Marriage and Managers' Attitudes To Risk *

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Abstract

Marital status can both reflect and affect individual preferences. We explore the impact of marriage on corporate CEOs, and find that firms run by single CEOs exhibit higher stock return volatility, pursue more aggressive investment policies, and do not respond to changes in idiosyncratic risk. These effects are weaker for older CEOs. Our findings continue to hold when we use variation in divorce laws across states to instrument for CEO marital status, which supports the hypothesis that marriage itself drives choices rather than it just reflecting innate heterogeneity in preferences. We explore various potential explanations for why single CEOs may be less risk-averse.

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Do managers' personal traits matter? A burgeoning recent literature provides ample evidence that individual CEO characteristics impact corporate policies. One of the key dimensions of heterogeneity across individuals is differential attitudes towards risk. Such heterogeneity can have important real consequences insofar as it drives corporate investment and R&D activities. In this paper, we explore whether risk attitudes across CEOs reflect only innate differences in preferences or whether external factors also play a role. More specifically, we investigate the impact of CEO marital status on corporate risk-taking.

We explore this question using a standard sample of U.S. public firms, which we augment with a new dataset on marital status of CEOs that we compile from a variety of public sources. We find that companies run by CEOs classified as single in our dataset exhibit higher levels of stock return volatility and pursue more aggressive investment policies than otherwise comparable firms, consistent with the hypothesis of greater risk-taking by single managers. These effects are both economically and statistically quite meaningful. A firm headed by a single CEO, controlling for a variety of personal and firm characteristics, exhibits stock return volatility that is 3% higher, and invests 10% more on average.

The difference in volatilities is driven by varying exposures to idiosyncratic rather than systematic risk. The investment policies vary with marital status for capital expenditures, as well as R&D spending and acquisitions, which are commonly associated with risk-taking. There is also some evidence that firm leverage is higher for firms with single CEOs. The effect of marital status is weaker for older managers, indicating that selection into marriage based on an unobserved characteristic that is correlated with risk-taking is an unlikely driver of our results, since it would suggest the opposite pattern.

Importantly, we control for firm characteristics in our analysis, so that our findings do not simply reflect the tendency of single CEOs to be matched with riskier firms. If we omit firm controls, the relationship between marital status and risk-taking becomes significantly stronger (coefficients typically increase by a factor of five), suggesting that single CEOs indeed are more likely to run relatively risky firms.[1] Furthermore, we demonstrate that single CEOs impact firm investment decisions by exploiting within-firm variation in idiosyncratic return volatility over time. We show that while married CEOs reduce investment in response to an increase in idiosyncratic risk (consistent with Panousi and Papanikolaou (2012)), those CEOs who are single do not, confirming that they are less averse to (idiosyncratic) risk. The latter result is based on within-firm variation in idiosyncratic volatility, and therefore cannot be attributed to unobserved firm heterogeneity driving differences in investment rates across firms.

These results support the hypothesis that single CEOs assume more risk than married ones. However, it is also possible that single managers exhibit different risk-taking behavior from married managers due to unobserved differences between managers. Individuals who are single at a given age may be inherently more risk-tolerant than those who are married by the same age. In order to distinguish our explanation from the alternative of innate heterogeneity, we employ an instrumental variable (IV) approach.

Our instrument exploits variation in divorce laws across different states in the U.S., which is very plausibly exogenous to the CEO-firm match and to firms' investment policies. Our basic assumption is that divorce costs should influence an individual's propensity to get married. One aspect of these costs, which should be of particular concern for wealthy individuals, is the division of marital property. We therefore distinguish between states where this division is determined by the *community property* standard and those where it is determined by the *equitable distribution* standard. The former mandates equal division of assets acquired during marriage between the two divorcing spouses, whereas the latter allows the division to be determined by a judge based on a

[1] The only exception is firm leverage, where the relation disappears with no firm controls, probably because the very riskiest firms typically have no or very little debt.

range of factors, including the relative contributions of the spouses. It is commonly understood that community property is more advantageous for the poorer spouse (Voena (2011)). Since a CEO should rarely be in this position, he or she should find divorce costlier in community property states. Consequently, all else equal, a CEO working in such a state should be less likely to be married at a given point in time. Indeed, this hypothesis is strongly confirmed by the data.[2] Our evidence indicates that the observed effect of community property regime on marital status is unlikely to just reflect other differences across states, such as income distribution, culture, or religion. Crucially, when we use the state divorce law as an instrument for marital status, all our findings continue to hold (and are actually stronger), suggesting the relation between marital status and risk-taking is not simply driven by innate differences between CEOs who single or married.

One of the important questions in the literature that studies the impact of managerial characteristics on firm outcomes is whether managers can alter their firms' policies to better suit their personal objectives, or whether the observed differences in the behavior of firms run by different managers simply reflect the matching of executives and firms along the relevant (but difficult to observe for an econometrician) characteristics (e.g., more risk-tolerant CEOs work for riskier firms). While we cannot completely rule out the latter mechanism as an explanation for some of our results, we find it reasonably unlikely, as marital status is not a permanent characteristic of a CEO. Moreover, even if CEOs were always optimally matched to firms, so that their preferences are fully in line with shareholder interests, our findings would still show that riskier firms prefer single CEOs, who are more willing to engage in risky projects.

In this paper, we show that marital status impacts CEO behavior, more specifically attitude towards risk. Why should marital status effect risk-taking behavior of CEOs? There exist a number of mechanisms through which marriage can alter individual risk attitudes. Having a family may

[2] We also provide evidence in a separate Online Appendix that a similar pattern holds in the broader U.S. population, but only for wealthier individuals, exactly as our hypothesis about costlier marriage in community property states implies.

raise the level of commitment consumption (or habit), which increases induced risk aversion. A married manager may also have a higher opportunity cost of effort, which is likely complementary to risk-taking, since leisure time may be more valuable for someone who has a spouse and children. If a typical CEO is more risk tolerant than an average person in the population and, in particular, than his (her) spouse, aggregation of preferences often implies that the combined objective function of the family exhibits greater aversion to risk compared to that of a single manager. To the extent that the CEO maximizes welfare of the whole family, these aggregated preferences drive choices that the manager makes. Thus, even if CEO's own personal preferences are unchanged by marriage, married managers should exhibit more conservative decision-making with respect to firm policies than single ones, all else equal (see Mazzocco (2004) for a qualification to this argument).

Rather than indirectly influencing CEO behavior, marital status may have a direct biological effect on preferences, for example by leading to lower testosterone levels in married males (e.g. Burnham, Chapman, Gray, McIntyre, Lipson, and Ellison (2003)), which are known to be correlated with risk-taking (e.g., Burnham (2007), Guiso and Rustichini (2011), and Sapienza, Zingales, and Maestripieri (2009)). Alternatively, rather than marriage increasing risk aversion, it could be the case that being single reduces risk aversion due to similar evolutionary mechanisms (e.g., Baker and Maner (2008)). Finally, single individuals may care more about their relative position in the wealth distribution due to competition for mates in the marriage market (Becker (1973)). As long as the improvement in the potential quality of the marital match raises the benefit of an extra dollar of wealth (beyond its pure consumption value), the matching environment creates an incentive for individuals to take more (idiosyncratic) risk than they would in the absence of the status contest (e.g., see Cole, Mailath, and Postlewaite (2001) and Roussanov (2010a)).[3]

[3] We provide an extensive discussion of these alternative explanations and link them to the relevant literatures in economics and psychology in the separate Online Appendix.

1 Data

1.1 CEO Characteristics

We collect the names, biographical information, and compensation of all CEOs covered by ExecuComp in the 1993-2008 period. We then research their marital and family status using a variety of public sources, such as the *Marquis Who's Is Who in Finance and Industry*, *Notable Names Database* (NNDB), the SEC insider filings, and various media mentions. The ultimate goal of this effort is to establish whether a particular CEO was married or single during his tenure. Unfortunately, we can obtain the actual marriage dates only for a small minority of CEOs, which means that for the bulk of our sample we have to rely on an indirect approach. More specifically, for those CEOs for whom we can find no dates, we start with the assumption that they are single, and then change their status if we find information indicating the opposite.[4] Any CEO who is ever mentioned as being married but the exact dates of marriage are not available is coded as married throughout his or her tenure. This means that some CEOs who are divorced or whose spouses are deceased will be wrongly counted as married. However, there also exists an offsetting bias. Since we require evidence to classify a CEO as married, those CEOs who are not prominent enough to warrant mention in our sources (or those who are very private with regards to their personal information) will appear in the data as single even if they are actually married. While we perform a comprehensive search for all CEOs, it is inevitable that we miss some. Furthermore, some CEOs may be involved in marriage-like relationships but not be formally married, and their status for our purposes should be classified as married but will not be.

The net effect of these biases cannot be determined with much certainty, but we are hopeful our data is not too unrepresentative. Table 1 shows that in terms of CEO-year observations married

[4]Our information sources report that a CEO is married reasonably frequently, but almost never directly report that one is single, so that we cannot start with the assumption that a CEO is married unless we find evidence to the contrary.

CEOs account for 84% of our sample. If we just consider each individual CEO, single ones make up 20% of our sample.[5] According to the U.S. Census data, 70% of men in the 35-59 age range were married in 2000. This group represents most of the CEOs in our sample, so it would appear that we overestimate the number of currently married CEOs.[6] But CEOs are also much wealthier than typical Americans, and wealth is positively correlated with the probability of being married. In the Online Appendix, we use the Survey of Consumer Finances data to show that the proportion of single CEOs in our sample is quite close to what we would expect to find in the general population, based on the median CEO age, wealth, and income.

If we wrongly characterized marital status of some CEOs, this would not constitute a problem for our analysis, as long as this effect was uncorrelated with anything else. The problem is that this may not be true for CEOs who are married, with no public information documenting their status. Such CEOs are likely to be less prominent than their peers and could potentially be associated with younger, riskier firms. This effect may explain risk-taking attitudes of managers we classify as "single", without any actual effect of marital status. For example, Malmendier and Tate (2009) find that "superstar" CEOs exhibit different behaviors than their less prominent counterparts.[7] This may represent a serious problem for our analysis, which we address in several ways.

First, in our regressions we use as controls observable measures that are likely to be correlated with both the degree of prominence of a company and its riskiness, such as firm size, market-to-book ratio, and age. Second, we explicitly control for the effect of prominence on our classification of CEOs as married or single by constructing measures of frequency of CEO and company media mentions. Specifically, we use *Factiva Dow Jones* database to count the number of news stories

[5]While there is a number of CEOs who are divorced in our sample, we do not explicitly consider divorced CEOs to be "single", as it is not obvious from the perspective of the various theories we consider that we should, especially given that its effective timing very difficult to ascertain.

[6]At the same time, we may be underestimating the proportion of CEOs who were married at any point in time (though not necessarily during their tenure). In the Census data, of the men falling in the 1950-1954 birth cohort, 89% had been married at some point before reaching the age of 50.

[7]Such "superstar status" could itself be viewed as a type of status payoff induces risk-taking. Shemesh (2010) presents evidence that achieving this status leads CEOs to reduce subsequent risk-taking.

mentioning the CEO and/or the company associated with each of the observations during our sample period. We use these measures to control for the effect of prominence on risk-taking in our analysis. While these controls do appear to capture some variation in firm risk, their inclusion does not affect our results in any way.

1.2 Other Control Variables

We augment our CEO dataset with information from COMPUSTAT and CRSP, which we use to construct measures of corporate risk-taking and the necessary control variables. The various variables we use are defined below (all numbers except ratios are in millions).[8]

Total investment ($Investment$) is capital expenditures ($CapEx$) plus acquisitions minus asset sales (*Net Acquisitions*) plus R&D expenditure ($R\&D$) plus advertising expenditure (*Advert.*), scaled by net property, plant & equipment ($PP\&E$). This is a more comprehensive measure than used in most of the literature, but we believe R&D and advertising expenditures should be counted as investment for our purposes, as they do reflect a firm's risk-taking (Guay (1999) uses R&D expenditure as a proxy for CEO risk-taking; see also Coles, Daniel, and Naveen (2006)). We also consider the individual components of investment separately (scaled by $PP\&E$). Total volatility is computed as the annualized volatility of a firm's monthly stock returns over the previous year. Idiosyncratic volatility is calculated as the annual volatility of the residuals of the firm's stock returns regressed on the CRSP value-weighted stock market portfolio return.

Firm size ($\log A$) is the log of its total assets. Book equity (BE) equals stockholders' equity; if that item is missing in COMPUSTAT, then it is common equity plus preferred equity; and if those items are unavailable as well, then it is total assets minus total liabilities. Market-to-book ratio (M/B) is the ratio of the market value of assets relative to their book value, where the market value

[8]We include in our sample all firms for which we have the necessary data. Our results continue to hold if we exclude financial firms.

of assets is the total value of assets minus book value of equity plus market value of equity. Cash flow (CF) equals earnings before extraordinary items plus depreciation & amortization, scaled by net $PP\&E$. Book leverage ($Leverage$) equals the sum of long-term and current debt divided by the sum of long-term debt, current debt, and book equity. Market leverage ($MarketLeverage$) equals the sum of long-term and current debt divided by the sum of long-term debt, current debt, and market equity. Firm age is computed with respect to the first year it appears in COMPUSTAT. All firm-related variables (except size and book equity) are winsorized at the 1% and 99% levels.

We also use information available in ExecuComp on the relevant characteristics of managers. CEO wealth (CEO_Wealth) is the log of CEO's total holdings of own company stock and options, which we use as a proxy for total CEO wealth. CEO compensation (CEO_Comp) is the log of CEO's total compensation. Age and $Tenure$ are the CEO's age and his tenure with the firm, as of the current year. The *Factiva*-based measures of CEO and firm prominence are each defined as the logarithm of the total number of their media mentions during our sample period. For CEOs, we only count news stories that are explicitly related to the firm they run, in order to avoid greatly exaggerating the prominence of CEOs with common names.

