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Measuring systematic risk from managerial organization capital

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Abstract

Organization capital (OC) constitutes a firm's unique, hard-to-mimic, hard-to-transfer culture, internal knowledge and language, policies and procedures, growth opportunities and information technology, brand name and any other aspects that are not directly related to the production process. In order to disentangle value enhancement from agency costs inherent in the OC, we calibrate systematic risk premiums from the loss of managerial OC rents by decomposing OC into: (1) portable economic rents in the form of disclosed executive compensation and (2) a strategic component that comprised undisclosed, non-portable OC rents mixed with agency costs. Shareholders in firms with high strategic component (not the portable component) earn an annual systematic risk premium of 4.6%. Disclosures revealing the breakdown between OC and agency costs in the strategic component (earnings surprises, managerial obfuscation and stock mispricing) as well as corporate governance eliminate this risk premium by revealing the OC rents in strategic component and increasing OC portability.

KEYWORDS
corporate governance, executive compensation, economic rents, earnings surprises, human capital, idiosyncratic risk, managerial obfuscation, organization capital, stock mispricing, systematic risk

JEL CLASSIFICATION
G12, G30, G32

1 | INTRODUCTION

The glue that holds a firm together is an intangible asset-denoted organization capital (OC). OC constitutes the firm's culture, internal knowledge and language, firm-specific policies and procedures, growth opportunities and information technology, brand name and any other aspects that are not directly related to the production process and are unique to the firm itself. Previous studies show that OC is positively related to firm performance (Banker et al., 2011; Chen et al., 2012; Lev & Radhakrishnan, 2005; Lev et al., 2009). These studies use overhead and non-allocated expenses to develop empirical measures of OC. Selling, general and administrative (SG&A) expenses are considered as inputs into an intangible OC production function since these costs relate to the firm's operation but are not directly connected to the firm's outputs. Since OC is valuable, the loss of this intangible asset is detrimental to the firm. Eisfeldt and Papanikolaou (2013; hereinafter EP) show that OC is embedded in the firm's top executives or "key talent." They show that systematic risk emanates from the risk to shareholders that key talent will leave the firm and take their valuable OC with them. That is, firm stockholders are exposed to the systematic risk associated with the loss of OC rents when key talent unexpectedly leaves the firm and transfers their OC cash flow rights to another firm. Thus, using the terminology of the theoretical models of both EP and Lustig et al. (2011; hereinafter LSV), the OC rents generated by top executives are portable, since C-suite executives who switch jobs receive the opportunity cost value of their OC rents (inside employment option) and replicate them at another firm (outside option). Indeed, Hillier et al. (2020) show that appropriate managerial incentives can create value.

However, not all OC rents are portable. Some are unique to the firm itself so that it is the combination of key talent and the firm's other personnel and resources that generate OC rents. For example, top executives can create OC value by hiring, firing and effectively mobilizing talented low and mid-level employees.[1] Thus, firm value will be destroyed when the firm's key talent switches from one firm to another since these economic rents are determined by the unique combination of firm assets and managerial skill, that is, OC may be both manager- and firm-specific. These non-portable OC rents are the source of systematic risk. However, these non-portable OC rents are not observable.

In this paper, we propose an empirical measure that distinguishes observable, portable OC rents from hidden, non-portable OC rents. Empirically, we decompose standard measures of OC into two components: (1) the portable component consisting of the observable value of key talent (denoted HC_OC) and (2) the non-portable, remaining strategic components of OC (denoted Strategic_OC). Firms are required to disclose payments to their executives in the form of cash (i.e., salary and bonus) and non-cash (i.e., stock and options) compensation. To poach key talent, competitor firms must offer compensation that meets (or exceeds) the inside option represented by observable payments to key talent in exchange for the OC rents they generate for the firm. Thus, all disclosed executive compensation should be considered to be portable and, therefore, represents a lower bound measure of the manager's total OC rent contribution.

However, to offer sufficiently attractive compensation packages as payment for firm-specific OC rents, firms may also offer perquisites and special arrangements as additional compensation in order to attract and retain strategic executives that generate value-enhancing OC. These arrangements are sometimes not publicly disclosed. Detecting the OC portion of this hidden compensation is made more complex by the fact that agency costs associated with perquisites and empire building may be masquerading as the cost of generating OC rents. For example, during Jeff Immelt's 16-year tenure at General Electric, a spare jet routinely accompanied the corporate jet on overseas trips. This was not even revealed to GE's Board.[2] Was Immelt's spare jet a perquisite required to elicit the full OC contribution of GE's chief executive to enhance firm value or was it a value-reducing agency cost?[3]

[1] For example, the newly appointed Chief Executive Officer (CEO) of GlaxoSmithKline PLC replaced 100 of her 125 top managers and changed the focus of the company's experimental drug pipeline. https://www.bloomberg.com/news/articles/2019-07-17/big-pharma-s-first-female-ceo-disrupts-glaxo-from-within?mod=djem10point

[2] *Wall Street Journal*, October 29, 2017, https://www.reuters.com/article/us-ge-airplane/ge-board-did-not-know-about-ceos-extra-plane-wsj-idUSKBN1CY0RI. On January 6, 2021, the Wall Street Journal reported that GE will not seek claw backs from Immelt for excessive spending on items such as the spare corporate jet, https://www.wsj.com/articles/ge-wont-try-to-claw-back-jeff-immelts-pay-11609878115.

[3] Yermack (2006) finds that firms that disclose managerial use of corporate jets underperform market benchmarks.

Our empirical Strategic_OC measure contains the undisclosed, non-portable component of OC rents produced by top executives. However, since firms are not required to report the breakdown of the many disparate items comprising Strategic_OC, poaching firms are unable to discern whether Strategic_OC includes value-enhancing economic rents or value-reducing agency costs or both.[4] In contrast, the HC_OC component observably compensates key talent for their value-enhancing OC contribution to the firm and comprises the portable component of OC rents. Consistent with this dichotomy, we find no evidence of a systematic risk premium for HC_OC. However, we do find a systematic risk premium for Strategic_OC, suggesting that shareholders are compensated for the non-portable OC rents hidden in some portion of this undisclosed compensation but not for portable OC rents incorporated in disclosed executive compensation packages.

Therefore, our empirical dichotomization of the standard OC measure extends both the EP and LSV models that impose exogenous assumptions about OC portability. EP assume that all OC is 100% portable, whereas LSV perform comparative statics on portability assumed to vary discreetly from 0% to 50% to 75%. In contrast, we endogenize the portability of OC by linking it to disclosure so that the more (less) observable the compensation, the more (less) portable the OC rents. Thus, for example, if all executive compensation for OC rents is fully disclosed, then these rents are 100% portable. Under an assumption of 100% portability in the disclosed component of OC rents in executive compensation, there is no systematic risk to shareholders from lost rents as a result of the unexpected departure of key executives. Shareholders pay out the full value of OC rents in the form of executive compensation. This explains why we find no systematic risk premium associated with HC_OC.

However, the larger the portion of compensation for OC rents that is not disclosed, the less portable is managerial OC rents. Strategic_OC measures this non-portable OC component. However, since Strategic_OC contains both non-portable OC rents and agency costs, it is unlikely that executives will be compensated for the full value of their OC rents since their outside option is constrained by the lack of information available to poaching firms. Thus, a systematic risk premium is paid to shareholders to compensate them for the potential loss of this hidden OC if key talent leaves the firm. That is, the non-portable component of OC rents that is contained in Strategic_OC is the source of the systematic risk premium identified by EP. Thus, if there is a systematic risk to stockholders as a result of the outside option that executives have to leave the firm and take out their value-enhancing contribution, it resides in Strategic_OC and not in HC_OC. Our decomposition allows us to pinpoint the source of the systematic risk associated with the loss of key talent. We create five portfolios separately sorted on HC_OC and Strategic_OC in order to assess cross-sectional risk characteristics. We utilize Capital Asset Pricing Model (CAPM), Fama–French three-factor model (Fama & French, 1993) and the Carhart four-factor model (Carhart, 1997) for portfolios created using the quintiles of HC_OC and Strategic_OC. Indeed, we find systematic risk in high Strategic_OC firms but not in high HC_OC firms. Our results show that shareholders in high Strategic_OC firms require an annual systematic risk premium of 4.6%.

