hedge fund manager is the largest donor, (5) limiting the sample to donations by hedge fund managers and controlling for manager characteristics, and (6) limiting the sample to donations by hedge fund managers and controlling for both manager and fund characteristics. We also discuss a number of robustness tests in Section 5.

4.1. Conservative and liberal hedge funds’ portfolio characteristics

The first three columns of Table 3 report the pooled cross-sectional time-series mean standardized portfolio characteristics for Liberal (>50% donations to Democrats) and Conservative (>50% donations to Republicans) hedge funds, as well as their differences, respectively. Because a given hedge fund’s holdings are not independent over time (i.e., funds often hold a stock for more than a single quarter) we follow Petersen (2009) and Hong and Kostovetsky (2012) and compute t -statistics based on standard errors clustered at the hedge fund level.³²

The results in the third column reveal that Liberal hedge funds exhibit greater exposure to smaller stocks and younger stocks, and are more willing to make adjustments to their U.S. equity exposure (statistically significant at the 5% level or better) than their Conservative counterparts. For example, companies in Liberal hedge funds’ portfolios average 0.118 standard deviations smaller size (first column) than the average hedge fund while companies in Conservative hedge funds’ portfolios average 0.098 standard devia-

³² Non-parametric Wilcoxon tests yield similar conclusions.

Table 3
Liberal and conservative hedge funds' portfolio characteristics.

	Liberal	Conservative	Lib.- Cons. (<i>t</i> -statistic)	Strong Liberal	Strong Conservative	Strong Lib.- Strong Cons. (<i>t</i> -statistic)
Natural log capitalization	−0.118	0.098	−0.216 (−2.27)**	−0.150	0.061	−0.210 (−1.99)**
Age	−0.132	0.110	−0.243 (−2.72)***	−0.187	0.077	−0.265 (−2.69)***
Return volatility	0.067	−0.056	0.123 (1.42)	0.137	−0.046	0.183 (1.82)*
Positive profitability	−0.085	0.071	−0.155 (−1.90)*	−0.124	0.068	−0.192 (−1.99)**
Dividend paying	−0.084	0.070	−0.155 (−1.61)	−0.191	0.066	−0.257 (−2.38)**
Lottery-type stocks	0.082	−0.068	0.151 (1.81)*	0.130	−0.054	0.184 (1.92)*
Turnover	0.068	−0.057	0.124 (1.43)	0.050	−0.107	0.157 (1.63)
%Change equity holdings	0.067	−0.056	0.123 (2.52)**	0.067	−0.064	0.131 (2.45)**
N = 10,438 hedge fund quarter observations				N = 8163 hedge fund quarter observations		

For each hedge fund-quarter, we compute the weighted mean characteristics for securities held in the hedge fund's portfolio. We also compute portfolio turnover and the absolute percent change in total equity holdings. Each quarter we standardize (rescale to unit variance, zero mean) each portfolio characteristic across all hedge fund firms in our sample. The first three columns report the pooled cross-sectional time-series mean (standardized) characteristics for Liberal (> 50% of total donations to Democrats, $n = 246$ hedge funds) and Conservative (> 50% of total donations to Republicans, $n = 248$ hedge funds) hedge funds as well as their differences. The *t*-statistics are based on standard errors clustered at the hedge fund level. The next three columns report analogous statistics for Strong Liberal (at least 70% of total donations to Democrats, $n = 195$ hedge funds) versus Strong Conservative (at least 70% of total donations to Republicans, $n = 210$ hedge funds). The bottom row reports sample sizes. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

tion larger size (second column) than the average hedge fund. The difference (0.216 standard deviations, third column) is statistically significant at the 5% level. We also find evidence (marginally significant at the 10% level) that Liberal hedge funds have greater exposure to unprofitable companies and lottery-type securities than Conservative hedge funds. Although the coefficients have the predicted sign, differences in return volatility, dividend paying, and turnover are not statistically significant at traditional levels (assuming a two-tail test).³³

Using the stricter political orientation classifications, the last three columns in Table 3 report the mean portfolio characteristics for Strong Liberals (>70% donations to Democrats) versus Strong Conservatives (>70% donations to Republicans) as well as their differences. In seven of eight cases the differences are larger (relative to the less stringent classifications) ranging from 0.131 standard deviations (for the absolute percent change in equity holdings) to 0.265 standard deviations (for average age of the securities held in the portfolio).³⁴ In addition, seven of the eight characteristic differences are at least marginally statistically significant. Specifically, we find Strong Liberal hedge funds tend to hold smaller companies, younger companies, unprofitable companies, and non-dividend paying companies, and are more willing to make adjustments to their U.S. equity market exposure than their Strong Conservative counterparts (statistically significant at the 5% level or better). We also find evidence that Strong Liberal hedge funds hold more volatile stocks and lottery-type stocks (marginally significant at the 10% level in all three cases) than their Strong Conserva-

tive counterparts. The difference between Strong Liberal and Strong Conservative hedge funds' turnover is not statistically significant at traditional levels.

4.2. Entry and exit trades

Unless a hedge fund has 100% portfolio turnover within a quarter, the fund's portfolio characteristics this quarter are mechanically related to their portfolio characteristics last quarter (and therefore are not independent; hence the clustered standard errors in Table 3 following Hong and Kostovetsky (2012)). As an alternative approach, we compute the value-weighted mean characteristics for stocks that enter each hedge fund's portfolio this quarter (i.e., held at the end of quarter t , but not held at the beginning of quarter t). Because we focus only on stocks new to the portfolio, there is no mechanical time-series overlap in these securities for any fund.

Analogous to the examination of portfolio holdings, we compute the value-weighted characteristics of entry trades where the weight is the dollar value of each entry trade scaled by the dollar value of all entry trades by manager k in quarter t .³⁵ In addition, rather than turnover, we examine enter ratios for each manager-quarter (recall the enter ratio is the number of securities hedge fund k enters in quarter t normalized by the number of securities fund k holds at the end of quarter t and ranges from 0 to 1). As before, to easily gauge the economic magnitude of the differences and to control for time-series variation in distributions of stock characteristics (see Table 2), each quarter we standardize the entry portfolio characteristics across all hedge funds in our sample. Because these positions do not overlap over time, we compute differences (between liberals and conservatives) each quarter and

³³ Because we make a specific directional prediction, arguably these should be one tail tests. As one tail tests, the differences in return volatility, dividend paying, and turnover are marginally significant at the 10% level and differences in profitability and lottery-type securities are statistically significant at the 5% level.