2 CEO Marital Status and Risk-Taking

2.1 Overview

Table 1 presents the main summary statistics for our data, grouping firms based on the marital status of their CEOs. It confirms that our classification produces intuitive results: married CEOs are on average somewhat older and, consistent with the theory that relates marital market success with wealth, richer (insofar as we can proxy their wealth with the value of their holdings of the company's stock and options). This first look at the data also supports our main hypothesis that marital status matters: firms managed by CEOs whom we classify as single display markedly different characteristics. Such firms have higher investment and experience greater return volatility, both of which measures should be related to the amount of risk associated with a firm. The differences are highly significant, both economically and statistically. Return volatility of single CEO firms is 24% higher, and a t-test for the difference produces a t-statistic of about 14 (untabulated). Investment is 69% higher for such firms relative to those run by married CEOs, with a t-statistic of 13 for the difference.

These differences appear to be quite dramatic, but single CEO-run firms are also on average smaller, younger, and potentially faster-growing, as indicated by their higher market-to-book ratios. Since both small and growth firms tend to invest more and have more volatile returns, it is important to control for these characteristics. We therefore run a variety of regression specifications with investment and return volatility as dependent variables:

$$RiskTaking = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}), \qquad (1)$$

where $RiskTaking$ is our measure of risk-taking, $Single$ is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, Y is a set of CEO characteristics (the specific variable definitions are given above), and $\tilde{Y}$ are the same characteristics that have been demeaned.[9] All our regressions also include year×industry (based on the Fama-French 49-industry classification) fixed effects, or just year fixed effects in the specification where we omit firm-specific controls. We compute t-statistics using clustered standard errors (by firm).

[9]Coles, Daniel, and Naveen (2006) show that CEO compensation has a meaningful effect on firm risk-taking through the pay-performance sensitivity. In the Online Appendix, we present regression results that control for CEO compensation and holdings of company stock; our main results are unaffected by these additional controls.

2.2 Single CEOs Run Riskier Firms: Examining Return Volatility

Table 2 presents regression results for the total (annualized) volatility of firm stock returns and for the idiosyncratic component of volatility. The coefficient of most interest is the dummy variable *Single*.

Do firms led by single CEOs experience greater return volatility, controlling for firm characteristics? Results reported in Table 2 show that firms run by single CEOs do indeed exhibit more volatile returns. This difference is statistically significant (t-stat=2.32 in column 1, which features the most comprehensive sets of control variables) and economically meaningful, with the coefficient magnitude suggesting about a 3% difference.[10] The coefficient is exactly the same for idiosyncratic volatility (column 3), suggesting that it is the main channel through which managers' marital status affects firm risk-taking (i.e., single CEO firms assume more firm-specific risk rather than economy-wide, systematic risk).

Importantly, all firm-level control variables have the expected effect in our regressions: firms with low cash flows, firms with high market-to-book ratios, small firms, firms with high leverage, and young firms have more volatile stock returns (we present additional results with different sets of controls in the Online Appendix). Since married and single CEOs also have different personal characteristics, we also include controls for CEO characteristics, such as age and tenure, and the interactions between those characteristics and the single status dummy variable (characteristics variables in the interaction terms are always demeaned). Older CEOs may behave more conservatively.[11] Since they are also more likely to be married, not controlling for CEO age could lead to a positive coefficient on Single, even if marital status had no impact on CEO preferences. Consistent with prior work, we find that age is negatively related to firm risk (as is tenure).Both age and tenure

[10] Computed as 0.012 (*Single* coefficient magnitude) divided by 0.370 (mean return volatility for firms run by married CEOs).

[11] Levi, Li, and Zhang (2010) document more aggressive deal-making behavior among younger CEOs, and argue that it is driven by their higher testosterone levels.

are significantly negatively related to firm risk.

The coefficient on CEO prominence is positive and significant, indicating that firms run by better-known CEOs take on more risk. However, this result crucially depends on the presence of firm-level controls. When we exclude those, the coefficient actually has the opposite sign, since firms whose CEOs tend to be most prominent are typically large and therefore less risky, especially in terms of idiosyncratic risk.

We also control for institutional holdings of company stock, obtained from Thomson Reuters database of 13f filings. We use institutional holdings as a proxy for the quality of a firm's corporate governance, under the assumption that firms with higher institutional ownership will be more responsive to shareholders. We introduce this variable to test whether greater shareholder control attenuates the effect of marital status, perhaps by making it harder for single CEOs to undertake overly risky investments. We find that firms with greater institutional ownership are indeed less risky (the coefficient is negative and statistically significant). Moreover, the interaction with the *Single* variable is negative and statistically significant, indicating that better governed firms may moderate the tendency of single managers to increase risk. This effect is particularly strong for idiosyncratic volatility.

Controlling for firm characteristics helps isolate the potential effect of manager's preferences on firm performance, but it understates the explanatory power of marital status with respect to the managers' individual behavior. In particular, insofar as potential managers choose to work for firms that match their risk preferences, single managers are likely to choose to work for companies exhibiting greater exposure to risk than married managers. The data strongly confirms this hypothesis: when we exclude controls for firm characteristics, only including CEO characteristics and time fixed effects (columns 2 and 4), the results become much stronger, with return volatility of firms run by single CEOs being 16% higher, and the t-statistic for the difference of 7.83. This result is consistent with any theory predicting lower risk aversion for single individuals, as single CEOs are more likely to be matched with riskier firms if they are indeed less risk averse. But they also undertake more risks even when we control for this tendency, as results in columns 1 and 3 show.

2.3 Where Does Risk Come From: Evidence on Firm Investment

What drives differences in riskiness between firms run by single and married CEOs? Our hypothesis implies that besides opting to work for inherently riskier firms, single CEOs may steer their companies towards riskier projects, as well as generally pursue more aggressive investment policies. In order to test this prediction, we examine the effect of marital status on investment. Table 3 presents regression results for total investment and its components that are likely to have particularly pronounced effects on firm risk, net acquisitions and R&D plus advertising expenditure.

Column 1 of Table 3 shows that the *Single* coefficient is positive and statistically significant (t-stat=2.65). Its magnitude suggests an economically very meaningful effect of marital status: single CEOs invest 10.5% more than their married counterparts (given that the sample mean for total investment is 1.00). The coefficients on firm characteristics are consistent with the evidence documented in previous work. Firms with high cash flows, growth firms, small firms, and firms with high past investment tend to invest more.[12] These are well-known correlations, and the fact that they hold in our sample reassures us that it is similar to those used in other studies.

Interestingly, the interaction coefficient between *Single* and *Age* is negative, which means that the impact of marital status on investment is less important for older CEOs. This result is consistent with the hypothesis that marriage impacts, rather than just reflects, CEO preferences and firm risk-taking. If the driving force behind our results was purely a selection effect, whereby CEOs who prefer to stay single are fundamentally different (e.g., by being more risk-tolerant) from those who

[12] Our results do not change if we use investment during the previous CEO's tenure as a control instead of lagged investment.

marry, the effect of marital status would be less likely to decrease with age. In fact, it would likely increase, as at older ages the single group would be predominantly populated by people with a particularly strong aversion to marriage, and thus by people who are especially risk-tolerant. On the other hand, if marital status directly influenced CEO preferences, there are many potential explanations that are consistent with the observed negative interaction coefficient between Age and Single. For example, older CEOs may have fewer consumption commitments; or, if single CEOs are less risk-averse due to their competing in the marriage market, we would expect this tendency to be less pronounced for older CEOs, as presumably the benefits of a prospective future marriage are lower later in ones life.

Our results do not change if we add controls for firm region, or if we use a different industry classification scheme.[13] They also hold if we focus just on R&D and advertising expenditures (specification in column 5), which arguably capture firm risk-taking more accurately, as they are commonly perceived as representing especially risky activities. The results for Net Acquisitions reported in column (3) are somewhat weaker, likely due to the fact that a lot of smaller firms do not make any acquisitions. It may also be influenced by a countervailing effect of diversifying acquisitions, which tend to reduce rather than increase firm riskiness. Similarly, we find that a firm's market leverage is higher if its CEO is single (these results are reported in the Online Appendix). This result is sometimes weaker than the findings for investment and volatility, probably because young risky fast-growing firms typically have no or very little debt.

Does institutional ownership mitigate the aggressive investment policy of single CEOs? The institutional holdings coefficient is positive and significant for total investment and acquisitions (and essentially zero for R&D and advertising). Interestingly, the coefficient is most significant for Net Acquisitions, so that firms where institutional investors hold larger stakes are more likely

[13]Those results are available upon request.

to engage in acquisitions. However, the coefficient on the interaction term between holdings and *Single* is not significant.

As mentioned before, we are not taking a stand in this paper on whether CEOs alter firm decisions to meet their own objectives or are just matched to firms along all their relevant characteristics. In order to explore how much of a role CEO-firm matching plays, we omit any firm characteristics from our regressions in specifications 2, 4, and 6. Consequently, we are comparing single and married CEOs just controlling for their personal characteristics. Under that specification, the *Single* coefficient for Total Investment grows dramatically to 0.45 (from 0.09), with a t-statistic of 5.23. Similarly to the return volatility results in the previous section, these findings suggest that riskier firms are strongly associated with single CEOs, perhaps because these CEOs are more willing to accept risks. However, even when we control for this selection effect in specifications 1, 3, and 5, single CEOs still assume greater risks than married ones. Results in columns 1, 3, and 5 are probably more conservative estimates of the difference between married and single CEOs, to the extent that our (potentially imperfect) controls capture all of the relevant firm characteristics, whereas those in columns 2, 4, and 6 represent the most aggressive estimates. Our results all continue to hold if we add controls for CEO wealth and compensation, as reported in the Online Appendix.

It is not surprising that firms that invest more are also riskier. Are our results driven primarily by the selection effect, whereby CEOs of young, fast-growing firms tend to be single (even controlling for age and other observable characteristics) for reasons that are unrelated to risk? Unfortunately, we do not have enough observations of CEO marital status changes (or changes between married and single CEOs) to establish whether firm risk and investment also change when they occur. However, we can exploit the impact of within-firm variation in risk on investment to explore further the role of CEO marital status. Panousi and Papanikolaou (2012) find that an increase in idiosyncratic volatility decreases corporate investment, which is consistent with the effect of managerial risk aversion, since CEOs cannot hedge purely idiosyncratic (firm-specific) risk. The status model detailed in the Online Appendix, which is one potential mechanism by which CEO marital status may influence firm risk-taking, predicts that single CEOs have higher tolerance for idiosyncratic risk. As a consequence, we should expect to see a much weaker effect of lagged idiosyncratic volatility of the firm's stock returns on investment among firms whose CEOs are single. To test this hypothesis, we estimate the following regression specification:

$$Investment_t = \alpha + \beta \times Single + \gamma \times IdVol_{t-1} + \delta \times (Single \times Id\tilde{V}ol_{t-1}) + \zeta \times X, \qquad (2)$$

where $IdVol_{t-1}$ is lagged idiosyncratic volatility of the firm's stock returns and X is a set of firm and CEO characteristics used as controls. Importantly, the latter includes firm as well as year fixed effects, as we are interested in within-firm effect of risk on investment. Results are reported in Table 4. Consistent with the evidence in Panousi and Papanikolaou (2012), we document a robustly negative and statistically significant effect of $IdVol_{t-1}$ on total firm investment, with coefficients of -0.175 without any controls other than fixed effects and around -0.330 when various combinations of controls are added, and t-statistics ranging between -3 and -6. Furthermore, while there is no statistically significant effect of *Single* itself on within-firm variation in investment, there is a strongly positive effect of the interaction between *Single* and the idiosyncratic volatility measure. This effect is essentially of the same magnitude as the effect of volatility itself, with coefficients ranging between 0.216 and 0.319 and t-statistics between 2.2 and 3.3. Therefore, for firms run by single CEOs, the total effect of these coefficients is effectively zero, implying that single managers are much less affected by changes in idiosyncratic risk than married ones, which is consistent with the hypothesis that marital status impacts managerial behavior. While married CEOs strongly decrease investment in response to increases in idiosyncratic volatility, single ones do not alter their investment patterns. As in our previous tests, single managers are much less averse to (idiosyncratic) risk, in a way that has a meaningful impact on firm investment.

3 Instrumental Variables Approach: Divorce Costs

Our results support the hypothesis that single CEOs assume more risk than married ones. It is also possible, however, that our results are not actually driven by CEOs' marital status but instead reflect their innate heterogeneity. For example, individuals who are single at a given age may be inherently more risk-tolerant than those who are married by the same age. It would be possible to distinguish this scenario from the one in which marriage itself matters by exploiting changes in managers' marital status over time. Unfortunately, this would require a significant number of CEOs to experience marital status changes during their tenure, and for us to be able to document such a transition. Moreover, we would need to have precise dates of these marital transitions, which are difficult to obtain.[14] Thus, we cannot convincingly distinguish our hypothesis from the alternative one that single and married CEOs are simply different using within-manager variation. Instead, in order to rule out the hypothesis of innate heterogeneity, we employ an instrumental variables approach described in the following section.