The systematic risk premium in high Strategic_OC firms compensates shareholders for the risk associated with their inability to differentiate agency costs from non-portable OC rents that are lost when there is an unexpected departure of key talent. The higher the Strategic_OC, the greater the likelihood that agency costs are masquerading as OC rents, thereby offering shareholders risk premiums for phantom OC rents. Anything that can reduce information asymmetries and transmit information about the breakdown of agency costs and OC rents addresses the inherent

[4] The SG&A line item on financial statements includes: (1) accounting expenses; (2) advertising expenses; (3) amortization of research and development costs; (4) bad debt expense (provision for doubtful accounts); (5) commissions; (6) corporate expenses; (7) delivery expenses; (8) directors' fees and remuneration; (9) engineering expenses; (10) extractive industries' lease rentals or expense, delay rentals, exploration expense, research and development expense, and geological and geophysical expenses, drilling program marketing expenses and carrying charges on non-producing properties; (11) financial service industries' labor, occupancy and equipment and related expenses; (12) foreign currency adjustments when included by the company; (13) freight-out expenses; (14) indirect costs when a separate cost of goods sold figure is given; (15) labor and related expenses (including salary, pension, retirement, profit sharing, provision for bonus and stock options, employee insurance and other employee benefits when reported below a gross profit figure); (16) legal expenses; (17) marketing expenses; (18) operating expenses when a separate cost of goods sold figure is given and no SG&A expense figure is reported; (19) parent company charges for administrative services; (20) recovery of allowance for losses; (21) research and development companies' company-sponsored research and development; (22) research and development expenses; (23) restaurants' preopening and closing costs; (24) retail companies' preopening and closing costs and rent expenses; (25) severance pay (when reported as a component of SG&A expenses); (26) state income tax when included by the company; (27) strike expenses.

lack of transparency in Strategic_OC.[5] Thus, we examine the impact of both information disclosure and obfuscation on systematic risk premiums.

First, we consider the role of financial analysts as an information disclosure mechanism. Earnings surprises indicate that analysts are unable to accurately forecast earnings for firms with substantial information asymmetries. We argue that risk premiums that compensate shareholders for the unanticipated loss of non-portable OC will be higher for high Strategic_OC firms with unexpectedly high (positive) earnings surprises. However, an unexpectedly low earnings announcement (negative) is consistent with bad news about the firm's value. Instead, we are interested in unexpectedly high earnings surprises that reveal the existence of valuable, non-portable OC rents included in Strategic_OC. Therefore, we test and report results consistent with our hypothesis that high Strategic_OC firms with positive earnings surprises have statistically significant systematic risk premiums (i.e., alpha).

Moreover, shareholders may be unable to identify value-enhancing non-portable OC if management hides agency costs in Strategic_OC. We further hypothesize that obfuscation techniques may allow executives to hide value-reducing agency costs, thereby increasing the systematic risk associated with Strategic_OC. Following Bushee et al. (2018), we utilize a measure of linguistic complexity that is associated with obfuscation in firm disclosures during conference calls.[6] Consistent with our hypothesis, we find significantly positive systematic risk premiums for high Strategic_OC firms that engage in high levels of obfuscation.

Further, we examine the role of information asymmetries about OC in explaining stock price anomalies that result in underpricing and overpricing. Stambaugh et al. (2015) define a mispricing index that comprised 11 return anomalies documented in the literature. Their mispricing index measures potential mispricing in the cross-section of stocks. They combine anomalies by constructing portfolios that comprised firms ranked according to the degree of overpricing implied by each anomaly. By construction, the higher (lower) the composite ranking, the more overpriced (underpriced) the stock. By double-sorting portfolios on both the mispricing index and Strategic_OC, we find that the most overpriced stocks (5th quintile) have between 11.23% to 15.39% annualized additional risk premiums (alphas) for high minus low Strategic_OC portfolios, whereas the most underpriced stocks (1st quintile) do not have any significant risk premiums. This is consistent with pricing anomalies emanating from the market's inability to distinguish between agency costs and OC rents in Strategic_OC. Thus, the market demands a higher risk premium for overpriced firms (as compared with underpriced firms) with high levels of Strategic_OC as compensation for the possibility that agency costs are masquerading as OC rents.

The lack of clarity due to the commingling of OC rents and agency costs in Strategic_OC results in non-portability and systematic risk. This is mitigated to the extent that corporate governance limits agency problems so that Strategic_OC becomes a cleaner measure of OC rents with fewer distortions from agency costs. In that case, Strategic_OC is a more accurate measure of OC rents, thereby increasing the portability of managerial OC and reducing the systematic risk premium. We utilize two measures of corporate governance to test our hypotheses. First, we hypothesize that a less entrenched management (measured using the entrenchment index (E-index) of Bebchuk et al., 2009) should show less of a systematic risk premium associated with Strategic_OC. Second, we utilize institutional block ownership (following Bethel et al., 1998) as an agency cost mitigation technique and expect a lower systematic risk premium for firms with higher institutional ownership. Our tests confirm both hypotheses, suggesting that corporate governance activities that reduce agency costs increase the portability of OC rents and reduce systematic risk.

Our focus on top executives as producers of OC rents and systematic risk exposure follows substantial literature. EP validate this approach by their finding that high OC firms list relies on key personnel as a prominent risk factor

[5] Although disclosure requirements have increased over past decades (e.g., the 2000 Regulation Fair Disclosure (Reg FD) and the 2006 Securities and Exchange Commission (SEC) amendments of executive compensation disclosure), we find that current disclosures are still not sufficiently transparent to separate agency costs from managerial OC. Following Espahbodi et al. (2016), we tested these discrete disclosure events and found that our results were not qualitatively changed. That is, even after the implementation of enhanced disclosure requirements, the remaining uncertainty about the nature of Strategic_OC still generates a systematic risk premium. This result is consistent with Hunter et al. (2012) that show that GAAP accounting procedures still do not fully disclose expenditures on intangible assets.

[6] We are indebted to the editor and an anonymous referee for this suggestion. In earlier versions of this paper, we found similar results in our tests of this hypothesis using earnings management as measured by discretionary accruals following Jones (1991).

in their 10-K disclosures. Further, they find a positive correlation between OC and the quality of top executives, measured using the survey of management practices by Bloom and Van Reenen (2007). Finally, they find that high OC firms have greater IT investment and are more profitable. Indeed, LSV find that the increased prevalence of pay for performance compensation contracts acts as a device for firms to retain the OC rents embedded in top management. The importance of top management to the performance of the firm is further documented in Bertrand and Schoar (2003) who identify the importance of executive "style." Focusing on founder-CEOs, Adams et al. (2009) identify a positive causal effect on firm performance, whereas Bennedsen et al. (2020) use CEO hospitalizations to show that CEOs have a significant effect on firm performance. The importance of top executives may be due to their more optimistic and risk-tolerant underlying attitudes as discovered in psychometric tests in Graham et al. (2013). However, Bebchuk and Grinstein (2005) document that executive pay during 1993–2003 may have outpaced the contribution of top management to firm performance. Thus, our paper contributes to this literature by identifying both the portable contribution of key talent to the firm's OC rents, as well as the non-portable component that may contain value-reducing agency costs.

The paper proceeds as follows. Section 2 contains a brief literature review and hypothesis development. Our empirical decomposition methodology is presented in Section 3. Section 4 estimates the risk characteristics of each of the components of OC and tests our information disclosure and corporate governance hypotheses. Finally, Section 5 concludes.

2 | LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The concept of OC dates back to economists' attempts to justify the existence of firms. The organization of assets into distinct companies occurs because these assets are more productive in unison than in isolation. That is, there is an intangible glue, called OC that connects the assets and makes them more productive. OC incorporates the non-production-related unique knowledge produced within the firm using the interaction of human capital and production technologies within themselves and among each other. Prescott and Visscher (1980) model the firm's OC in terms of improvements in the productivity of the firm's human capital since the firm's knowledge of the capabilities of its individual employees improves efficiency by matching the worker to the best job, by creating effective teams of employees and by investment in on-the-job training. Evenson and Westphal (1995) summarize the OC as: "the knowledge used to combine human skills and physical capital into systems for producing and delivering want-satisfying products." Carlin et al. (2012) view OC as a form of intra-firm language. This captures the idea that the value of OC depends on its being shared across managers and that it must be transmitted to the next generation of employees to be preserved. A firm's language includes informal work routines, convenient technical jargons and a vocabulary of patterns remembered from past experiences. They show that firms with more OC have less employee turnover and, therefore, can invest over the long term.

Webster and Jensen (2006) note the increased importance of intangible assets such as OC over time. Indeed, Buddelmeyer et al. (2009) study the impact on firm survival of innovation and expenditure on intangible assets. Atkeson and Kehoe (2005) estimate that payments to intangible capital represent about 8% of US manufacturing output, with return on OC encompassing 40% of those payments. Corrado et al. (2009) attribute 30% of all intangible assets in the United States to OC (or "firm-specific economic competencies"), representing the largest category. Moreover, Leung et al. (2018) find that OC impacts stock returns in 20 Journal of Financial and Quantitative Analysis (OECD countries. OC includes the firm's intellectual capital embodied in research and development, growth opportunities and corporate culture with respect to innovations. Francis et al. (2021) connect the firm's OC to the number of patents granted. Martín-Oliver and Salas-Fumás (2012) show that OC increases firm value through the optimal deployment of the firm's investment in information technology and other material assets.