³⁴ As discussed above we standardize portfolio characteristics to account for time-series variation in the characteristics' distributions and to allow for ease in interpreting the evidence. One can approximate the magnitude (in the original scale) of any of the effects as the difference in Table 3 times the mean cross-sectional standard deviations reported in Panel B of Table 2. For instance, the 0.265 difference for age implies that securities in Strong Conservatives' portfolios average approximately 27 months (i.e., 0.265×101.915) older than securities in Strong Liberals' portfolios.

³⁵ For example, if a manager enters two stocks—investing \$1,000 in a non-dividend paying stock and \$9,000 in a dividend paying stock—the value-weighted dividend indicator for entry trades is 0.9 (i.e., $0.1 \times 0 + 0.9 \times 1$). The dollar value of the entry trade is computed as the number of shares held at the end of the quarter times the end of quarter price. The typical hedge fund makes 19 entry trades each quarter (time-series average of cross-sectional median).

Table 4
Hedge fund entry and exit trades.

	Entry trades (n = 52 quarters)			Exit trades (n = 52 quarters)		
	Strong Liberal	Strong Conservative	Strong Lib. – Strong Cons. (t-statistic)	Strong Liberal	Strong Conservative	Strong Lib. – Strong Cons. (t-statistic)
Natural log capitalization	–0.105	0.019	–0.124 (–4.31)***	–0.100	0.016	–0.116 (–3.63)***
Age	–0.108	0.019	–0.127 (–7.77)***	–0.102	0.021	–0.124 (–8.15)***
Return volatility	0.082	0.002	0.080 (3.84)***	0.060	0.011	0.050 (2.11)**
Positive profitability	–0.084	0.029	–0.113 (–6.44)***	–0.058	0.028	–0.086 (–3.97)***
Dividend paying	–0.133	0.031	–0.165 (–10.97)***	–0.120	0.021	–0.141 (–7.81)***
Lottery-type stocks	0.087	–0.023	0.110 (4.74)***	0.064	–0.030	0.094 (3.73)***
Enter Ratio	0.028	–0.090	0.118 (7.13)***			
Exit Ratio				0.043	–0.102	0.146 (8.16)***

For each hedge fund-quarter, we compute the value-weighted mean characteristic of stocks the hedge fund enters and exits that quarter. The stock's weight for hedge fund k in quarter t is the value of the entry trade (shares purchased times end of quarter price) scaled by the dollar value of all manager k 's entry trades in quarter t . We compute the hedge fund enter ratio as the number of securities fund k enters in quarter t scaled by the number of securities fund k holds at the end of quarter t . Each quarter, we standardize (rescale to zero mean, unit variance) portfolio characteristics across all hedge funds in our sample. The first three columns report the time-series mean ($n=52$ quarters) of the cross-sectional average standardized entry trade characteristics for Strong Liberal and Strong Conservative hedge funds, as well as their differences. The associated t -statistics are computed from the time-series mean with Newey-West (1987) standard errors. The last three columns report analogous statistics for hedge fund exit trades. The exit ratio is defined as the number of securities fund k completely liquidates in quarter t scaled by the number of securities fund k holds at the beginning of quarter t . On average (across time), the median fund makes 19 entry trades and 18 exit trades. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

generate statistical inferences from the time-series of these quarterly differences.

We also examine the characteristics of exit trades that, analogous to entry trades, have no overlap for a given manager over adjacent quarters. Specifically, we compute the value-weighted exit trade characteristic as the dollar value of the exit trade of security i in quarter t by manager k , scaled by the dollar value of all exit trades by manager k in quarter t .³⁶ Similarly, we compare exit ratios for politically liberal and conservative hedge funds (recall the exit ratio is the number of securities hedge fund k completely liquidates in quarter t normalized by the number of securities hedge fund k holds at the beginning of quarter t and ranges from 0 to 1). As with entry portfolios, the exit portfolio characteristics are standardized (rescaled each quarter to zero mean, unit variance) across all hedge funds each quarter.

To conserve space, we limit the sample to Strong Liberal and Strong Conservative funds for the balance of the study. The first three columns in Table 4 report the time-series average ($n=52$ quarters) of the cross-sectional mean (across hedge funds) standardized entry portfolio characteristics across Strong Liberal and Strong Conservative hedge funds as well as their differences. The t -statistics reported in the third column are based on the time-series of the difference in mean estimates computed with Newey-West (1987) standard errors. The results in the third column reveal that Strong Liberal hedge funds are more likely than their Strong Conservative counterparts to purchase smaller stocks, younger companies, high volatility stocks, companies operating at a loss, non-dividend paying stocks, and lottery-type securities. Strong Liberal funds also exhibit a meaningfully higher enter ratio than their Strong Conservative counterparts. All differences are statistically significant at the 1% level. The economic magnitudes of the effects

indicate that the differences between Strong Liberal and Strong Conservative hedge funds' purchases range from 0.080 standard deviations (return volatility) to 0.165 standard deviations (dividend paying).

We hypothesize that politically conservative hedge funds tend to sell more conservative securities (relative to politically liberal hedge funds) because politically conservative hedge funds tend to buy, and therefore hold, conservative stocks in their portfolios. For instance, if politically conservative hedge funds tend to hold older stocks in their portfolios (relative to politically liberal hedge funds), they will tend to sell older stocks (relative to politically liberal hedge funds).³⁷ The results in the last three columns of Table 4 are consistent with our hypothesis—Strong Liberal hedge funds are more likely to exit smaller stocks, younger stocks, high volatility stocks, companies operating at a loss, non-dividend paying stocks, and lottery-types securities than their Strong Conservative counterparts (statistically significant at the 5% level or better in every case). We also find that Strong Liberal hedge funds exhibit a meaningfully (statistically significant at the 1% level) larger exit ratio than their Strong Conservative counterparts.

4.3. Are hedge funds attempting to buy performance?

As pointed out by Hong and Kostovetsky (2012), it is possible that institutional investors make political contributions in an attempt to improve the performance of their holdings through legislation. This seems an unlikely scenario in our study for two reasons. First, as discussed above, the characteristics we examine are

³⁶ The dollar value of the exit trade is computed as the number of shares held at the beginning of the quarter times beginning of quarter price. The typical hedge fund makes 18 exit trades each quarter (time-series average of cross-sectional median).