3.1 Community Property vs. Equitable Division

While some of the variation in CEOs' marital status is likely driven by their luck or skill in finding a suitable marriage partner, some variation is probably due to the perceived costs of getting married. In particular, a nontrivial fraction of marriages, including those of CEOs, end in divorce. Since divorce is costly, this possibility should have an effect on an individual's propensity to enter into a

[14] We are able to find 76 CEOs in our sample who became married during their tenure, but for many of those the marital status change occurred right after they became CEO or shortly before them stepping down (thus not allowing a proper comparison of managerial decisions before and after marriage).

marriage in the first place. For a wealthy person, a major concern is the division of property upon dissolution of a marriage. In the U.S., the division of marital assets upon divorce is regulated at the state level. Consequently, we can exploit the variation in the divorce laws across states of CEOs' residences, as it is plausibly exogenous both to the match between a firm and a CEO and to the firms' investment opportunities.

The most salient aspect of heterogeneity in the laws guiding the division of marital property is the distinction between *community property* and *equitable division* standards. The former mandates equal division of all assets acquired during marriage between the two spouses upon divorce, regardless of how much each spouse contributed, whereas the latter follows the common law practice allowing the division to be determined by a judge based on a range of factors, including the relative contributions of the spouses. It is commonly understood that community property is more advantageous for the poorer spouse (see Voena (2011)), and especially so for wealthy households. Since CEOs are typically substantially wealthier than their spouses, equal division of assets mandated by community property laws makes marriage costlier for them (as long as there is a positive probability of its dissolution).

There are nine states in the U.S. that have adopted the community property system: Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas, Washington, and Wisconsin.[15] While community property legislation was adopted by these states at different points in time, it was in place in all of them throughout the period covered by our sample. Thus, there is little concern that political economy considerations could create an endogeneity problem, since it is highly unlikely that the passage of laws regulating divorce is systematically related to firms' investment opportunities and risk decades later. It is interesting to note that the use of the community property standard is not obviously related to (current) state characteristics. It is present in both rich and poor states,

[15] Puerto Rico is also a community property jurisdiction.

in large and small ones, as well as those whose populations' political preferences tend to be either predominantly liberal or predominantly conservative.

Although we do not directly observe the state of CEO residence, we can use the state in which the firm is headquartered as a reasonably good proxy for which type of jurisdiction is more relevant for the CEO.[16] While the number of community property jurisdictions is small, it includes some of the most populous states in the U.S., and thus represents approximately 36% of our sample of CEOs.

A potential issue is that prospective CEOs who are married may choose to reside in certain states because their divorce laws are more friendly to wealthy individuals. The market for CEOs in states where divorce is more costly would then have a relatively greater supply of potential CEOs who are single. If these CEOs are also more innately risk-tolerant on average, this could represent a problem for our instrument. However, given that the labor market for CEOs of public companies is likely nation-wide, this would require divorce laws to be a significant factor in determining where potential CEOs seek employment, which we believe is not plausible. What our instrument relies on is the assumption that a state's legal regime can influence a single CEO's decision whether to get married at a given point in time. More specifically, a CEO who is currently single and resides in a community property state is more likely to postpone marriage, holding all else equal.

Prenuptial agreements may limit the extent to which community property statutes impose a cost on wealthy individuals who marry less wealthy spouses. However, even among the wealthy their adoption is by no means universal. A prenuptial agreement is costly, and not exclusively, or even primarily, just in terms of monetary costs. Moreover, full enforcement of premarital agreements by the courts is not always guaranteed.[17] To the extent that such agreements decrease the impact of

[16] Although a number of CEOs of companies headquartered in New York City reside in Connecticut or New Jersey, both of these are also equitable distribution states, and so there is no error due to misclassification for these CEOs.

[17] A recent example where such an agreement was not upheld by the legal system in a community property jurisdiction is the high-profile divorce between Frank and Jamie McCourt (http://www.avvo.com/legal-guides/ugc/judge-tosses-out-prenup-dodgers-ownership-still-undecided).

state laws on the cost of divorce, and therefore on the probability of a single CEO getting married, this would only attenuate our first-stage estimates of the effect of community property states on CEO marital status, and consequently weaken the statistical power of the instrument in the second stage. Mismeasurement of the relevant jurisdiction would have a similar effect, weakening our results. In the Online Appendix, we provide an external validation exercise for our divorce law instrument, where we use U.S. Census data to show that wealthy individuals are less likely to be married in community property states.

3.2 Instrumental Variable Results

In the first stage, we regress the (potentially) endogenous variable *Single* on the instrumental variable, *Community*, which equals one if the firm is headquartered in one of the community property states and zero otherwise, as well as all of the control variables that we use. Our specification is as follows:

$$Single = \alpha + \beta \times Community + \gamma \times X + \delta \times Y, \tag{3}$$

where X is a set of firm characteristics and Y is a set of CEO characteristics. We also include industry and year fixed effects, which we do not tabulate.

Table 5 reports the estimated coefficients in column 1. In accordance with our hypothesis, *Community* has a highly significant effect on the probability of a CEO being single, controlling for all of the firm and CEO characteristics (including, in particular, CEO age and wealth, which both have predictably negative effects). Thus, variation in divorce laws represents a useful instrument for CEO marital status, and in fact a rather strong one, as suggested by a t-statistic of between 3.25 (calculated using robust standard errors clustered at state level). A CEO residing in a community property state is 4.6% more likely to be single relative to the unconditional probability of 16.2%.

We then repeat the regressions for return volatility and for firm investment (given by Eq. (1))

using a two-stage least squares approach, where we substitute the fitted value from the first stage regression described above, $SinglePred$, for the endogenous variable $Single$. We report the results for our two main dependent variables: idiosyncratic stock return volatility and total firm investment (these results also extend to the other outcome variables that we used above). These second stage results are presented in columns (2) and (3). Each one of these uses the appropriate first-stage regression (i.e., with lagged volatility or investment as controls, rather than both as in column (1)). The effect of the instrumented variable, $SinglePred$, is always strongly significant, regardless of specification, with t-statistics of 2.73 for idiosyncratic volatility and 2.99 for total investment, following the same specifications as in Tables 2 and 3, respectively.

One potential source of concern regarding our instrumental variable approach is the possibility that our instrument is systematically correlated with variation in firm investment opportunities across states. Most of the firms in our sample are fairly large companies operating at the national level, so that the economic activity in the state where their headquarters are located is unlikely to drive their investment opportunities. Nevertheless, as we do not have data on the geographic composition of firms' investment, we cannot rule out this possibility directly. Instead, we attempt to control for state-level variation in investment opportunities using state-level macroeconomic variables.[18]

We use the following variables to capture state-level economic activity: the annual growth rate in nonfarm payroll employment ($Payroll$) and the in-state Coincident Economic Activity Index constructed by the Federal Reserve Bank of Philadelphia ($CEAI$), as well as the logarithm of real per capital income ($LogIncomeState$). Our results are not altered by the inclusion of these controls. The only statistically significant state-level coefficient is that of $LogIncomeState$ on investment, indicating that firms headquartered in states with higher per capita income on average

[18]The OLS results reported in Section 2 are robust to the inclusion of state fixed effects. Clearly, we cannot include these in the IV estimation due to the cross-sectional nature of our instrument.

invest more. At the same time, the effect of the state-level economic activity index, while not statistically significant, is negative. We conclude that our instrumental variable results are not likely to be due to differences in economic conditions across states.

Overall, these results confirm that CEO marital status has an effect on firm risk-taking. The instrumental variable approach helps rule out innate heterogeneity among CEOs that is correlated with marital status as an explanation of our results. It also potentially strengthens our results by reducing the effect of measurement error that arises from our classification of CEOs into "single" and "married."

4 Conclusion

In this paper, we explore the relation between CEO marital status and firm risk-taking. We find that single CEOs invest more aggressively (in capital expenditures, R&D, advertising, and acquisitions) and that their companies exhibit higher stock return volatility. These effects are not only statistically significant, but also economically important. Our results are strengthened when we adopt an instrumental variable approach, based on variation in divorce laws across U.S. states. The instrumental variable results support the hypothesis that CEO marital status impacts firm risk-taking rather than that the relation simply reflects innate heterogeneity in CEO preferences.

There exist a number of potential explanations for our findings, including changes in indirect preferences over wealth resulting from family formation, status concerns driven by marriage market competition, or direct biological effects of marriage on behavior. Distinguishing between the different channels through which marriage can alter risk tolerance of high-wealth individuals is a fruitful venue for future research. Whether one or several of these channels are at work, our findings have potentially wide-ranging implications, as differences in marriage norms across societies may help us understand the huge variation in management practices and, consequently, diverging patterns of economic growth (e.g., Bloom and Van Reenen (2010)).

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Table 1: Summary Statistics

Panel A. Risk-taking measures

	Investment	CapEx	R&D	Advertising	Net Acq.	Vol.	Id. vol.
				Married CEOs			
Mean	0.90	0.27	0.25	0.08	0.24	0.37	0.34
Median	0.36	0.19	0.00	0.00	0.00	0.31	0.28
1st. Perct.	-0.02	0.01	0.00	0.00	-0.31	0.00	0.09
99th Perct.	11.25	1.69	4.50	1.63	6.31	3.72	1.12
N	21,876	21,876	21,876	21,876	21,876	20,433	20,418
				Single CEOs			
Mean	1.52	0.32	0.58	0.12	0.38	0.45	0.42
Median	0.48	0.22	0.00	0.00	0.00	0.37	0.34
1st. Perct.	0.00	0.00	0.00	0.00	-0.29	0.07	0.11
99th Perct.	19.85	2.04	8.86	3.94	9.51	9.51	1.41
N	4,224	4,224	4,224	4,224	4,224	3,786	3,785

Panel B. Control variables

	Assets	M/B	CF	Leverage	Firm Age	CEO Age	Tenure	Wealth
					Married CEOs			
Mean	12,517	1.94	0.54	0.36	25.6	55.0	5.1	166
Median	1,615	1.46	0.39	0.35	22.0	55.0	4.0	16
1st. Perct.	47	0.79	-5.30	0.00	3.0	38.0	0.0	0
99th Perct.	208,335	8.85	8.38	1.27	57.0	77.0	24.0	1,853
N	21,856	21,876	21,876	21,876	21,876	20,885	21,876	16,531
					Single CEOs			
Mean	2,076	2.14	0.31	0.30	18.5	52.6	4.5	36
Median	595	1.56	0.37	0.25	13.0	53.0	3.0	8
1st. Perct.	26	0.69	-12.20	0.00	3.0	36.0	0.0	0
99th Perct.	24,563	10.82	17.42	1.57	57.0	70.0	22	360
N	4220	4,224	4,224	4,224	4,224	3,960	4,224	2,969

Panel A reports the summary statistics for various measures of firm risk-taking. Investment ($Investment$) and its components ($CapEx$, $R\&D$, $Advertising$, and $NetAcquisitions$) are relative to $PP\&E$. Volatility is the (annualized) standard deviation of monthly stock returns over the previous year. Idiosyncratic volatility is the standard deviation of residuals from the regression of stock returns on the market return.

Panel B reports the summary statistics for our main control variables. Firm assets (A) and CEO wealth ($Wealth$) are expressed in millions. Market-to-book ratio (M/B) is the ratio of the market value of assets to their book value. Cash flow (CF) equals earnings before extraordinary items plus depreciation & amortization, scaled by net $PP\&E$. Book leverage ($Leverage$) equals the sum of long-term and current debt divided by the sum of long-term debt, current debt, and book equity. Firm age ($Firm\ Age$) is computed with respect to the first year it appears in COMPUSTAT (expressed in years, as are CEO age and tenure).

Table 2: Regression Results for Stock Return Volatility

	Total		Idiosyncratic	
	1	2	3	4
$Single$	0.012	0.067	0.012	0.063
	(2.320)	(7.827)	(2.520)	(8.085)
CF_t	-0.006		-0.004	
	(-6.810)		(-4.200)	
M_{t-1}/B_{t-1}	0.000		-0.002	
	(0.210)		(-1.680)	
$logA_{t-1}$	-0.022		-0.027	
	(-9.120)		(-11.850)	
$Leverage_t$	0.097		0.085	
	(10.130)		(9.690)	
Vol_{t-1}	0.335		0.327	
	(7.930)		(7.260)	
$FirmAge$	-0.001		-0.001	
	(-7.320)		(-7.200)	
Age	-0.001	-0.004	-0.001	-0.004
	(-3.470)	(-11.458)	(-3.710)	(-11.370)
$Age \times Single$	-0.001	-0.002	-0.001	-0.001
	(-1.520)	(-1.188)	(-1.310)	(-0.960)
$Tenure$	-0.001	-0.001	-0.001	-0.000
	(-2.340)	(-1.021)	(-2.070)	(-0.819)
$Tenure \times Single$	-0.000	0.000	0.000	-0.001
	(1.800)	(-0.198)	(0.230)	(-0.464)
$CEOProminence$	0.003	-0.007	0.003	-0.008
	(2.750)	(-4.556)	(2.890)	(-6.177)
$FirmProminence$	-0.001		-0.001	
	(-1.190)		(-0.640)	
$Inst$	-0.045		-0.050	
	(-4.710)		(-5.590)	
$Inst \times Single$	-0.054		-0.064	
	(-1.610)		(-1.930)	
Industry × year fixed effects	yes	no	yes	no
Year fixed effects	no	yes	no	yes
N	23,028	23,094	23,011	23,278
R^2	0.512	0.196	0.482	0.189

The table reports coefficient estimates of the following OLS regression:

$$Vol = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}),$$

where Vol is either the annualized standard deviation of monthly stock returns over the previous year (Total volatility), or the standard deviation of the residual from a regression of stock returns on the CRSP value-weighted market portfolio return (Idiosyncratic volatility). $Single$ is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, and Y is a set of CEO characteristics (the specific variable definitions are given in Section 2), demeaned when used in interaction terms: $\tilde{Y} = Y - \hat{E}Y$. Industry×year fixed effects are based on the Fama-French 49-industry classification. t-statistics are in parentheses, and are computed using robust standard errors clustered by firm.

