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Issue 2, 2014

Cultural values and mergers

The corporation in finance

Intervening in bankers' pay

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CEO compensation contagion

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About the Cover

Qi Baishi (1864–1957): Eagle standing in Pine Tree. China, 1946 Qi Baishi (pronounced as Ch'i Paiu-shih) is one of the most influential modern Chinese artists. He is known for using traditional Chinese painting techniques in a fresh way to draw themes of landscapes and animals without Western influence. His painting Eagle Standing in Pine Tree is the most expensive Chinese painting sold to date, at $67.1 million in 2011. However, because the buyer developed doubts about the authenticity of this painting, it remains in a storage vault at *China Guardian Auctions*. The high price for traditional Chinese paintings and questions about forgeries are two faces of the Chinese art market. High demand and low supply of guaranteed authentic Chinese art has opened up good opportunities for Sotheby's and Christie's.

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- Epub is the best format for tablets. Like pdf and unlike html, it works well for viewing on non-Internet connected devices, too. (Epub is basically pre-packaged html without javascript.) Unfortunately, many e-book readers are still "immature" (buggy). FAME has been tested to work well on Apple iBooks, Firefox's epubreader, and Adobe's Digital Editions. calibre and the Android Uiversal Book Reader mostly work, but have several bugs. (Amazon makes it intentionally difficult to transfer content that was not obtained through the Amazon store onto the Kindle reader.) Note that external links cannot be made to work reliably inside an ebook reader—epub is a self-contained package format. Some e-book readers will open a web browser; others will not.

- Source contains the LaTeX-dialect source from which all of the above have been created. This is of interest only to connoisseurs of typesetting systems.

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Featured MeMos

Raghuram G. Rajan

The corporation in finance

The Journal of Finance | Volume 67, Issue 4 (Aug 2012), 1173–1217
(please cite only the original publication, not FAME)

Watch Raghu Rajan's talk

One of the cornerstones of modern corporate finance is the Modigliani-Miller Theorem, which essentially says that in a world where investors can borrow and lend as easily as corporations, the value of a firm is determined by the present discounted value of its expected cash flows, and not by how these cash flows are allocated to various claimholders—i.e., by its capital structure. One of the important assumptions of the Modigliani-Miller Theorem is the very existence of the corporation. In the largely perfect world envisioned by Miller and Modigliani, it is not clear what, if anything, determines the existence of the corporation and how it is structured. As researchers on the theory of the firm, such as Ronald Coase, Oliver Hart, and Oliver Williamson, have suggested, firms with well-defined boundaries emerge in worlds with transactions costs stemming from difficulties in contracting. But these costs are unimportant in the Modigliani-Miller world. So the Modigliani-Miller Theorem postulates the irrelevance of corporate capital structure in a world where corporations are also irrelevant in the first place. Put differently, could the imperfections that lead to the firm being organized in a particular way also lead to implications for its capital structure, and vice versa? That is indeed what I argue in this paper.

First—create a unique product

The firm's structure and its financing center around a common problem: how to create net present value—that is, value net of the opportunity costs of the inputs—and then how to allocate this back to agents in the economy in a way that maximizes value creation. I argue that the typical innovative firm undergoes two important transformations over its early life: the first transformation entails *differentiation*. An entrepreneur cannot create net present value simply by mimicking others unless she happens to be extraordinarily lucky or the market extraordinarily uncompetitive—very few of the myriad laundry shops or small restaurants that open (and close) every day repay anything more than the normal expected returns for the factors that are employed. To create net present value, the entrepreneur has to go out on a limb, distinguishing herself from the rest of the herd of potential competitors, and thus potentially earning sustainable profits. Thus, the process of creating positive net present value invariably implies differentiation—whether in creating new products or product varieties that nobody else manufactures, in developing production methods that are more efficient than that of the competition, or in targeting customer populations or needs that have hitherto been overlooked.

...then hire employees who take orders

However, the entrepreneur faces a critical challenge. She needs to persuade others to join her in enterprise-building activities. This is hard if the entrepreneurial venture is a significant departure from the ordinary, and is therefore both risky as well as uncertain (in the Knightian sense of entailing unknown unknowns). Clearly, one option would be to contract to buy inputs and hire services in the spot market. The entrepreneur would then be a contractor who sets up a *nexus of contracts* with other *independent* contractors—collaborators who have full independence of actions, as well as full ownership of the critical assets they use, bound only by the need to make contracted deliveries at the stipulated time. This is typically the way undifferentiated products are put together. But differentiated products often require producers to acquire special skills that have little outside market value, place facilities in locations where there are few other uses, and put together machinery in new ways that make them not just hard to sell but also hard to replace. Independent contractors may worry about the likely decline in the outside value of their human capital and their assets if they tie their fates to the venture, even as they also doubt the chances of the proposed venture. When contracts are incomplete, the entrepreneur will find it hard to ensure through contracts alone that independent contractors coordinate and specialize to the desired extent.

An example may be useful to explain this further. It is well known that car manufacturer Henry Ford perfected progressive assembly or more colloquially, the moving assembly line, whereby men stayed put and the parts and work flowed wherever they were needed. But Ford also implemented a second innovation that was key to the success of the first, the "American-system" production of parts—that is the production of parts finished to such high tolerances that they were for all practical purposes interchangeable. With it, the assembly line no longer needed artisans who could rework poorly finished parts; it could manage with moderately skilled workers. Moreover, the assembly line was not subject to delays as parts were re-jigged to fit each car. So the high tolerance of parts was essential to the low cost and high efficiency of the assembly line. But since no other car manufacturer required such high tolerances, and since Ford in his early years was known for his failures rather than his successes, it would have been hard for him to persuade suppliers to produce the tolerances he needed.

Indeed, it is far more attractive for the skeptical independent contractor to stay closer to the mainstream and provide a more conventional intermediate product that will have a market if the entrepreneur fails; the contractor's downside is protected by the deep market for the conventional intermediate product; he can obtain scale economies by producing for that larger market; he can also get more of the surplus generated by the entrepreneur if she is successful, because he retains a credible outside option. Matters are even worse in the "Prisoner's Dilemma" situation where no independent contractor wants to specialize to the business of the entrepreneur if they believe other key contractors will not specialize. Moreover, even when the independent contractor is convinced that the entrepreneur's venture will work, he can maneuver to grab a greater share of the prospective surplus instead of working to enhance it. More generally, if the venture shows initial signs of success, the presence of multiple irreplaceable independent contractors who will each up their demands as the entrepreneur tries to get them to continue, will greatly diminish the rewards to entrepreneurship, and potentially reduce the life of the enterprise. So how does the entrepreneur gain enough control to shape the transformation?

The key is for the entrepreneur to have employees, who typically have fewer degrees of freedom than independent contractors. Employees, unlike independent contractors, usually do not own the assets they work with—instead, someone else owns the irreplaceable assets that are key to the enterprise, i.e., control over their use is largely delegated to the entrepreneur. The ability to allow (or deny)

access to the assets, both initially and over time, is central to the entrepreneur's ability to encourage coordination.

Standards make employees replaceable and thus financing feasible

But a differentiated unique enterprise is hard for outsiders to finance. The entrepreneur needs financing to assemble the critical assets the enterprise needs, with the problem being particularly acute if the scale at which she needs to start is large. But the financier needs to be assured of an adequate return. If the differentiated enterprise succeeds, the entrepreneur and the employees will appropriate much of the going-concern value because their irreplaceable human capital will give them bargaining power. A debt contract, whereby the creditor can lay claim to the firm's assets in case it does not make contracted payments, gives the creditor the ability to force repayment if the redeployment value of the assets or the break-up value is high. But this will typically not be the case in the differentiated firm; critical irreplaceable assets will either be intrinsically special or will have been specialized during the first transformation, which reduces alternative uses. The more the collaborator coordinates, the lower the value of the redeployment option. Moreover, the financier has to share some of the redeployment surplus with the collaborator, diminishing his own recovery in redeployment.

This is why the firm needs a second transformation, *standardization*, whereby the firm's operations are standardized so as to make the firm's key human capital more replaceable and liquid, even while it continues to produce the differentiated product or service. Finance requires successful start-ups to grow up and standardize what they do well, and the entrepreneur has an incentive to make this happen precisely because the firm will be run by others over time. In this way, outsiders obtain more control over the going concern, and value can be committed to them to repay their earlier financing. Equity by venture capitalists seems the natural claim with which to finance when the entrepreneur's intent is to commit to share future going concern value, since it supports payouts with the threat of replacing management even while maintaining the firm as a going concern. Equity markets play an important role by rewarding the entrepreneur for standardizing the firm, and thus providing powerful incentives for the second transformation.

First equity, then debt

The preceding might suggest that equity is always the preferred financing instrument. This is probably true only when the firm is being standardized. Once the firm is standardized, the split of surplus between equity and management is determined. If standardization is not high, equity gets only a moderate fraction of the surplus generated by an investment. If this investment is financed with an equity issuance, it is possible that old equity is "diluted" by issuance, because the share of additional surplus going to equity is outweighed by the significantly larger number of shareholders post-issue. All this then suggests a life cycle of firm financing, with firms financing with equity early on so as to enhance incentives for standardization, and financing later with debt so as to avoid diluting equity.

It is useful to lay out in Figure 1 the array of possibilities for firms and financing when we consider both standardization and differentiation. A laundry shop is low on both differentiation and standardization. A utility is low on differentiation but high on standardization, hence it is easy to finance. A wealthy family enterprise can be high on differentiation and relatively low on standardization—it can differentiate more (though families may be undiversified and risk averse, which will eventually limit differentiation) without standardizing because it has little need to cater to financial markets. Finally, a mature firm

with entrepreneurial roots, such as Microsoft, scores high on both differentiation and standardization. The central forces governing the structure of the laundry shop or the small grocer are different from those governing the entrepreneurial high technology firm, and a tremendous source of confusion in the literature has been to try and understand the latter by examining the former.

Figure 1: Differentiation and standardization

	Low Standardization	High Standardization
Low Differentiation	Laundry Shop	Utility
High Differentiation	Family Firm	High-Tech IPO

Main Street and Wall Street must intersect

Because the cycle of up front financing followed by the two transformations is hard to commit to, path-breaking innovation, enterprise creation, and the generation of positive NPV, are all difficult. The availability of finance does alter the nature of firms that are created and explains why corporate finance is so central to innovation, firm growth, and economic development. Of course, mature firms are more capable of financing projects themselves, but the standardization many of them have undertaken to repay past finance typically renders them less capable of innovation. Analyzing the firm and its financing in this way gives us insights into who should own the firm, what the form of financing should be, and what kinds of innovation and enterprises are possible when the financial system is underdeveloped. In my presidential address, I discuss evidence that is consistent with the implications of my model.

It is tempting to succumb to the rhetoric that financial innovation and creativity are simply ways for the clever to part the innocent of their money. Such rhetoric does get louder after a crisis, and makes it easier for governments to suppress finance. What I have tried to show in my paper is that there is a very real potential cost if financiers are unable to play midwife to innovative new firms, and if equity markets are not vibrant enough to reward entrepreneurial activity. The broader point is that attempts to separate Main Street from Wall Street, real activity from "merely" finance, are not useful. The two are intimately linked, both in theory and in practice.

Gu Kaizi: Admonitions of the Court Instructress. China, 5th Century, Jing Dynasty. This is one of the three surviving scenes from an ancient Chinese scroll that originally contained twelve scenes. Gu Kaizi was a celebrated Chinese artist who wrote three books on paintings that are still surviving. This piece is such a significant part of the early history of Chinese paintings that a copy with all twelve scenes was made in the twelfth century and now resides in the Palace Museum in Beijing. This piece passed through the hands of many collectors (including Emperors). It was finally acquired by a British officer in India during the Boxer rebellion. It was later sold to the British Museum, where it resides to this day.

Nihat Aktas, Eric de Bodt, and Richard Roll

Learning from repetitive acquisitions: Evidence from the time between deals

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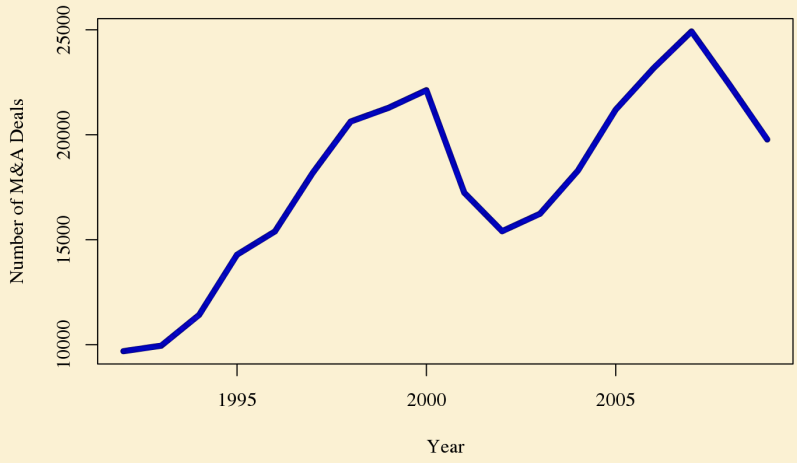
(please cite only the original publication, not FAME)

Our JFE paper studies whether firms gain valuable experience from repetitive acquisitions in the mergers and acquisitions (M&A) market. This is an important question, because if repetition translates into learning gains, the effort to structure learning processes within the organization could be a key driver of value creation. If instead repetition does not lead to positive gains, then stricter supervision of acquisitions programs would be warranted.

By undertaking successive deals, repetitive acquirers have the potential to build experience and acquire knowledge about the takeover process. But repetitive acquisitions increase firm size and diversity, thus generating additional integration costs. If repetition is value creating for shareholders, the increase in acquisition benefits must dominate the increase in integration costs.

Figure 1: M&A activity by year



The number of M&A transactions peaked first in 2000 and then again in 2008.

The sample includes 321,610 completed M&A transactions announced during 1992–2009, and in which the acquirer owned less than 50% of the target prior to the purchase and more than 50% after the transaction. The figure looks similar if one plots the dollar value of acquisitions instead (which we do in our paper).