³⁷ We hypothesize that politically conservative hedge funds will tend to sell more conservative securities (relative to politically liberal hedge funds) because politically conservative hedge funds tend to buy, and therefore hold, conservative stocks in their portfolio. It is also possible that some security characteristics (e.g., volatility) change over time and that change may influence hedge funds' sell decisions. We focus on characteristic levels, rather than changes, however, because the security characteristics are comparatively stable over hedge funds' holding periods.

Table 5
Portfolio characteristics – excluding large donors.

	Strong liberal	Strong conservative	Strong lib.- strong cons. (t-statistic)
Natural log capitalization	−0.254	−0.002	−0.252 (−2.11)**
Age	−0.234	0.062	−0.296 (−2.76)***
Return volatility	0.227	−0.052	0.279 (2.44)**
Positive profitability	−0.206	0.067	−0.273 (−2.48)**
Dividend paying	−0.266	0.077	−0.343 (−2.79)***
Lottery-type stocks	0.218	−0.026	0.244 (2.21)**
Turnover	0.081	−0.050	0.131 (1.22)
%Change equity holdings	0.074	−0.040	0.114 (1.84)*

N = 6695 hedge fund quarter observations

For each hedge fund-quarter, we compute the weighted mean characteristics for securities held in the hedge fund's portfolio. We also compute portfolio turnover and the absolute percent change in total equity holdings. Each quarter we standardize (rescale to unit variance, zero mean) each portfolio characteristic across all hedge fund managers in our sample. We then limit the sample to funds that give less than \$100,000 to either party over the entire 1999–2012 period. We report below the pooled cross-sectional time-series mean (standardized) characteristics for Strong Liberal (> 70% of total donations to Democrats, $n = 165$ hedge funds) and Strong Conservative (> 70% of total donations to Republicans, $n = 191$ hedge funds) hedge funds as well as their differences. The t -statistics are based on standard errors clustered at the hedge fund level. The bottom row reports the sample size. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

not related to politics by design. For instance, we do not expect that giving to Republican candidates would benefit older firms more so than younger firms. Second, the typical hedge fund donation is relatively modest and unlikely to “buy” influence. Moreover, previous studies contend that political contributions should be viewed as a consumption good rather than an investment (e.g., Ansolabehere et al., 2003) because there is no evidence that political donations buy influence.

Nonetheless, as a test of this explanation, we repeat the analysis in Table 3, but eliminate all large donors—defined as any hedge fund that contributes more than \$100,000 to either party. This eliminates 49 of the 405 hedge funds that are identified as Strong Liberal or Strong Conservative. The results, reported in Table 5, are consistent with those reported in Table 3. Strong Liberal hedge funds exhibit a greater willingness to hold smaller stocks, younger companies, more volatile stocks, unprofitable companies, non-dividend paying companies, and lottery-type securities than their Strong Conservative counterparts (all statistically significant at the 5% level or better). Strong Liberal hedge funds also exhibit a greater willingness to adjust their U.S. equity exposure (marginally significant at the 10% level).

4.4. Controlling for hedge fund characteristics

It is possible that hedge fund characteristics are associated with their willingness to hold securities with more subjective valuations. For example, funds with greater leverage or no lockups may avoid securities with more subjective valuations. Thus, in this section, we control for hedge fund characteristics to more cleanly identify the relation between hedge funds' political orientations and their portfolio characteristics. To examine this issue, we merge, by hedge fund firm name, the hedge fund firms in the 13(f)/political donation sample with hedge fund firms in two of the major hedge fund databases: the Hedge Fund Research database and the Morningstar/CISDM database. Because the 13(f) and donation data are at the hedge fund firm level and the hedge fund databases are at the hedge fund level (but also identify the hedge fund firm), some hedge fund firms have multiple hedge

funds identified in the databases.³⁸ As a result, in this section we differentiate hedge funds (i.e., data from Hedge Fund Research and Morningstar/CISDM databases) from hedge fund firms (i.e., 13(f) and political donation data).

For each hedge fund firm we gather six variables from the hedge fund databases—a leverage indicator, a lockup indicator, fund age, fund size, fund flows, and fund style. The leverage and lockup indicators equal one if any of the hedge fund firm's individual funds uses leverage or have a lockup period, respectively. Hedge fund age, computed each quarter, is the number of months (divided by 100) since inception of the hedge fund firm's oldest fund. Hedge fund size, is the natural logarithm of the sum of assets under management for all the hedge fund firm's funds. We compute hedge fund company flow as the aggregate flow across all hedge funds reported by the manager (in the Hedge Fund Research and Morningstar/CISDM databases) scaled by beginning of quarter aggregate assets under management for the hedge fund company. Following the literature (e.g., Ben-David et al., 2012), we compute flows as end of quarter assets under management less the sum of beginning of quarter assets under management and dollar return.

Hedge fund style identifies one of five primary strategies (the four used by Hedge Fund Research plus Multi-Strategy firms) for each hedge fund firm—Event-Driven, Equity-Hedge, Macro, Relative-Value, and Multi-Strategy.³⁹ If all of the funds associated with a hedge fund firm follow the same primary strategy (as identified in the hedge fund databases), the hedge fund firm is identified as following that strategy (e.g., a firm has three Equity-Hedge funds). If a hedge fund firm has funds that follow different main strategies (e.g., a Macro fund and an Event-Driven fund), we designate the firm as Multi-Strategy (22% of our hedge fund firms are classified as Multi-Strategy). We also compute, for each hedge fund firm, an indicator variable for funds located in the Northeast (following Kostovetsky, 2009) based on the mode zip code from donations. (Appendix A provides additional details of our hedge fund

³⁸ If a hedge fund firm appears in both databases, we use the Hedge Fund Research data.

³⁹ We map CISDM/Morningstar categories to Hedge Fund Research main strategies. See Appendix A for additional detail.

Table 6
Portfolio characteristics controlling for hedge fund firm characteristics.