Table 3: Regression Results for Investment

	Total Investment		Net Acquisitions		R&D + Advertising	
	1	2	3	4	5	6
Single	0.105	0.453	0.048	0.095	0.032	0.324
	(2.650)	(5.234)	(1.900)	(2.587)	(2.590)	(5.667)
CF_t	0.094		0.071		0.008	
	(5.710)		(10.130)		(1.410)	
M_{t-1}/B_{t-1}	0.109		0.016		0.012	
	(7.340)		(2.280)		(2.240)	
$logA_{t-1}$	-0.145		-0.049		-0.030	
	(-11.170)		(-7.820)		(-6.540)	
$Leverage_t$	0.205		0.266		-0.029	
	(3.660)		(7.760)		(-1.690)	
$Investment_{t-1}$	0.477		0.230		0.801	
	(18.940)		(13.130)		(39.110)	
FirmAge	-0.002		-0.001		-0.000	
	(-2.720)		(-2.790)		(-0.310)	
Age	-0.004	-0.029	-0.001	-0.005	-0.001	-0.016
	(-2.700)	(-9.768)	(-0.920)	(-3.741)	(-2.100)	(-8.702)
$Age \times Single$	-0.017	-0.042	-0.006	-0.012	-0.004	-0.024
	(-2.440)	(-2.928)	(-1.600)	(-2.276)	(-1.630)	(-2.478)
Tenure	-0.007	-0.007	-0.003	-0.003	-0.001	-0.003
	(-3.410)	(-1.262)	(-1.640)	(-1.257)	(-2.070)	(-1.143)
$Tenure \times Single$	0.015	0.039	0.013	0.021	0.001	0.013
	(1.320)	(1.474)	(1.610)	(1.844)	(0.240)	(0.713)
CEOProminence	0.032	-0.002	0.006	-0.014	0.009	0.016
	(3.550)	(-0.186)	(1.230)	(-2.587)	(3.040)	(2.148)
FirmProminence	0.004		-0.002		0.001	
	(0.350)		(-0.320)		(0.190)	
Inst	0.121		0.167		-0.003	
	(1.680)		(4.520)		(-0.130)	
$Inst \times Single$	0.019		-0.080		0.031	
	(0.090)		(-0.720)		(0.380)	
Industry × year fixed effects	yes	no	yes	no	yes	no
Year fixed effects	no	yes	no	yes	no	yes
N	24,815	24,835	24,815	24,835	24,815	24,835
R^2	0.463	0.043	0.179	0.014	0.770	0.048

The table reports coefficient estimates of the following OLS regression:

$$Investment = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}),$$

where *Investment* is defined as: Capital Expenditures plus Net Acquisitions (acquisitions minus asset sales) plus R&D expenditure plus Advertising Expenditure scaled by Net Property, Plant & Equipment (Total Investment, columns 1 and 2); Net Acquisitions only (columns 3 and 4); or R&D plus Advertising only (columns 5 and 6). *Single* is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, and Y is a set of CEO characteristics (the specific variable definitions are given in Section 2), demeaned when used in interaction terms: $\tilde{Y} = Y - \hat{E}Y$. Industry×year fixed effects are based on the Fama-French 49-industry classification. t-statistics are in parentheses, and are computed using robust standard errors clustered by firm.

Table 4: Effect of Idiosyncratic Risk on Investment

	1	2	3
$IdVol_{t-1}$	-0.175	-0.330	-0.289
	(-3.100)	(-5.940)	(-4.950)
$Single$	-0.043	-0.043	-0.026
	(-1.090)	(-1.110)	(-0.600)
$IdVol_{t-1} \times Single$	0.216	0.309	0.319
	(2.250)	(3.320)	(3.270)
CF_t		0.101	0.103
		(16.110)	(15.600)
M_{t-1}/B_{t-1}		0.207	0.199
		(21.240)	(19.610)
$logA_{t-1}$		-0.334	-0.347
		(-15.680)	(-15.580)
$Leverage_t$		0.745	0.757
		(12.540)	(12.220)
$Investment_{t-1}$		0.082	0.074
		(12.690)	(10.970)
$FirmAge$		0.043	0.039
		(14.200)	(10.500)
Age			-0.003
			(-1.380)
$Age \times Single$			-0.003
			(-0.450)
$Tenure$			0.001
			(0.170)
$Tenure \times Single$			0.010
			(1.220)
$CEOProminence$			-0.019
			(-1.760)
$FirmProminence$			-0.013
			(-0.790)
$Inst$			0.337
			(4.650)
N	24,169	24,167	23,011
R^2	0.594	0.621	0.623

The table reports coefficient estimates of the following OLS regression:

$$Investment_t = \alpha + \beta \times Single + \gamma \times IdVol_{t-1} + \delta \times (Single \times \widetilde{IdVol}_{t-1}) + \zeta \times X,$$

where $Investment$ is our measure of total investment in Table 3, $Single$ is a dummy variable equaling one if the CEO is unmarried and zero otherwise, $IdVol_{t-1}$ is lagged idiosyncratic volatility of the firm's stock returns, and X is a set of firm and CEO characteristics. All variables are demeaned when used in interaction terms (e.g.: $\widetilde{IdVol}_{t-1} = IdVol_{t-1} - \hat{E}IdVol_{t-1}$). All specifications also include firm and year fixed effects. Robust t-statistics are in parentheses.

Table 5: Instrumental Variable Results

	Single Status	Idiosyncratic Volatility	Total Investment
	1	2	3
Community	0.046		
	(3.250)		
SinglePred		0.330	2.357
		(2.730)	(2.990)
CF_t	-0.001	-0.004	0.109
	(-0.320)	(-3.830)	(5.600)
M_{t-1}/B_{t-1}	0.001	0.001	0.096
	(0.290)	(0.520)	(7.070)
$logA_{t-1}$	-0.016	-0.020	-0.128
	(-3.670)	(-7.490)	(-6.440)
$Leverage_t$	-0.011	0.079	0.292
	(-0.480)	(11.330)	(5.420)
$IdVol_{t-1}$	0.035	0.318	
	(1.620)	(6.670)	
$Investment_{t-1}$	0.008		0.456
	(2.640)		(18.780)
FirmAge	-0.002	-0.000	0.003
	(-3.680)	(-1.460)	(1.610)
Age	-0.003	0.000	-0.000
	(-4.050)	(0.470)	(-0.080)
Tenure	-0.002	0.001	-0.003
	(-1.630)	(1.400)	(-1.130)
Wealth	-0.019	0.002	0.071
	(-6.180)	(0.710)	(4.280)
CEOProminence	-0.022	0.011	0.076
	(-5.610)	(4.540)	(4.930)
FirmProminence	-0.002	-0.000	0.009
	(-0.660)	(-0.350)	(0.830)
Inst	0.033	-0.075	0.047
	(1.300)	(-5.000)	(0.570)
Payroll	0.069	0.108	0.641
	(0.100)	(0.350)	(0.270)
CEAI	-0.121	0.190	-1.448
	(-0.280)	(0.640)	(-0.770)
LogIncomeState	0.055	0.003	0.285
	(1.200)	(0.190)	(2.300)
N	22,402	24,189	22,402
R^2	0.110	0.444	0.450

The table reports coefficient estimates of the instrumental variables regressions. Column 1 presents estimates from the following OLS regression:

$$Single = \alpha + \beta \times Community + \gamma \times X + \delta \times Y + \zeta \times Z,$$

where *Single* is a dummy variable equaling one if the CEO is unmarried and zero otherwise, *Community* is a dummy variable equaling one if the firm is headquartered in a community property state and zero otherwise, X is a set of firm characteristics, Y is a set of CEO characteristics, and Z is a set of state-level control variables (the specific variable definitions are given in Sections 2 and 4.3). Columns 2 and 3 report coefficient estimates of the following OLS regression:

$$I = \alpha + \beta \times SinglePred + \gamma \times X + \delta \times Y + \zeta \times Z,$$

where I is either $IdVol$ or Total Investment, *SinglePred* is the predicted value for *Single* computed using the appropriate first-stage specification, X is a set of firm characteristics, Y is a set of CEO characteristics, and Z is a set of state-level control variables (the specific variable definitions are given in Sections 2 and 4.3). All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported). t-statistics are in parentheses, and are computed using robust standard errors clustered by state, taking into account the uncertainty in first-stage estimates.

Online Appendix

A.1 Marriage and Risk Attitudes: the Setting

Following Bertrand and Schoar (2003), who show that manager identities are strongly correlated with corporate policies, a large literature aims to identify the managerial characteristics that affect firm policies. Benmelech and Frydman (2012), Malmendier, Tate, and Yan (2011), and Schoar and Zuo (2011) trace the impact of the CEOs' earlier life experiences on firm policies and performance. Kaplan, Klebanov, and Sorensen (2008) examine the role of particular types of managerial skills of prospective CEOs, whereas Adams, Almeida, and Ferreira (2005) and Morse, Nanda, and Seru (2011) focus on the concentration of decision-making power in the hands of the CEOs. Bennedsen, Perez-Gonzalez, and Wolfenzon (2006) and Bennedsen, Nielsen, Perez-Gonzalez, and Wolfenzon (2007) use Scandinavian data to identify exogenous shocks to CEO appointment and termination based on life events. Graham, Harvey, and Puri (2011) directly measure behavioral traits of CEOs and link them to firm actions. In our paper, we add to this literature by exploring the role of marital status.

Apart from understanding manager and firm behavior as such, we are interested in shedding light on the risk attitudes of wealthy individuals, who are likely to be marginal investors in financial markets. CEOs in our sample almost exclusively fall in that group (Kaplan and Rauh (2010)), and their preferences are likely to be reflected in corporate investment and financial policies (to the extent that CEO wealth is tied to their firms' financial performance through incentive pay or changes in the value of their human capital). Furthermore, the decisions they make in their CEO role involve large financial stakes and have potentially broad-ranging impact on other agents.

Household survey data appears to indicate that changes in marital status do alter risk-taking behavior; in particular, for males a transition from being single to being married is associated with a decrease in the portfolio share invested in stocks and similar risky assets (Love (2010)). While intuition suggests that aggregation of preferences within a households results in an "averaging" of risk aversion coefficients, Mazzocco (2004) shows that, somewhat counterintuitively, lowering the risk aversion of one of the household members can actually increase the effective risk aversion of the household. Barber and Odean (2000) show that single men display more aggressive trading behavior than single women or married couples, which they interpret as evidence of overconfidence.

In corporate finance, following Malmendier and Tate (2005) and Malmendier and Tate (2009), a number of authors find that managers exhibiting overconfident behavior engage in more risk-taking, in particular through more aggressive investment and debt policies (e.g., see Ben-David, Graham, and Harvey (2007)) and greater innovation activity (Galasso and Simcoe (2010), Hirshleifer, Low, and Teoh (2012)). The latter studies show that overconfident managers may in fact be relatively successful in pursuing innovation, which is consistent with the theoretical literature that shows that managerial overconfidence may be optimal from the firm's standpoint, as explored by Gervais and Goldstein (2007), Gervais, Heaton, and Odean (2011), and Goel and Thakor (2008). Interestingly, recent evidence in both psychology and economics suggests that overconfident behavior itself is a product of social status considerations - see Anderson, Brion, Moore, and Kennedy (2012) and Burks, Carpenter, Goette, and Rustichini (2013).

There exists a large literature in evolutionary psychology that links status, mating, and risk-taking behavior, especially among males. Overwhelming evidence exists that wealth and socioeconomic status are positively related to men's reproductive success (e.g., see Hopcroft (2006), Nettle and Pollet (2008), and Pollet and Nettle (2009), and extensive references therein). Both experimental and survey evidence indicates that mating concerns induce signaling of wealth through conspicuous consumption and financial risk-taking (Griskevicius, Sundie, Miller, Tybur, Cialdini, and Kenrick (2007)). This literature also documents greater risk-taking by subjects confronted with situations suggestive of mating or competing for mates (Wilson and Daly (2004) and Baker and Maner (2008)).

Postlewaite (1998) advocates modeling status concerns as arising endogenously due to non-market interactions (such as marriage and other settings where allocations depend on matching instead of prices) rather than being hard-wired into preferences. Standard arguments lead to positively assortative matching in marriage markets, whereby higher wealth individuals are likely to be matched with mates who are highly desirable, in terms of their wealth or other relevant characteristics (Becker (1973)). Indeed, Charles, Hurst, and Killewald (2011) present evidence of positive marital sorting based on parental wealth. Chiappori, Oreffice, and Quintana-Domeque (2012) estimate a model of marital matching in which both income/education and physical attributes of a spouse enter into an individual's preferences. Consequently, individuals care about their future wealth not only because it can be converted into consumption, but also because it is instrumental in securing a marital match, where the quality of the match depends on relative wealth, i.e. status.

Evidence in the recent literature indicates that status concerns stemming from marriage market competition are also important for other dimensions of individual consumption and investment decisions. In particular, variation in sex ratios, which determine the intensity of competition among males and females, appears to induce variation in the propensity to invest in human and physical capital. Charles and Luoh (2010) exploit the differences in male incarceration rates in the U.S. to identify the effect of marriage market competition on female schooling and labor supply, while Wei and Zhang (2011a) and Wei and Zhang (2011b) use variation in gender imbalances (i.e., the relative number of males to females in the population) across provinces of China to argue that they result in higher savings, greater investment rates, and more economic growth, consistent with the predictions of endogenous status models. Du and Wei (2010) and Du and Wei (2011) use a quantitative model to show that the unbalanced sex ratios in China could also drive its current account surpluses and real exchange rates.