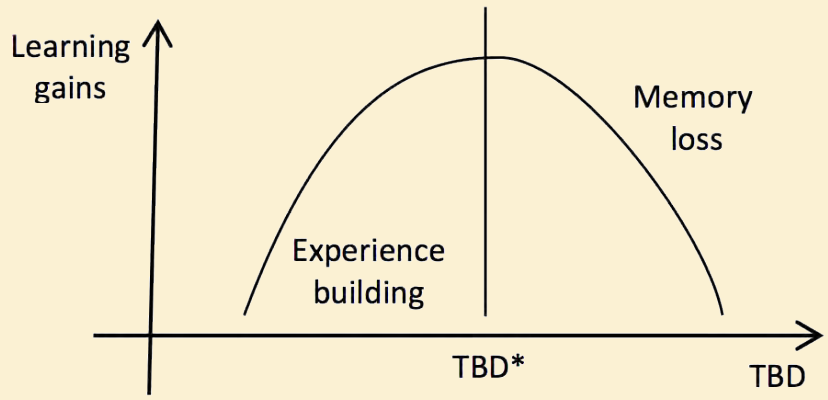
Using a global sample of more than 320,000 deals announced during the period 1992–2009, we test empirically whether repetitive acquirers gain from learning. We focus on M&A activity because the

potential for learning possibly represents sizeable economic effects. Figure 1 shows the yearly pattern in aggregate M&A activity. The average yearly total deal value by all acquirers during 1992–2009 was $1,789 billion, with a peak value in 1999 of $3,597 billion (in 2008 constant dollars). The figure here just plots the number of deals. The sample displays a first peak in the number of transactions between 1997 and 2000, consistent with the well-known friendly M&A wave of the end of the 1990s, and then a second peak between 2005 and 2007.

When you learn, time between deals (TBD) decreases

Assessing whether learning gains exist is challenging because neither acquisition benefits nor integration costs are directly observable from outside the firm. We rely on a simple theoretical model to overcome this problem. Our model relates the time elapsed between successive deals (TBD) to the ratio of changes in acquisition benefits to changes in integrations costs. Our theoretical framework is based on Hayward (SMJ 2002)'s paper. Figure 2 illustrates the theoretical premises used to derive our key proposition. Learning gains for a given deal attempt is a function of the time elapsed since the previous deal (TBD). TBD* denotes some TBD threshold around which the experience building phase gives way to the memory loss phase. Learning first increases with the TBD up to a threshold value, before which acquisitions too quickly in succession cannot provide enough time to build experience (experience building phase). Then, learning decreases with the TBD because, after the threshold, acquisition expertise decays when successive takeovers are too far apart (memory loss phase). Under these premises, we derive our testable proposition: as long as the firm is in the experience building phase (i.e., learning gains are increasing in the TBD), a decrease in the TBD through the acquisitions sequence implies positive learning gains.

Figure 2: Learning gains as a function of the TBD



Repetitive acquisitions are common

We depict the acquisitions sequence of a given acquirer by using the deal order number (DON), which refers to the number of transactions already completed by the firm. To highlight that repetitive acquisition is common in the M&A market, we report the distribution of the DON variable in Table 1. More than 55% of all deals are a first deal for a particular acquirer, though multiple acquisitions are common: 67,387 transactions are associated with a DON of at least 5, 36,835 transactions with a DON

of at least 10, and 19,341 transactions with a DON of at least 21. Therefore, Table 1 clearly highlights the presence of serial acquirers into the M&A market. The average deal size by DON in Table 1 is clearly increasing throughout the acquisitions sequence. For example, the fifth deal in a sequence has an average deal size three times higher than the first deal, and later deals in the sequence have an average deal size approximately four times higher than the first deal. This substantial increase in deal size through the acquisitions sequence appears consistent with learning: firms begin with smaller deals to learn the basics, then gain more knowledge and start to risk bigger acquisitions. This is a practice which is emphasized by consulting firms advising acquirers (see Harding-Rovit (HBR 2004)).

Table 1: Sample distribution by deal order number (DON)

DON	N	%	Average deal size
1	179,057	55.68%	103
2	40,012	12.44%	133
3	21,402	6.65%	165
4	13,752	4.28%	241
5	9,706	3.02%	325
6	7,237	2.25%	234
7	5,564	1.73%	274
8	4,428	1.38%	339
9	3,617	1.12%	381
10 and higher	36,835	11.45%	437
Total	321,610	100%	197

The sample includes 321,610 completed M&A transactions announced during 1992–2009. Respectively, N and % denote the number of acquisitions and the percentage of the sample for each deal order number. We also report the average deal size by deal order number (in millions of dollars)

Less frequent deals in industries with high concentration, large firms, large ROA, and tighter financing

To test our proposition, we regress the TBD on the DON. Our main measure of the TBD is the number of days between the most recent completed deal and the announcement date of the current deal. Given that the TBD is potentially affected by industry factors that are not necessarily related to the trade-off between acquisition-related benefits and integration costs, we control for industry determinants of the TBD in our empirical analysis.

Table 2: Repetitive acquirers and learning: Explaining time between deals with TBD

Variable	All deals	Acq Pgms
DON	–3.841***	–27.805***
DON^2	0.015***	0.227***
Firm fixed effects	Yes	Yes
Fisher statistic	82.73	199.97
Number of observations	129,223	17,590

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

This table shows that TBD decreases with successive acquisitions.

The estimated coefficient of the deal order number variable (DON) is from a fixed-effects panel regression, in which the dependent variable is the industry-adjusted time between successive deals (TBD). Column 1 reports on the "all deals" sample. In column 2, the sample includes deals embedded in acquisitions programs, defined as an acquisitions program that starts after a dormant period of 24 months and includes successive acquisitions separated by at most 12 months.

Among the industry factors, we document that the TBD increases with industry concentration, industry median firm size, and industry median return on assets. These three variables seem to characterize industries with fewer transaction opportunities. The TBD is shorter in growing industries, suggesting that growing industries offer more opportunities for acquirers. We also find that tighter financing conditions increase the TBD, which is consistent with the observation of lower M&A market activity during economic recessions and financial downturns.

Table 2 summarizes our main results. Column 1 reports on the main sample of 38,875 unique firms that have completed at least two deals during 1992–2009.

TBD decreases with successive acquisitions

The DON variable relates negatively to the TBD, with a statistically significant coefficient estimate of –3.841. This indicates that the TBD is significantly decreasing through acquisitions sequences. From the second to the fifth deal, the decrease in TBD averages 15 days. This corresponds to a 5% reduction with respect to the sample average TBD. This result provides strong and robust evidence that net gains from learning increase over the course of sequential deals.

The presence of several acquisitions over a period as long as 1992–2009 does not necessarily mean that the firm actually implemented an acquisitions program. To assess whether firms implementing acquisitions programs develop learning-by-doing, we create another sample that includes only "program acquirers"—firms that did not announce any acquisitions during a period of at least 24 months, and then engaged in successive acquisitions separated by at most 12 months. These results, which are reported in column 2 of Table 2, are even more supportive of the learning hypothesis: the decrease in the TBD from deal to deal is substantial, with an average reduction of almost 30 days from the second deal to the third deal, or a 9% reduction with respect to the sample average TBD. This finding is consistent with the view that program acquirers are more focused on transferring their positive experience from one deal to the next as emphasized by consulting firms and the business press (see,

e.g., Ashkenas-DeMonaco-Francis (HBR 1998)). For example, General Electric, a well-known repetitive acquirer, has managed to specialize its acquisition process in order to effectively integrate most of its acquisitions within 100 days.

We examine also whether the relation between the TBD and DON is a function of variables known a priori to be correlated with learning. In this respect, we consider three potential factors: heterogeneity in acquisition experience, CEO continuity, and integration capability.

Learning is impeded when deals are different...

Heterogeneity in acquisition experience. Intuitively, learning-by-doing should relate to the degree of similarity between current and past acquisitions. Because, too much heterogeneity in acquisition experience may impede firm learning in early stages of capability building, whereas experience in similar settings should facilitate learning and improve acquisition performance. To measure heterogeneity in successive acquisitions, we construct an index corresponding to the variance of a portfolio of deal characteristics. This is analogous to the variance of a portfolio of assets, the deal characteristics corresponding to the different assets in the portfolio. We consider four deal characteristics: the extent of diversification of the deal at the three-digit SIC code level, the target status (whether the target is listed, private, or subsidiary), whether the deal is domestic, and the relative deal size (i.e., deal size divided by the acquirer's equity market value). The four deal characteristics are equally weighted in the index. We compute the heterogeneity index starting from the third deal of the program, and the index is updated for each deal thereafter. The results indicate that heterogeneity across successive deals reduces the speed at which deals are undertaken. This result suggests that slower or more difficult learning (because of deal heterogeneity) gives pause to acquisition speed.

...when the CEO changes

CEO continuity. So far, we perform the analysis at the firm level, and therefore focus on organizational learning. However, substantial learning may depend on the persons involved in deal-making, such as the CEO for large deals, and learning might be more salient in cases of CEO continuity, while being negatively affected following a CEO change. To test the effect of CEO continuity on the speed at which successive deals are undertaken in an acquisitions program, we start by building an acquisitions program sample at the CEO-firm level. We use the ExecuComp database to identify the CEOs. We only consider full year CEOs, and match these CEOs with our initial M&A sample. An indicator variable is set to one when the current deal is undertaken by a CEO who is new since the previous deal of the firm. This variable is 0 in case of CEO continuity. The proportion of deals undertaken by new CEOs is around 9% in our sample. We find that the decrease in the TBD from deal to deal is stronger under CEO continuity, while a CEO change retards the TBD decrease from deal to deal. These results indicate that the learning effect is stronger under CEO continuity and is negatively affected by a CEO change. Learning is therefore not only organizational but is also related to individuals that are involved in deal-making.

...and when integration is costly

Integration capability. A third result bears on the integration capability of the firm. Integration costs should increase with deal size, which in turn should reduce the integration capability of the firm for subsequent deals and negatively affect the speed at which subsequent deals are undertaken. To test this idea, we use the deal size of the previous deal as a proxy for the saturation of the firm's integration capability (i.e., large acquisitions require more resources to merge with existing activities). We show that the larger the previous deal, the more the acquirer reduces its acquisition speed and takes more time to undertake its acquisition attempts.

Conclusion

Our empirical evidence uncovers a clear and significant decrease in the TBD during acquisitions sequences. This negative trend is consistent with positive learning gains associated with repetitive deal-making. We also document that the negative trend in the TBD relates to known determinants of learning, such as heterogeneity in acquisition experience, CEO continuity, and integration capability. This brings further support to the notion that TBD relates to the tradeoff between acquisition benefits and integration costs. Our results should have important managerial implications because they reveal the importance of learning-by-doing through repetitive acquisitions. An organizational structure flexible enough to encourage learning thus appears highly desirable.

Dong Yuan: Mountain Hall. China, 10th century Landscapes have been the subject of Chinese paintings from ancient to modern times. They are often considered as the highest form of Chinese paintings. This mountain was painted during the "great age of Chinese landscape." It beautifully exemplifies the style in which monochromatic landscapes were not mere reproductions but meant to grasp the rhythm of the nature. Dong Yuan followed the literati painting style, spanning the Tang and early Ming dynasties. Literati refers to the lifestyle of a scholar-artist (just like those of our authors in FAME). The traditional Chinese painting styles used calligraphy techniques, with a brush dipped in ink (no oil). Different types of brush strokes were developed to paint landscapes, from the meticulous to the freehand. The canvas material was usually paper or silk mounted on a hand scroll or a wall scroll.

Kenneth R. Ahern, Daniele Daminelli, and Cesare Fracassi

Lost in translation? The effect of cultural values on mergers around the world

Journal of Financial Economics | forthcoming
(please cite only the original publication, not FAME)

The primary goal of corporate mergers is to produce synergy gains. By combining the assets of two companies, costs can be reduced and new revenues produced. To realize these synergies, employees of the merging firms must coordinate with each other; a task that is easier said than done. In cross-border mergers, where employees may have conflicting values and beliefs, coordination is especially difficult. Mistrust, misunderstanding, or mismatched goals are likely to impair coordination. For instance, it is more acceptable to question authority in some cultures than it is in others. Likewise, in some cultures, teamwork is more valued than individual aspirations. Hence, in settings where cultural differences are likely to inhibit integration, we would expect to see fewer mergers and lower gains in those mergers that do occur.

While cross-border mergers have historically been rare, since the 1990s they have become a major component of global investing activities. In large part, the ascendancy of cross-border mergers has been driven by deals in new markets. At the peak of global merger activity in 2007, more than half of all targets were located outside the top five merger markets (U.S., U.K., Canada, Germany, and France), compared to less than 30% in 1990. The increased activity in a more diverse set of countries emphasizes the need to understand the role of cultural differences in cross-border mergers.

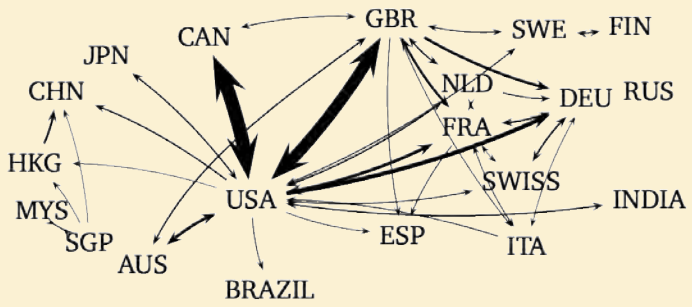
Cross-border mergers are common among neighbors, trading partners, and countries with similar laws

The complexity of worldwide merger patterns is illustrated in Figure 1. The size of the arrows connecting countries is proportional to their total cross-border merger activity over 1985 to 2008. Merger partners are clearly not random. For instance, both the U.S. and Canada, and the U.S. and the U.K., have strong cross-border merger ties, but Canada and the U.K. have relatively few cross-border deals. In addition, some of the largest domestic markets have few cross-border mergers, most notably Japan. Japan is the fifth largest domestic merger market in the world, but less than 6% of acquisitions of Japanese companies are made by non-Japanese firms. In contrast, over two-thirds of acquisitions are made by foreign acquirers in Germany, the seventh largest target nation.

The pattern in Figure 1 is consistent with multiple interpretations, including geographic proximity, historical trade relations, and shared legal origins. It is also consistent with cultural differences. For instance, Hong Kong and Austalia are relatively close geographically and both share a common history with the UK, but they have little cross-border merger activity. At the same time, they have widely

different cultural values. In our study, we formalize this intuition and predict that cultural differences negatively affect the incidence and gains of cross-border mergers.

Figure 1: Cross-border merger patterns



This figure shows the volume of cross-border activity for the 20 most active domestic M&A markets, 1985–2008. The most active cross-border merger flows are indicated by the width of the arrows between countries.

Do cultural differences discourage mergers?

To test this hypothesis, we focus on three cultural dimensions that are the most commonly identified in sociology and economics:

1. Trust versus Distrust (whether people believe that others can be trusted);
2. Hierarchy versus Egalitarianism (whether people believe they should follow the rules dictated by higher authorities); and
3. Individualism versus Collectivism (whether people believe they should sacrifice personal gains for the greater good of all).

Though other dimensions might be important, we think these three are particularly relevant in cross-border mergers.