	Natural log of capitalization	Age	Return volatility	Positive profitability	Dividend paying	Lottery-type stocks	Turnover	%change equity holdings
Strong Liberal indicator	−0.356 (−2.47)**	−0.362 (−2.94)***	0.303 (2.20)**	−0.270 (−1.94)*	−0.393 (−2.58)***	0.320 (2.27)**	0.200 (1.53)	0.119 (1.75)*
Leverage dummy	−0.122 (−0.50)	−0.083 (−0.35)	0.221 (0.98)	−0.076 (−0.38)	−0.059 (−0.22)	0.021 (0.09)	0.234 (1.31)	0.090 (0.83)
Lockup dummy	−0.024 (−0.12)	−0.039 (−0.25)	−0.078 (−0.44)	0.056 (0.30)	−0.134 (−0.67)	0.007 (0.04)	−0.051 (−0.29)	−0.007 (−0.10)
Fund age	−0.246 (−2.19)**	−0.221 (−2.20)**	0.131 (1.23)	−0.240 (−2.70)***	−0.081 (−0.71)	0.206 (1.86)*	−0.151 (−1.41)	−0.178 (−2.78)***
Natural log of assets	0.181 (4.35)***	0.124 (3.01)***	−0.050 (−1.38)	0.052 (1.61)	0.100 (2.54)**	−0.082 (−2.38)**	0.049 (1.23)	0.043 (1.83)*
% flow	−0.067 (−0.26)	−0.010 (−0.04)	0.167 (0.60)	0.050 (0.19)	−0.109 (−0.37)	0.044 (0.14)	0.910 (3.16)***	1.311 (5.53)***
Northeast dummy	0.326 (2.11)*	0.146 (0.99)	−0.176 (−1.17)	0.174 (1.19)	0.170 (1.05)	−0.353 (−2.26)**	0.138 (0.94)	0.025 (0.35)
Fund style controls	YES	YES	YES	YES	YES	YES	YES	YES
Quarterly fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
N = 3461 hedge fund quarter observations								

For each hedge fund firm-quarter, we compute the weighted mean characteristics for securities held in the hedge fund firm's portfolio. We also compute portfolio turnover and the absolute percent change in total equity holdings. Each quarter we standardize (rescale to unit variance, zero mean) each portfolio characteristic across all hedge fund firms in our sample. We gather hedge fund characteristics from the Hedge Fund Research and Morningstar/CISDM databases. We then limit the sample to hedge fund firms that are classified as Strong Liberal (>70% total donations to Democrats, $n = 87$ hedge fund firms) or Strong Conservative (>70% total donations to Republicans, $n = 95$ hedge fund firms) that have fund characteristic data available. We then estimate panel regressions of hedge fund firms' portfolio characteristics on a Strong Liberal indicator variable, an indicator variable for hedge fund firms that use leverage, an indicator variable for hedge fund firms that use lockups, hedge fund firm size (natural log of total fund company AUM), the absolute value of hedge fund firm flows as a percent of beginning of quarter AUM, an indicator variable for hedge fund firms located in the Northeast, indicator variables for hedge fund firm styles, and quarterly fixed effects. The t -statistics are based on standard errors clustered at the hedge fund firm level. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

firm variables.) Our final sample for this analysis consists of 182 hedge fund firms (87 Strong Liberal and 95 Strong Conservative) for a total of 3461 hedge fund firm-quarter observations.

To examine differences in portfolio characteristics while controlling for hedge fund firms' characteristics, we estimate a panel regression of hedge fund firms' portfolio characteristics (standardized across all hedge funds each quarter) on hedge fund firm age, hedge fund firm size, hedge fund firm absolute flows, and indicator variables for hedge fund firm styles, hedge fund firms using leverage, hedge fund firms with lockups, and hedge fund firms located in the Northeast. We also include quarterly fixed effects.⁴⁰ Last, to capture differences between Strong Conservative and Strong Liberal hedge fund firms, we include an indicator variable for Strong Liberal hedge fund firms:

$$\text{Standardized Characteristic}_{k,t} = \sum_{t=1}^{52} \alpha_t + \sum_{t=1}^4 \text{Style}_k + \beta_1 \text{StrongLiberal}_k + \beta_2 \text{Leverage}_k + \beta_3 \text{Lockup}_k + \beta_4 \text{Fund Age}_{k,t} + \beta_5 \text{Fund AUM}_{k,t} + \beta_6 |\% \text{flow}|_{k,t} + \beta_7 \text{Northeast}_k + \varepsilon_{k,t} \quad (1)$$

where $\text{Standardized Characteristic}_{k,t}$ is the standardized value-weighted portfolio characteristic for hedge fund k at the end of quarter t .⁴¹ Standard errors are clustered at the hedge fund firm level.

Table 6 reports the regression results for each of the standardized characteristics. Most of the coefficients associated with hedge

fund firm characteristics are not meaningfully different from zero. We do find, however, that older hedge fund firms are more willing to hold smaller stocks, younger companies, and unprofitable companies and less willing to make adjustments to their U.S. equity exposure. Larger hedge fund firms favor larger stocks, older companies, dividend paying companies, and avoid lottery-type securities.⁴² Hedge funds located in the northeast also appear to avoid lottery-type securities. We also find the intuitive result that hedge funds with greater absolute flows average greater turnover and greater absolute changes in their U.S. equity exposures.

The coefficients associated with the Strong Liberal indicator variable reveal that when controlling for hedge fund firm characteristics, Strong Liberal hedge fund firms are more willing to hold smaller stocks, younger companies, high volatility stocks, non-dividend paying companies, and lottery-type securities (statistically significant at the 5% level or better). We also find evidence that Strong Liberal hedge fund firms have greater exposure to unprofitable companies and are more willing to make adjustments to their U.S. equity exposure (marginally significant at the 10% level). Although the point estimate is in the expected direction, we cannot reject the hypothesis that Strong Liberal hedge fund firms and Strong Conservative hedge fund firms exhibit similar turnover.

Because the dependent variable is standardized across all hedge fund firms each quarter, the coefficient associated with the Strong Liberal indicator has a straightforward interpretation—it represents the standard deviation change in the portfolio characteristic when moving from a Strong Conservative hedge fund firm to a Strong Liberal hedge fund firm when holding hedge fund firm characteristics (i.e., the other independent variables) constant. The magnitude of the effect ranges from 0.119 standard deviations (absolute per-

⁴⁰ Because the portfolio characteristics are standardized across all hedge funds in our data (rather than just the hedge funds we match with Hedge Fund Research and Morningstar/CISDM data), the mean portfolio characteristic differs from zero and, as a result, we include quarterly fixed effects to control for any time-series variation in mean values. Nonetheless, we find nearly identical results when estimating without fixed effects.

⁴¹ Because we have both fixed time effects and indicator variables for the hedge fund firm style, we only include fund style controls for four fund styles to avoid a dummy variable trap (thus, the fixed time effects reflect the effect for the omitted style category).

⁴² We do not have specific hypotheses regarding how hedge fund characteristics (other than political orientation) may be related to the conservatism of the hedge funds' security selection and portfolio characteristics. Rather, our focus is on testing whether the relation between hedge funds' political orientations and security selection and portfolio decisions remains intact after accounting for variation in fund characteristics.

cent change in equity holdings) to 0.393 standard deviations (exposure to dividend paying securities).