These papers focus on how marriage market competition induces individuals to increase their future expected wealth due to the fear of ending up in the lower end of the wealth distribution, and thus being at risk of failing to obtain a suitable marital match. In contrast, our paper is more concerned with how individuals, especially those already in the upper tail of the wealth distribution, attempt to increase the probability of outperforming their peers by assuming more risk. Importantly, such individuals may take on more (idiosyncratic) risk even if their expected wealth does not increase as a result.

Status concerns have been proposed as explanations for gambling behavior (Robson (1992)), local bias in portfolios (Cole, Mailath, and Postlewaite (2001) and DeMarzo, Kaniel, and Kremer (2004)), and other forms of under-diversification, such as entrepreneurial risk-taking (Roussanov (2010a)). Our findings confirm the importance of such concerns by highlighting how they impact even high-stakes decisions. Models of status differ in their predictions as to whether status considerations lead to greater tolerance for idiosyncratic or aggregate risk. In particular, models that feature "keeping up with the Joneses," as in Abel (1990), exhibit conformist, or herding, behavior (e.g., see Gollier (2004) and DeMarzo, Kaniel, and Kremer (2004)). In contrast, the prediction that competition for status leads to greater idiosyncratic risk-taking ("getting ahead of the Joneses"), whether resulting from marital sorting or not, is driven by the feature that the marginal benefit of an extra dollar of wealth is increasing in relative wealth (e.g., see Gregory (1980) and Becker, Murphy, and Werning (2005)). Therefore, analyzing the differences in attitudes towards idiosyncratic risk by varying the strength of status concerns can shed light on which class of reduced-form relative wealth preferences is empirically relevant, potentially yielding implications for asset pricing and risk sharing.

While we view our findings as providing further support for the theory of marriage-driven status concerns, one can also interpret our results as consistent with the view that both risk-taking and marriage market behavior are determined biologically, and that the link between the two is shaped by evolutionary forces. There is evidence that married males exhibit lower testosterone (Burnham, Chapman, Gray, McIntyre, Lipson, and Ellison (2003)), and high testosterone levels (in both men and women) are often associated with risk-taking behaviors (Burnham (2007) and Sapienza, Zingales, and Maestripieri (2009)), and even appear to predict empire-building behavior among entrepreneurs (Guiso and Rustichini (2011)).

A.2 Marriage, status concerns, and risk-taking: a model

In this appendix we present a model of matching in the marriage market and investment in order to highlight the interaction between matching-induced status concerns and risk-taking. The model builds on Cole, Mailath, and Postlewaite (1992) and Cole, Mailath, and Postlewaite (2001), who show that competition for mates can induce a concern for relative position even if it does not directly enter individuals' preferences. In our model, such relative wealth concerns can lead to a greater tolerance for risk (e.g., Robson (1992) and Becker, Murphy, and Werning (2005)), and especially idiosyncratic risk, as emphasized by Roussanov (2010a). The intuition is that competition for mates is akin to an arms race: insofar as potential spouses prefer wealthier suitors, what matters for attaining a spouse of a higher "quality" is how much wealth one has relative to competitors (as long as the notion of spouse quality is the same for everyone). If attaining a higher quality spouse raises one's marginal utility of wealth, then the desire to "get ahead of the Joneses" overcomes risk aversion and leads to greater risk-taking than if matching concerns were absent.

Environment

There is a continuum of agents of two types: set M (indexed by i) of males and set F (indexed by j) of females, each of measure one.[19] Each agent derives utility from a market good c and a non-market good s:

$$u(c, s) \ = s \log (1 + c)$$

Females are endowed with f_j units of the non-market good, distributed according to c.d.f. H on $(0, \infty)$. Type M agents are managers, i.e. each controls a firm (indexed also by i). At the beginning of the period, each male is endowed with $W_0 > 0$ shares of the firm equity. The manager can choose the composition of the firm's investment projects. The manager's market wealth W at

[19]We use these labels just for convenience. There is nothing in our model (or in our empirical tests) that requires the two groups to have biological characteristics of their respective sexes.

the end of the period is determined by the return on firm equity. The project choice set of the manager consists of all possible linear combinations of two linear technologies: riskless storage at rate R^f and firm-specific risky investment that earns a stochastic rate of return R^i. The market "wealth" of each male at the end of the period is then

$$W^i = W_o\left(R^f + \theta^i(R^i - R^f)\right), \tag{A-1}$$

where θ^i is the share of the firm's capital invested in the risky technology by (male) manager i, subject to the constraint that $W^i > 0$ (this constraint ensures that $c > 0$ and, consequently, utility is always increasing in the non-market good). Risky returns R^i are distributed independently and identically across agents with a c.d.f. Φ on $A = [R_{\min}, \infty)$.[20] We denote the percentile rank of male i in the resulting equilibrium distribution of end-of-period wealth as $G\left(W^i\right)$.[21]

Having matched, a male and a female jointly consume each good; i.e., if a male i matches with a female j, each of them receives utility $u(W^i, f_j)$ at the end of the period. A subset M_M having total measure $\lambda_M \in (0, 1)$ of males, and a set F_M of the same measure of females, drawn randomly and independently from their respective distributions, are permanently matched at the beginning of the period. This is meant to capture the idea that people may find their marriage partners early in life, before their investment payoffs are realized. Since all males are ex ante identical while the females are not, they are matched randomly. The remaining subsets M_U of males and F_U of females enter the matching market at the end of the period, after W^i are realized. The relevant equilibrium concept is a stable matching, as introduced by Gale and Shapley (1962), which requires that, given a matching, no male and female would prefer to leave their current matches and pair with each other (see Roth and Sotomayor (1990) for details). Since utility is increasing in both arguments for both males and females, and the two goods are complements, the only stable matching is positively assortative (in W and f, respectively), so that the matched male i and female j have the same percentile rank in the respective distributions:

$$G\left(W^i\right) = H\left(f_j\right).$$

Therefore, the equilibrium allocations depend only on the relative status of the males after the real-

[20] The assumption of independence is not critical; what is important is that the agent-specific investment opportunities contain some purely idiosyncratic risk so that they are not perfectly correlated across managers.

[21] The assumption that only males have access to an investment technology is meant to simplify exposition. One could instead consider a symmetric setting where both "males" and "females" face the same problem.

ization of uncertainty about the investment projects. The equilibrium matching function produces a pairing

$$s^i = f_j$$

such that

$$s^i = H^{-1}\left(G\left(W^i\right)\right) = S\left(W^i\right).$$

Thus, at the beginning of the period, each unmatched male solves

$$\max_{\theta} E\left[S\left(W^i\right)\log\left(1+W^i\right)\right], \tag{A-2}$$

where W^i is subject to the resource constraint (A-1) above, and taking the equilibrium status function $S\left(W^i\right)$ as given. Each exogenously matched male solves

$$\max_{\theta} E\left[s^i \log\left(1+W^i\right)\right], \tag{A-3}$$

subject to the same resource constraint (A-1), where s^i is the endowment of the female that the male i was randomly matched with at the beginning of the period.

Equilibrium

We focus on a symmetric equilibrium: a solution θ^i to the problem (A-2) such that $\theta^i = \bar{\theta}$ for all $i \in M_U$. Since the decisions of matched males solving (A-3) are neither influenced by nor have an impact on the decisions of other males, they can be omitted from the description of the equilibrium: there is an θ_M such that $\theta^i = \theta_M$ is satisfied trivially for all $i \in M_M$.

In the symmetric equilibrium, the status matching given by the equilibrium distribution of end-of-period wealth is a function of one's own choice θ^i and the choice of all other agents $\bar{\theta}$ (taken by agent i as given). In this symmetric equilibrium, the wealth distribution inherits the properties of the probability distribution of risky asset returns, since

$$G(W) = \Pr\left[W^i \leq W\right] = \Phi\left(\frac{W/W_o - \left(1-\bar{\theta}\right)R^f}{\bar{\theta}}\right).$$

Assume that the status function $S\left(W^i\right)$ is continuously differentiable. Then the first-order condition for the individual investment problem faced by the unmarried male is

$$E\left[R^{ix}\left(\frac{S\left(W^i\right)}{1+W^i}+\log\left(1+W^i\right)S'\left(W^i\right)\right)\right]=0,$$

where $R^{ix}=R^i-R^f$.

For those males whose marriage matches are assigned permanently at time 0, there is no interaction between investment and matching concerns, and therefore s^i is orthogonal to W^i. Then the first-order condition for the problem (A-3) of a married male is the standard Euler equation:

$$E\left[\frac{R^{ix}}{1+W_M^i}\right]=0, \tag{A-4}$$

where W_M^i is the end-of-period value of the wealth of agent $i\in M_M$ (married at the beginning of the period) given his optimal choice of investment projects.

For the males who are active in the matching market at the end of the period, we can write (4) as

$$\begin{aligned}
0 &= E\left[R^{ix}\left(\frac{S\left(W^i\right)}{1+W^i}\right)\right]+E\left[R^{ix}\log\left(1+W^i\right)S'\left(W^i\right)\right]\\
&= Cov\left(\frac{R^{ix}}{1+W^i},S\left(W^i\right)\right)+E\left[\frac{R^{ix}}{1+W^i}\right]E\left[S\left(W^i\right)\right]\\
&\quad +Cov\left(R^{ix}\log\left(1+W^i\right),S'\left(W^i\right)\right)+E\left[R^{ix}\log\left(1+W^i\right)\right]E\left[S'\left(W^i\right)\right],
\end{aligned}$$

so that

$$E\left[\frac{R^{ix}}{1+W^i}\right]=-\frac{1}{E\left[S\left(W^i\right)\right]}\left[\begin{array}{c}Cov\left(\frac{R^{ix}}{1+W^i},S\left(W^i\right)\right)+Cov\left(R^{ix}\log\left(1+W^i\right),S'\left(W^i\right)\right)\\ +E\left[R^{ix}\log\left(1+W^i\right)\right]E\left[S'\left(W^i\right)\right]\end{array}\right]. \tag{A-5}$$

Suppose the status function is linear:

$$s^i=S\left(W^i\right)=\alpha W^i, \tag{A-6}$$

so that $S'\left(W^i\right)=\alpha$ is a (positive) constant and $Cov\left(R^{ix}\log\left(1+W^i\right),S'\left(W^i\right)\right)=0$. Then (A-5) implies

$$E\left[\frac{R^{ix}}{1+W^i}\right] = -\frac{1}{E\left[S\left(W^i\right)\right]}\left[Cov\left(\frac{R^{ix}}{1+W^i}, S\left(W^i\right)\right) + E\left[R^{ix}\log\left(1+W^i\right)\right] E\left[S'\left(W^i\right)\right]\right].$$

Consequently, for single males this Euler equation implies an inequality

$$E\left[\frac{R^{ix}}{1+W_U^i}\right] < 0 \tag{A-7}$$

that must satisfied by the optimal wealth portfolios W_U^i for all $i \in M_U$ (unmarried at the beginning of period). By comparison with the Euler equation (A-4), this inequality states that the expected excess return on the idiosyncratic risky project, risk-adjusted using the stochastic discount factor of a married investor evaluated at the optimal wealth of a single investor, is negative. That is, the single manager's optimal investment policy exhibits a higher allocation to the idiosyncratic asset than that optimally chosen by the married agent. In other words, agents who are active in the marriage market invest more in the idiosyncratic risky project than those who are married at the beginning of period.

What is the mechanism behind this result? If the idiosyncratic project enjoys a high return, this not only raises the wealth (and therefore consumption) of the agent, but also increases the equilibrium quality of his match, since the wealth of other agents is unaffected, and so it is easier for him to beat the competition. Thus, $S(W^i)$ increases, which in turn raises the marginal utility of consumption. Since wealth becomes relatively more valuable in the high R^i state, this idiosyncratic asset is less risky from the perspective of an agent who is active in the marriage market than it is from the perspective of an exogenously-matched agent, who does not care about relative position. If the risky project realization was common to all agents, however, this effect would not arise. Since all males are ex ante identical, a higher return on the common project does not alter their relative positions and hence has no impact on status and, consequently, match quality.

Special Cases and Extensions

The model prediction above was derived under the simplifying assumption (A-6), which states that the reduced form equilibrium status/matching function is linear in male agent's wealth. Under what conditions is the status function linear? The following simple examples provide sufficient conditions:

1. female good is distributed uniformly on $[f_{\min}, f_{\max}]$ and the equilibrium distribution of wealth

is uniform (which is the case if R^{ix} is uniformly distributed on $[R_{\min}, R_{\max}]$);

2. the distribution of the female non-market good coincides with the equilibrium distribution of male wealth, $H(x) = G(x)$ for all x; this situation is relevant also if the problem is completely symmetric, i.e. the females face an investment problem identical to that faced by the males.

What if S is not linear? Then the sign of $Cov\left(R^{ix}\log\left(1+W^i\right), G'\left(W^i\right)\right)$ is ambiguous and depends on the shape of the status/matching function S, which, in turn, depends on the equilibrium distribution of wealth G. In particular, if S is convex, the latter covariance is negative and the same conclusion as above holds. However, if S is concave, the conclusion is ambiguous and potentially depends on the specific parameterization of the model.

The feature of the model that yields the prediction of greater risk-taking by single managers under a broad set of conditions is the complementarity between the male and the female good (i.e., the fact that $u_{cs} > 0$). This feature is intuitive: a higher quality spouse raises one's own marginal utility of consumption. For example, a spouse with a higher level of "sophistication" may influence one's tastes in a direction that demands purchase of more expensive consumption goods.