First, in economic transactions characterized by uncertainty, trust is the confidence that a counterparty will fulfill her side of the deal. As far back as Arrow (Book 1972), economics scholars have recognized that trust facilitates trade. This could lead to more cross-border mergers, since integration costs are reduced. In contrast, trust may preclude the need for a merger if more trust allows for arm's-length contracts.

Second, egalitarian cultures rank the importance and social power of all members relatively equally, whereas hierarchical cultures delineate members into multiple vertical ranks of power. In a firm, this means that workers are more likely to follow instructions from superiors in hierarchical cultures. Differences in the norms of hierarchy could inhibit post-merger coordination. Hierarchical bosses might not understand that egalitarian workers are unlikely to follow their orders without justification. Likewise, egalitarian bosses might not be respected by hierarchical workers if the boss treats workers as equals.

Third, in individualistic societies, it is expected that people will seek to maximize their self-interest, without regard to the well-being of society-at-large. In contrast, collectivist cultures emphasize group goals, and the aspirations of individuals are tied to social obligations. Clearly, following a merger, individualistic employees may not work well with collectivist employees, and vice versa.

We first investigate the impact of cultural differences on the dollar volume of cross-border mergers. From the SDC database, we collect mergers across the globe, including public, private, and subsidiary firms, from 1991 to 2008. This generates a sample of 20,893 cross-border mergers across 52 different countries. These mergers are aggregated into 27,753 country-pair-years. We measure national culture using survey responses from the World Values Survey (WVS), the largest study ever conducted on cultural values, covering 97 societies on six continents, and representing more than 88% of the total world population.

Following a long tradition in international economics, we use a "gravity", where we measure distance in cultural space, not just geographic space. We control for both acquirer-and target-country fixed effects to capture any country-level effects that do not vary over time, such as legal origin, investor protection laws, religion, and language; year fixed effects to control for worldwide macroeconomic shocks, such as currency crises and changes in world market valuations; time-varying country-level variables, such as GDP, GDP/Capita, and imports and exports; and country-pair variables such as geographic distance, shared language, religion, and institutions. This approach is designed to isolate the effect of cultural differences, while holding constant all other variables.

Differences in Trust and Individualism reduce cross-border mergers

Table 1 presents Tobit regression estimates of the effect of cultural differences on the level of cross-border activity across the 27,753 country-pair-year observations. The dependent variable is the log of dollar volume of cross-border merger activity between two countries. We find that greater cross-country differences in trustfulness and individualism are significantly related to less cross-border merger activity, even after including a multitude of controls. In tests not reported here that control for country-year fixed effects, we find significant and negative coefficients on each of the three cultural distance measures.

Cultural distance has substantial consequences for merger activity. A change from the 25th to the 75th percentile in the distance in trust leads to a decline in the natural log of the dollar value of mergers of 0.436. For the same change in the distance of individualism, merger activity falls by 0.334. These are large effects when compared to the average of the natural log of dollars in cross-border mergers of 1.02. These results provide strong evidence that cultural differences have a substantial negative effect on the dollar volume of cross-border mergers, consistent with the hypothesis that firms avoid mergers where cultural distance imposes additional costs on integration.

Table 1: Cultural distance and merger volume

	Dollar volume of cross-border mergers			
| Change in Trust |	–2.68***			–2.57***
| Change in Hierarchy |		–0.73		–0.49
| Change in Individualism |			–3.10***	–2.92***
Observations	27,753	27,753	27,753	27,753

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

This table presents the coefficient estimates of regressions of the natural log of the aggregate dollar value of all mergers from acquirer country i to target country j from 1991 to 2008 on the log of cultural differences. All regressions control for the year of the merger, characteristics of the acquirer and target nations that do not change over time (such as legal history), and a host of time-varying control variables (such as GDP and imports).

One concern is that cultural values could proxy for omitted institutional features of a country. For instance, residents of countries with a history of fair and orderly government could be more trustful and hierarchical. We address these endogeneity concerns, by using genetic and somatic differences to proxy for differences in cultural values. In these instrumental variables tests, we find evidence consistent with our main results.

Value creation is smaller when cultural differences are larger

We next estimate the effect of cultural differences on the value created by mergers. In order to measure value, we use a smaller sub-sample of 827 deals from 35 countries, where acquirers and targets are both publicly traded firms with available stock price data. For each deal we compute the acquirer's and target's abnormal returns in the three days surrounding the announcement of the merger, where abnormal returns are daily returns minus the return of the Datastream country index of the firm. We take the sum over three days to generate a cumulative abnormal return (CAR). We take the average of these CARs, weighted by each firm's market value, to form the Combined CAR, our proxy for synergy gains.

Table 2 presents estimates of the effect of cultural differences on combined returns in cross-border mergers. We include the same controls as before, and also add deal-level characteristics known to affect announcement returns, such as form of payment, and a control for the fact cross-border mergers do not occur randomly. We find that the greater is the distance between two countries along the cultural dimensions of trust and individualism, the lower are the combined announcement returns of a merger. This effect is consistent with the results found for the role of trust and individualism on the volume of cross-border mergers.

The value effects are also economically meaningful. Increasing the distance in trustfulness from the 25th to the 75th percentile leads to a 28% reduction from the median combined return of 2.1%, and a 16% reduction of the average combined return of 3.6%. For the same change in individualism, there is

an equal drop in abnormal returns. In dollar terms, this implies a range of value loss for median-size firms of roughly $14 million. For average-size firms, the loss is roughly $50 million.

Table 2: Cultural distance and combined abnormal returns

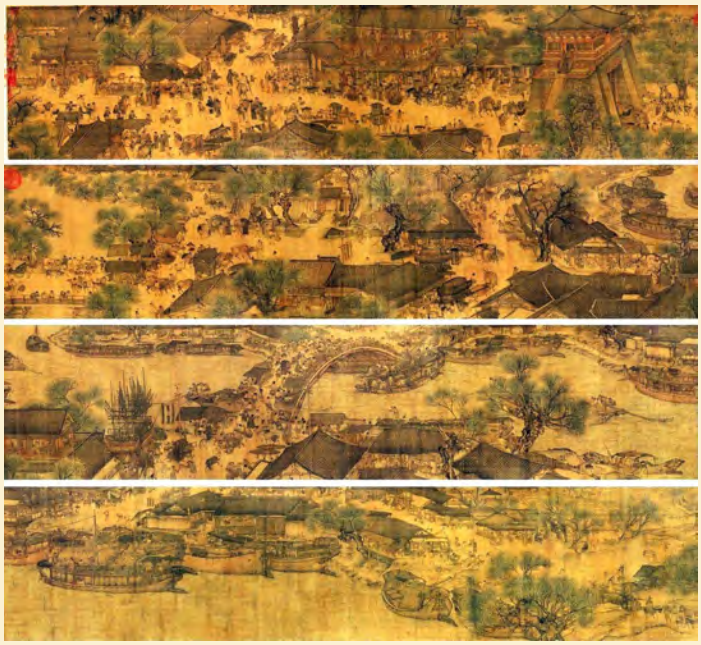
	Combined $CAR_{(-1,+1)}$			
| Change in Trust |	–0.06***			–0.05*
| Change in Hierarchy |		0.01		0.02
| Change in Individualism |			–0.08**	–0.07*
Observations	827	827	827	827

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

This table presents regressions estimates of the combined abnormal announcement return of combined abnormal returns over 1991 to 2008 on the log of cultural differences. All regressions control for the year of the merger, characteristics of the acquirer and target nations that do not change over time (such as legal history), and a host of time-varying control variables at the nation-level and firm-level.

To verify our results, we conduct additional robustness tests. First, we investigate cultural differences across regions in the U.S., rather than across countries, to hold institutional features like government fixed. Second, we run tests that exclude all U.S. firms from the sample. Third, we investigate the effects of national culture on long-run stock market returns. Fourth, we run matched-sample tests where cross-border deals are matched to domestic deals in the same country and industry. And fifth, we use alternative survey measures of culture. In each of these cases, we find that cultural differences reduce the likelihood of mergers.

In summary, we find evidence consistent with the idea that cultural differences create obstacles to realizing synergy gains in mergers. These findings overturn a long-held belief that culture is of secondary importance in mergers. Instead, the results highlight the need for managers to carefully consider the challenges in integrating two sets of diverse employees, especially when they hold widely different fundamental beliefs and values.



Zhang Zeduan: Along the River During Qingming Festival. China, Song Dynasty, 11th century. These are sections from the full scroll, which is 10 inches in height and 5.74 yards in length. It has been called "China's Mona Lisa," not only because it is the most famous Chinese painting, but also because sections of it have been reproduced, reinterpreted (and forged) by many other artists. This scroll's home is the Palace Museum in the Forbidden City. A digital animated(!) version was displayed at the World Expo 2010 at the China Pavillion. (Presumably without Mickey.) As a national treasure, it was lent to an exhibition in Hong Kong in 2007 to commemorate the tenth anniversary of Hong Kong's reunion with China, and to the Tokyo National Museum in 2012 to symbolize the (more) normalized relationships between China and Japan.

Alex Edmans, Itay Goldstein, and Wei Jiang

The real effects of financial markets: The impact of prices on takeovers

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(please cite only the original publication, not FAME)

Does a low market valuation make a firm a takeover target? Answering this question is important to gauge how effective the takeover market is in disciplining firm management. In theory, if a manager underperforms, his firm's stock price will decline, in turn increasing the risk of a hostile takeover. The fear of such a takeover will induce the manager to maximize value in the first place. In practice, however, there seems to be no systematic relationship between a firm's stock price and its takeover vulnerability. While some studies find a negative (but economically insignificant) link between takeover likelihood and firm valuations, others find a zero or even a positive link. These results suggest that the market for corporate control is an ineffective governance mechanism.

We argue that it is difficult to detect this *trigger effect*—the impact of a fall in stock prices on takeover vulnerability—in the data, due to at least two reasons. First, existing studies typically predict a firm's takeover likelihood with its raw valuation (such as price-to-earnings or market-to-book ratios). However, a low raw valuation may not indicate underperformance and thus the need for a disciplinary takeover, it may be outside the manager's control and irremediable—for example, because the firm is in a low-growth, competitive industry. Instead, we hypothesize that the true driver of takeovers is the "discount" between the firm's raw valuation and its maximum potential value. This discount measures the value that an acquirer can create by taking over the firm and restoring it to its potential.

Benchmark firm valuation to peers

We estimate this discount by using the actual values of peer firms with similar fundamentals. Let X be a vector of firm fundamentals that determine a firm's potential value. Then, by observing the values of peers with similar X's, we can infer the maximum potential value of the firm in question. Specifically, if V^* represents a firm's potential, we have $V^* = f(X)$. Since V^* represents the potential value after the acquirer has corrected managerial inefficiencies, the X variables should consist of firm characteristics that bidders are unlikely to change upon takeover. We thus use two approaches to choose our X variables and thus define a firm's peer group. The first is to let X be a firm's industry affiliation. Acquirers are unlikely to change the target's sector and instead typically aim to restore its value to that commanded by successful peers in the same sector. However, a firm's industry may not be the only relevant determinant of its valuation. The second approach is thus to let X be a set of firm characteristics: firm size, firm age, asset intensity, R&D intensity, market share, growth opportunities, and business cyclicality. Since these characteristics are not completely outside the bidder's control, we use the tercile rank of these characteristics within a sector. This specification allows for bidders to change the values of these fundamentals within a given tercile, but not to alter them sufficiently

to move it into a different tercile. Excluding targets close to the edges of the tercile cutoffs does not change the results.

Having defined the peer group, we now infer a firm's potential given the valuations of its peers. If the set of firm characteristics X is exhaustive, and there is no mispricing, then the firm's potential would be the maximum valuation across all of its peers. However, idiosyncratic factors like misvaluation or unique core competencies could mean that this maximum is unattainable by the firm in question, even with efficient management. For example, a typical search engine is unlikely to command the valuation of Google. Instead, we assume that a firm's potential equals the valuation commanded by the 80th percentile of its peer group. We come up with 80% by taking the median takeover premium of 37–39% from Andrade-Mitchell-Stafford (JEP 2001), and adding this to the actual values of firms that later became the target of a takeover. This calculation places the median takeover target at the 77th percentile of its respective industry, which gives 80% when rounding to the nearest decile. Our results are little changed when we use 70% or 90%.

Market valuation may not be low if a takeover is anticipated

The second empirical challenge is that, while the trigger effect leads to low prices attracting takeovers, the *anticipation effect* runs in the opposite direction: the expectation of a takeover will increase the stock price. Thus, there is a two-way feedback loop between prices and takeovers: prices both reflect and affect a firm's takeover probability. This reverse causality will weaken the relationship between these variables in the data.

Addressing the endogeneity of firm valuations requires an instrument—a variable that affects the market price (the relevance criterion), but does not affect takeover probability other than through the market prices (the exclusion restriction). Our chosen instrument is MFFlow, the price pressure created by mutual fund trading. Since a mutual fund's actual trades could be driven by private information on a firm's likely takeover potential, we instead study mutual funds' hypothetical trades mechanically induced by flows by their own investors. Fund investors' decisions to accumulate or divest mutual fund shares are unlikely to be influenced with the takeover prospects of individual firms held by the fund. An investor, who wishes to speculate on the takeover likelihood of an individual firm, will trade the stock of that firm, rather than a mutual fund share. Hence, investor flows lead to price pressure that may affect the probability of a takeover, but are not directly motivated by this probability. We find that our measure causes significant price changes, followed by slow reversal that ends with full correction only after about two years.

Our general model can be written as

$$\text{Discount} = \gamma_0 \cdot X + \gamma_1 \cdot Z_1 + \gamma_2 \cdot Z_2 + \delta \cdot \xi + \eta',$$

$$\text{Takeover}^* = \mu_1 \cdot \text{Discount} + \mu_2 \cdot X + \mu_3 \cdot Z_1 + \xi\,,$$

$$\text{Takeover} = \begin{cases} 1 & \text{if Takeover}^* > 0, \\ 0 & \text{otherwise} \end{cases},$$

$$\text{corr}(\eta', \xi) = 0\,,$$

$$\delta < 0\,,$$

where Takeover* is the unobserved variable for takeover likelihood, and Takeover is the corresponding observed binary outcome. Z_1 measures firm characteristics or policies that affect both discount and takeover probability, either by proxying for managerial entrenchment (thus deterring takeovers) or by affecting the ease of takeover execution. These variables include leverage, payout, institutional ownership, and illiquidity. Z_2 is the MFFlow instrument.

The construction of the Discount variable relies on the choice of a valuation metric to determine V. We use both Q and Enterprise Value (EV) divided by Ebitda (EV/Ebitda). Combined with the two specifications for X, these two specifications for Discount yield four specifications in total.