4.5. Hedge fund managers' donations

Although we exclude donations for those individuals unlikely to have a role in security selection and portfolio decisions (e.g., “human resources”) it is possible that employees at some hedge funds play a larger role in political contributions than in security selection or portfolio decisions. For instance, an “analyst” at a large fund may have little influence on individual security decisions, but account for a relatively large percentage of the total donations from the fund's employees. The noise caused by these observations, however, would reduce the power of our tests yielding a lower likelihood of rejecting the null hypothesis that hedge funds' political orientations are independent of their security selection and portfolio characteristics.

Nonetheless, to provide a potentially cleaner link between hedge fund managers' psychological characteristics and their security selection and portfolio characteristics, we identify the largest donor for each hedge fund and classify that person as a hedge fund manager or non-manager employee. Our classifications are based on the reported occupation in the political donation data (248 the 494 hedge funds) or, when ambiguous (e.g., occupation reported as “Finance”), we search for additional information on the Internet (246 of the 494 hedge funds). We classify the top donor for each hedge fund as a hedge fund manager (e.g., CEO, President, founder, owner, principal, etc.) or hedge fund non-manager (e.g., trader, analyst, etc.).⁴³

Of the 494 hedge funds in our sample, hedge fund managers are the largest donor in 426 cases (86% of the hedge fund sample). Based only on donations from hedge fund managers (and members of their family who report working for the fund), we reclassify these 426 hedge funds as Strong Liberal if the hedge fund manager gives at least 70% of their total donations to Democrats and Strong Conservative if they give at least 70% of their total donations to Republicans. This results in a sample of 373 Strong Conservative ($n = 197$ managers) or Strong Liberal ($n = 176$ managers) hedge fund managers. Not surprisingly, given we focus on the largest donor for each fund, the fund political orientation classifications based on hedge fund manager's donations is the same as the fund's political orientation classification based on all employees' donations for 368 of the 373 hedge funds (99%).

We then repeat the examination of security characteristics when limiting the sample to funds where a manager is the largest donor and use the political orientation classifications based on the hedge fund manager's donations only. Table 7 reports the mean portfolio characteristics (standardized across all hedge fund firms each quarter) for Strong Liberal hedge funds, Strong Conservative hedge funds, and their differences. Analogous to Table 3, standard errors are clustered by hedge fund.

Our results remain robust with the revised classification method—Strong Liberal managers have greater exposure to smaller stocks, younger stocks, high volatility stocks, and non-dividend paying companies and exhibit a greater willingness to make adjustments to the U.S. equity market exposure than their Strong Conservative counterparts (statistically significant at the 5% level or

better in all cases). We also find evidence that Strong Liberal managers are more willing to hold unprofitable companies and lottery-type securities, and exhibit greater turnover (all marginally statistically significant at the 10% level). The economic magnitude of the mean differences ranges from 0.157 standard deviations to 0.275 standard deviations.

4.6. Controlling for manager characteristics

Another possibility is that the managers' personal characteristics (beyond their political orientation) are associated with their willingness to hold securities with more subjective valuations. For instance, older managers may be more politically conservative and invest more conservatively. These personal characteristics may help explain variation in hedge funds' portfolio conservatism if they are systematically related to psychological characteristics associated with conservatism above and beyond that captured by the manager's political conservatism. Nonetheless, analogous to the hedge fund characteristics controls above, controlling for manager characteristics should allow us to more cleanly identify the relation between hedge funds' political orientations and portfolio characteristics. Specifically, we gather the biographical data used in Kostovetsky (2009) and Hong and Kostovetsky (2012) mutual fund analysis: manager age, median SAT of the manager's undergraduate institution in 2005, gender, and an indicator variable for graduate education.⁴⁴ We successfully collect the biographical data for 295 of the 373 (79%) largest donors who are managers and either Strong Liberal managers ($n = 143$ managers) or Strong Conservative managers ($n = 152$ managers).

We then estimate a panel regression for each standardized characteristic on an indicator variable for Strong Liberal, manager characteristics, and quarterly fixed effects (analogous to Eq. (1)) with standard errors clustered at the hedge fund firm level. Table 8 reports the estimated coefficients based on our sample of 295 managers and 5959 hedge fund manager firm-quarters. The analysis reveals that the relations between managers' political orientation and security characteristics remain fully intact when accounting for other manager characteristics. Specifically, even when controlling for manager age, gender, graduate education, and median undergraduate SAT, Strong Liberal managers have greater exposure to small stocks, younger companies, high volatility stocks, unprofitable companies, non-dividend paying stocks, and lottery-type securities. We also find evidence that Strong Liberal managers are more willing to adjust their exposure to U.S. equity markets (marginally statistically significant at the 10% level) than Strong Conservative managers. In general, we find little evidence that manager characteristics other than political conservatism are systematically related to hedge funds' portfolio conservatism with the exceptions that younger managers exhibit higher turnover and appear more willing to adjust their U.S. equity market exposure.

4.7. Controlling for manager characteristics and hedge fund characteristics

As a final test we control for both manager characteristics and hedge fund firm characteristics. Because we require both manager characteristic data and hedge fund firm characteristic data, the sample size is 131 hedge fund managers (61 Strong Liberal and 70 Strong Conservative) accounting for 2574 hedge fund firm-quarter observations. Specifically, we control for manager age, gender, graduate degree, median undergraduate SAT, hedge fund firm leverage (indicator variable), hedge fund firm lockup (indicator

⁴³ We classify the following as hedge fund managers: CEO (and co-CEO), Chairman, Chief Investment Officer, Director of Investments, Founder (or Co-Founder), Founding Partner, Fund Manager, General Partner, Hedge Fund Manager, Investment Manager, Lead Portfolio Manager, Co-Manager, Managing Director, Managing General Partner, Managing Member, Managing Partner (or co-Managing Partner), Owner (or co-Owner), Partner, Portfolio Manager, President, Principal, and Senior Managing Director. We also include two hedge fund managers where the press identifies the fund as either “controlled by” or “run by” the manager.

⁴⁴ Note that although we include an indicator variable for gender, males comprise 96% of the hedge fund managers in our sample.

Table 7
Portfolio characteristics—classifications based on hedge fund manager's donations only.