The complementarity assumption is not crucial. For example, Cole, Mailath, and Postlewaite (2001) consider a setting in which utility is separable in the market and non-market good, and show that if the status/matching payoff is convex in market wealth, the same result as here obtains (agents take more idiosyncratic risk than in the absence of matching). However, if utility is sufficiently concave over the non-market good, the opposite prediction obtains - the agents "herd" towards common projects (Roussanov (2010b) describes in detail the conditions under which these predictions hold).

A model can be easily generalized to accommodate other margins that have an effect on wealth accumulation, such as a choice of effort vs. leisure or intertemporal consumption-saving decisions. Since the status payoff that comes from the marriage market competition provides an additional benefit of wealth, the key prediction of the model carries over under fairly general conditions: unmarried individuals invest more than married ones. This is because the relative position concerns induced by matching are a form of an arms race: single individuals competing for mates are lead to accumulate more resources than they would for consumption purposes alone. However, unlike other models of relative wealth concerns based on marriage market interactions, such as Cole, Mailath, and Postlewaite (1992) and Wei and Zhang (2011a), our emphasis is not on pure wealth accumulation, but rather on the risk-taking that leads to extreme outcomes and increased wealth dispersion. While

CEOs do not necessarily compete with one another for mates, they do not compete with an average person. Rather, they likely compete with other wealthy and highly visible individuals, such as top entrepreneurs, entertainers, and asset managers, who dominate the highest wealth percentiles (Kaplan and Rauh (2010)). Indeed, our model emphasizes that that the payoff to the relative position is the highest in the right tail of the distribution (due to the complementarity between wealth and spouse quality), leading to increased risk-taking.

Discussion of Implications

We show that under a set of plausible conditions individuals who expect to compete in the market for mates exhibit greater risk-taking than those who do not, including those who are already matched. We aim to test this prediction of the model by analyzing differences in risk-taking between single and married managers. The intuition is that for single individuals marriage market competition is more acute than for those already married (even if the matches are not expected to be permanent, as long as divorce and re-matching are costly). The model is deliberately simple in that it compares people who make investment decisions before competing in the marriage market to those who invest after being exogenously matched. The way to interpret this assumption is that the probability of being married at a given point in time depends on luck (e.g., in meeting a suitable partner) as well as relative wealth.

A.3 CEO marital status: external validity

Marriage rates

In order to confirm that the proportion of single CEOs in our data is reasonable, we use data from the Survey of Consumer Finances (SCF) for the year 2001, which is roughly in the middle of our sample period. The SCF oversamples wealthy households, and therefore is more likely than the Census to accurately capture the demographic to which the CEOs in our sample belong. It also does not apply systematic top-coding to income and wealth variables, unlike most other commonly used survey datasets, and therefore provides reliable evidence on the financial position of the wealthiest households (see Kennickell and Lane (2006)).[22] We estimate a logistic regression predicting that

[22]The SCF does explicitly drop all households/individuals listed in the *Forbes* 400 list of the wealthiest people. Since this list covers only a subset of the CEOs in our sample, the overlap between the two groups is likely sufficiently large to make reliable inferences.

the head of household in the SCF is single using the following specification:

$$\Pr(Single) = \Phi\left(\alpha + \beta \times Wealth + \gamma \times Income + \delta \times Age + \zeta \times \frac{Age^2}{100}\right), \qquad \text{(A-8)}$$

where $Single$ is a dummy variable that equals one if the head is unmarried, Age is the head's age, $Income$ is the annual household income, and $Wealth$ is a measure of household wealth. We use two wealth measures: one is the total household net worth (total assets minus total liabilities), and the other is the value of holdings concentrated in the single largest risky asset. The latter wealth variable (see Roussanov (2010b) for details on its construction) is meant to mimic our proxy for CEO wealth, which is based on holdings of own-company stock and options. We do not use SCF population weights, which are supposed to address the issue of oversampling of wealthy households, as we are interested in capturing the relation precisely for such households rather than the U.S. population as a whole.

Table A-1 presents the regression results, together with the implied probability of being single computed for the median CEO in our sample. This probability is calculated based on the median CEO wealth of $13.8 million, median annual CEO compensation of $2.2 million, and median CEO age of 55 years. The implied probabilities for various specifications fall in the 11 to 20% range, which is not too far from the proportion of CEOs we classify as single in our sample. Consequently, we conclude that our measure of marital status is reasonably accurate, at least in the sense that we do not greatly overestimate or underestimate the number of unmarried CEOs.

Table A-1: CEO Marital Status: A Diagnostic

	1	2	3	4	5
Intercept	2.455	1.452	2.396	2.391	1.410
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Net Worth	-0.032			-0.018	
	(0.000)			(0.000)	
Largest Asset		-0.018			-0.011
		(0.000)			(0.001)
Income			-0.488	-0.279	-0.080
			(0.000)	(0.000)	(0.000)
Age	-0.130	-0.121	-0.125	-0.126	-0.118
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$Age^2/100$	0.125	0.113	0.119	0.121	0.111
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$\Pr(Single \mid MedianCEO)$	0.203	0.117	0.122	0.149	0.113

This table presents the results of logit regressions of marital status on measures of wealth, income, and age:

$$\Pr\left(Single\right) = \Phi\left(\alpha + \beta \times Wealth + \gamma \times Income + \delta \times Age + \zeta \times \frac{Age^2}{100}\right),$$

where Φ is the logistic c.d.f. Data is from the 2001 Survey of Consumer Finances. Specifications (1) and (4) use *Net Worth* as a measure of wealth in the SCF, while specifications (2) and (5) use the value of the single largest risky asset holding (*Largest Asset*) as a proxy for wealth. We also show the implied probability of a median CEO being single based on these estimates. The implied probabilities are computed based on the median CEO wealth of $13.8 million (using CEO's holdings of company stock and options), median CEO income of $2.2 million, and median CEO age of 55 years.

Validating the divorce law instrument

As a way of validating our instrumental variable approach externally to address some of these concerns, we analyze data from the entire U.S. population collected by the U.S. Census Bureau. The idea behind our instrument is that wealthier individuals are deterred from marriage (i.e., are more likely to be single, *ceteris paribus*) if they reside in a community property state. Thus, we test whether an additional interaction between measures of wealth/income and community property residence is positive, using the data from the 2000 U.S. Census 5% sample from the Integrated Public Use Microdata Series (IPUMS). Census does not collect data on wealth, so we can only use data on personal income of the head of household. Since current income is a noisy measure of lifetime income, especially for younger people, we also use data on occupation of the head of household in order to identify individuals who are likely to accumulate substantial wealth over time. In particular, we identify individuals with occupation codes "Lawyers" and "Surgeons and physicians." Finally, as an additional measure that is closest to our focus on corporate CEOs, we separately identify individuals with occupation code "Chief executives."[23] We use two measures of single marital status: a narrow measure that includes only people reporting to have never been married, and a broad measure that includes those who never married as well as those who report their current marital status as either divorced or widowed. All of the regressions control for a quadratic in age to capture life-cycle effects.

Table A-2 presents the results of these tests. The general regression specification is

$$Single = \alpha + \beta \times Comm + \gamma \times Income + \delta \times Age + \zeta \times \frac{Age^2}{100} + \eta \times Occ + \chi \times \widetilde{Income} \times Comm + \kappa \times \widetilde{Occ} \times Comm, \quad \text{(A-9)}$$

where $Comm$ is the dummy variable equal to one if the household's state of residence is a community property state. $Single$ is a dummy variable equal to one if the head of household has never been married (specification 1) or has never been married, is divorced, or is widowed (specifications 2-4). $Income$ is in millions. Occ is a dummy variable for whether the head of household is either a lawyer or a surgeon/physician by occupation (specification 3) or a chief executive (specification 4). The interacted variables $\widetilde{Income}$ and $\widetilde{Occ}$ are demeaned using population weights. Consistent with our results using SCF data in Table A-1, higher income individuals are less likely to be single, as are older individuals (albeit the effect of age is nonlinear).

In accordance with our hypothesis that higher-income individuals are less likely to be married

[23] This category is likely to include CEOs of privately held firms as well as, potentially, heads of nonprofit organizations. The number of public-company CEOs in this sample is likely to be small, given the small number of publicly listed companies relative to the total number of firms in the U.S.

if they reside in a community property jurisdiction, the interaction of income with the community property dummy is positive and highly statistically significant (with t-statistics around 10), regardless of which definition of single status is used. This occurs despite the fact that the effect of community property itself is actually negative (and significant, with t-statistics between 4 and 6). The effect of the community property regime on marriage rates in the general population can depend on a number of factors, such as the difference in income distribution or religious composition between the equitable distribution and community property states. However, this does not have an effect on the validity of our instrument. What matters is whether community property standard has a differential impact on the decisions of wealthy individuals, and whether it makes it less likely for such individuals to get married.

Similarly to the results above, the interaction of a dummy for high-income occupations (doctors and lawyers) with the community property dummy is also positive and statistically significant (specification 3). The interaction of a CEO dummy with the community property dummy is positive but not quite statistically significant, likely due to the fact that many individuals reporting "Chief executive" as their occupation are not actually sufficiently wealthy to be concerned about property division in divorce. We conclude that the effect of residing in a community property state on marital status is concentrated among the wealthier individuals, which validates the use of community property jurisdiction as a useful instrument for CEO single status, as well as alleviates concerns that this variable might be exclusively capturing unobserved heterogeneity across states.

Table A-2: Validating the Instrument: Marital Status and Divorce Law in the U.S.

	1	2	3	4
Intercept	1.252	1.185	1.182	1.181
	(260.000)	(220.560)	(220.160)	(219.970)
Comm	-0.007	-0.007	-0.007	-0.007
	(-5.730)	(-4.330)	(-4.180)	(-4.190)
Income	-0.415	-1.374	-1.274	-1.240
	(-38.130)	(-79.080)	(-83.330)	(-82.170)
Age	-0.037	-0.031	-0.031	-0.031
	(-205.780)	(-142.400)	(-142.480)	(-142.440)
Age^2	0.027	0.030	0.030	0.030
	(177.880)	(152.280)	(152.430)	(152.380)
Occ			-0.005	-0.084
			(-0.680)	(-10.790)
$Comm \times Income$	0.193	0.349		
	(9.390)	(11.070)		
$Comm \times Occ$			0.041	0.018
			(3.090)	(1.280)

This table presents the results of an OLS regressions of marital status on measures of income as well as their interactions with the legal regime guiding division of marital assets in divorce in the state of residence, controlling for age, using the data from the 2000 U.S. Census 5% sample from the Integrated Public Use Microdata Series (IPUMS). The regression specification is

$$Single = \alpha + \beta \times Comm + \gamma \times Income + \delta \times Age + \zeta \times \frac{Age^2}{100} + \eta \times Occ + \chi \times \widetilde{Income} \times Comm + \kappa \times \widetilde{Occ} \times Comm,$$

where $Comm$ is the dummy variable equal to one if the household's state of residence is a community property state. $Single$ is a dummy variable equal to one if the head of household has never been married (specification 1) or has never been married, is divorced, or is widowed (specifications 2-4). $Income$ is in millions. Occ is a dummy variable for whether the head of household is either a lawyer or a surgeon/physician by occupation (specification 3) or a chief executive (specification 4). The interacted variables $\widetilde{Income}$ and $\widetilde{Occ}$ are demeaned using population weights. t-statistics are reported in the parentheses.

A.4 Additional empirical results: tables

In this section we present the full set of regression results for a range of alternative specifications, including additional empirical results on firm leverage and acquisition activity, as well as all of the baseline results for volatility and investment augmented with controls for CEO compensation and holdings.

Table A-3: Regression Results for Total Stock Return Volatility

	1	2	3	4	5	6
CF_t	-0.006	-0.005	-0.005	-0.005	-0.006	
	(-6.430)	(-5.694)	(-5.753)	(-5.781)	(-6.810)	
M_{t-1}/B_{t-1}	0.006	0.005	0.004	0.004	0.000	
	(3.938)	(3.200)	(3.016)	(3.074)	(0.210)	
$logA_{t-1}$	-0.022	-0.022	-0.024	-0.023	-0.022	
	(-10.978)	(-10.546)	(-9.768)	(-9.892)	(-9.120)	
$Leverage_t$	0.077	0.071	0.072	0.072	0.097	
	(8.708)	(7.975)	(7.977)	(8.002)	(10.130)	
Vol_{t-1}	0.408	0.405	0.404	0.401	0.387	
	(9.523)	(8.891)	(8.850)	(8.659)	(7.930)	
$FirmAge$	-0.001	-0.001	-0.001	-0.001	-0.001	
	(-6.678)	(-6.428)	(-6.384)	(-6.436)	(-7.320)	
$Single$	0.012	0.008	0.009	0.011	0.012	0.067
	(2.640)	(1.761)	(2.054)	(2.303)	(2.320)	(7.827)
Age		-0.001	-0.001	-0.001	-0.001	-0.004
		(-4.114)	(-3.781)	(-3.842)	(-3.470)	(-11.458)
$Age \times Single$		-0.001	-0.001	-0.001	-0.001	-0.002
		(-1.460)	(-1.452)	(-1.530)	(-1.520)	(-1.188)
$Tenure$		-0.001	-0.001	-0.001	-0.001	-0.001
		(-1.877)	(-1.992)	(-2.300)	(-2.340)	(-1.021)
$Tenure \times Single$		0.001	0.000	0.001	0.002	-0.000
		(0.693)	(0.610)	(0.843)	(1.800)	(-0.198)
$CEOProminence$			0.003	0.003	0.003	-0.007
			(3.115)	(3.152)	(2.750)	(-4.556)
$FirmProminence$			-0.001	-0.001	-0.001	
			(-0.962)	(-0.972)	(-1.190)	
$Inst$				-0.034	-0.045	
				(-3.789)	(-4.710)	
$Inst \times Single$				-0.061	-0.054	
				(-1.951)	(-1.610)	
R^2	0.481	0.482	0.482	0.484	0.512	0.196

The table reports coefficient estimates of the following OLS regression:

$$Vol = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}),$$

where Vol is the annualized standard deviation of monthly stock returns over the previous year, $Single$ is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, and Y is a set of CEO characteristics (the specific variable definitions are given in Section 2), demeaned when used in interaction terms: $\tilde{Y} = Y - \hat{E}Y$. All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported), with the exception of specification (5), which includes industry×year fixed effects. t-statistics are in parentheses, and are computed using robust standard errors clustered by firm.