We first ignore the anticipation effect (Discount) and estimate (Takeover) equations separately (essentially treating Discount as being unaffected by takeover probability). As is intuitive, Discount is decreasing in leverage (a potential discipline on management) and industry concentration (which affects market power), and increasing in firm concentration (consistent with the literature on the diversification discount) and illiquidity (consistent with Amihud (JFM 2002)). Most importantly, our instrument, MFFlow, is significantly associated with lower discounts across all four specifications.

Undervalued firms are more likely takeover targets

A one percentage point increase in Discount is associated with a one to three basis point increase in takeover probability, and an interquartile change in Discount is associated with a 0.4 to 1.6 percentage point increase, out of an unconditional probability of 6.2%. While a number of prior papers find no relationship between takeovers and raw valuation, this coefficient is highly statistically significant. The result is consistent with the hypothesis that the discount to potential value, rather than raw valuation, motivates acquisitions. Nevertheless, the economic magnitude is modest, especially when using EV/Ebitda. This weak relationship may result from the endogeneity of Discount, which is shrunk by the prospect of a takeover.

...but anticipation impedes takeovers

We next take into account the anticipation effect and estimate the full model using non-linear two-stage least squares, employing our MFFlow instrument. We find that a one percentage point increase in Discount would lead to a statistically significant 12 to 16 basis point increase in Takeover probability, if Discount did not shrink in anticipation of a takeover. An interquartile change in Discount is associated with a 5.7 to 7.6 percentage point increase in Takeover probability, which is economically large. Accounting for the anticipation effect and measuring a firm's valuation using the discount to its potential shows that prices are a far more important driver of takeover activities than implied by existing literature.

These results have a number of implications for takeover markets. First, the trigger effect implies that financial markets are not just a side show. They have a real effect on corporate events such as takeovers, and thus on firm value. To our knowledge, our paper is the first to use an instrumental variable to capture the effect of exogenous price changes on corporate events. Interestingly, the active role of financial markets implies that any factor that influences prices can also influence takeover activity (and other real actions). Therefore, mispricing (e.g. due to market frictions or investor errors) can have real consequences by impacting takeovers. Hence, our paper is related to the behavioral corporate finance literature. In this literature, temporary overvaluation often improves a firm's fundamental value as

it allows managers to raise capital or undertake acquisitions at favorable prices. Here, it can reduce fundamental value by deterring value-creating takeovers.

Second, regarding the anticipation effect, our results demonstrate the illusory content of stock prices. While researchers typically use valuation measures to proxy for management performance, a firm's stock price may not reveal the full extent of its agency problems, as it may also incorporate the expected correction of these problems via a takeover. Our results thus challenge the common practice of using Tobin's Q or stock price performance to measure management quality. By breaking the correlation between market valuations and takeover activity into trigger and anticipation effects, our analysis enables us to ascertain the extent to which future expected takeovers are priced in.

Third, considering the full *feedback loop*—the combination of the trigger and anticipation effects—our results suggest that the anticipation effect could become an impediment to takeovers—the anticipation of a takeover boosts prices, deterring the acquisition of underperforming firms. Indeed, many practitioners believe that the anticipation effect has significant effects on real-life takeover activity. A December 22, 2005 *Wall Street Journal* article claims that this has been a major problem in the U.S. banking industry: "takeover potential raises [the] value of small financial institutions, making them harder to acquire." This may have led to severe consequences, as small banks remained stand-alone and were less able to withstand the recent financial crisis. The belief of an upcoming takeover becomes self-defeating, which in turn sheds new light on other important real-world phenomena. First, it suggests why merger waves endogenously die out. If a recent spate of mergers leads the market to predict future acquisitions, this causes valuations to rise (anticipation effect), dissuading further acquisition attempts. Second, it provides a rationale for the practice of CEOs publicly expressing concerns about an upcoming takeover. Such statements act as a takeover defense, as they inflate the price, which in turn deters the takeover from occurring.

Forward-looking prices complicate inference and remedial action

Our paper also has a number of wider implications outside the takeover market. The feedback loop may apply to other corrective actions, such as CEO replacement, shareholder activism, and regulatory intervention. Low valuations trigger intervention, but market anticipation causes prices to rise, which in turn may deter the correction from occurring. In addition, while many existing papers use raw valuation or profitability to measure management quality or agency problems (e.g. to correlate it with CEO pay or corporate governance), this paper's approach of measuring these variables using a discount to potential value can be applied to these other settings. Furthermore, trigger effects are often estimated in non-M&A settings, such as the link between firm valuation and CEO turnover. Our approach of purging valuations of the anticipation effect is applicable to the estimation of these trigger effects also.

More broadly, our results contribute to the growing literature that analyzes the link between financial markets and corporate events (see Bond-Edmans-Goldstein (AnnRvw 2012) for a recent survey). While the corporate finance literature typically studies the effect of prices on firm actions and the asset pricing literature examines the reverse relation, our paper analyzes the full feedback loop—the simultaneous, two-way interaction between prices and corporate actions that combines the trigger and anticipation effects. We show that prices both affect and reflect real decisions. One important strand of this literature concerns the link between financial market efficiency and real efficiency. While most existing research

suggests that the former is beneficial for the latter, our results point to an intriguing disadvantage of forward-looking prices—they may deter the very actions that they anticipate.

Zhao Zhiqian (1829–1884): Hemerocallis. China, 1859. This radiant flower painting is an example of the Shanghai School of painting. Shanghai had an influx of foreigners and grew wealthy through trade (thanks to the Opium War, though this one is not a poppy). This created a lucrative market for art and a place for artists to break away from the traditional "literati" style into an innovative amalgamation of traditional subjects and modern techniques. Zhao Zhiqian, who created a dazzling array of flower paintings, inspired later masters, such as Qi Baichi (on our FAME cover). This painting now hangs in the Shanghai Museum.

Jeffrey L. Hoopes, Devan Mescall, and Jeffrey A. Pittman

Do IRS audits deter corporate tax avoidance?

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Corporations maximize profits. Since these profits are after-tax, corporations are often eager to invest in tax planning to lower their tax burden. This planning routinely takes the form of reducing the firm's tax liabilities through strategies that are clearly acceptable to tax authorities. In other cases, firms may become more aggressive and engage in tax avoidance strategies involving greyer areas of tax law where tax authorities are likely to disagree with the taxpayer's position. The Internal Revenue Service (IRS) attempts to deter any overly aggressive tax behavior of firms through audit and the threat of audit. An audit by the IRS is costly to firms because it may result in additional tax liability, interest and penalties, the cost of legal defense, and potential reputational costs of being labeled tax aggressive. Given these potential costs, our study investigates whether the likelihood of an IRS audit affects public firms' decisions on whether to undertake aggressive tax positions.

Pay more taxes or spend more to avoid taxes?

Although this may appear intuitive, there are a number of reasons to believe that corporate tax avoidance is insensitive to IRS oversight. For example, managers may discount the cost of an IRS audit when they consider their tax position to be highly defensible. Prior research by Hanlon-Mills-Slemrod (Book, 2007) document that of the firms audited in their sample, 45 percent had no proposed tax deficiency, and of those firms with a proposed deficiency identified by the IRS, only 60 percent of these amounts were later paid, suggesting that even when audits do occur, sometimes they are not very costly to firms.

In addition, it is possible that corporations behave like wealthy individuals by increasing tax avoidance when IRS monitoring is stricter to ensure that their after-audit tax liability remains stable. This was the finding of Slemrod-Blumenthal-Christian (JPubE 2001) and is explained further in a recent report by PricewaterhouseCoopers (2004, 6) that states:"...[T]he final agreement of a tax return often ends in a "horse trade" between the taxpayer and the relevant revenue authority; it may make sense to have a number of aggressive positions in the return so that there is something to give as part of any negotiations." In other words, it may make sense for companies to undertake more aggressive positions to provide negotiating room when they perceive that an IRS audit is more likely, undermining the deterrence role of an audit. Considering these previously documented outcomes, it is an empirical question whether an increased likelihood of an IRS audit deters tax avoidance by corporations.

About 60% of firms would be deterred, 40% would not

To gain some initial insight into the relationship between tax enforcement and corporate tax avoidance, we surveyed members of the Tax Executive Institute (TEI) with multinational operations and received responses from 50 tax directors. Participants were asked, "From your experience, does a company's assessment of a higher probability of tax authority audit lead the company to...", and were then given several options for finishing the sentence. The majority of respondents (59%) finished the sentence by saying that companies would "take a less aggressive tax position due to the risk of being challenged." However, the rest (41%) replied that it would either "have no effect on the tax position taken", or "take a more aggressive tax position for expected bargaining purposes." In short, although the majority of respondents indicated that threat of audit would have a deterrent effect on corporate tax avoidance, a large fraction of respondents indicate that their companies do not become less tax aggressive when enforcement is stricter.

Statistical analysis with a larger data set confirms the deterrence effect

To investigate if the deterrent effect suggested by a majority of survey respondents generalizes to a larger population of public firms and holds on average, we use publicly available data from companies' financial statements for 10,626 unique firms over a 17-year span resulting in a total sample of 66,310 firm/year observations. We use data from this sample to estimate the following model of tax avoidance using ordinary least squares regression (subscripts are suppressed):

$$\text{CASH-ETR} = \beta_0 + \beta_1 \cdot \text{AUDIT-PROBABILITY} + \beta_2 \cdot \text{X} + \text{V}(1)$$

To measure tax avoidance we use the firms' cash effective tax rate (CASH-ETR), which is the amount of cash taxes paid by the firm divided by its pre-tax income. To measure IRS monitoring (AUDIT-PROBABILITY), we rely on data from the Transactional Records Clearinghouse (TRAC). This data provides details of how many corporations of a given size the IRS actually audits in a given year. X represents a set of control variables, including year and industry fixed effects.

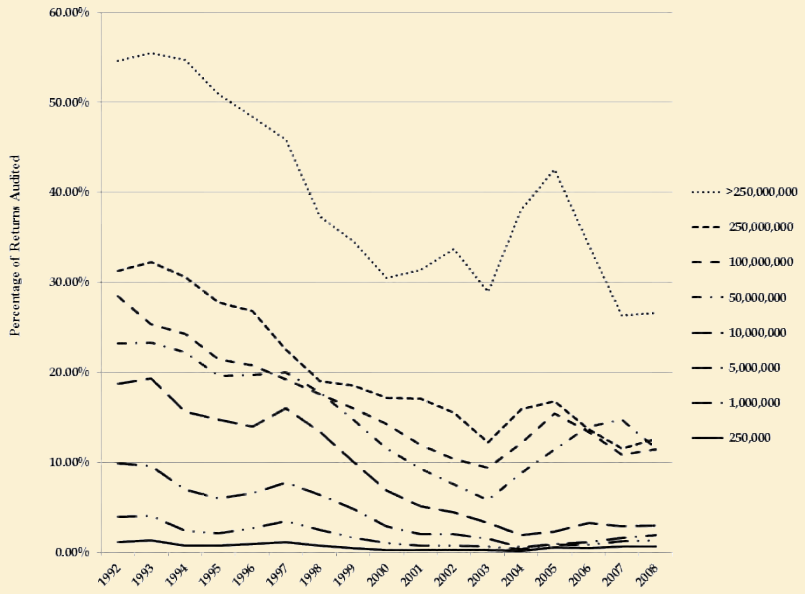
Our analysis ranges from the earliest (1992) to the latest (2008) year that IRS audit rate data are available. Analyzing this long time-frame is constructive for identification since corporate tax enforcement was ascending at some points during this period and descending at others. Figure 1 shows that these fluctuations were different for companies of different sizes.

In order to attempt to isolate the effect of IRS enforcement in the AUDIT-PROBABILITY measure, the model controls for other influences on tax avoidance, including the industry of the firm, year, size, leverage, capital expenditures, research and development expenditures, profitability, the presence of, and changes in, tax loss carry-forwards, foreign income, and the presence of a Big Four auditor.

When we estimate the model, we find that as the likelihood of an IRS audit (AUDIT-PROBABILITY) increases, firms avoid fewer taxes (CASH-ETR), providing evidence that greater IRS monitoring decreases corporate tax avoidance. Since our main measure of IRS audit rates are based on the TRAC data which is aggregated by firm size and time and not firm-specific, we also try several other measures of AUDIT-PROBABILITY to triangulate our results. We also try different measures of tax avoidance. Finally, we conduct a host of robustness tests to provide assurance that what we are

observing in the data is all consistent with more IRS enforcement decreasing corporate tax avoidance. All of our robustness tests support our main finding.

Figure 1: Time series of IRS audit rates



There was not only a secular decline in audit rates, but also year-to-year variations in this decline across different types of firms.

Our results suggest that firms' cash effective tax rates rise by almost 2 percentage points (a 7 percent increase in relative terms) when the probability that the firm will be subject to an IRS audit increases from 19 percent (the 25th percentile in our data) to 37 percent (the 75th percentile). Put another way, the biggest group of companies in our sample, those with assets of $250 million or more, had a 27% probability of being audited in 2008, the last year covered in our study. If the likelihood of audit been 34%, as it was six years earlier, the results from our paper imply that the Treasury may have collected an extra $7.1 billion in 2008. In additional analysis, we find that the impact of IRS audit rates on corporate tax avoidance is larger in poorly-governed firms.

Collectively, our research suggests that higher levels of IRS enforcement increases the amount corporations pay in taxes. However, this does not necessarily mean that simply increasing IRS enforcement levels across all firms is desirable. Since tax enforcement consumes real resources the best enforcement policy must consider the net benefit and not just the policy that would result in corporations paying the most tax. Our results suggest that the effectiveness of tax authority monitoring on curbing tax aggressiveness can vary by firm specific factors such as governance. The best policy for corporate tax enforcement likely entails a combined approach including considering adjustments to enforcement levels for targeted firms, promoting cooperation between taxpayers and the IRS, considering requiring more corporate tax disclosure, and adjusting the penalty for committing tax evasion.

Xu Beihong (1895–1953): Put Down Your Whip. China, 1939. This piece is based on a play of a girl and father escaping Japanese-occupied Manchuria. Painted by modern Chinese realism painter Xu Beihong, it set a record for a Chinese painting when sold for $9.2 million by Hong Kong Sotheby's in 2007. Some blame this auction to have set off a fury of price increases in the Chinese Art market, which may well have surpassed the U.S. market by now. Many Chinese art collectors have a preference for such traditional Chinese art, pushing prices for Chinese paintings (though not necessarily whips) into the millions of dollars.