	Strong liberal	Strong conservative	Strong lib.- strong cons. (t-statistic)
Natural log capitalization	−0.123	0.153	−0.275 (−2.59)***
Age	−0.130	0.144	−0.275 (−2.57)***
Return volatility	0.079	−0.124	0.202 (1.96)**
Positive profitability	−0.074	0.103	−0.177 (−1.86)*
Dividend paying	−0.111	0.132	−0.244 (−2.22)**
Lottery-type stocks	0.088	−0.089	0.177 (1.81)*
Turnover	0.047	−0.135	0.182 (1.83)*
%Change equity holdings	0.059	−0.097	0.157 (2.64)***

N = 7658 hedge fund quarter observations

For each hedge fund-quarter, we compute the weighted mean characteristics for securities held in the hedge fund's portfolio. We also compute portfolio turnover and the absolute percent change in total equity holdings. Each quarter we standardize (rescale to unit variance, zero mean) each portfolio characteristic across all hedge fund firms in our sample. We then limit the sample to hedge funds where the hedge fund manager is the largest donor and the manager is classified as a Strong Liberal (>70% total donations to Democrats, $n = 176$ hedge fund managers) or a Strong Conservative (>70% total donations to Republicans, $n = 197$ hedge fund managers). We report below the pooled cross-sectional time-series mean (standardized) characteristics for Strong Liberal and Strong Conservative hedge funds as well as their differences. The t -statistics are based on standard errors clustered at the hedge fund level. The bottom row reports the sample size. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

Table 8
Portfolio characteristics controlling for manager characteristics.

	Natural log of capitalization	Age	Return volatility	Positive profitability	Dividend paying	Lottery-type stocks	Turnover	%Change equity holdings
Strong Liberal indicator	−0.412 (−3.22)***	−0.286 (−2.40)**	0.315 (2.45)**	−0.33 (−2.96)***	−0.329 (−2.48)**	0.354 (2.84)***	0.133 (1.24)	0.114 (1.83)*
Manage age	−0.618 (−0.91)	0.063 (0.10)	−0.292 (−0.44)	0.019 (0.03)	−0.076 (−0.11)	0.472 (0.68)	−1.87 (−4.18)***	−1.213 (−4.13)***
Gender	−0.108 (−0.31)	−0.096 (−0.25)	0.013 (0.05)	0.056 (0.17)	0.016 (0.04)	0.019 (0.09)	0.184 (0.80)	0.104 (0.76)
Graduate degree	−0.003 (−0.02)	−0.179 (−1.35)	0.141 (1.15)	−0.085 (−0.76)	−0.090 (−0.70)	0.039 (0.35)	0.126 (1.15)	0.112 (1.63)
Median SAT	−0.003 (−0.07)	−0.111 (−2.12)**	0.012 (0.21)	0.054 (1.12)	−0.058 (−1.13)	−0.061 (−1.19)	0.025 (0.65)	0.001 (0.03)
Quarterly fixed effects	YES	YES	YES	YES	YES	YES	YES	YES

N = 5959 hedge fund quarter observations

For each hedge fund-quarter, we compute the weighted mean characteristics for securities held in the hedge fund's portfolio. We also compute portfolio turnover and the absolute percent change in total equity holdings. Each quarter we standardize (rescale to unit variance, zero mean) each portfolio characteristic across all hedge fund firms in our sample. We then limit the sample to hedge funds where: (1) the hedge fund manager is the largest donor, (2) we are able to collect the hedge fund manager's personal data (e.g., age), and (3) the manager is classified as a Strong Liberal (>70% total donations to Democrats, $n = 143$ hedge fund managers) or a Strong Conservative (>70% of the manager's donations to Republicans, $n = 152$ hedge fund managers). We then estimate panel regressions of hedge fund firms' portfolio characteristics on a Strong Liberal indicator variable, manager age, manager gender, an indicator for whether the manager has earned a graduate degree, the median SAT score for the manager's undergraduate institution, and quarterly fixed effects. The t -statistics are based on standard errors clustered at the hedge fund firm level. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

variable), hedge fund firm age, hedge fund firm size, hedge fund firm absolute flows, indicator variable for northeast location, indicator variables for hedge fund firm styles, and quarterly fixed effects. Standard errors are clustered at the hedge fund firm level.

Table 9 reveals that we find the strongest results in the model controlling for both fund and manager characteristics. Specifically, the evidence continues to demonstrate that Strong Liberal managers tend to exhibit greater exposure to smaller stocks, younger companies, higher volatility stocks, unprofitable companies, non-dividend paying companies, lottery-type securities and exhibit higher portfolio turnover and a greater willingness to adjust their exposure to U.S. equity markets (all coefficients are statistically significant at the 5% level or better). The economic magnitude of the effects of moving from a Strong Liberal hedge fund to a Strong Conservative hedge fund ranges from 0.180 standard deviations

(absolute percent change in equity holdings) to 0.539 standard deviations (natural log of capitalization).

5. Discussion

Although political contributions are the observable metric we use to proxy for a hedge fund's political orientation (which reflects its managers' psychological characteristics), a number of unobservable characteristics (e.g., religiosity) may also serve as an indication of a hedge fund's attitude toward investment conservativeness. Our inability to observe these variables, however, does not change the interpretation of our results. Specifically, our results are consistent with the hypothesis that the psychological characteristics of the most sophisticated investor group impact their security selection

Table 9
Portfolio characteristics controlling for hedge fund and manager characteristics.