OC encompasses the firm's know-how embedded in its workforce. OC emanates from rank-and-file employees as well as middle-level managers. However, it is the top executives (key talent in the C-suite) that hires, trains and

mobilizes the workforce. EP highlight the role of key talent in building the firm's OC. Cambrea et al. (2019) show how CEO knowledge of firm performance impacts the value of deferred executive compensation plans. However, these talented executives have an outside option to leave the firm and use their expertise at another firm. Thus, the firm's shareholders are exposed to the risk that key talent will depart, thereby taking valuable OC with them. This results in a 4.6% increase in risk-adjusted returns. LSV find that shareholders must share economic rents to key talent to prevent them from leaving the firm. This takes the form of pay for performance and greater inequality of income among the firm's employees. Further, Boguth et al. (2016) find that OC is fragile, thereby exposing the firm to the risk of loss. They estimate a 6% per annum risk premium for OC fragility, as measured by the size of the management team (the smaller the team, the more fragile the firm's OC). Oshima et al. (2009) view OC as entrepreneurial human capital that has been transformed from a non-tradable asset into tradable capital that is embedded in firm value.

Although OC is linked to the value created by key talent, there are limits to the ability to write contracts based on this entrepreneurial talent. OC is an intangible asset and, therefore, susceptible to agency problems that may reduce firm value. This is closely related to the literature relating higher executive compensation with increasing agency problems between managers and shareholders of a firm. Agency theory argues that misalignment of interests between shareholders and managers could lead to agency problems so that managers engage in activities for their own benefits rather than the benefits of the firm's shareholders (Jensen & Meckling, 1976). One well-known agency problem is managerial empire building, which refers to managers' tendencies to grow the firm beyond its optimal size or to maintain unutilized staff and other resources with the purpose of increasing personal utility from status, power, compensation and prestige (Bebchuk et al., 2002; Chen et al., 2012; Hope & Thomas, 2008; Jensen, 1986; Masulis et al., 2007; Stulz, 1990).

A related agency problem is the managers' disincentives to downsize as they derive monetary and nonmonetary benefits from managing larger and more complex organizations. Since any benefits from downsizing accrue primarily to shareholders rather than managers, managers may prefer the quiet life and try to avoid the difficult decisions and costly efforts associated with downsizing (Bertrand & Mullainathan, 2003; Chen et al., 2012; Datta et al., 2010). For example, in his seminal paper on managers' utility-maximizing tendencies, Williamson (1963) specifically uses the expansion of staff beyond optimal levels as an example to illustrate the effects of managerial discretion on managers' opportunistic behavior. In addition, Venieris et al. (2015) find that SG&A expenses are sticky due to managerial reluctance to reallocate capital during downturns. Thus, key talent can pursue private objectives (such as empire building or risk diversification) at odds with value maximization. Firms' shareholders provide incentive pay to induce managers to relinquish control rights. Consistent with this, Eisfeldt and Rampini (2008) show that capital is less efficiently reallocated during downturns because executives have capital control rights as a result of their private information about asset productivity. Indeed, Jensen and Webster (2009) show that firm capture of the knowledge embedded in OC may actually impede knowledge creation.

In this paper, we utilize a novel decomposition of OC in order to calibrate the systematic risk premium associated with managerial OC rents. We hypothesize that the executive compensation component of OC has a different relationship with systematic risk than other OC costs (such as Research and Development (R&D), staffing, perquisites, etc.). Since HC_OC represents observable compensation for key talent, it should incorporate all portable OC rents produced by human capital. Executive compensation reflects the fully portable OC rents created by key talent. Thus, executives expropriate the full value of their OC rents as measured by HC_OC, thereby leaving no rents for shareholders. Because there are no rents to shareholders associated with HC_OC, shareholders are not exposed to systematic risk from the loss of OC rents if key talent departs the firm. To test this, we hypothesize that:

Hypothesis 1. There is no systematic risk premium for HC_OC incorporated into stock returns.

However, Strategic_OC contains an unobservable mix of value-enhancing OC and value-reducing agency costs. Thus, shareholders are exposed to systematic risk associated with the possible loss of unobservable managerial OC rents, thereby creating systematic risk. To test this, we hypothesize that:

Hypothesis 2. There is a systematic risk premium for Strategic_OC incorporated into stock returns.

Stockholders earn systematic risk premiums if the market cannot distinguish between OC rents and agency costs in Strategic_OC. In contrast, transparency discloses the OC rent component in Strategic_OC and increases the portability of managerial OC, thereby reducing systematic risk premiums from the loss of key talent's OC rents. Most importantly, a more transparent information environment reduces the value-destroying agency costs embedded in OC, thereby reducing the risk premium in high Strategic_OC firms. Therefore, we test the impact of information disclosure and obfuscation on the systematic risk premium from Strategic_OC. We consider three possible mechanisms impacting firm-level information asymmetries. They are: (1) earnings announcements, (2) information obfuscation and (3) stock market pricing anomalies. We hypothesize that the greater (smaller) the level of information asymmetry, the higher (lower) the systematic risk premium from Strategic_OC. This implies the following hypothesis:

Hypothesis 3: The systematic risk premium for Strategic_OC is highest in the presence of greater firm-level information asymmetries that reduce the portability of OC rents.

Non-portability and systematic risk result from the lack of transparency in the breakdown of Strategic_OC into the OC rents versus the agency costs components. Thus, hypothesis 3 implies that more accurate and complete information disclosure should mitigate these effects. Our first test of this hypothesis uses earnings announcements as a measure of firm-level information asymmetries. That is, information asymmetries hamper the accuracy of financial analysts' earnings forecasts. Thus, the greater the deviation in analysts' forecasts from actual earnings, the less transparent the firm. Specifically, earnings that are surprisingly higher than analyst forecasts could be attributed to a greater than average proportion of OC rents in the Strategic_OC. We follow Edmans (2011) and define 1-year earnings surprises as the difference between actual and median analyst forecasts 8 months prior to the end of the forecast period scaled by the stock price. We expect that risk premiums that compensate shareholders for the unanticipated loss of non-portable OC will be higher for high Strategic_OC firms with positive earnings surprises.

Our second measure of firm-level information asymmetries is the complexity in conference call disclosures. Bushee et al. (2018) derive an obfuscation measure based on the linguistic complexity of conference call transcripts. Finally, our third measure of firm-level information asymmetries is an index of stock price anomalies following Stambaugh et al. (2015).

Finally, we hypothesize that corporate governance techniques that reduce agency costs should also mitigate the systematic risk associated with non-portability in OC rents. That is, reductions in agency costs will *ceteris paribus* reduce systematic risk premiums by increasing the portion of Strategic_OC that can be attributed to portable OC rents. Using the managerial entrenchment E-index of Bebchuk et al. (2009) and the institutional block ownership of Bethel et al. (1998), we test the following hypothesis:

Hypothesis 4: The systematic risk premium for Strategic_OC is highest in the presence of entrenched management and low institutional ownership.

3 | CONSTRUCTING OC COMPONENTS

3.1 | Sample construction

We obtain financial data concerning firms and executive compensation from Compustat, Center for Research in Security Prices (CRSP), Execucomp, Thomson Reuters Form 13F filings and Institutional Brokers' Estimate System (I-B-E-S)

analyst forecasts databases for the period from 1992 to 2015.[7] Our sample consists of all firms with sales and total assets higher than $5 million excluding financial firms and utilities, as these industries are highly regulated. We exclude firms that have less than 3 consecutive years of data. Our final sample consists of 15,486 firm-year observations of 1373 firms.

Data on risk factors are from Kenneth French's website. We obtain monthly stock returns data from CRSP and match each year's HC_OC and Strategic_OC. Our merged sample includes all firms described above with fiscal year ending in December and with common shares that are traded on New York Stock Exchange (NYSE), American Stock Exchange (AMEX), or National Association of Securities Dealers Automated Quotations (NASDAQ) and that have non-missing Standard Industrial Classification (SIC) codes and nonzero values of HC_OC and Strategic_OC.

Following EP, we first group firms into 17 industries based on the Fama and French (1997) classification excluding finance and utilities industries. Then, within each industry and each year, we sort firms into five subportfolios based on HC_OC (Strategic_OC). We then pool the subportfolios across industries and years to form five portfolios of firms sorted on HC_OC (Strategic_OC), where the breakpoints are industry- and year-specific. Finally, we form five value-weighted portfolios based on each firm's within-industry HC_OC (Strategic_OC) rank in each year and rebalance these portfolios in June every year.[8] Therefore, Portfolio 1 (5) contains firms in the lowest (highest) HC_OC or Strategic_OC quintile in each year and industry.

3.2 | Variable definitions

Our main variable of interest is the OC measure and its components; human capital (HC_OC) and strategic (Strategic_OC). Previous studies use SG&A expenses item of the income statement as a proxy for OC measure (Eisfeldt & Papanikolaou, 2013; Lev et al., 2009). Following EP, we construct the stock of OC using the perpetual inventory method. Therefore, we calculate the following:

$$OCstock_{it} = (1-\delta)\, OCstock_{it-1} + \frac{SG\&A_{it}}{cpi_t} \tag{1}$$

in which cpi_t denotes the consumer price index, and δ is the depreciation rate. In order to implement the law of motion, we choose an initial stock by

$$OCstock_{i0} = \frac{SG\&A_{i1}}{g+\delta_0}. \tag{2}$$

As in EP, we use the depreciation rate of 15%, which is equal to the depreciation rate used by the Bureau of Economic Analysis (BEA) in its estimation of R&D capital in 2006 and match the growth rate, g, with average annual real growth rate of firm-level SG&A expenditures, which is 8% in our sample. We scale this *OCstock* by the firm's book value of assets and denote this ratio as OC.