Andrey Golubov, Dimitris Petmezas, and Nickolaos G. Travlos

When it pays to pay your investment banker: New evidence on the role of financial advisors in M&As

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(please cite only the original publication, not FAME)

Corporations spend trillions of dollars on mergers and acquisitions (M&A) every year. Since a typical firm does not have in-house deal making expertise (though some "serial acquirers" do have internal M&A departments) most of these deals are originated, structured, or negotiated by corporate finance advisory firms—predominantly investment banks. In fact, the data show that about 85% of deals by transaction value are handled by M&A advisors, with most of the business going to the so-called "bulge bracket", or top-tier, investment banks. Given the high stakes involved, it is only natural that investors, executives, and economists are wondering whether it pays off to employ one of these highly reputable advisors.

Theoretically, it is well understood that, in a setting where the quality of the product or service cannot be assessed prior to the purchase, and where the providers interact with the market repeatedly, reputation plays an important role. M&A advisory market suits this description well. In fact, investment banks routinely cite their league table positions in pitch books when trying to win mandates. Whether these league tables are informative and signal the quality of the advisor is a question that intrigued academics in the past.

Surprisingly though, the early empirical evidence indicates that employing a reputable financial advisor does not lead to better acquisitions, as measured by the short- and long-run abnormal stock returns of the acquiring firms—a measure that reflects shareholder value creation from the deal. Puzzled by this fact, in our JF paper we re-examine the effects of investment bank reputation on the price and quality of their M&A advisory services.

Reputed investment bankers help when acquiring public targets

Specifically, we look at all U.S. M&A deals between 1996 and 2009 where the identity of the bidding firm's advisor was available. During this period, the Top-8 advisors by market share (the value of deals they advised on) were Goldman Sachs, Merrill Lynch (now owned by Bank of America), Morgan Stanley, J.P. Morgan, Citi, Credit Suisse, Lehman Brothers (whose North American investment banking arm was bought out by Barclays Capital), and Lazard. We designate this group of banks as top-tier and all others as non-top-tier, and compare the outcomes of M&A transactions between the two groups of advisors (the results are equally strong if we focus only on Top-5, or extend the group to Top-10 to include UBS and Deutsche Bank).

Consistent with the notion that reputable advisors should provide higher quality services, we find that bidders employing top-tier advisors enjoy better stock price reactions around deal announcements, but only when acquiring other public firms. In particular, we find that, other things being equal, employing a top-tier bank in a public firm takeover results in a 1.01% better (less negative) market response. This translates into a $65.83 million shareholder value improvement for a mean-sized bidder—an economically non-trivial estimate.

The fact that the effect of advisor reputation on deal quality is only present in public firm acquisitions is noteworthy. We attribute it to two non-mutually-exclusive facts.

First, public firm takeovers entail greater visibility and scrutiny from all the market participants, and greater visibility in turn creates greater reputational exposure. Intuitively, providing bad advice in a highly prominent situation should lead to a greater reputation loss. This incentivizes the advisors to do their best in public firm acquisitions. Second, public firm takeovers are more complex in many respects and thus require greater skill on the part of the advisor—allowing for the expertise of top-tier advisors to shine through. In particular, these deals entail increased disclosure requirements and frequently require shareholder and regulatory approvals. Moreover, public targets have greater bargaining power as compared to private targets, making it more difficult for the bidder to appropriate synergy gains in these deals. Further, it is impossible to incorporate specific post-deal indemnification for hidden or undisclosed liabilities into the merger contract given the dispersed nature of the selling shareholders in public firm acquisitions, giving the advisor a one-and-only chance to identify and price any such contingencies. Collectively, these attributes of public firm acquisitions make the effect of advisor reputation on acquisition outcomes relatively more pronounced. It turns out that prior conclusions were based on tests which did not take this and other potentially confounding factors into account.

Top-tier banks do better deals for bidders and improve synergy

An issue of potential concern in interpreting our results is that of endogeneity (omitted variable bias). Specifically, do top-tier banks actually do better deals, or do they simply match with higher quality acquirers (i.e. positive-assortative matching)? We explicitly model this possibility in our tests employing an econometric technique known as a switching regression model with endogenous switching. Specifically, the estimation is in two stages whereby we first model the choice of a top-tier vs. a non-top-tier advisor as a function of various client- and deal-specific characteristics, and then pass on the estimation results to the second stage which models bidder returns. We also use this setup to estimate a counterfactual outcome, i.e. the bidder return that would have been most likely obtained had an alternative type of advisor been chosen, and the associated improvement. The results of this analysis indicate that improvements in bidder returns brought about by top-tier advisors are indeed driven by advisor skill rather than by observed and unobserved firm characteristics.

Naturally, it is interesting to ask where this improvement in acquirer returns is coming from. Do top-tier banks identify and structure fundamentally better mergers (i.e. those with higher synergies)? Or do they merely help extract more wealth from the target shareholders by negotiating more favorable terms for the bidder? In order to answer these questions we construct measures of the overall synergy gain (defined as the combined abnormal announcement stock return of the bidder and the target) and the share of the overall synergies accruing to the bidder. It appears that both factors are at play, with top-tier bankers designing deals that generate higher overall synergy gains, as well as being able to get a higher share of the synergies to accrue to the bidder (the latter is, however, not detectable when the

advisor on the target side is also top-tier, whose efforts in extracting the benefits for the target cancel out those of the bidder's advisor).

Reputed investment-bankers are expensive, but worth it

These gains do come at a premium price. Bidders employing top-tier banks pay higher advisory fees, 0.25% higher in absolute terms for comparable transactions. When compared to an average advisory fee of 0.65% this represents almost a 40% premium in relative terms. Our finding of a premium fee is also consistent with the theoretical "premium price – premium quality" equilibrium modelled in the seminal reputation literature. But on the net, bidders still gain from employing a top-tier bank. (In an efficient market, our measure of deal quality—abnormal announcement returns—should be capturing the expected higher cost of employing a top-tier advisor and thus represents a "net" outcome.) Executives and directors of prospective acquirers concerned with potential disruption to their businesses coming from a pending deal might also like to know that top-tier advisors complete deals quicker than non-top-tier banks. Of course, not all firms can benefit from this by switching to a reputable advisor because, as we show, the latter serve a specific clientele—they advise on relatively larger deals by larger firms with higher stock return volatility and book-to-market ratios and lower stock-price run-ups.

Consistent with reputation being relatively more important in public firm takeovers, we do not find evidence of shareholder value gains from employing top-tier investment banks in acquisitions of private firms or subsidiary firms. There is not enough data on advisory fees for these private and subsidiary deals in order to ascertain whether top-tier advisors charge premium fees in these deals as well.

Importantly, there is no evidence that top-tier advisors are more fixated on deal completion than their less reputable counterparts (we do find a positive association between advisor reputation and deal completion in a subsample of subsidiary firm acquisitions, but this result is based on a very small sample of withdrawn subsidiary deals). Thus, the reputational forces prevent top-tier banks from closing more deals in the lure of fees that are contingent on closure.

Finally, we examine the choice of acquirers to go "in-house" (that is, not to retain a financial advisor at all) on their deals. We show that acquirers with more experience of doing deals on their own (independent of the number of prior acquisitions in general) are more likely to go in-house again.

We believe our results have important implications for both academic and practitioner worlds. For instance, contrary to prior beliefs, our findings confirm that the reputational forces are indeed functioning in the market for merger advisory services. Further, they justify the current practice of relying on league tables as a signal of advisor ability and quality. Finally, our finding of a fee premium for top-tier financial advisors should serve as an encouragement to investment banks to continue to build-up and protect their reputational capital by providing high quality services in the future.

Unknown Artist: Murals of two Buddhist deities in the Ajanta Caves. India, 2000 years old. Carved from hard lava rocks, the caves are one of architectural wonders of India. They show the finest surviving examples of early Indian paintings. Originally, they were prayer halls for monastic Buddhist monks. Thus, they contained masterpieces of Buddhist religious art. So far, so good. But they were also art galleries with paintings depicting affectionate couples and decked-up princesses. The caves themselves had been lost to thick jungle for centuries and were only accidently rediscovered in the 19th century by a British officer hunting a tiger. How would "affectionate" couples have looked to the Victorian puritan, when it was even deemed improper to say "leg" (rather than "limb")?

Clara X. Chen, Michael G. Williamson, and Flora H. Zhou

Reward system design and group creativity: An experimental investigation

The Accounting Review | Volume 87, Issue 6 (Nov 2012), 1885–1911
(please cite only the original publication, not FAME)

A challenge for organizations engaged in collaborative creative efforts is designing performance evaluation and reward systems to promote group creativity. In designing such systems, managers can face two important decisions:

1. whether to use group-based or individual-based measure of creativity;
2. whether to make pay an increasing function of the creativity measure (piece-rate) or contingent on competition (tournament).

In this study, we examine whether moving from the piece-rate to the tournament form of compensation better promotes group creativity across environments where individuals receive pay based on either

1. the creativity of the group's solution, or
2. the creativity of their individual input to the group's solution.

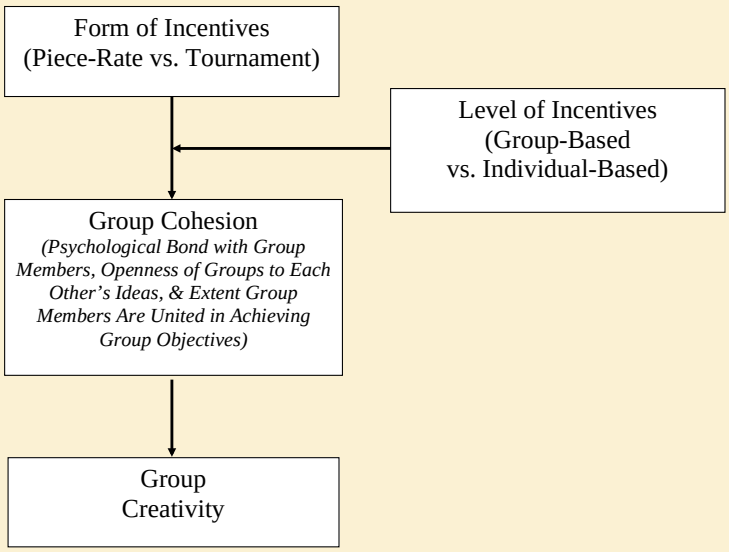
Should firms reward teams or employees?

Drawing on theory from psychology, we develop a process model suggesting that group-based tournament pay helps increase group creativity. Specifically, when a group feels challenged or threatened by outsiders such as other groups competing with it for an organization's scarce resources, members feel a greater sense of cohesion or solidarity with one another. In more cohesive groups, members will not only more freely share their ideas, but they will also exert the cognitive efforts necessary to process, synthesize, and build on each other's ideas, which can ultimately enhance the creativity of a group's solution.

By contrast, research suggests that intragroup competition sparked by individual tournaments motivates more independent individual efforts than individual piece-rate pay. These individual efforts, however, are unlikely to facilitate group cohesion and collaborative efforts among group members, which are essential for group creativity.

Therefore, we predict that group tournament pay will increase the efficacy of creativity-contingent incentives relative to group piece-rate pay, but individual tournament pay will not increase the efficacy of creativity-contingent incentives relative to individual piece-rate pay. Figure 1 summarizes our predictions.

Figure 1: Process model



To test our predictions, we recruited 180 undergraduate student volunteers from upper-level business classes of a large state university and randomly assigned them to groups of three to participate in one of fourteen 75-minute laboratory experiments. In the experiment, three-person groups of undergraduate students developed a creative solution (i.e., a solution that is "original, innovative, and implementable within a reasonable budget") to an assigned campus problem. During the idea generation and development phase, groups utilized a computer program that allowed participants to easily generate new ideas and develop others' and individuals' own ideas. Groups then selected one of the developed ideas to serve as their group solution.

We varied two factors between subjects at two levels each. First, we vary the *level of incentives* by tying participant pay to a measure of either the creativity of the group's solution or the creativity of individual input to the group's solution, both as assessed by an independent panel of three raters. That is, half of the participant-groups received compensation based on the creativity of their group's solution. The other half received compensation based on the creativity of their individual input to the group's solution.

Piece-rate or tournament?

Second, we vary the *form of incentives* by providing participants with either a linear piece-rate based on their assigned measure or a winner-take-all tournament. That is, we paid half of our participant-groups a linear piece-rate based on their assigned performance measure. The other half of our participants received tournament pay where the participant or group performing best among three competitors received the highest compensation. Under the winner-take-all tournament, participants rewarded based on group creativity competed against two other groups in their session (i.e., an intergroup tournament), and participants rewarded based on individual creativity competed against the two other

individuals in their group (i.e., an intragroup tournament). Across all four conditions, we held average participant compensation constant.

Team Rewards enhance cohesion and creativity

Our results support our predictions. We find that group tournament pay leads to more creative group solutions than group piece-rate pay. We further show that this result is partially driven by group cohesion, which captures group members' psychological bond, openness to each other's ideas, and the extent that group members feel united in achieving group objectives. By contrast, we find that individual tournament pay fails to generate more creative group solutions relative to individual piece-rate pay, either in our initial experiment where we rewarded individuals based solely on the creativity of their inputs to the selected group solution or in a supplemental experiment where we rewarded individuals based on the creativity of their input to all group ideas. Table 1 summarizes our results.

Table 1: Group creativity ratings by condition

	Tournament	Piece-rate
Group Compensation	5.8	5.1
Individual Compensation	4.8	5.5

In a tournament, the group solution is more creative when groups rather than individuals are compensated. Under piece-rate compensation, the opposite is the case.

In addition, we also explore how reward system design affects within-group interactions in the process of generating initial ideas, developing these ideas, and selecting one of these ideas as the group solution. While groups across all conditions consider a similar number/diversity of initial ideas and exhibit similar propensities to select their most creative idea as the group solution, we observe important differences in how groups *develop* their ideas. On the one hand, group tournament pay increases the extent to which group members build on each other's thoughts and ideas when developing proposals relative to those in the group piece-rate condition. On the other hand, individual tournament pay increases the extent to which individuals build on their *own* thoughts and ideas relative to the average of the other conditions, but these independent individual efforts do not appear to enhance individual or group creativity.

Our research contributes to a better understanding of observations from practice suggesting that organizations desiring group creativity often induce intergroup competition. For example, innovative companies such as Johnson & Johnson and Procter & Gamble invest heavily in competitive budgeting systems rewarding members of the most innovative project teams with greater funding and pay. Our findings also contribute to a better understanding of academic practices in that research teams and universities are becoming increasingly reliant on competitive grants for the funding of innovative projects. Beyond formal organizational practices, our results also provide potential insight with respect to the recent trend of "crowdsourcing." Here, organizations make open calls to groups of people

requesting creative solutions to important problems and often pay groups with the most innovative solution. For example, InnoCentive, launched with funding from Eli Lilly, provides a platform where companies such as Boeing and Dupont post pressing R&D challenges to the scientific community and provide financial rewards to teams with the best solutions.