	Natural log of capitalization	Age	Return volatility	Positive profitability	Dividend paying	Lottery-type stocks	Turnover	%Change equity holdings
Strong Liberal indicator	−0.539 (−3.65)***	−0.297 (−2.10)**	0.514 (3.24)***	−0.509 (−3.47)***	−0.524 (−3.01)***	0.435 (2.81)***	0.312 (2.05)**	0.180 (2.22)**
Manager age	0.058 (0.07)	0.978 (1.12)	−1.171 (−1.69)*	1.240 (1.53)	0.679 (0.68)	−0.804 (−1.28)	−2.48 (−3.60)***	−1.376 (−3.74)***
Gender	0.235 (0.59)	0.497 (1.66)*	−0.301 (−0.99)	0.275 (0.53)	0.344 (1.06)	−0.133 (−0.43)	0.390 (1.38)	0.174 (1.25)
Graduate degree	0.033 (0.23)	0.083 (0.63)	0.045 (0.30)	−0.072 (−0.49)	0.098 (0.54)	0.019 (0.14)	0.151 (1.10)	0.065 (0.74)
Median SAT	−0.017 (−0.28)	−0.030 (−0.58)	−0.045 (−0.83)	0.086 (1.59)	0.007 (0.10)	−0.054 (0.88)	0.025 (0.47)	−0.018 (−0.66)
Leverage dummy	−0.314 (−1.08)	−0.086 (−0.29)	0.122 (0.44)	0.042 (0.19)	0.020 (0.06)	−0.038 (−0.14)	−0.054 (−0.27)	−0.013 (−0.11)
Lockup dummy	0.125 (0.55)	0.022 (0.13)	−0.176 (−0.95)	−0.071 (−0.39)	−0.189 (−0.88)	0.060 (0.31)	−0.083 (−0.45)	0.094 (0.97)
Fund age	−0.075 (−0.65)	−0.273 (−2.12)**	0.175 (1.41)	−0.229 (−1.81)*	−0.173 (−1.32)	0.179 (1.42)	0.125 (1.08)	−0.144 (−2.20)**
Natural log of assets	0.102 (2.16)**	0.001 (0.00)	0.024 (0.54)	0.000 (0.01)	−0.012 (−0.22)	−0.044 (−1.06)	0.025 (0.56)	0.040 (1.39)
% flow	0.085 (0.33)	0.059 (0.24)	0.263 (0.89)	−0.020 (−0.16)	−0.105 (−0.33)	−0.085 (−0.29)	0.765 (2.40)**	1.275 (4.57)***
Northeast dummy	0.165 (1.10)	0.030 (0.19)	−0.160 (−1.00)	0.134 (0.94)	0.248 (1.42)	−0.260 (−1.61)	0.243 (1.36)	0.129 (1.62)
Fund style controls	YES	YES	YES	YES	YES	YES	YES	YES
Quarterly fixed effects	YES	YES	YES	YES	YES	YES	YES	YES

N = 2574 hedge fund quarter observations

For each hedge fund firm-quarter, we compute the weighted mean characteristics for securities held in the hedge fund firm's portfolio. We also compute portfolio turnover and the absolute percent change in total equity holdings. Each quarter we standardize (rescale to unit variance, zero mean) each portfolio characteristic across all hedge fund firms in our sample. We then limit the sample to hedge fund firms where: (1) the hedge fund manager is the largest donor, (2) we are able to collect the hedge fund manager's personal data (e.g., age), (3) we have hedge fund characteristic data (from Hedge Fund Research or Morningstar/CISDM databases), and (4) the manager is classified as a Strong Liberal (>70% total donations to Democrats, $n=61$ hedge fund managers) or a Strong Conservative (>70% of the manager's donations to Republicans, $n=70$ hedge fund managers). We then estimate panel regressions of hedge fund firms' portfolio characteristics on a Strong Liberal indicator variable, manager characteristics (see Table 8), hedge fund firm characteristics (see Table 6), and quarterly fixed effects. The t -statistics are based on standard errors clustered at the hedge fund firm level. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

decisions, their willingness to exit and enter security positions, and their willingness to adjust equity market exposures.

Following previous work (e.g., Hong and Kostovetsky, 2012; Hutton et al., 2014), we use political contributions to infer political orientation. It is likely, of course, that some political contributions are not motivated by political orientation (e.g., a manager giving as a result of peer effects). Once again, the noise caused by the lack of perfect correspondence between political donations and political orientation only reduces the power of our tests. Nonetheless, extant evidence suggests that political contributions do, in general, reflect, political orientation (see, for example, the discussion in Hutton, Jiang, and Kumar). To further examine this issue, we were able to identify 39 hedge fund managers (from Section 4.5) registered as a Republican or Democrat in Connecticut that were: (1) the largest donor for the hedge fund, and (2) identified as a Strong Democrat or Strong Republican.⁴⁵ Of those 39 managers, 33 (85%) matched on their political contribution and party registration. Although political orientation is unobservable, these results support the hypothesis that political contributions reflect political party membership, another indicator of political orientation.

Another potential concern is that some types of hedge funds' security selection decisions are likely immune from psychological factors. For example, if some managers take a pure quantitative approach, one may expect that their security selection decisions

are unrelated to their political orientation.⁴⁶ It is important to recognize, however, that we do not claim our evidence suggests psychological characteristics impact the decisions of *all* hedge funds. Rather, our evidence suggests that, on average, there is a relation between psychological characteristics and hedge funds' security selection and portfolio decisions. Moreover, *most* hedge funds do not appear to select broad portfolios of securities as expected if using a quantitative model (e.g., Table I shows that the typical hedge fund holds less than 60 long-equity positions even though their portfolio exceeds \$400 M).

We also consider the possibility that funds with non-equity-hedge focus (e.g., Macro or Multi-Strategy funds) may influence our results. Once again, the additional noise caused by non-equity-focused funds only weakens our tests. Regardless, to examine this possibility we repeat the tests in Table 6 limiting the sample to equity-oriented (as identified by HFR or CISDM) hedge funds only. Consistent with our hypothesis, the results are generally stronger with limiting the sample to equity-oriented funds only (untabulated).

Last, our results do not require that hedge funds directly consider the characteristics the literature uses to estimate the degree of subjectivity (e.g., whether a company pays a dividend). Rather, as Baker and Wurgler (2006) point out, these characteristics help quantify the degree of subjectivity in valuation. If stocks with highly subjective valuations are less likely to pay a dividend and

⁴⁵ Connecticut party registration is gathered from the website connvoters.com. The 2002 Help America Vote Act required each state to collect official state voter rolls. The public availability of these rolls vary from state to state. In Connecticut, the data are publically available. Most states, however, have very restricted access to these data. In New York, for example, it is a crime to use these data for any "non-election purposes."

⁴⁶ Of course, it is possible that psychological factors influence the decision to take a quantitative approach. Moreover, the functional form of the model may be related to psychological characteristics. Given the evidence that hedge fund long equity portfolios have very little overlap (Sias et al., 2016), there must be meaningful cross-sectional variation in the models used by quantitative funds.

politically liberal hedge funds are more willing to hold stocks with more subjective valuations, then politically liberal hedge funds will have higher exposure to non-dividend paying stocks (even if they do not directly consider whether a stock pays a dividend in their decision making process).