For the human capital component of OC measure, we capitalize the total executive compensation (item TDC1 in Execucomp) of the top five executives that a firm reports on the annual proxy (DEF14A SEC form).[9] We construct the HC_OC measure following the same procedure used in Equations (1) and (2). As it is a proxy for the human capital of a firm, we use a 1% depreciation rate[10] and a 20% real growth rate of executive compensation. Similar to *OCstock*, we

[7] The period is restricted to 1992 because it is the earliest year Execucomp database is available.

[8] Robustness checks using equal-weighted portfolios are provided in the Internet Appendix.

[9] To avoid heterogeneity of firms' reporting in ExecuComp, we limit our sample to firms with five executives listed in ExecuComp. Our results are robust to including total compensation to three or more executives listed in ExecuComp.

[10] Previous studies find human capital depreciation rate between 0.1% and 0.8%. (Browning et al., 1999; Ludwig et al., 2012). Arrazola and Hevia (2004) find the depreciation rate to be 1% and 1.5% in Spain. Our results are robust to a depreciation rate in 0%–1% interval.

TABLE 1 Summary statistics

Variable	Obs	Mean	Std.Dev.	Q1	Median	Q3
SG&A expenses ($ millions)	15,486	987.916	2704.126	95.614	246.409	709.698
Total Executive Compensation ($ millions)	15,486	12.908	14.934	4.489	8.371	15.848
OC	15,486	0.762	0.720	0.269	0.546	1.005
HC_OC	15,486	0.050	0.063	0.014	0.028	0.059
Strategic_OC	15,486	0.701	0.665	0.245	0.503	0.927
Institutional Ownership	15,486	0.144	0.145	0	0.119	0.242
E-Index	10,205	3.170	1.523	2	3	4
Analyst Coverage	13,271	10.819	10.271	1	9	17
Earnings Surprise	7327	0.001	0.024	−0.005	0.003	0.011
Obfuscation (*Obfu(Present)*)	6801	−0.112	1.341	−0.961	−0.112	0.769
Tobin's q	15,486	1.748	1.368	0.946	1.341	2.026
Size	15,486	7.492	1.591	6.34	7.393	8.53
ROA	15,486	0.141	0.118	0.094	0.137	0.189
Firm Age	15,486	25.902	21.655	10	19	36

Note: We construct the organization capital (*OC*) variable by cumulating the deflated value of Selling, General and Administrative expenses (*SG&A*) each year scaled by total assets, following Eisfeldt and Papanikolaou (2013; EP). We define *HC_OC* by cumulating the deflated value of top five executives' compensation each year scaled by total assets. Similarly, we define *Strategic_OC* by cumulating the deflated value of the difference between SG&A and top five executives' compensation each year and scale the difference by total assets. We define *Institutional Ownership* as block ownership of at least 5% of a firm's shares. Our entrenchment index (*E-Index*) measure is from Bebchuk et al. (2009). Following Edmans (2011) we define 1-year earnings surprises as the difference between actual and median analyst forecasts 8 months prior to the end of forecast period scaled by the stock price. Our *obfuscation* measure is from Bushee et al. (2018) and defined using conference call presentations. We follow Faleye (2007) and measure *Tobin's q* as the market value of equity plus the book values of debt and preferred equity, all divided by the book value of assets. We measure profitability using return on assets (*ROA*), which is defined as the ratio of operating income before depreciation to total assets. We define *Firm Age* as the number of years since IPO and firm *Size* as the natural logarithm of book value of assets. Our sample period is between 1992 and 2015.

scale this measure by the firm's book value of assets. To construct Strategic_OC, we subtract total executive compensation from SG&A expenses and follow the procedure in Equations (1) and (2) using a 15% depreciation rate and a real growth rate of 10% per annum.[11]

We also define governance, information asymmetries and firm performance measures. We measure firm governance using institutional block ownership and managerial entrenchment. The institutional block ownership data are obtained from Thomson Reuters Form 13F filings. We replace missing observations with zeros in the block ownership variable. To proxy for managerial entrenchment, we use the E-index measure of Bebchuk et al. (2009). We measure information asymmetries using earnings surprises and managerial obfuscation. We define earnings surprises following Edmans (2011). The obfuscation variable is from Bushee et al. (2018) and defined using conference call presentations. We provide firm performance measures from Compustat to present sample characteristics. We follow Faleye (2007) and measure Tobin's q as the market value of equity plus the book values of debt and preferred equity, all divided by the book value of assets. We measure profitability using return on assets (ROA), which is defined as the ratio of operating income before depreciation to total assets. We define firm age as the number of years since initial public offering (IPO) and firm size as the natural logarithm of the book value of assets.

Table 1 presents summary statistics for the variables described above. As the table shows, SG&A item has a mean of $987.916 million, and total executive compensation is $12.908 million on average. Therefore, the executive

[11] Firm level Strategic_OC has a real growth rate of 8% per annum in the sample. We use 15% depreciation rate as in the construction of OC.

TABLE 2 Correlations

	OC	*HC_OC*	*Strategic_OC*	*Institutional Ownership*	*Size*
HC_OC	0.4680				
	0.0000				
Strategic_OC	0.9969	0.4268			
	0.0000	0.0000			
Institutional Ownership	−0.0176	0.1301	−0.0196		
	0.0273	0.0000	0.0139		
Size	−0.4222	−0.6152	−0.3913	−0.1321	
	0.0000	0.0000	0.0000	0.0000	
Tobin's q	0.2250	0.2735	0.2097	−0.0223	−0.1911
	0.0000	0.0000	0.0000	0.0052	0.0000

Note: We construct the organization capital (*OC*) variable by cumulating the deflated value of Selling, General and Administrative expenses (*SG&A*) each year scaled by total assets, following EP. We define *HC_OC* by cumulating the deflated value of top five executives' compensation each year scaled by total assets. Similarly, we define *Strategic_OC* by cumulating the deflated value of the difference between SG&A and top five executives' compensation each year and scale the difference by total assets. We define *Institutional Ownership* as block ownership of more than 5% of a firm's shares. We follow Faleye (2007) and measure *Tobin's q* as the market value of equity plus the book values of debt and preferred equity, all divided by the book value of assets. We define firm *Size* as the natural logarithm of book value of assets. Our sample period is between 1992 and 2015. *p*-values are provided below the correlation numbers.

compensation component constitutes approximately 1.3% of SG&A expenses. An average firm has a total OC measure of 0.76. This is decomposed into HC_OC with a mean of 0.05, and Strategic_OC, which has a mean of 0.70. On average, institutional block ownership is 14.4% of the firm's outstanding shares. The E-index measure ranges between 0 and 6 with a mean (median) of 3.17 (3). The obfuscation measure has a mean and median of −0.112. The earnings surprise variable has a mean (median) of 0.001 (0.003). The average firm size in the sample is 7.49, which corresponds to approximately $7.2 billion of total assets with a 14.1% annual ROA. The age of an average firm in the sample is about 26. The average of Tobin's q in our sample is 1.74.

We present the variable correlations in Table 2. According to these, the correlation between HC_OC and Strategic_OC is 0.42 and statistically significant at 1% level. Consistent with earlier studies linking OC to firm value (Lev and Radhakrishnan (2005) for example), our measures of OC - HC_OC and Strategic_OC - are positively correlated with Tobin's q.

4 | THE RISK OF OC COMPONENTS

To test our hypotheses, we analyze the risk of each of the two components of OC to measure priced systematic risk. In order to test this, we estimate CAPM, Fama–French three-factor model (Fama & French, 1993) and Carhart four-factor model (Carhart, 1997) for five portfolios of firms sorted on lagged HC_OC and Strategic_OC separately within each year and industry.