More generally, our research highlights the importance of gaining a better understanding of linkages between performance evaluation and reward system design and creativity in group settings. Our existing knowledge of these linkages comes predominantly from individual settings where research often suggests reward system design has little impact on creativity. Our results are consistent with this research, suggesting that simply encouraging *individual* group members to independently work harder at being creative may not lead to the desired result. However, our results suggest that performance evaluation and reward systems can play a vital role in promoting *group* creativity by encouraging individual employees to collaborate and build on the diverse ideas of others.

Marza Farrukh Baig (1545–1615): Babur Receives a Courtier. India and Persia, 1589. Influenced by Persian miniatures, the Moghul (aka Mughal) miniature style of painting required amazing attention to tiny details and immense amounts of time. The brilliant red, green, and blue colors were also influenced by their Persian predecessors. Common themes were Mughal nobility and animals, shown in a realistic and secular way. The above piece is mounted in Rawdat al-Safa, a Persian history book of Islam and Persia. The best private collection of Moghul paintings is in the Cleveland Museum of Art. Yes, there is more than Case-Western and Cleveland State in Cleveland!

Cláudia Custódio, Miguel A. Ferreira, and Pedro Matos

Generalists versus specialists: Lifetime work experience and Chief Executive Officer pay

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(please cite only the original publication, not FAME)

Market-based theories predict that, if a competitive labor market determines executive compensation, more productive CEOs should earn higher pay. Recent academic literature extends this by arguing that CEO skills also matter. A CEO with skills well suited to a particular firm (firm-specific skills) might not be as effective at another firm or in another industry, even if she has extensive experience at her firm. Hence,"generalist" managers that possess transferable skills should earn a premium over "specialist" managers with similar characteristics and who are employed by comparable firms. This is because more general skills increase a CEO's potential mobility, which translates into more bargaining power in the labor market. In this paper, we test the hypothesis that CEOs with more generalist skills are paid a premium. We estimate the generalist pay premium to be 19%, which represents nearly a million dollars a year in additional compensation on average.

The general ability index

CEO ability cannot be observed directly, so in order to test the effect of skill composition on compensation we create a proxy for the "generality" of CEO human capital. Our General Ability Index (GAI) measures the degree to which skills are transferable across firms and industries and provides a quantitative benchmark by which managers can be compared. In constructing the index, we consider five channels through which a manager acquires general rather than specific skills. These include the number of different (1) positions, (2) firms, and (3) industries in a CEO's lifetime work history, as well as (4) whether the CEO held at CEO position at a different firm, and (5) whether the CEO worked for a conglomerate. We expect all five factors to have a positive effect on the general managerial ability of a CEO.

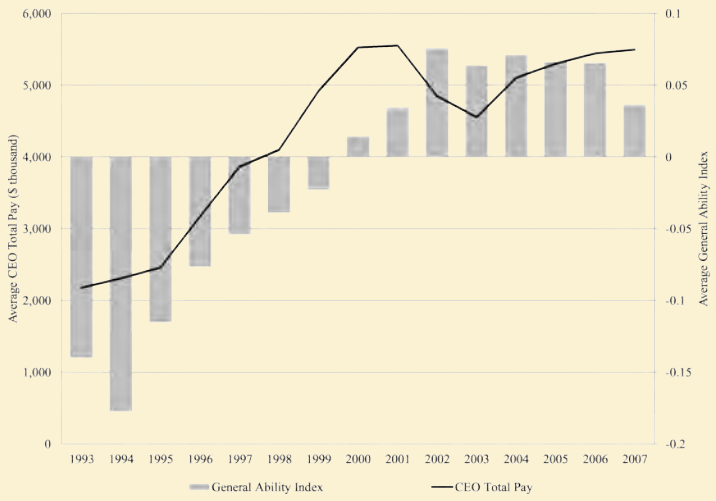
Data on these factors comes from CEO profiles in the BoardEx database, which contains biographical data and information on the experience, education, notable achievements, and other characteristics of corporate leaders. In order to avoid problems caused by high correlation between the characteristics of the CEO and minimize measurement error, we combine these factors into a one-dimensional index by extracting the first principal component, which is a new and single variable that accounts for as much of the variability in the data as possible. As expected, all factors contribute positively to the index, indicating that a manager with more general skills have a higher index value. We compile a panel dataset of CEOs by manually extracting those top executives of S&P 1,500 firms in ExecuComp who also have profiles in BoardEx, and our sample includes nearly 4,500 CEOs with roughly 32,500 different past positions.

Using the GAI index, we classify CEOs as either generalists or specialists, based on whether their index values fall above or below the median in a given year, respectively. An example of a generalist CEO is Michael H. Jordan, whose index value of 5.87 (as of 2007) which placed him fifth highest in the GAI index. His resume includes being CEO of PepsiCo, Westinghouse Electric, CBS, and Electronic Data Systems, as well as other positions in a variety of industries. Contrast this with a specialist such as James Skinner who was CEO of McDonald's from 2004 to 2012, having worked at McDonald's for his whole professional life, and whose index values ranked him below the 10th percentile of GAI.

Results and discussion

Our analysis provides direct evidence of the increased importance of general managerial skills over the sample period of 1993–2007. Consistent with the idea that CEOs have acquired more general skills, we find that the GAI increases over time, as illustrated in Figure 1. In addition to the GAI index, we develop a new measure, "Generalist Excess Pay," that captures the pay premium of a "multi-industry" CEO with diverse experience. It is analogous to the excess value measure used in studies of corporate diversification and captures the difference between CEO Total Pay and the imputed pay from the portfolio of the median pay of single-industry CEOs who match the CEO's past industry experience. The average generalist excess pay is positive over the entire sample period, growing from about $1 million to more than $2.7 million by 2007.

Figure 1: Timeseries of managers' general skills and pay



Both skills and pay increased over the years, although both have levelled off after 2002.

Our primary econometric tests estimate the "marginal" effect of the GAI on compensation. We use ordinary least squares and fixed effects regressions, allowing us to control for unobserved, time invariant CEO heterogeneity, such as innate talent. The results confirm that the effect of GAI on compensation is statistically significant and economically meaningful. As reported in Table 1, a generalist earns up to nearly 19% more in total pay than a specialist, which amounts to about $850,000 per year

(from column 4). The dependent variable in these regressions is the total compensation of the CEO, and coefficients of interest are those of the General Ability Index (a continuous variable), and of the General Ability Index Dummy (a variable that has the value of one if the CEO is a Generalist and zero otherwise). Because the dependent variable is the log of compensation and because the index is standardized to have zero mean and a standard deviation of one, these coefficients can be easily interpreted as a percentage. For column 1, an increase of a standard deviation in the General Ability Index increases compensation by 11.7%.

Table 1: Selected regression results

		Firm Fixed	CEO Fixed		Firm Fixed	CEO Fixed
	OLS	Effects	Effects	OLS	Effects	Effects
General Ability Index (Continuous)	0.117***	0.073***	0.094**			
General Ability Index Dummy				0.186***	0.136***	0.110***
CEO Age	–0.007***	–0.006***	0.000	–0.007***	–0.006***	–0.001
CEO Tenure	–0.006***	0.001	0.023*	–0.007**	0.001	0.014
External Hire Dummy	0.124***	0.141***	–0.126	0.134***	0.151***	–0.117
MBA Dummy	0.025	0.050**		0.031	0.054**	
CEO-Chair Dummy	0.169***	0.059***	0.063**	0.177***	0.063***	0.065**
First Year as CEO Dummy	0.096***	0.125***	0.188***	0.090***	0.123***	0.185***
Further firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	No	Firm	CEO	No	Firm	CEO
R-squared	0.503	0.748	0.799	0.499	0.748	0.799

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Generalists earned on average more compensation than specialists, holding other factors constant. Depending on the measure and specification, the extra compensation seems to have been between 7.3% and 18.6% more.

The effect holds for individual cash and equity components of pay, in addition to total pay. Furthermore, we find the increase in pay is highest when a firm that currently has a specialist CEO externally hires a generalist, evidence that general managerial skill commands a premium in the labor market at the time a new compensation package is set.

Alternative explanations for the positive relation between CEO pay and general managerial skills exist, but we find the effect of GAI to exist beyond these alternative explanations. For instance, it could be that generalist CEOs are also more talented, and that is why they are paid at a premium. However, including factors such as innate CEO talent, firm size, firm performance, corporate governance, and managerial risk aversion as control variables does not affect the result. We also address selection bias concerns, in other words, the possibility that CEOs and firms are matched for other reasons than the general ability of the CEO and that are not observed in the data. For instance, we use firm and

CEO fixed effects regressions, which is an econometric technique that aims to capture the effect of unobserved CEO and firm characteristics that do not vary overtime. Overall, the results support an efficient market-based explanation of the premium awarded to CEOs with more general skills, and are also consistent with optimal contracting and the view that boards make merit-based compensation decisions.

Nihal Chand (1710–1782): Lord Krishna with his Spiritual Lover Radha. India, 1750. The rulers of the 18th century Hindu kingdom in Rajasthan, India, were referred to as Rajputs. They ruled side-by-side with the Islamic Mughal Empire. Their own distinct style of paintings was called Rajput paintings. Religious, mystical, or spiritual angles were frowned upon by Mughals, but Rajput paintings (often miniatures or wall paintings in the royal courts) covered themes from the life of the Rajputs or scenes from ancient epics such as Mahabharata, Ramayana, and the life of Krishna. The pigments were made from minerals, sometimes from semi-precious stones. The above painting hangs in the Allahabad Museum in India.

Margaret H. Christ, Karen L. Sedatole, Kristy L. Towry, and Margaret B. Shackell

Sticks and Carrots: The Effect of Contract Frame on Effort in Incomplete Contracts

The Accounting Review | Volume 87, Issue 6 (Nov 2012), 1913–1938
(Original article authors were Christ, Sedatole, and Towry)
(please cite only the original publication, not FAME)

The economic downturn has caused managers to look more carefully at how to motivate workers. Does punishment work?

In our study, we examine employee effort under bonus vs. penalty contracts in an incomplete contract setting, in which the employee's pay is not deterministically based on objective performance measures. Incentive bonus contracts are one of many types of formal controls organizations implement to motivate and direct employee behavior. In prior research, we have seen evidence that negatively-framed controls can be perceived by employees as intrusive and as reducing their autonomy (Christ et al. 2008). People do not like to be controlled. They do not like to have their actions questioned or their decision rights limited. When negatively-framed controls are in place, employees can feel that their integrity and competence are questioned. This can lead to a feeling that the manager does not trust the employee and hence, the employee does not trust the manager. In the current study, we predict that incentive contracts that include penalties for low performance will be perceived negatively by employees and will evoke the same negative feelings that other negatively-framed controls are known to elicit. Therefore, our hypothesis is that employees working under bonus contracts will feel more trusted by their managers and will reciprocate that trust. Ultimately, we expect that this greater trust will cause employees working under bonus contracts to increase their effort, even on those tasks not explicitly governed by the contract.

The contract frame laboratory experiment

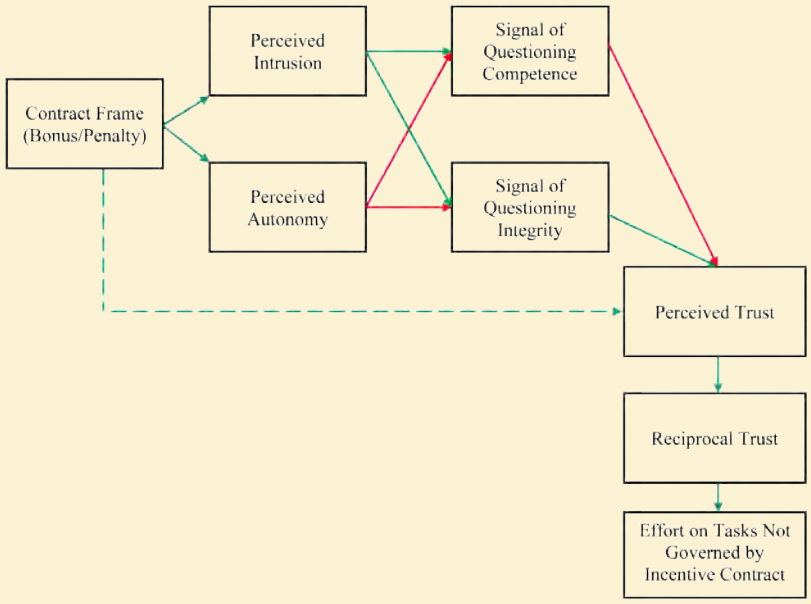
To test our predictions, we ran an experiment at a highly ranked U.S. business school with undergraduates: 52% female and 48% male, 20.4 years old on average. Each participant was assigned the role of either a manager or an employee and engaged in a two stage experiment. In stage one, employees were required to make a series of investment decisions on behalf of their managers. In one condition, managers could impose a contract that paid the employee a bonus if their investment selection achieved a target payoff. In another condition, managers could impose a similar contract that penalized employees who did not reach that target payoff amount. In all conditions, managers could pay employees a flat wage instead of the incentive contract. In stage two, employees could make another investment on behalf of their managers, but in this stage there was no incentive contract. Instead, managers could pay employees any amount of the returns earned by the chosen investment. Importantly, the second stage investment decision depends on the employee's trust in his/her manager.

In particular, the employee decides the amount of his/her own money to invest on behalf of the manager. This investment is guaranteed to return three times the original investment, all of which is paid to the manager. To make an investment, the employee must trust that the manager will pay him/her at least as much as that initial investment amount. The more of his/her own funds the employee is willing to invest, the greater his/her trust in the manager.

Employee participants also answered a series of questions about their trust in their manager partners, the extent to which they felt that the contract was intrusive or limited their autonomy, and the extent to which they interpreted the contract as questioning their competence or integrity. We used participants' answers to these questions to understand the underlying motivation driving their behavior.

Our results are shown in Figure 1. The green arrows are the paths that are significant as predicted, and the red paths are not significant.