Table A-4: Regression Results for Idiosyncratic Return Volatility

	1	2	3	4	5	6
CF_t	-0.005	-0.004	-0.004	-0.004	-0.004	
	(-5.488)	(-4.816)	(-4.885)	(-4.858)	(-4.200)	
M_{t-1}/B_{t-1}	0.001	0.000	0.000	0.000	-0.002	
	(0.890)	(0.233)	(0.011)	(0.049)	(-1.680)	
$logA_{t-1}$	-0.027	-0.027	-0.028	-0.027	-0.027	
	(-12.689)	(-12.330)	(-11.506)	(-11.719)	(-11.850)	
$Leverage_t$	0.082	0.078	0.078	0.079	0.085	
	(9.644)	(8.988)	(9.010)	(9.104)	(9.690)	
$IdVol_{t-1}$	0.346	0.341	0.340	0.335	0.327	
	(8.197)	(7.637)	(7.608)	(7.357)	(7.260)	
$FirmAge$	-0.001	-0.001	-0.001	-0.001	-0.001	
	(-6.853)	(-6.627)	(-6.572)	(-6.702)	(-7.200)	
$Single$	0.012	0.008	0.010	0.012	0.012	0.063
	(2.667)	(1.927)	(2.236)	(2.551)	(2.520)	(8.085)
Age		-0.001	-0.001	-0.001	-0.001	-0.004
		(-3.927)	(-3.551)	(-3.654)	(-3.710)	(-11.370)
$Age \times Single$		-0.001	-0.001	-0.001	-0.001	-0.001
		(-1.278)	(-1.271)	(-1.371)	(-1.310)	(-0.960)
$Tenure$		-0.000	-0.000	-0.001	-0.001	-0.000
		(-1.609)	(-1.733)	(-2.169)	(-2.070)	(-0.819)
$Tenure \times Single$		0.000	0.000	0.000	0.000	-0.001
		(0.131)	(0.038)	(0.352)	(0.230)	(-0.464)
$CEOProminence$			0.003	0.003	0.003	-0.008
			(3.298)	(3.365)	(2.890)	(-6.177)
$FirmProminence$			-0.001	-0.001	-0.001	
			(-0.913)	(-0.934)	(-0.640)	
$Inst$				-0.047	-0.050	
				(-5.269)	(-5.590)	
$Inst \times Single$				-0.076	-0.064	
				(-2.253)	(-1.930)	
R^2	0.443	0.442	0.443	0.445	0.482	0.189

The table reports coefficient estimates of the following OLS regression:

$$IdVol = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}),$$

where $IdVol$ is the annualized standard deviation of residuals from the regression of firm monthly stock returns on the market return, $Single$ is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, and Y is a set of CEO characteristics (the specific variable definitions are given in Section 2), demeaned when used in interaction terms: $\tilde{Y} = Y - \hat{E}Y$. All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported), with the exception of specification (5), which includes industry×year fixed effects. t-statistics are in parentheses, and are computed using robust standard errors clustered by firm.

Table A-5: Regression Results for Total Investment

	1	2	3	4	5	6
CF_t	0.091	0.096	0.095	0.095	0.094	
	(5.551)	(5.941)	(5.882)	(5.878)	(5.710)	
M_{t-1}/B_{t-1}	0.118	0.114	0.108	0.108	0.109	
	(7.894)	(7.676)	(7.363)	(7.349)	(7.340)	
$logA_{t-1}$	-0.128	-0.131	-0.151	-0.154	-0.145	
	(-11.844)	(-11.847)	(-11.335)	(-11.745)	(-11.170)	
$Leverage_t$	0.195	0.188	0.198	0.198	0.205	
	(3.525)	(3.328)	(3.498)	(3.506)	(3.660)	
$Investment_{t-1}$	0.484	0.476	0.475	0.475	0.477	
	(18.104)	(19.099)	(19.043)	(18.980)	(18.940)	
$FirmAge$	-0.002	-0.002	-0.002	-0.002	-0.002	
	(-3.071)	(-2.418)	(-2.350)	(-2.273)	(-2.720)	
$Single$	0.093	0.069	0.090	0.087	0.105	0.453
	(2.349)	(1.712)	(2.249)	(2.181)	(2.650)	(5.234)
Age		-0.004	-0.003	-0.003	-0.004	-0.029
		(-2.782)	(-2.114)	(-2.072)	(-2.700)	(-9.768)
$Age \times Single$		-0.019	-0.019	-0.019	-0.017	-0.042
		(-2.613)	(-2.631)	(-2.638)	(-2.440)	(-2.928)
$Tenure$		-0.009	-0.009	-0.009	-0.007	-0.007
		(-3.727)	(-3.920)	(-3.875)	(-3.410)	(-1.262)
$Tenure \times Single$		0.017	0.016	0.016	0.015	0.039
		(1.440)	(1.372)	(1.389)	(1.320)	(1.474)
$CEOProminence$			0.035	0.035	0.032	-0.002
			(3.832)	(3.842)	(3.550)	(-0.186)
$FirmProminence$			0.004	0.004	0.004	
			(0.405)	(0.416)	(0.350)	
$Inst$				0.133	0.121	
				(1.849)	(1.680)	
$Inst \times Single$				0.022	0.019	
				(0.103)	(0.090)	
R^2	0.445	0.444	0.445	0.445	0.463	0.043

The table reports coefficient estimates of the following OLS regression:

$$Investment = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}),$$

where *Investment* is capital expenditures plus acquisitions minus asset sales plus R&D expenditure plus advertising expenditure (scaled by net property, plant & equipment), *Single* is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, and Y is a set of CEO characteristics (the specific variable definitions are given in Section 2), demeaned when used in interaction terms: $\tilde{Y} = Y - \hat{E}Y$. All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported), with the exception of specification (5), which includes industry×year fixed effects. t-statistics are in parentheses, and are computed using robust standard errors clustered by firm.

Table A-6: Regression Results for R&D and Advertising

	1	2	3	4	5	6
CF_t	0.009	0.010	0.010	0.009	0.008	
	(1.592)	(1.684)	(1.644)	(1.640)	(1.410)	
M_{t-1}/B_{t-1}	0.015	0.013	0.012	0.012	0.012	
	(2.787)	(2.397)	(2.155)	(2.144)	(2.240)	
$logA_{t-1}$	-0.026	-0.028	-0.033	-0.033	-0.030	
	(-6.738)	(-6.822)	(-6.739)	(-6.862)	(-6.540)	
$Leverage_t$	-0.019	-0.025	-0.023	-0.023	-0.029	
	(-1.125)	(-1.422)	(-1.303)	(-1.304)	(-1.690)	
$NetAcq_{t-1}$	0.806	0.800	0.799	0.799	0.801	
	(39.609)	(38.798)	(38.546)	(38.576)	(39.110)	
$FirmAge$	-0.000	0.000	0.000	0.000	-0.000	
	(-0.587)	(0.019)	(0.098)	(0.115)	(-0.310)	
$Single$	0.033	0.024	0.029	0.029	0.032	0.324
	(2.598)	(1.932)	(2.402)	(2.228)	(2.590)	(5.667)
Age		-0.001	-0.001	-0.001	-0.001	-0.016
		(-1.966)	(-1.393)	(-1.395)	(-2.100)	(-8.702)
$Age \times Single$		-0.005	-0.005	-0.005	-0.004	-0.024
		(-1.879)	(-1.886)	(-1.880)	(-1.630)	(-2.478)
$Tenure$		-0.002	-0.002	-0.002	-0.001	-0.003
		(-2.597)	(-2.769)	(-2.694)	(-2.070)	(-1.143)
$Tenure \times Single$		0.002	0.002	0.001	0.001	0.013
		(0.541)	(0.475)	(0.446)	(0.240)	(0.713)
$CEOProminence$			0.009	0.009	0.009	0.016
			(3.233)	(3.226)	(3.040)	(2.148)
$FirmProminence$			0.001	0.001	0.001	
			(0.198)	(0.192)	(0.190)	
$Inst$				-0.000	-0.003	
				(-0.014)	(-0.130)	
$Inst \times Single$				0.032	0.031	
				(0.382)	(0.380)	
R^2	0.765	0.761	0.761	0.761	0.770	0.048

The table reports coefficient estimates of the following OLS regression:

$$R\&D + Advertising = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}),$$

where $R\&D + Advertising$ is R&D expenditure plus advertising expenditure (scaled by net property, plant & equipment), $Single$ is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, and Y is a set of CEO characteristics (the specific variable definitions are given in Section 2), demeaned when used in interaction terms: $\tilde{Y} = Y - \hat{E}Y$. All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported), with the exception of specification (5), which includes industry×year fixed effects. t-statistics are in parentheses, and are computed using robust standard errors clustered by firm.

Table A-7: Regression Results for Net Acquisitions

	1	2	3	4	5	6
CF	0.069	0.070	0.070	0.069	0.071	
	(10.620)	(10.215)	(10.194)	(10.145)	(10.130)	
M_{t-1}/B_{t-1}	0.015	0.016	0.015	0.015	0.016	
	(2.370)	(2.344)	(2.167)	(2.177)	(2.280)	
$logA_{t-1}$	-0.046	-0.047	-0.050	-0.053	-0.049	
	(-8.394)	(-8.566)	(-8.133)	(-8.570)	(-7.820)	
$Leverage$	0.242	0.250	0.251	0.252	0.266	
	(7.438)	(7.409)	(7.405)	(7.424)	(7.760)	
$NetAcq_{t-1}$	0.239	0.237	0.237	0.236	0.230	
	(13.332)	(13.135)	(13.147)	(13.069)	(13.130)	
$FirmAge$	-0.001	-0.001	-0.001	-0.001	-0.001	
	(-3.109)	(-2.718)	(-2.683)	(-2.530)	(-2.790)	
$Single$	0.035	0.035	0.039	0.038	0.048	0.095
	(1.415)	(1.347)	(1.482)	(1.452)	(1.900)	(2.587)
Age		-0.001	-0.000	-0.000	-0.001	-0.005
		(-0.621)	(-0.414)	(-0.312)	(-0.920)	(-3.741)
$Age \times Single$		-0.007	-0.006	-0.007	-0.006	-0.012
		(-1.753)	(-1.749)	(-1.762)	(-1.600)	(-2.276)
$Tenure$		-0.004	-0.004	-0.004	-0.003	-0.003
		(-2.107)	(-2.162)	(-2.160)	(-1.640)	(-1.257)
$Tenure \times Single$		0.013	0.013	0.013	0.013	0.021
		(1.655)	(1.640)	(1.653)	(1.610)	(1.844)
$CEOProminence$			0.008	0.008	0.006	-0.014
			(1.504)	(1.519)	(1.230)	(-2.587)
$FirmProminence$			-0.001	-0.001	-0.002	
			(-0.217)	(-0.178)	(-0.320)	
$Inst$				0.182	0.167	
				(5.048)	(4.520)	
$Inst \times Single$				-0.063	-0.080	
				(-0.558)	(-0.720)	
R^2	0.150	0.151	0.151	0.151	0.179	0.014

The table reports coefficient estimates of the following OLS regression:

$$NetAcq = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}),$$

where $NetAcq$ is acquisitions minus asset sales (scaled by net property, plant & equipment), $Single$ is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, and Y is a set of CEO characteristics (the specific variable definitions are given in Section 2), demeaned when used in interaction terms: $\tilde{Y} = Y - \hat{E}Y$. All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported), with the exception of specification (5), which includes industry×year fixed effects. t-statistics are in parentheses, and are computed using robust standard errors clustered by firm.

Table A-8: Regression Results for Market Leverage

	1	2	3	4	5	6
CF_t	-0.011	-0.010	-0.010	-0.010	-0.010	
	(-9.250)	(-8.720)	(-8.590)	(-8.400)	(-20.340)	
M_{t-1}/B_{t-1}	-0.044	-0.044	-0.042	-0.042	-0.041	
	(-22.730)	(-23.370)	(-22.230)	(-22.380)	(-46.930)	
$logA_{t-1}$	0.031	0.031	0.036	0.037	0.036	
	(12.910)	(12.680)	(14.100)	(14.390)	(39.490)	
$Investment_t$	0.004	0.004	0.004	0.004	0.005	
	(3.780)	(3.800)	(4.170)	(4.210)	(7.560)	
$FirmAge$	-0.001	-0.001	-0.001	-0.001	-0.001	
	(-2.270)	(-2.230)	(-2.160)	(-2.230)	(-5.910)	
$Single$	0.017	0.014	0.010	0.011	0.009	-0.004
	(2.550)	(2.020)	(1.460)	(1.610)	(2.800)	(-0.590)
Age		-0.000	-0.001	-0.001	-0.001	0.000
		(-1.100)	(-1.460)	(-1.510)	(-3.220)	(1.160)
$Age \times Single$		0.000	0.000	0.000	-0.000	0.001
		(0.350)	(0.430)	(0.410)	(-0.090)	(0.550)
$Tenure$		-0.001	-0.001	-0.001	-0.001	-0.001
		(-1.410)	(-1.310)	(-1.400)	(-4.000)	(-2.010)
$Tenure \times Single$		-0.001	-0.001	-0.001	-0.001	-0.002
		(-1.120)	(-1.030)	(-0.920)	(-1.650)	(-1.370)
$CEOProminence$			-0.003	-0.003	-0.003	0.002
			(-1.730)	(-1.740)	(-3.560)	(1.030)
$FirmProminence$			-0.006	-0.006	-0.005	
			(-3.390)	(-3.360)	(-7.480)	
$Inst$				-0.036	-0.028	
				(-2.380)	(-4.260)	
$Inst \times Single$				-0.026	-0.026	
				(-1.050)	(-1.870)	
R^2	0.420	0.425	0.429	0.430	0.444	0.293

The table reports coefficient estimates of the following OLS regression:

$$Leverage = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}),$$

where *Leverage* is market leverage of the firm, *Single* is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, and Y is a set of CEO characteristics (the specific variable definitions are given in Section 2), demeaned when used in interaction terms: $\tilde{Y} = Y - \hat{E}Y$. All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported), with the exception of specification (5), which includes industry×year fixed effects. t-statistics are in parentheses, and are computed using robust standard errors clustered by firm.