4.1 | Asset prices of portfolios sorted on components of OC

We present our asset pricing results for portfolios sorted on HC_OC in Table 3 and on Strategic_OC in Table 4. As in EP, in addition to estimating CAPM, Fama and French three-factor and Carhart four-factor models, we also use

TABLE 3 Asset pricing: five portfolios sorted on HC_OC

Panel A: CAPM						
	1	2	3	4	5	5-1
α	0.200*	0.297**	0.159	0.174	0.209	0.009
	(1.92)	(2.14)	(0.95)	(1.12)	(1.20)	(0.04)
β_{MKT}	0.913***	0.896***	0.954***	0.930***	0.988***	0.075
	(33.04)	(20.89)	(16.76)	(20.11)	(19.64)	(1.19)
R^2	0.85	0.77	0.73	0.75	0.71	0.01
Panel B: Two-factor model						
	1	2	3	4	5	
α	0.203**	0.297**	0.157	0.171	0.203**	
	(2.51)	(2.14)	(0.98)	(1.27)	(2.51)	
β_{MKT}	0.936***	0.896***	0.940***	0.906***	0.936***	
	(43.61)	(21.05)	(18.29)	(24.50)	(43.61)	
β_{HMLHC}	−0.307***	−0.002	0.181***	0.323***	0.693***	
	(10.04)	(0.04)	(2.92)	(7.69)	(22.69)	
R^2	0.91	0.77	0.74	0.80	0.94	
Panel C: Three-factor model						
	1	2	3	4	5	5-1
α	0.224**	0.273**	0.089	0.109	0.132	−0.091
	(2.43)	(2.07)	(0.57)	(0.74)	(0.89)	(0.54)
β_{MKT}	0.955***	0.937***	0.973***	0.923***	0.938***	−0.016
	(39.81)	(23.66)	(19.31)	(20.93)	(20.00)	(0.31)
β_{SMB}	−0.257***	−0.120**	0.110**	0.216***	0.444***	0.701***
	(7.22)	(2.28)	(2.29)	(3.46)	(5.76)	(9.77)
β_{HML}	−0.031	0.115	0.237***	0.196***	0.190**	0.221***
	(0.70)	(1.60)	(3.14)	(2.76)	(2.54)	(2.61)
R^2	0.88	0.78	0.75	0.77	0.79	0.40
Panel D: Four-factor model						
	1	2	3	4	5	5-1
α	0.300***	0.300**	0.152	0.123	0.170	−0.130
	(3.29)	(2.20)	(0.92)	(0.81)	(1.11)	(0.73)
β_{MKT}	0.916***	0.924***	0.942***	0.916***	0.919***	0.003
	(35.24)	(21.88)	(18.73)	(19.61)	(20.22)	(0.06)
β_{SMB}	−0.243***	−0.115**	0.121***	0.219***	0.451***	0.694***
	(7.97)	(2.27)	(2.67)	(3.62)	(6.13)	(9.21)
β_{HML}	−0.064*	0.103	0.210***	0.190***	0.173**	0.237***
	(1.66)	(1.46)	(2.95)	(2.70)	(2.54)	(2.97)
β_{MOM}	−0.097***	−0.033	−0.079*	−0.017	−0.047	0.049
	(3.34)	(0.94)	(1.73)	(0.50)	(1.04)	(0.79)

(Continues)

TABLE 3 (Continued)

Panel D: Four-factor model						
	1	2	3	4	5	5-1
R^2	0.90	0.79	0.75	0.77	0.79	0.40

Note: This table shows asset-pricing estimations for five portfolios sorted on HC_OC over book value of assets relative to their industry peers within each year. We define *HC_OC* by cumulating the deflated value of top five executives' compensation each year scaled by total assets. In Panel A, we report portfolio alphas and betas of a regression of excess portfolio returns on excess returns of the market portfolio. In Panel B, we report portfolio alphas and betas of a regression of excess portfolio returns on excess returns of the market portfolio and high-minus-low HC_OC factor. In Panel C, we report portfolio alphas and betas of a regression of excess portfolio returns on excess returns of the market portfolio and the Fama and French (1993) small-minus-big (SMB) and high-minus-low (HML) factors. In Panel D, we report portfolio alphas and betas of a regression of excess portfolio returns on excess returns of the market portfolio, the Fama and French (1993) SMB and HML factors and the Carhart (1997) momentum (MOM) factor. Data on SMB, HML, and MOM are from Kenneth French's website. The sample period is June 1992 to December 2015. All portfolio returns correspond to value-weighted returns by firm market capitalization.
*, ** and *** indicate 10%, 5% and 1% statistical significance levels, respectively.

the high-minus-low portfolio of both HC_OC and Strategic_OC as additional risk factors in Panel B of Tables 3 and 4, respectively. These results show that the beta of high-minus-low HC_OC and Strategic_OC portfolios increases from low to high quintile portfolios suggesting that both components of OC are sources of risk that increase monotonically from low to high portfolios.[12] However, when controlling for other factors in Panel C (three-factor) and Panel D (four-factor), the alpha of high-minus-low HC_OC portfolio (5-1) becomes negative and insignificant, consistent with hypothesis 1. In contrast, the alpha of high-minus-low Strategic_OC portfolio (5-1) becomes positive and significant, consistent with hypothesis 2. In the four-factor model presented in Panel D of Table 4 the significance of alpha in high-minus-low (5-1) is at 5%. Our results suggest that the risk premium of high-minus-low Strategic_OC portfolio (5-1) corresponds to 7.03% higher annual returns in the three-factor model (i.e., 12 times the monthly alpha coefficient of 0.586 in Panel C of Table 4) and 4.60% higher annual return in the four-factor model (i.e., 12 times the monthly alpha coefficient of 0.384 in Panel D of Table 4).[13,14]

4.2 | Firm-level information asymmetries and systematic risk from managerial OC

Systematic risk from Strategic_OC emanates from the market's inability to separate out the value-enhancing OC rents from the value-reducing agency costs. Thus, any disclosure that resolves some of this information asymmetry should be particularly valuable for high Strategic_OC firms. In this subsection, we consider three information disclosure measures: earnings surprises, managerial obfuscation and stock pricing anomalies.

4.2.1 | Information asymmetries: Strategic_OC and earnings surprises

Financial analysts resolve firm-level information asymmetries by investigating and disclosing information about the firms that they cover. The greater the analyst coverage, the greater the likelihood that analysts will uncover hidden details about the firm, thereby reducing information asymmetries. Financial analysts typically transmit their findings

[12] As robustness tests we also estimate Fama and French five-factor model (Fama & French, 2015) and Q-factor model of Hou et al. (2015). The results are similar and are available in the Internet Appendix Table A3 for HC_OC and Table A4 for Strategic_OC.

[13] As robustness, we confirm these results in Table A5 in the Internet Appendix using industry-returns-adjusted and characteristic-adjusted portfolios following Daniel et al. (1997).

[14] The results are similar in all our tests when we winsorize stock returns at 1% and 99% levels.

TABLE 4 Asset pricing: five portfolios sorted on Strategic_OC

Panel A: CAPM						
	1	2	3	4	5	5-1
α	−0.226	0.247**	0.256**	0.281**	0.394***	0.620***
	(1.55)	(2.06)	(2.00)	(2.15)	(2.60)	(3.10)
β_{MKT}	1.055***	0.939***	0.873***	0.789***	0.661***	−0.395***
	(28.68)	(31.71)	(25.19)	(21.43)	(15.96)	(7.86)
R^2	0.80	0.81	0.78	0.74	0.59	0.22
Panel B: Two-factor model						
	1	2	3	4	5	
α	0.073	0.352***	0.243*	0.234*	0.073	
	(0.64)	(3.00)	(1.80)	(1.79)	(0.64)	
β_{MKT}	0.865***	0.872***	0.881***	0.819***	0.865***	
	(25.40)	(28.27)	(21.96)	(22.79)	(25.40)	
β_{HMLHC}	−0.483***	−0.169***	0.022	0.077*	0.517***	
	(11.88)	(4.30)	(0.48)	(1.84)	(12.73)	
R^2	0.89	0.83	0.78	0.74	0.78	
Panel C: Three-factor model						
	1	2	3	4	5	5-1
α	−0.231	0.284**	0.221*	0.285**	0.356**	0.586***
	(1.64)	(2.46)	(1.85)	(2.40)	(2.43)	(3.05)
β_{MKT}	1.087***	0.962***	0.913***	0.843***	0.701***	−0.386***
	(30.45)	(34.26)	(31.77)	(25.55)	(18.28)	(7.92)
β_{SMB}	−0.131**	−0.210***	−0.084*	−0.257***	−0.074	0.057
	(2.30)	(4.23)	(1.84)	(5.24)	(1.43)	(0.77)
β_{HML}	0.046	−0.092**	0.150***	0.044	0.159**	0.113
	(0.70)	(2.34)	(2.96)	(0.71)	(2.17)	(1.14)
R^2	0.81	0.83	0.80	0.79	0.62	0.23
Panel D: Four-factor model						
	1	2	3	4	5	5-1
α	−0.116	0.370***	0.279**	0.321***	0.268*	0.384**
	(0.83)	(3.20)	(2.29)	(2.67)	(1.85)	(2.04)
β_{MKT}	1.030***	0.919***	0.884***	0.825***	0.744***	−0.285***
	(28.06)	(31.76)	(27.16)	(23.24)	(18.63)	(5.95)
β_{SMB}	−0.111**	−0.195***	−0.074*	−0.251***	−0.090*	0.021
	(2.26)	(4.63)	(1.73)	(5.34)	(1.71)	(0.32)
β_{HML}	−0.003	−0.130***	0.125***	0.028	0.197***	0.200**
	(0.06)	(3.49)	(2.66)	(0.46)	(2.75)	(2.21)
β_{MOM}	−0.144***	−0.108***	−0.073**	−0.046	0.110***	0.254***
	(3.81)	(3.46)	(2.32)	(1.43)	(3.11)	(4.72)

(Continues)

TABLE 4 (Continued)

Panel D: Four-factor model						
	1	2	3	4	5	5-1
R^2	0.82	0.85	0.80	0.79	0.64	0.34

Note: This table shows asset-pricing estimations for five portfolios sorted on Strategic_OC over book value of assets relative to their industry peers within each year. We define *Strategic_OC* by cumulating the deflated value of the difference between SG&A and top five executives' compensation each year and scale the difference by total assets. In Panel A, we report portfolio alphas and betas of a regression of excess portfolio returns on excess returns of the market portfolio. In Panel B, we report portfolio alphas and betas of a regression of excess portfolio returns on excess returns of the market portfolio and high-minus-low Strategic_OC factor. In Panel C, we report portfolio alphas and betas of a regression of excess portfolio returns on excess returns of the market portfolio and the Fama and French (1993) SMB and HML factors. In Panel D, we report portfolio alphas and betas of a regression of excess portfolio returns on excess returns of the market portfolio, the Fama and French (1993) SMB and HML factors and the Carhart (1997) MOM factor. Data on SMB, HML, and MOM are from Kenneth French's website. The sample period is June 1992 to December 2015. All portfolio returns correspond to value-weighted returns by firm market capitalization.