Figure 1: Test of full model: Comparison of penalty and bonus contract conditions



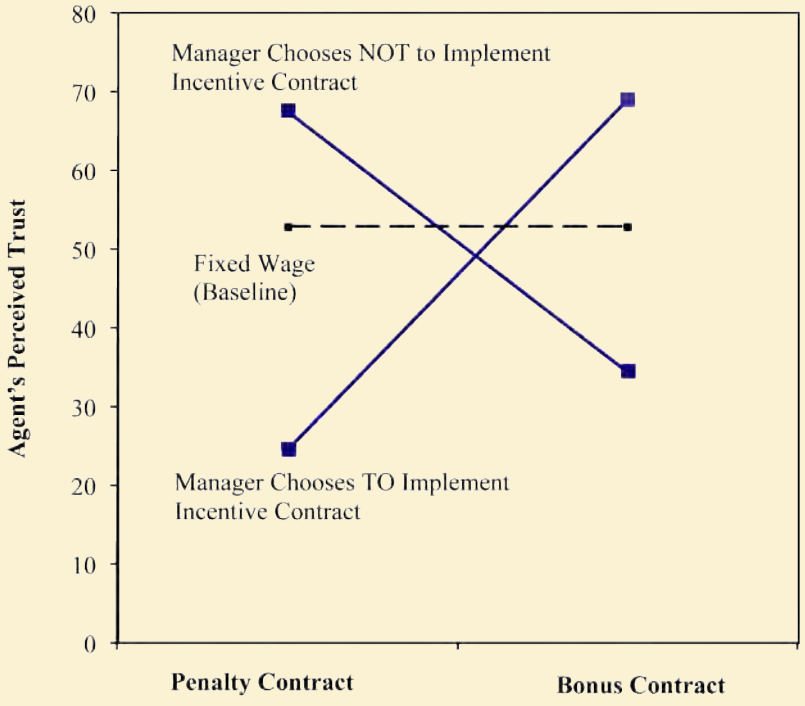
Participants facing the penalty contract reported feeling more intrusion and less autonomy than those facing the bonus contract. That intrusion felt like a signal questioning their competence and integrity, but the threat to their autonomy was not interpreted as such a signal. When participants felt that their integrity was questioned, they perceived less trust from their managers. As predicted, when employees perceived trust (mistrust) from their managers, trust (mistrust) was reciprocated, and when trust (mistrust) was reciprocated, the participants worked harder (less hard) on a task that was not governed by the initial contract. We also found a direct relation between contract frame (bonus contract vs. penalty contract) and perceived trust: those who received the bonus contract felt more trust than those who faced the penalty.

As previously mentioned, the managers in the experiment had the choice of whether to implement an incentive contract or not. In Figure 2, we compare the impact on trust of the choice to implement or not implement the bonus or penalty condition relative to the level of trust for employees in a fixed wage setting.

There are few observations in which the manager chooses NOT to implement the incentive contract, so we won't dwell on the downward sloping line. But as Figure 2 shows, the great difference in trust occurs when the manager chooses to implement a bonus contract versus a penalty contract.

In summary, our experimental results show that employees' trust in the manager matters, and that both trust and effort are lower when employees work under a penalty contract than when they work under a bonus contract. Therefore, both the frame of an incentive bonus contract, as well as the degree of contract completeness, are important determinants of effort.

Figure 2: Employee's perceived trust under the bonus and penalty contract conditions versus the fixed wage (baseline) condition



From the lab to practice

What can we learn from this laboratory experiment that will help firms in practice? Two things: First, trust is critical to the success of bonus plans, in particular bonus plans that include some level of supervising manager discretion. When employees feel intruded upon or that they lack autonomy, this begins a domino effect, with the final result being decreased effort. Such effects might be particularly acute in settings involving knowledge workers involved in creative activities where a sense of autonomy is paramount. A loss of trust induced by an incentive contract could be devastating. Incentive contracts intended to increase effort but perceived by employees to have a punitive element may backfire with dire consequences.

Second, incentive contracts with a penalty frame are tempting, especially given the current economic climate and the prior evidence that they are more effective than bonuses at eliciting effort. While

penalty contracts of the form used in our experiment have not, and may never be, common in practice, the use of various other forms of punitive contracts is on the rise. Indeed, there are political efforts (e.g., 2010 Dodd-Frank Wall Street Reform Act) currently underway to require the use of "clawback provisions" at the executive levels as a means of recovering previously awarded incentive pay awarded based on financial performance later revealed to be erroneous. To the extent that such provisions are at the discretion of corporate boards, they will likely have some of the trust eroding effects that we document in the lab. There is also increasing use of "bonus banks" allowing for some portion of an earned bonus to remain "at risk" to fund negative bonuses in future years (Murphy (Sage 2012)). Such practices are at risk of having a negative impact on the trust environment, leading to unintended negative performance effects. How these forces will play out remains to be seen.

Unknown artist: Disguised Akbar with Tansen Visit Swami Haridas. India, 18th Century. In this miniature painting (25×31cm), Emperor Akbar is disguised as a commoner, standing behind his legendary court singer Tansen during a visit to a Swami (a guru—sort of like Gene Fama). Notice how the green leaves in the background are intricately and carefully painted in different styles and different shades of green, an art honed by hundreds of hours of practice. Notice also the humility captured in the body pastures of all three figures. This painting hangs in the National Museum in New Delhi, which holds an exquisite collection of miniature paintings from different schools.

John Thanassoulis

The case for intervening in bankers' pay

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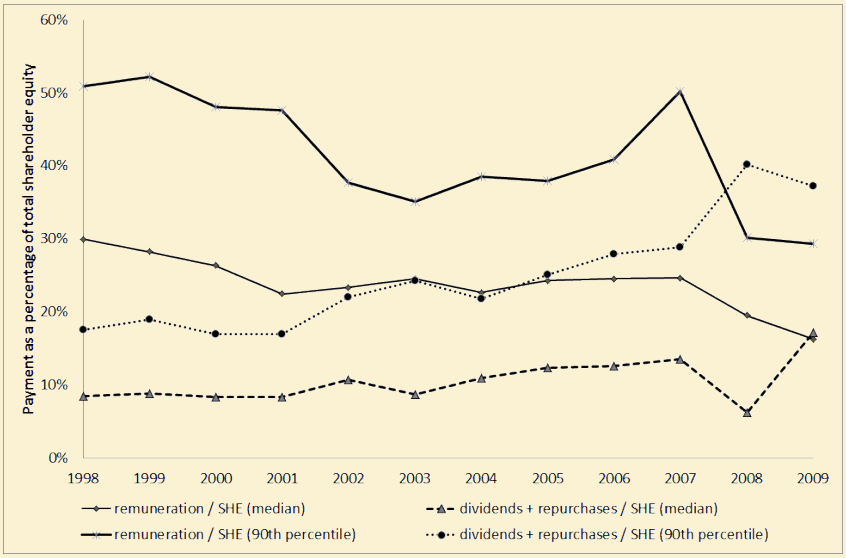
(please cite only the original publication, not FAME)

Many policy makers in the E.U., U.S., and G20 have criticised bankers' pay. The European Union even introduced regulations to outlaw bonuses which are greater than base salary. My study asks whether it would be optimal to regulate bankers' pay, and if so how.

I present a model of banker remuneration in a competitive market for banker talent. I show that there is a market failure in the competition between banks for bankers in that one bank's hiring activities has the effect of raising rival banks' cost of labour and raises their risk of default. I demonstrate that this negative externality adds significantly to default risk. Optimal financial regulation will involve some intervention in the competitive market for bankers' labour. In particular it will involve weak caps on bonus payments in proportion to bank assets.

Figure 1: Comparison of remuneration to dividends plus share repurchases for some systemically important banks



The graph shows the median and 90th-percentile of remuneration payments as a proportion of shareholder equity (SHE) for 21 systemically important banks. The remuneration payments are compared against the total dividends paid out plus any sums spent on repurchasing shares by the banks as a proportion of their shareholder equity. The graph demonstrates that remuneration payments are on average approximately double dividend payments plus repurchases and so make a significant contribution to a bank's default risk.

Competition for top talent increases pay but reduces the bank's equity

High aggregate pay bills add to the financial fragility of banks as they remove funds which would otherwise cushion the bank from poor investment realizations. The level of aggregate pay can be a very significant proportion of shareholder equity. Payouts to staff also considerably exceed payouts to shareholders in the form of buy-backs and dividend payments. This is demonstrated in Figure 1.

The intuition is that because the level of pay is a significant portion of shareholder equity, by bidding for bankers that they will ultimately not succeed in hiring, banks raise their rival's costs, and so add to their rival's fragility. The costs associated with fragility and default, are not a gain to the banker. They are a negative externality. Optimal risk regulation, by acting to lower the market levels of pay whilst preserving the optimal assignment of banks to bankers would reduce this externality.

The model

I model multiple banks of different sizes competing to hire a team of bankers from a population of bankers who are differentiated in terms of their skill. As any default event will be a low probability event, I model the extremes of investment realizations using Extreme Value Theory. This allows me to formulate a tractable and yet very general functional form. Using this approach the expected value of a bank of asset size S, and liabilities (excluding capital) D, which hires a team of bankers with expected return α, pays them a bonus rate of q, and a fixed wage of w is

$$\alpha \cdot (1-q)S - w - \lambda \cdot S \cdot \underbrace{G \cdot \left[\frac{w+D}{\alpha \cdot S \cdot (1-q)}\right]^{\gamma}}_{\substack{\text{Probability of} \\ \text{default event.}}}$$

The parameters γ and G capture the shape of the bank's returns distribution in the tail of very poor realization of returns. The tail is modelled as having a polynomial shape with index γ, and is scaled up by the constant G. The parameter λ is a cost of a default event.

Banks care about risk because if investment realizations are poor they will suffer extra costs. These could be enhanced costs of capital, or the costs of the premature selling of assets, for example. The banks therefore avoid risk even when they are modelled as being risk neutral. It therefore follows that banks benefit by sharing risk with their staff. This implies that:

Proposition 1 *The competitive outcome will be for the bankers to be paid entirely in bonus.*

Bonuses have a role beyond an incentivization tool. They are a means by which risk can be better shared. When returns are poor, bonuses shrink, just when a bank needs to reduce calls on its capital.

This insight allows us to solve the full general equilibrium model of bankers pay and determine the equilibrium bonus rates and assignment of teams of bankers to banks. Using this machinery one can then explore the different possible regulatory tools which can be deployed to deal with the negative externality a bank has when it bids for bankers.

Bonus Limits A modest cap on the proportion of bank assets which can be used for bonuses lowers default risk and *raises* the value of the largest banks. Compensation levels for all banks fall and in addition the risk problems of fixed wages are avoided. However very stringent bonus caps, or a requirement to use wages rather than bonuses are not optimal.

The market rate of pay is determined by how much a rival bank is willing to bid. In bidding for bankers they don't ultimately hire, the losing bank is pushing up pay for the hiring bank. This pushes up risk for the hiring bank and so creates larger expected costs from a default scenario. A modest cap on bonuses affects the marginal bidder more than the employing bank. This is because the marginal bidder will be the bank which is recruiting for a smaller set of assets, and so is applying a larger bonus rate to a smaller pot to try and attract the bankers. The bonus cap forces the bidding bank to use wages, but these have poor insurance properties. The bidding bank is therefore willing to bid less hard. This lowers the banker's pay and raises the employing bank's value and robustness to risk. As the employing bank secures more value from its bankers, it is less aggressive in its bidding for even better bankers. This effect is reinforced up the chain so that all the large banks save money and become more robust to risk.

If the cap is too severe however, then fixed wages will rise. This raises bank risk.

Taxation A financial regulator might consider taxing the bonus pools of banks. The taxation policy does lower the amount delivered to bankers, but it leaves bank default risks unaffected. In a competitive equilibrium, the amount a bank is willing to pay to hire a better banking team depends upon the quality of the alternative bankers it can hire. The tax does not alter this calculation. Though default risk is not altered, money is diverted from bankers' pay to the government.

Increase capital adequacy ratios The problem of bank fragility can be dealt with by increasing capital ratios, or altering the risk weights. If extra capital is not raised, an increase in the required capital ratio is met by altering the portfolio of assets to include more assets which have a lower risk weight. This limits the freedom of the bank and lowers bank value.

The paper explores the optimal financial regulation which maximizes the profits of banks subject to a maximum default probability. To characterize the optimal regulatory intervention the paper defines *maximal weak bonus caps*. The maximally weak bonus cap for a bank is the most stringent cap on the proportion of the bank assets which can be used for bonuses without causing the bank to recourse to increased fixed wages for its staff.

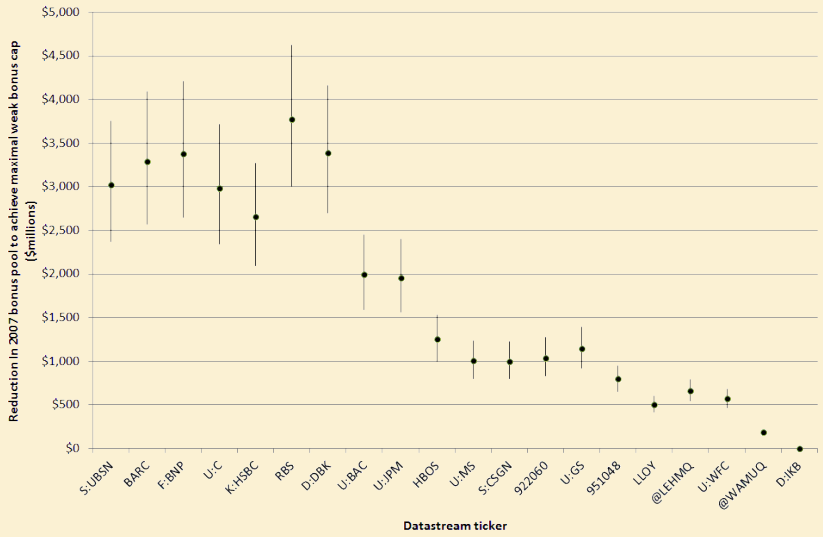
This cap is strictly lower than the bonus paid without a cap.

Proposition 2 *The optimal financial regulation requires bonus caps for all banks at least as strict as the maximally weak bonus caps.*

If a regulator only controls a subset of the banks, use of a bonus cap more binding than the maximally weak bonus caps cannot be optimal for all regulators.

The paper calibrates how large a reduction in the bonus pool would be required to achieve the maximally weak bonus cap in 2007. The result is given in Figure 2.

Figure 2: Calibrated reduction in bonus pool to achieve maximally weak bonus cap



The central estimate is plotted as a dot in the graph and depicts the set of dollar reductions to the annual bonus pools of these 20 banks which together would lower the bonuses paid to the level of the maximally weak bonus caps. The line depicts the range captured by the two extreme estimates for the level of tail risk. The graph shows that optimal regulatory intervention would not be of a trivial magnitude. The banks are ordered by 2006 total assets in U.S. dollars with conversion to U.S. dollars provided by Datastream. 922060=Merrill Lynch; 951048=Wachovia Corporation.

The paper concludes that some regulation of remuneration is optimal. However regulations, likely such as the E.U. one-to-one bonus cap, which have the effect of increasing wages are not optimal. Though any reduction in pay levels makes banks safer, risk could be further reduced by allowing banks to use bonuses instead of fixed wages to pay bankers the market rates.