Table A-9: Regression Results with Compensation and Holdings Controls

	Id. Vol.	Vol.	Investment	Net Acq.	R&D + Advert.
CF_t	-0.005	-0.007	0.097	0.078	0.007
	(-5.110)	(-7.520)	(5.380)	(8.860)	(0.580)
M_{t-1}/B_{t-1}	0.001	0.006	0.124	-0.024	0.091
	(0.840)	(3.220)	(6.830)	(-2.630)	(6.820)
$logA_{t-1}$	-0.029	-0.023	-0.154	-0.062	-0.045
	(-9.560)	(-7.920)	(-9.710)	(-7.100)	(-4.070)
$Leverage_t$	0.073	0.081	0.288	0.313	-0.082
	(7.310)	(8.220)	(4.260)	(7.300)	(-1.750)
$IdVol_{t-1}$	0.302	0.385	0.461	0.103	0.264
	(5.690)	(7.450)	(17.250)	(9.530)	(13.090)
$FirmAge$	-0.001	-0.001	-0.003	-0.001	-0.001
	(-7.180)	(-7.220)	(-2.890)	(-1.330)	(-2.060)
$Single$	0.014	0.014	0.125	0.045	0.121
	(2.210)	(2.190)	(2.640)	(1.420)	(3.140)
Age	-0.000	-0.001	-0.001	-0.000	0.001
	(-1.730)	(-2.800)	(-0.570)	(-0.270)	(0.970)
$Age \times Single$	-0.002	-0.001	-0.015	-0.002	-0.015
	(-1.340)	(-1.270)	(-1.900)	(-0.370)	(-2.490)
$Tenure$	0.000	-0.000	-0.009	-0.007	-0.000
	(0.080)	(-0.750)	(-3.180)	(-3.640)	(-0.180)
$Tenure \times Single$	0.001	0.001	0.021	0.014	0.007
	(0.660)	(1.260)	(1.540)	(1.340)	(0.550)
$CEOProminence$	0.005	0.004	0.028	-0.003	0.033
	(4.050)	(3.480)	(2.570)	(-0.410)	(3.680)
$FirmProminence$	-0.001	-0.002	0.004	-0.001	-0.003
	(-1.230)	(-1.910)	(0.310)	(-0.130)	(-0.300)
$Inst$	-0.045	-0.045	0.076	0.189	-0.084
	(-4.430)	(-4.380)	(0.950)	(4.160)	(-1.780)
$Inst \times Single$	-0.087	-0.077	-0.141	-0.133	0.021
	(-1.800)	(-1.910)	(-0.520)	(-1.000)	(0.110)
$CEO_holdings$	-0.004	-0.003	-0.013	0.019	-0.038
	(-3.450)	(-2.850)	(-1.540)	(3.470)	(-5.990)
$CEO_compensation$	0.007	0.009	0.074	0.039	0.023
	(3.720)	(3.800)	(4.780)	(4.160)	(2.460)
R^2	0.433	0.457	0.432	0.133	0.502

The table reports coefficient estimates of the following OLS regression:

$$Z = \alpha + \beta \times Single + \gamma \times X + \delta \times Y + \zeta \times (Single \times \tilde{Y}),$$

for the following outcome variables Z: idiosyncratic volatility, total volatility, total investment, net acquisitions, and R&D expenditure plus advertising expenditure (all scaled by net property, plant & equipment). *Single* is a dummy variable equaling one if the CEO is unmarried and zero otherwise, X is a set of firm characteristics, and Y is a set of CEO characteristics (the specific variable definitions are given in Section 2), demeaned when used in interaction terms: $\tilde{Y} = Y - \hat{E}Y$. All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported). t-statistics are in parentheses, and are computed using robust standard errors clustered by firm.

Table A-10: Predicting CEO Marital Status with Divorce Law Instrument

	1	2	3	4	5	6
$Community$	0.050	0.048	0.049	0.049	0.059	0.046
	(3.740)	(3.510)	(3.610)	(3.580)	(4.410)	(3.250)
CF_t	-0.006	-0.003	-0.003	-0.003		-0.001
	(-1.860)	(-0.930)	(-0.870)	(-0.910)		(-0.320)
M_{t-1}/B_{t-1}	-0.008	-0.001	0.001	0.001		0.001
	(-2.170)	(-0.260)	(0.340)	(0.330)		(0.290)
$logA_{t-1}$	-0.041	-0.027	-0.016	-0.017		-0.016
	(-11.050)	(-7.000)	(-3.710)	(-3.910)		(-3.670)
$Leverage_{t-1}$	0.018	-0.010	-0.014	-0.015		-0.011
	(0.800)	(-0.410)	(-0.620)	(-0.640)		(-0.480)
$IdVol_{t-1}$	0.037	0.020	0.029	0.031		0.035
	(1.740)	(0.870)	(1.320)	(1.440)		(1.620)
$Investment_{t-1}$	0.009	0.008	0.008	0.008		0.008
	(2.950)	(2.640)	(2.820)	(2.800)		(2.640)
$FirmAge$	-0.001	-0.002	-0.002	-0.002		-0.002
	(-3.260)	(-3.840)	(-3.730)	(-3.670)		(-3.680)
Age		-0.002	-0.003	-0.003	-0.004	-0.003
		(-2.900)	(-3.780)	(-3.760)	(-5.450)	(-4.050)
$Tenure$		-0.002	-0.002	-0.002	-0.002	-0.002
		(-1.400)	(-1.350)	(-1.330)	(-1.430)	(-1.630)
$Wealth$		-0.021	-0.017	-0.017	-0.020	-0.019
		(-7.220)	(-5.810)	(-5.780)	(-7.250)	(-6.180)
$CEOProminence$			-0.021	-0.021	-0.031	-0.022
			(-5.370)	(-5.370)	(-10.570)	(-5.610)
$FirmProminence$			-0.003	-0.002		-0.002
			(-0.720)	(-0.710)		(-0.660)
$Inst$				0.040		0.033
				(1.540)		(1.300)
$Payroll$						0.069
						(0.100)
$CEAI$						-0.121
						(-0.280)
$LogIncomeState$						0.055
						(1.200)
R^2	0.09	0.10	0.11	0.11	0.09	0.11

The table reports coefficient estimates of the following OLS regression:

$$Single = \alpha + \beta \times Community + \gamma \times X + \delta \times Y + \zeta \times Z,$$

where $Single$ is a dummy variable equaling one if the CEO is unmarried and zero otherwise, $Community$ is a dummy variable equaling one if the firm is headquartered in a community property state and zero otherwise, X is a set of firm characteristics, Y is a set of CEO characteristics, and Z is a set of state-level control variables (the specific variable definitions are given in Sections 2 and 4.3). All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported). t-statistics are in parentheses, and are computed using robust standard errors clustered by state.

Table A-11: IV Results for Idiosyncratic Volatility

	1	2	3	4	5	6
CF_t	-0.003	-0.003	-0.004	-0.003		-0.004
	(-3.210)	(-3.270)	(-3.470)	(-3.260)		(-3.830)
M_{t-1}/B_{t-1}	0.003	0.002	0.001	0.001		0.001
	(1.810)	(1.130)	(0.580)	(0.660)		(0.520)
$logA_{t-1}$	-0.015	-0.017	-0.022	-0.020		-0.020
	(-3.340)	(-4.920)	(-7.760)	(-7.290)		(-7.490)
$Leverage_t$	0.077	0.078	0.079	0.080		0.079
	(11.500)	(11.180)	(10.990)	(10.920)		(11.330)
$IdVol_{t-1}$	0.331	0.330	0.326	0.321		0.318
	(7.610)	(7.020)	(6.910)	(6.730)		(6.670)
$FirmAge$	-0.000	-0.000	-0.000	-0.000		-0.000
	(-1.970)	(-1.370)	(-1.540)	(-1.590)		(-1.460)
$SinglePred$	0.297	0.308	0.301	0.316	0.643	0.330
	(2.680)	(2.480)	(2.570)	(2.560)	(2.660)	(2.730)
Age		-0.000	0.000	0.000	0.000	0.000
		(-0.330)	(0.380)	(0.390)	(0.140)	(0.470)
$Tenure$		0.000	0.000	0.000	0.001	0.001
		(1.130)	(0.980)	(0.960)	(1.800)	(1.400)
$Wealth$		0.003	0.001	0.001	0.000	0.002
		(0.980)	(0.480)	(0.460)	(0.080)	(0.710)
$CEOProminence$			0.010	0.011	0.013	0.011
			(4.410)	(4.390)	(1.910)	(4.540)
$FirmProminence$			-0.000	-0.000		-0.000
			(-0.300)	(-0.350)		(-0.350)
$Inst$				-0.075		-0.075
				(-4.880)		(-5.000)
$Payroll$						0.108
						(0.350)
$CEAI$						0.190
						(0.640)
$LogIncomeState$						0.003
						(0.190)
R^2	0.443	0.442	0.442	0.444	0.301	0.444

The table reports coefficient estimates of the following OLS regression:

$$IdVol = \alpha + \beta \times SinglePred + \gamma \times X + \delta \times Y + \zeta \times Z,$$

where $IdVol$ is the annualized standard deviation of residuals from the regression of firm monthly stock returns on the market return, $SinglePred$ is the predicted value for $Single$ computed using coefficient estimates for the corresponding specification in Table A-10, X is a set of firm characteristics, Y is a set of CEO characteristics, and Z is a set of state-level control variables (the specific variable definitions are given in Sections 2 and 4.3). All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported). t-statistics are in parentheses, and are computed using robust standard errors clustered by state, taking into account the uncertainty in first-stage estimates.

Table A-12: IV Results for Total Investment

	1	2	3	4	5	6
CF_t	0.109	0.109	0.108	0.108		0.109
	(6.110)	(5.350)	(5.410)	(5.370)		(5.600)
M_{t-1}/B_{t-1}	0.135	0.103	0.096	0.096		0.096
	(9.940)	(7.890)	(7.850)	(7.870)		(7.070)
$logA_{t-1}$	-0.030	-0.083	-0.122	-0.123		-0.128
	(-0.800)	(-2.980)	(-5.890)	(-5.840)		(-6.440)
$Leverage_t$	0.148	0.245	0.255	0.255		0.292
	(2.330)	(4.550)	(4.900)	(4.920)		(5.420)
$Investment_{t-1}$	0.470	0.464	0.463	0.463		0.456
	(18.890)	(20.690)	(20.220)	(20.160)		(18.780)
$FirmAge$	0.001	0.002	0.002	0.002		0.003
	(0.720)	(1.200)	(1.200)	(1.210)		(1.610)
$SinglePred$	2.299	2.197	2.114	2.107	5.367	2.357
	(2.560)	(2.260)	(2.440)	(2.380)	(1.880)	(2.990)
Age		-0.003	-0.001	-0.001	-0.005	-0.000
		(-1.130)	(-0.350)	(-0.350)	(-0.450)	(-0.080)
$Tenure$		-0.003	-0.004	-0.004	0.001	-0.003
		(-0.910)	(-1.180)	(-1.170)	(0.250)	(-1.130)
$Wealth$		0.073	0.059	0.059	0.155	0.071
		(3.600)	(3.690)	(3.690)	(2.670)	(4.280)
$CEOProminence$			0.076	0.075	0.134	0.076
			(4.210)	(4.150)	(1.610)	(4.930)
$FirmProminence$			0.004	0.004		0.009
			(0.360)	(0.360)		(0.830)
$Inst$				0.020		0.047
				(0.190)		(0.570)
$Payroll$						0.641
						(0.270)
$CEAI$						-1.448
						(-0.770)
$LogIncomeState$						0.285
						(2.300)
R^2	0.446	0.445	0.445	0.445	0.170	0.450

The table reports coefficient estimates of the following OLS regression:

$$Investment = \alpha + \beta \times SinglePred + \gamma \times X + \delta \times Y + \zeta \times Z,$$

where $Investment$ is capital expenditures plus acquisitions minus asset sales plus R&D expenditure plus advertising expenditure (scaled by net property, plant & equipment), $SinglePred$ is the predicted value for $Single$ computed using coefficient estimates for the corresponding specification in Table A-10, X is a set of firm characteristics, Y is a set of CEO characteristics, and Z is a set of state-level control variables (the specific variable definitions are given in Sections 2 and 4.3). All specifications also include industry (based on the Fama-French 49-industry classification) and year fixed effects (unreported). t-statistics are in parentheses, and are computed using robust standard errors clustered by state, taking into account the uncertainty in first-stage estimates.