*, ** and *** indicate 10%, 5% and 1% statistical significance levels, respectively.

to the market in the form of earnings forecasts. Thus, we examine earnings surprises as another test of hypothesis 3. Following Edmans (2011), we define 1-year earnings surprises as the difference between actual and median analyst forecasts 8 months prior to the end of forecast period scaled by the stock price. Then we define unexpectedly high versus unexpectedly low earnings surprises similar to Shanthikumar (2012) using top tercile (positive) and bottom tercile (negative) of earnings surprises, respectively. Unexpectedly high earnings (positive earnings surprises) are consistent with a larger proportion of non-portable OC rents in Strategic_OC. Therefore, we hypothesize that risk premiums that compensate shareholders for the unanticipated loss of non-portable OC will be higher for high Strategic_OC firms with positive earnings surprises.

Table 5 presents the results of this test of hypothesis 3 by analyzing the abnormal returns of firms with positive and negative earnings surprises within high-minus-low quintiles of Strategic_OC portfolios. The results show that there are no statistically significant abnormal returns on high-minus-low Strategic_OC portfolios upon the announcement of negative earnings surprises. However, high-minus-low Strategic_OC portfolios have statistically significant positive abnormal returns upon announcement of positive earnings surprises. Consistent with hypothesis 3, we find a systematic risk premium (alpha) only high for Strategic_OC firms with positive earnings surprises that reveal larger than expected amounts of non-portable OC. Table 5 also shows that these results are robust across both equal-weighted (EW) and value-weighted (VW) portfolios, as well as adjusting for industry returns and firm characteristics. Within the unexpectedly low earnings surprises, the subsample alpha of the Q-factor model in value-weighted portfolios adjusted for industry returns is significant. However, both the coefficient and the statistical significance level are much smaller than the alpha of the same model in the unexpectedly high earnings surprises subsample.

4.2.2 | Information asymmetries: Strategic_OC and managerial obfuscation

As another measure of firm-level information asymmetries, we examine the linguistic complexity that is associated with obfuscation in firm disclosures during the conference calls. Bushee et al. (2018) develop an information obfuscation measure that is orthogonal to the firm's fundamental complexity but positively associated with firm-level information asymmetries. In the context of this paper, we examine obfuscation, which is intended to reduce the informativeness of disclosures, as a possible mechanism used by C-suite executives to reduce the transparency of OC rents and agency costs within Strategic_OC. To test this, we first sort firms in our sample into quintile portfolios of the

TABLE 5 Strategic_OC and earnings surprises

Panel A: Unexpectedly high earnings surprises						
	Risk-free rate adj.		Characteristics adj.		Industry returns adj.	
	EW	VW	EW	VW	EW	VW
CAPM α	0.853**	1.719***	0.794**	1.394***	0.801**	1.068**
	(2.27)	(3.73)	(2.11)	(2.99)	(1.97)	(2.38)
Fama–French three-factor α	0.927**	1.744***	0.903**	1.510***	0.877**	1.146**
	(2.38)	(3.67)	(2.32)	(3.20)	(2.02)	(2.45)
Fama–French four-factor α	1.077***	1.799***	0.979**	1.566***	0.913*	1.233**
	(2.66)	(3.71)	(2.47)	(3.19)	(1.92)	(2.50)
Q-factor α	1.140***	1.698***	1.138***	1.659***	1.009**	1.279**
	(2.67)	(3.43)	(2.73)	(3.34)	(2.13)	(2.48)
Fama–French five-factor α	1.023***	1.645***	1.026***	1.637***	0.889**	1.143**
	(2.62)	(3.53)	(2.61)	(3.41)	(2.15)	(2.43)
Panel B: Unexpectedly low earnings surprises						
	Risk-free rate adj.		Characteristics adj.		Industry returns adj.	
	EW	VW	EW	VW	EW	VW
CAPM α	0.041	0.336	−0.192	0.083	0.057	0.296
	(0.17)	(1.00)	(0.64)	(0.24)	(0.24)	(0.93)
Fama–French 3-factor α	0.058	0.304	−0.195	0.030	0.010	0.381
	(0.24)	(0.91)	(0.65)	(0.08)	(0.04)	(1.25)
Fama–French 4-factor α	−0.020	0.283	−0.228	0.015	−0.109	0.354
	(0.08)	(0.79)	(0.69)	(0.04)	(0.47)	(1.06)
Q-factor α	0.103	0.320	−0.169	0.062	−0.095	0.609*
	(0.40)	(0.90)	(0.50)	(0.16)	(0.38)	(1.87)
Fama–French five-factor α	0.058	0.375	−0.201	0.112	−0.104	0.522
	(0.22)	(1.07)	(0.59)	(0.29)	(0.41)	(1.57)

Note: This table shows the alpha coefficients of high-minus-low Strategic_OC portfolio returns for unexpectedly high and unexpectedly low earnings surprises. We define *Strategic_OC* by cumulating the deflated value of the difference between SG&A and top five executives' compensation each year and scale the difference by total assets. We define 1-year earnings surprises as the difference between actual and median analyst forecasts 8 months prior to the end of forecast period scaled by the stock price. Unexpectedly high (low) earnings surprises are defined using top (bottom) tercile of 1-year earnings surprises. The sample period is June 1992 to December 2015.

*, ** and *** indicate 10%, 5% and 1% statistical significance levels, respectively.

measure of obfuscation in the presentation part of their conference calls within each year and industry.[15] To convert the quarterly obfuscation into an annual measure, we utilize the mean value of all quarters in a year. Then within each obfuscation quintile portfolio in each year and industry, we sort firms on the Strategic_OC component. The results in Panel A of Table 6 show that within the high obfuscation quintile, high-minus-low Strategic_OC portfolios have positive and significant abnormal returns in value-weighted portfolios adjusted for the risk-free rate and industry returns. Although alphas of the equal-weighted portfolio returns are mostly insignificant in the high obfuscation subsample, the coefficients are still positive and higher than the alphas of the comparable model in the low obfuscation

[15] We use the *Obfu(present)* variable in Bushee et al. (2018) and thank Daniel Taylor for sharing the data.

TABLE 6 Strategic_OC and obfuscation

Panel A: High obfuscation						
	Risk-free rate adj.		Characteristics adj.		Industry returns adj.	
	EW	VW	EW	VW	EW	VW
CAPM α	0.504	1.402***	0.169	0.935*	0.422	0.983**
	(1.29)	(3.01)	(0.33)	(1.70)	(1.11)	(2.27)
Fama–French three-factor α	0.480	1.400***	0.085	0.880	0.407	0.980**
	(1.29)	(2.97)	(0.17)	(1.62)	(1.11)	(2.25)
Fama–French four-factor α	0.404	1.250***	0.062	0.842	0.395	0.976**
	(1.10)	(2.78)	(0.13)	(1.58)	(1.08)	(2.25)
Q-factor α	0.480	1.218***	−0.049	0.713	0.368	0.939**
	(1.28)	(2.68)	(0.09)	(1.30)	(1.00)	(2.23)
Fama–French five-factor α	0.443	1.199**	−0.046	0.711	0.353	0.906**
	(1.19)	(2.61)	(0.08)	(1.28)	(0.97)	(2.15)
Panel B: Low obfuscation						
	Risk-free rate adj.		Characteristics adj.		Industry returns adj.	
	EW	VW	EW	VW	EW	VW
CAPM α	−0.328	−0.458	−0.509	−0.715	−0.188	−0.405
	(0.91)	(1.04)	(1.02)	(1.17)	(0.53)	(1.08)
Fama–French three-factor α	−0.356	−0.469	−0.593	−0.802	−0.209	−0.414
	(1.03)	(1.06)	(1.20)	(1.30)	(0.61)	(1.12)
Fama–French four-factor α	−0.387	−0.541	−0.596	−0.819	−0.218	−0.417
	(1.10)	(1.24)	(1.19)	(1.34)	(0.62)	(1.12)
Q-factor α	−0.238	−0.426	−0.421	−0.734	−0.154	−0.353
	(0.72)	(1.02)	(0.91)	(1.16)	(0.46)	(0.99)
Fama–French five-factor α	−0.283	−0.427	−0.417	−0.738	−0.179	−0.337
	(0.86)	(1.01)	(0.90)	(1.18)	(0.53)	(0.93)

Note: This table shows the alpha coefficients of high-minus-low Strategic_OC portfolio returns within high versus low portfolios constructed using the obfuscation measure introduced by Bushee et al. (2018) from conference call presentations. We define *Strategic_OC* by cumulating the deflated value of the difference between SG&A and top five executives' compensation each year and scale the difference by total assets. We define high (low) obfuscation sample as the 5th (1st) quintile of obfuscation distribution. The sample period is June 1992 to December 2015.