6. Conclusions

Based on well-established psychology and political science research, we use hedge funds' political donations to examine if hedge fund managers' psychological characteristics influence their security selection and portfolio decisions. We find that politically liberal hedge funds tend to hold less conservative portfolios. Specifically, politically liberal hedge funds exhibit greater exposure to smaller stocks, less mature companies, more volatile stocks, unprofitable companies, non-dividend paying stocks, and lottery-type stocks relative to their politically conservative counterparts. Further consistent with the hypothesis that psychological characteristics influence their portfolio decisions, politically liberal hedge funds exhibit, on average, a greater willingness to completely exit

a security, enter a new equity position, and to make larger adjustments to their U.S. equity market exposure than their politically conservative counterparts. We find no evidence that hedge fund or manager characteristics subsume the relations between hedge funds' political orientations and portfolio characteristics. In short, regardless of how we frame the tests, we find evidence that hedge funds' political conservatism is related to the conservativeness of their security selection and portfolio decisions. Our results provide the first evidence that psychological characteristics influence the decisions of those investors at the very top of the financial sophistication ladder who are assumed to correct any mispricing induced by other, less sophisticated, investors.

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Appendix A

Definitions

Item	Source	Description
Strategy indicators	Hedge Fund Research database & CISDM database	For the Hedge Fund Research database, we use five strategy indicator variables—the four “main strategy” categories (Event-Driven, Equity Hedge, Macro, and Relative-Value) and a multi-strategy indicator. If all funds managed by a hedge fund firm operate in the same main strategy (e.g., three different Equity Hedge funds), the hedge fund firm is given that classification. If a hedge fund firm has funds in different strategies (e.g., a Relative-Value fund and a Macro fund), the firm is classified as multi-strategy. For the CISDM database, we map the 32 Morningstar fund categories to the five Hedge Fund Research categories. In most cases, the mapping is based on the analogous Hedge Fund Research sub-strategy. For instance, the Morningstar “HF Volatility” strategy is classified as a Relative-Value strategy because “Volatility” is a substrategy of the Relative-Value strategy in Hedge Fund Research.
Fund assets	Hedge Fund Research database & CISDM database	We compute total assets under management for each hedge fund firm as the sum of the assets under management for the funds controlled by the hedge fund firm. Our analysis uses the natural logarithm of total AUM. The value is updated every quarter.
Leverage indicator	Hedge Fund Research database & CISDM database	The leverage indicator variable equals one if any fund associated with a hedge fund firm reports using leverage. For Hedge Fund Research, we use the variable “leverage” to identify funds using leverage. For CISDM we use the variables “use_leverage”, “leverage ratio”, and “avg leverage” to identify funds using leverage.
Lockup indicator	Hedge Fund Research database & CISDM database	The lockup indicator variable equals one if any fund associated with a hedge fund firm reports a lockup period. For Hedge Fund Research, we use the variable “lockup” to identify funds using lockups. For CISDM we use the variable “lockup months” to identify funds using lockups.
Fund age	Hedge Fund Research database & CISDM database	Number of months since inception of the hedge fund firm's first fund. For Hedge Fund Research, we use the variable “inception.” For CISDM we use the variable “inception_date.”
%Flow	Hedge Fund Research database & CISDM database	End of quarter AUM less beginning of quarter AUM*(1+return) computed at fund level and then aggregated across funds for each hedge fund firm.
Northeast indicator	FEC political donor database	An indicator variable that equals one if the mode zipcode of hedge fund donors is located in the northeast (Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, New Jersey, Delaware, Maryland, and Washington DC). The definition of “northeast” states follows Kostovetsky (2009) . For hedge fund firms without a mode zipcode (e.g., a hedge fund with only two donations from different zipcodes), we investigate the hedge fund via the web to determine the hedge fund location.
Manager age	Main sources: Business week and LinkedIn Additional Sources: online media articles, alumni websites, wedding announcements, parental eulogies.	Manager's age (divided by 100) in April 2014. If a manager's age is found in a media article we assume the age is the reported age plus the number of years since publication as of 2014. For example, if a manager is reported as 25 years old in an article from 2004 we record the age as 35. If no age data is found we assume the manager was 22 years old at the time of their undergraduate graduation. Finally, in one case the manager died before 2014. For this observation we record the manager's age as the age upon the manager's death.
Manager gender	Main sources: Business week and LinkedIn	An indicator variable that equals one for males. We require a gender specific pronoun or honorific in any source available.
Manager graduate degree indicator	Main sources: Business week and LinkedIn Additional sources: online media articles and alumni websites	An indicator variable that equals one for managers that have a graduate degree. If we cannot confirm the manager has a graduate degree we assume he or she does not.
Manager SAT score	The Integrated Postsecondary Education Data System Data Center (IPEDS) http://nces.ed.gov/ipeds/datacenter/	The median SAT score at the manager's undergraduate institution (divided by 100) in 2005. SAT data is reported separately for the verbal and quantitative sections. Further, only the 25th and 75th percentiles are reported for each section. The median for each section is defined as the average of the 25th and 75th percentiles. The median for the exam is the sum of the median score for the verbal and quantitative sections.
Natural log of capitalization	CRSP	Natural logarithm of security capitalization
Age	CRSP	Number of months the stock has been listed on CRSP
Return volatility	CRSP	Standard deviation of monthly returns over the previous year (require at least nine months of data)
Positive profitability	Compustat	An indicator variable for profitable companies. Profitable companies are those with positive net income (the sum of quarterly net income less quarterly preferred dividends over the previous four quarters).
Dividend paying	Compustat	An indicator variable for companies that paid a dividend in the previous year.
Lottery-type security	CRSP	An indicator variable for securities with below-median price, above-median idiosyncratic volatility, and above-median idiosyncratic skewness. Following Kumar (2009) and Kumar et al. (2011) , idiosyncratic volatility is estimated over the previous six months with a regression of excess daily returns on a four factor model (excess market, size, value, and momentum). Idiosyncratic skewness is estimated over the previous six months based on a regression of excess daily returns on a two factor model (excess market return and squared excess market return). Idiosyncratic volatility and idiosyncratic skewness are both calculated from the residuals of the respective regressions.
Turnover	CRSP/13(f)	Minimum of the dollar value of the hedge fund's total purchases or sales (as indicated by 13(f) reports) scaled by the hedge fund's beginning of quarter long equity portfolio value.
%Change equity holdings	CRSP/13(f)	The sum across securities of the end of quarter number of (split-adjusted) shares held less the number of beginning of quarter shares held times beginning of quarter price scaled by the dollar value of the beginning of quarter equity portfolio value.
Enter ratio	CRSP/13(f)	The numbers of securities hedge fund firm k enters in a quarter scaled by the number of securities hedge fund firm k holds at the end of the quarter.
Exit ratio	CRSP/13(f)	The numbers of securities hedge fund firm k exits in a quarter scaled by the number of securities hedge fund firm k holds at the beginning of the quarter.

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