*, ** and *** indicate 10%, 5% and 1% statistical significance levels, respectively.

subsample. Consistent with hypothesis 3, none of the low obfuscation portfolios shown in Panel B of Table 6 have statistically significant alphas.

4.2.3 | Information asymmetries: Strategic_OC and stock market anomalies

Stock price anomalies may emanate from disagreements about unobservable fundamental value. The literature has documented possible stock mispricing as measured by persistent return anomalies. Stambaugh et al. (2015) construct

an index of 11 pricing anomalies that persist even after the three-factor Fama–French model is utilized.[16] The index is a composite ranking of individual stocks on the basis of their sorting on each anomaly such that the higher the rank, the greater the overpricing. Thus, the mispricing index is a relative measure that examines which stock is most likely to be overpriced in the cross-section. We examine the presence of stock price anomalies as indicators of uncertainty about OC rents within the firm. In particular, since arbitrage is asymmetric (i.e., shorting costs make it easier to eliminate underpricing than overpricing), we consider whether overpriced firms have higher OC risk premiums that cannot be fully eliminated through arbitrage. We double sort the firms in our sample into quintile portfolios of the mispricing index and Strategic_OC, respectively, in each year and industry. The results in Table 7 show that OC risk premiums are observed for overpriced firms only in risk-free rate-adjusted, industry-returns-adjusted and characteristics benchmark returns-adjusted portfolios. For underpriced firms, we find significant and positive alphas only in CAPM model using value-weighted portfolio returns. However, both the coefficients and the statistical significance level are smaller than the comparable model in the subsample of overpriced firms. These results are consistent with the relative lack of transparency about the proportion of rents versus agency costs in Strategic_OC as proposed in hypothesis 3.

4.3 | Corporate governance and systematic risk from managerial OC

Agency costs embedded in Strategic_OC should be higher in the absence of external governance. Indeed, without informational frictions, well-governed firms may pay out all of OC rents to managers, thereby resulting in 100% portability. In contrast, poorly governed firms may be unable to disentangle OC rents from agency costs, thereby inducing shareholders to demand a systematic risk premium. Therefore, hypothesis 4 states that the systematic risk premium for Strategic_OC is higher when corporate governance is less effective in controlling agency problems. Alternatively, if effective corporate governance limits agency costs, we hypothesize that the systematic risk premium for Strategic_OC is curtailed.

4.3.1 | Corporate governance: Strategic_OC and the E-index

One of the measures we use to proxy for ineffective corporate governance is the level of managerial entrenchment. Bebchuk et al. (2009) construct an E-index based on six provisions published by Investor Responsibility Research Center (IRRC): staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes and supermajority requirements for mergers and charter amendments. They document that high entrenchment firms have lower firm value, measured by Tobin's q, and negative abnormal returns, thereby indicating higher agency costs. Thus, we hypothesize that higher values of the E-index are related to higher systematic risk premiums for high Strategic_OC firms. That is, entrenched management may impose higher agency costs on the firm, thereby obscuring the managerial OC rents that may be contained in Strategic_OC.

The E-index value ranges between zero and six, counting the number of entrenchment provisions that are in place at any point in time.[17] We create portfolios double sorted on the E-index and Strategic_OC within each year and industry. We use the most conservative long-short portfolio definition in Bebchuk et al. (2009) to sort firms based on the E-index and assign firms with index values from three to six to high entrenchment portfolios and those with index values from zero to two to low entrenchment portfolio. The results in Panel A of Table 8 present the alphas on high-minus-low Strategic_OC firms in high entrenchment portfolios. The findings show positive and statistically significant abnormal

[16] The 11 anomalies are: financial distress, O-score bankruptcy probability, net stock issues, composite equity issues, total accruals, net operating assets, momentum, gross profitability, asset growth, ROA and investment-to-assets.(2006).

[17] Following Gompers et al. (2003) and Bebchuk et al. (2009), we assume that the E-index is unchanged for any year in which the IRRC publication is not available.

TABLE 7 Strategic_OC and mispricing index

Panel A: For high mispricing score (5th quintile)						
	Risk-free rate adj.		Characteristics adj.		Industry returns adj.	
	EW	VW	EW	VW	EW	VW
CAPM α	1.045***	1.285***	1.117***	1.504***	1.073***	0.912**
	(3.38)	(3.20)	(3.20)	(3.25)	(3.72)	(2.30)
Fama–French three-factor α	1.157***	1.318***	1.241***	1.545***	1.130***	1.003***
	(4.23)	(3.28)	(4.04)	(3.34)	(4.33)	(2.61)
Fama–French four-factor α	1.146***	1.213***	1.232***	1.427***	1.079***	0.923**
	(4.14)	(2.81)	(3.97)	(2.94)	(4.11)	(2.27)
Q-factor α	1.457***	1.290***	1.596***	1.552***	1.316***	1.103***
	(5.00)	(3.00)	(4.84)	(3.12)	(4.77)	(2.67)
Fama–French five-factor α	1.374***	1.180***	1.529***	1.440***	1.259***	0.973**
	(4.67)	(2.81)	(4.59)	(2.95)	(4.52)	(2.43)
Panel B: For low mispricing score (1st quintile)						
	Risk-free rate adj.		Characteristics adj.		Industry returns adj.	
	EW	VW	EW	VW	EW	VW
CAPM α	0.032	0.587*	−0.005	0.683*	−0.022	0.502*
	(0.17)	(1.66)	(0.03)	(1.70)	(0.11)	(1.69)
Fama–French three-factor α	0.027	0.519	−0.009	0.600	−0.084	0.460
	(0.15)	(1.47)	(0.04)	(1.49)	(0.45)	(1.56)
Fama–French four-factor α	0.053	0.585	0.023	0.663	−0.059	0.495
	(0.28)	(1.63)	(0.11)	(1.62)	(0.31)	(1.63)
Q-factor α	−0.017	0.349	−0.058	0.399	−0.247	0.329
	(0.09)	(1.04)	(0.26)	(1.03)	(1.29)	(1.13)
Fama–French five-factor α	−0.024	0.423	−0.076	0.450	−0.215	0.350
	(0.13)	(1.32)	(0.35)	(1.20)	(1.14)	(1.24)

Note: This table shows alpha coefficients of high-minus-low Strategic_OC portfolio returns for high versus low scores of mispricing. We define *Strategic_OC* by cumulating the deflated value of the difference between SG&A and top five executives' compensation each year and scale the difference by total assets. We use the mispricing index constructed by Stambaugh et al. (2015) and create quintile portfolios sorted first on mispricing index and then on Strategic_OC in each year and industry. The sample period is June 1992 to December 2015.

*, ** and *** indicate 10%, 5% and 1% statistical significance levels, respectively.

returns for firms with high-minus-low Strategic_OC and high E-index values. On the other hand, Panel B of Table 8 shows that high Strategic_OC portfolios with less entrenched management do not generate statistically significant alpha abnormal returns except CAPM and three-factor models using risk-free rate-adjusted and industry-adjusted returns with equal-weighted portfolio returns. Although the coefficients of alphas estimated in these models in the low entrenchment subsample are higher than the coefficients of alphas of comparable models in the high entrenchment subsample, the statistical significance levels are smaller in the former than the latter. We also calculate *F*-test statistics to compare the significance of alphas. We find that the *p*-values of *F*-tests in the high entrenchment subsample are less than 1%, while in the low entrenchment subsample, *p*-values are between 8%–10% for the statistically significant

TABLE 8 Strategic_OC and E-index

Panel A: High E-index	Risk-free rate adj.		Characteristics adj.		Industry returns adj.	
	EW	VW	EW	VW	EW	VW
CAPM α	0.466***	0.596***	0.380**	0.397*	0.496***	0.527***
	(3.45)	(3.05)	(2.49)	(1.81)	(3.71)	(2.82)
Fama–French three-factor α	0.468***	0.613***	0.376**	0.382*	0.490***	0.575***
	(3.45)	(3.10)	(2.38)	(1.69)	(3.67)	(3.12)
Fama–French four-factor α	0.432***	0.430**	0.354**	0.225	0.459***	0.481***
	(3.11)	(2.20)	(2.21)	(1.00)	(3.34)	(2.60)
Q-factor α	0.419***	0.484**	0.333**	0.270	0.437***	0.514***
	(2.93)	(2.39)	(2.00)	(1.10)	(3.11)	(2.69)
Fama–French five-factor α	0.378***	0.375*	0.303*	0.223	0.405***	0.380**
	(2.64)	(1.92)	(1.84)	(0.90)	(2.88)	(2.07)
Panel B: Low E-index	**Risk-free rate adj.**		**Characteristics adj.**		**Industry returns adj.**	
	EW	VW	EW	VW	EW	VW
CAPM α	0.564*	0.607	0.411	0.549	0.534	0.174
	(1.66)	(1.49)	(1.25)	(1.43)	(1.59)	(0.49)
Fama–French three-factor α	0.628*	0.479	0.471	0.500	0.572*	0.206
	(1.82)	(1.23)	(1.35)	(1.27)	(1.67)	(0.59)
Fama–French four-factor α	0.575	0.364	0.411	0.407	0.532	0.115
	(1.62)	(0.92)	(1.16)	(1.05)	(1.51)	(0.33)
Q-factor α	0.577	0.019	0.366	0.186	0.457	0.043
	(1.57)	(0.05)	(0.96)	(0.45)	(1.26)	(0.12)
Fama–French five-factor α	0.442	0.032	0.239	0.129	0.345	−0.102
	(1.22)	(0.08)	(0.64)	(0.31)	(0.96)	(0.29)

Note: This table shows the alpha coefficients of high-minus-low Strategic_OC portfolio returns within high vs. low portfolios constructed using E-index introduced by Bebchuk et al. (2009). We define *Strategic_OC* by cumulating the deflated value of the difference between SG&A and top five executives' compensation each year and scale the difference by total assets. We assign firms with index values from three to six to high E-index portfolio and those with index values from zero to two to low E-index portfolio. The sample period is June 1992 to December 2015.
*, ** and *** indicate 10%, 5% and 1% statistical significance levels, respectively.

alphas.[18] Overall, these results suggest that even firm-specific OC rents are paid to unentrenched management in the form of executive compensation in order to retain management. These results are consistent with hypothesis 4.

4.3.2 | Corporate governance: Strategic_OC and institutional ownership

Following Bethel et al. (1998), we use institutional block ownership to proxy for the effectiveness of corporate governance. That is, institutional blockholders are found to have the incentive and ability to limit value-reducing managerial

[18] We thank the anonymous referee for suggesting this additional test.

TABLE 9 Strategic_OC and institutional ownership

Panel A: High institutional ownership						
	Risk-free rate adj.		Characteristics adj.		Industry returns adj.	
	EW	VW	EW	VW	EW	VW
CAPM α	0.691	0.808	0.260	0.299	0.855	0.814
	(1.10)	(1.33)	(0.30)	(0.38)	(1.37)	(1.34)
Fama–French three-factor α	0.704	0.827	0.268	0.365	0.802	0.769
	(1.18)	(1.39)	(0.33)	(0.49)	(1.37)	(1.32)
Fama–French four-factor α	0.418	0.647	0.119	0.293	0.550	0.588
	(0.78)	(1.20)	(0.15)	(0.41)	(1.05)	(1.11)
Q-factor α	0.597	0.648	0.081	0.116	0.641	0.508
	(1.06)	(1.07)	(0.11)	(0.16)	(1.19)	(0.88)
Fama–French five-factor α	0.478	0.544	−0.016	0.015	0.547	0.436
	(0.88)	(0.92)	(0.02)	(0.02)	(1.04)	(0.76)
Panel B: Low Institutional Ownership						
	Risk-free rate adj.		Characteristics adj.		Industry returns adj.	
	EW	VW	EW	VW	EW	VW
CAPM α	0.761***	0.655**	0.453*	0.688**	0.802***	0.618**
	(2.80)	(1.99)	(1.74)	(2.06)	(3.02)	(2.19)
Fama–French three-factor α	0.750***	0.567*	0.432	0.615*	0.782***	0.581**
	(2.74)	(1.78)	(1.61)	(1.83)	(2.91)	(2.14)
Fama–French four-factor α	0.737***	0.472	0.460*	0.551	0.749***	0.553**
	(2.64)	(1.44)	(1.69)	(1.59)	(2.77)	(2.00)
Q-factor α	0.692**	0.369	0.405	0.469	0.704**	0.452
	(2.40)	(1.11)	(1.43)	(1.35)	(2.49)	(1.60)
Fama–French five-factor α	0.681**	0.399	0.409	0.476	0.695**	0.427
	(2.41)	(1.20)	(1.49)	(1.38)	(2.53)	(1.50)

Note: This table shows the alpha coefficients of high-minus-low Strategic_OC portfolio returns within high vs. low institutional ownership portfolios. We define *Strategic_OC* by cumulating the deflated value of the difference between SG&A and top five executives' compensation each year and scale the difference by total assets. We define *institutional ownership* as block ownership of at least 5% of a firm's shares. We first sort firms by quintiles of institutional ownership in each year and industry. Then within highest (5^{th}) and lowest (1^{st}) quintiles, we sort the firms again by quintiles of Strategic_OC within each year and industry. The sample period is June 1992 to December 2015.

*, ** and *** indicate 10%, 5% and 1% statistical significance levels, respectively.

activities that generate agency costs. Therefore, according to hypothesis 4, the lower the institutional block holdings, the less effective is corporate governance and the higher the systematic risk premium from Strategic_OC. To test this, we first sort firms by quintiles of institutional ownership in each year and industry. Then within the highest (5^{th}) and lowest (1^{st}) quintiles, we sort the firms again by quintiles of Strategic_OC in each year and industry. We present the results in Table 9. Panel A shows that there is no systematic risk premium for high-minus-low Strategic_OC portfolios within the high institutional ownership quintile. However, Panel B of Table 9 shows evidence of statistically significant alphas for high Strategic_OC portfolios with low institutional ownership, consistent with hypothesis 4.

5 | CONCLUSION

We introduce a new empirical decomposition of the aggregate OC measure used in the literature in order to calibrate the systematic risk premium found in EP and LSV. These papers find that stockholders receive a risk premium to compensate for the risk that key talent will unexpectedly leave the firm and take their OC economic rents with them. We contribute to this literature by recognizing that not all OC rents are portable. That is, some of the value of OC is specific to the unique combination of the firm and the manager and therefore cannot be transferred to other firms but rather is destroyed when a manager switches jobs. We hypothesize that some OC rents are observable and can be attributed to the manager individually and, therefore, are portable from firm to firm. In contrast, some OC rents are not observable and may be indistinguishable from agency costs. This portion of OC rents is not portable from firm to firm. The systematic risk premium observed in the literature is shown to be compensation for the non-portable component of OC rents only. Our finding of a 4.6% annual systematic risk premium for non-portable OC rents only is virtually the same as the risk premium in the literature attributed to total OC managerial rents.

In this paper, we endogenize the portability of OC rents by relating it to disclosures regarding executive compensation. That is, the observable measure of an executive's contribution to the firm's value is the compensation package. Poaching firms must offer the executive an employment package that meets (or exceeds) this inside option in order to attract the manager's OC rents. We capitalize the publicly disclosed compensation package of top executives to obtain the portable component of OC rents, denoted HC_OC.

However, HC_OC is only one component of total OC as commonly measured using SG&A expenses. We designate the residual component of total OC as Strategic_OC. This component includes both the non-portable component of managerial OC rents and agency costs. Since corporate disclosure is insufficient to distinguish between managerial OC rents and agency costs in Strategic_OC, there is a systematic risk premium earned by shareholders. That is, the risk to shareholders from unexpected loss of key talent emanates from the loss of non-portable managerial OC, not portable managerial OC. This is because the non-portable component of managerial OC is not fully compensated and disclosed, but rather may be paid in the form of perquisites and other emoluments that are indistinguishable from agency costs for empire building and managerial preferences.

Building on our use of disclosure as a way to endogenize the portability of managerial OC rents, we utilize several tests of information asymmetries to examine the systematic risk premium associated with Strategic_OC. We hypothesize that the greater the firm-level information asymmetries, the larger the systematic risk premium since there is less ability for the market to differentiate non-portable managerial OC rents from agency costs. We utilize three measures of information asymmetries: earnings surprises, obfuscation in conference calls and market pricing anomalies. Firm-level information asymmetries are higher when positive earnings surprises reveal greater than expected non-portable OC rents when the level of linguistic complexity indicative of corporate obfuscation increases and when the stock mispricing index is highest. Our analysis finds a statistically and economically significant systematic risk premium only for the portfolios of high Strategic_OC firms with the highest levels of information asymmetries.

The source of the non-portability of managerial OC is the lack of sufficient disclosure to differentiate OC rents from agency costs. Thus, we utilize corporate governance measures in order to control the level of agency problems in the firm. That is, if a firm has effective corporate governance, we hypothesize that there will be fewer agency conflicts and therefore less uncertainty about attributing Strategic_OC to managerial OC rents as opposed to agency costs. The more entrenched the management (as measured by the E-index) and the lower the level of institutional block holdings, the greater the potential agency costs depressing firm value. As hypothesized, we find that the systematic risk premium for Strategic_OC is higher the more entrenched the management and the lower the level of institutional block holdings.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon request.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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