Raja Ravi Varma (1848–1906): Swan Damayanti. India, 1899. Princess Damayanti falls in love with Nala even before meeting him when she hears of his virtues (in a referee report) from the golden swan. The model in the painting is none other than Raja Ravi Varma's famous muse Sugandha—played by Amartya Sen's daughter Nandana, in the 2008 Bollywood movie Rang Rasiya. Varma was the first modern Indian artist to gain international recognition and later to become a household name in India. He is both admired and dismissed for his Western academic theatrical painting style of Indian mythological scenes and Gods. Many of his paintings are at the Laxmi Vilas Palace of Vadodara.

Ji-Woong Chung, Berk A. Sensoy, Léa Stern, and Michael S. Weisbach

Pay for performance from future fund flows: The case of private equity

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The incentives of private equity general partners to create value for their investors (limited partners) are often questioned by investors, industry observers, and academics alike. Critics argue that pay-for-performance incentives from the carried interest profit share (typically 20%) are muted when funds fall short of their hurdle rates, and because fixed fees alone represent a substantial source of income for many private equity groups.

In this paper, we point out that the direct incentives from carried interest are only part of the total pay-for-performance incentives that general partners have. The other part is the indirect, market-based incentives that arise from the fact that general partners' ability to raise capital for new funds in the future, and so to earn income from managing that capital, depends on the performance of their current funds.

To better understand general partners' motivations, it is essential to have a complete picture of their total pay for performance incentives, which is the sum of the direct effect of current performance on earnings from carried interest, and the indirect effect of current performance on earnings from managing future funds.

An additional contribution of our work is that our general framework for quantifying these effects can be extended to other asset management settings in which future fund raising or flows depend on current performance.

Modeling indirect pay-for-performance

Our goal is to quantify the indirect effect and compare its magnitude to the direct effect. To do so, we present a rational learning model based on Berk-Green (JPE 2004) that formalizes the logic by which good performance in the current fund could lead to higher future incomes for general partners through an effect on expected future fund-raising. In our model, the ability of a general partner to generate abnormal returns is unknown to market participants. However, a general partner builds his reputation as the market updates its assessment of his ability based on the observed returns. Ultimately, investors will decide whether the observed returns are sufficient for the general partner to raise another fund, and if so how much capital will be allocated.

The key ingredients of the learning model are these. The general partner has some unknown ability θ to generate (abnormal) returns. Investors have a prior θ_0, drawn from a normal distribution with mean θ and precision τ. Fund returns r_i are distributed normally, with mean θ (the general partner's true ability) and precision s. After the market observes the returns, it updates its assessment of the

general partner's ability

$$\theta_i = \frac{\tau \cdot \theta_0 + s \cdot \sum_i r_i}{\tau + i \cdot s}$$

In the model, both the probability that the general partner is able to raise another fund $p(\theta_i)$ and the size of that fund if one is raised, $f(\theta_i)$, are both increasing functions of the current estimate of ability, θ_i. The expected size of the next fund is therefore equal to $p(\theta_i) \cdot f(\theta_i)$.

The rational learning framework thus predicts that both the likelihood of raising a follow-on fund and the size of the follow-on if it is raised increase with current performance. If we assume that a general partner runs a total of N+1 funds, his total lifetime revenues are

$$TR = k(r_i) \cdot f(\theta_0) + k(r_2) \cdot p(\theta_1) \cdot f(\theta_1) + \ldots + k(r_N + 1) \cdot \prod [p(\theta_i) \cdot f(\theta_N)]$$

In the above equation, $k(r)$ is the general partner's revenue as a percentage of fund size as a function of performance r. In order to estimate how a general partner's lifetime compensation varies with the performance of his current fund, we differentiate the above equation with respect to r. The resulting explicit formula for indirect pay-for-performance from future fundraising provides estimates of how general partners' lifetime income varies with their current performance. Indirect pay-for-performance is a function of

- the expected sizes of future funds, consisting of the probability of raising a future fund and its expected size if there is one,
- the sensitivities to current performance of the likelihood of a general partner raising another fund, and its size if there is one,
- and the expected general partner compensation per dollar of fund size.

Predictions of the learning model

The model provides us with several cross-sectional predictions about the magnitude of the sensitivity of future fundraising to current performance that have not been previously tested in the private equity literature, and that in our framework translate directly into cross-sectional differences in indirect pay for performance incentives.

The first prediction is that for a given assessment of a general partner's ability to generate returns, the more 'scalable' abilities are, the more investors are willing to put money into a following fund. To the extent that buyout funds are more scalable than venture capital funds (Metrick-Yasuda (RFS 2010)), future fundraising-performance sensitivity should be greater for buyout funds than for venture capital funds. Intuitively, if a general partner of a buyout partnership is shown to be talented at increasing value by buying out companies, he can potentially employ the same skills to buy out larger companies and increase their value, and hence make effective use of a larger pool of capital. In contrast, if a venture capitalist has demonstrated that she is talented at investing in startup companies, she is not able to increase fund size as much because the size of startup investments is not scalable (and because, given the time-consuming value-added nature of the private equity investing process, it is not feasible simply to increase the number of investments).

The model also predicts that as a partnership ages, so its ability is known with more precision, performance in a given fund should have less incremental impact on the market's overall assessment of the partnership's ability. This means that future fundraising should be more sensitive to performance for younger partnerships than for older ones.

Finally, the model predicts that for a given performance, a manager is more likely to raise a subsequent fund if the prior assessment of his ability is better. It implies that later sequence funds should be more likely to raise a follow-on fund because the average assessment of ability will be higher in later sequence funds than in earlier ones, for the simple reason of their survival.

Main results

Using a sample of buyout, venture capital, and real estate private equity funds from Preqin from 1993–2010, we find support for all of these predictions. In particular, the data support the rational learning framework over a simple return chasing story for future fundraising, which predicts if anything the opposite relations with respect to partnership age.

The tests provide estimates of the sensitivities of the probability of raising a future fund, and its size if one is raised, to performance in the current fund. We combine these estimates with sample summary statistics on the fraction of funds that raise a future fund, and the size of that fund if one is raised, and with Metrick-Yasuda (RFS 2001)'s estimates of general partner revenue per dollar of fund size. We use these three pieces of information to compute indirect pay for performance from future fundraising according to the formula derived from the learning model. We compute indirect pay for performance under various sets of assumptions.

Our results show that for a first time buyout (venture capital) fund of average size, whose managers can run a maximum of three more funds in the future, a one-percentage-point improvement in net return to limited partners in the current fund relative to the sample average return will increase the present value of his expected total lifetime income by over $4 million ($0.31 million). When the maximum number of future funds is five, these figures increase to $7.8 million and $0.35 million for buyout funds and venture funds, respectively.

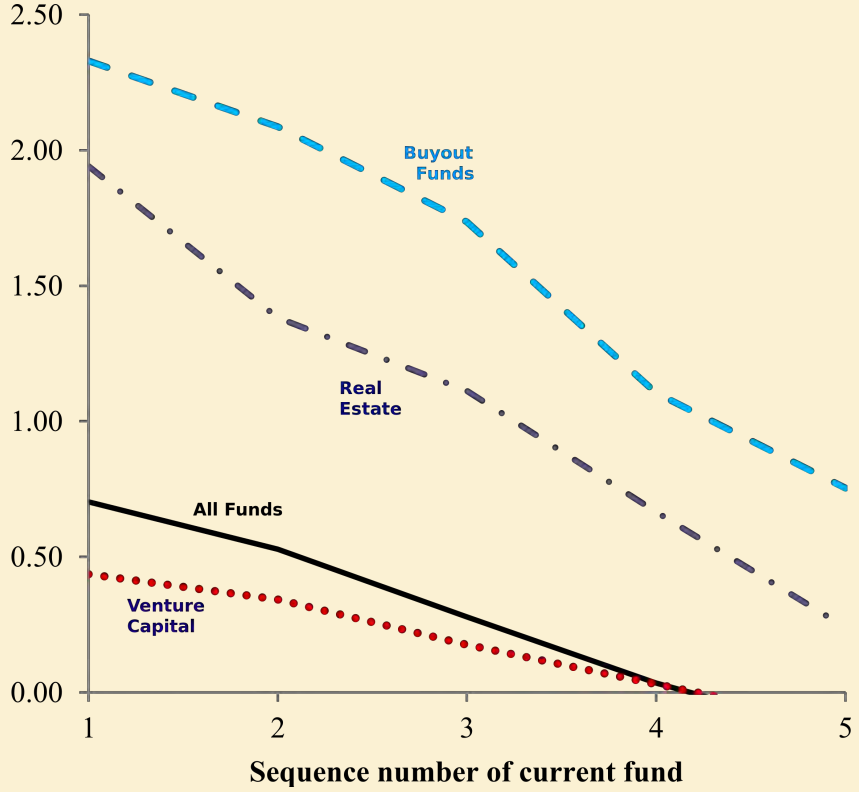
To gauge the significance of these figures, we then compare the magnitude of this indirect pay for performance to the direct pay for performance from carried interest, under the assumption that the current fund is in the money so the general partner receives, at a carried interest of 20%, an incremental $0.25 for every incremental $1.00 returned to fund investors. While this assumption reflects reality for the typical fund in our data, it means that our estimates of the importance of indirect pay for performance is understated because some funds never earn any carried interest.

The following figure summarizes these calculations. The figure shows the ratio of indirect to direct pay for performance, for different types of funds and as a function of the sequence number of the current fund, which is the position of the current fund in the partnership's overall sequence of funds.

There are three main takeaways from the figure. First, indirect pay for performance is sizeable and of the same order of magnitude as direct pay for performance from carried interest. For all funds taken together, the ratio of indirect to direct pay for performance is 0.7. Second, indirect pay for performance is much stronger for buyout funds than for venture capital funds, with real estate in between. Indeed, the ratios of indirect to direct pay for performance for first time buyout, venture and real estate funds are 2.3, 0.4 and 2, respectively. This result is in accordance with our prediction as

buyout funds are much more scalable by nature than venture capital funds. Third, indirect pay for performance becomes weaker as a partnership ages and manages more funds. This is again consistent with the model's prediction that current performance has less impact on the market's overall assessment of ability as a partnership ages. The magnitude is reduced by more than half for a fifth-fund buyout partnership compared to a new partnership, and for venture capital there is essentially no indirect pay for performance beyond the fourth fund. Our results are all consistent with the learning framework, and suggest that learning about ability is a key driver of indirect pay for performance in private equity.

Figure 1: Ratio of indirect to direct pay for performance, for different types of funds and sequence numbers



The figure shows that indirect compensation was sizable compared to direct compensation, higher for buyout than for VC funds, and higher early in the partnership.

Implications of our results

These results have several implications. One is that total pay for performance in private equity is much larger and much more heterogeneous than suggested by the carried interest alone (the focus of much academic work and practitioner interest). This is suggestive of greater alignment of general partner interests with investors' interests than discussions of the carried interest alone would suggest. At the same time, the results imply that total pay for performance goes down as a partnership ages. In particular, in contrast to theories such as Gibbons-Murphy (JPE 1992), in private equity we do not see explicit incentives from contractual carried interest rise (enough) to offset the decline in market-based, indirect pay for performance. Whether it is optimal for private equity compensation contracts to look the way they do in light of the market-based incentives we document is an important question for future research.

Hokusai (1760-1849): Great Waves of Kanagawa, Japan, 1829. This is one of the most-recognized Japanese art pieces in the world. It is made with a woodblock print technique called ukiyo-e. Hokusai broke away from the traditional ukiyo-e subjects, such as courtesans, actors, used landscapes, and daily-life social situations. This ukiyo-e print shows a Tsunami wave off the coast of Kanagawa, with Mount Fuji in the background. (The nuclear reactor is probably behind the mountain.) Copies of this print are in many Western collections, such as the Met and the Chicago Art Institute.

Byungjin Kwak, Byung T. Ro, and Inho Suk

The composition of top management with general counsel and voluntary information disclosure

Journal of Accounting and Economics | Volume 54, Issue 1 (Aug 2012), 19–41
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Many firms have in-house legal counsel or an internal legal department as part of their organizational structure. The chief counsel, called General Counsel (GC) or Chief Legal Officer (CLO), plays important roles as an internal advisory and monitoring mechanism for top management. For many firms, the demand for legal expertise and experience is high and increasing as their business environments become more complex and litigious. Thus, firms often have a GC in top management to take advantage of his (her) legal expertise (43% of our sample firms).

GCs play two basic roles: (a) advising Chief Executive Officers (CEOs) and boards of directors on important business decisions and contracts, regulatory compliances, legal matters, and litigation risk (among others), and (b) monitoring CEOs' unusual behavior against shareholders' interest. The *advisory* role of GCs varies across firms. While such advisory services may be obtained from external lawyers, CEOs prefer in-house lawyers because these lawyers understand their firms better, are more trustworthy, and serve as an effective vehicle for dealing with outside counsel (the ACCA-Spherion survey, 2001).

GCs' *monitoring* role is also important. The *American Bar Association Task Force on Corporate Responsibility* (March 2003) reports that corporate legal counsel is one of the four most important private sector governance mechanisms for public firms, along with boards, audit firms, and shareholders (institutional investors in particular). (Some believe that recent corporate accounting scandals were due partly to the failure of GCs (or in-house counsel) to play an effective role. For example, Bainbridge-Johnson (LawRev 2004) argue that lawyers often act as facilitators of management impropriety.) For corporate information disclosures, this means that GCs help top management make fair and full disclosure on a timely basis, in order to protect shareholders' interest. (The Sarbanes-Oxley Act (SOX) of 2002 emphasizes the importance of in-house counsel as an internal governance mechanism for transparent financial reporting to investors.)

Hypotheses

Despite the key role of GCs for information disclosure, it is not clear in reality whether they serve the interest of top management or shareholders when there is a potential conflict of interest between managers and shareholders. Our study examines whether the presence of a GC in top management is related to the disclosure of management earnings forecasts(MFs). (We focus on MFs, since MFs are perhaps the most common form of firms' voluntary information and are frequently associated with

litigation risk, which is related to the role of GCs. Johnson-Nelson-Pritchard (JLEO 2007) find that forecast-related allegations in lawsuits are more common than accounting fraud and insider trading allegations before the Private Security Litigation Reform Act (PSLRA) of 1995 and about equally common even after the PSLRA, despite the safe harbor rule.) If the GC in top management plays an effective role as a voluntary internal governance mechanism on behalf of shareholders, he is likely to help his firm reduce information asymmetry with shareholders and make fair and transparent voluntary disclosures, including MFs. Therefore, our first hypothesis is:

Hypothesis H1 *Firms with a general counsel in top management are more likely to provide management earnings forecasts and do so more frequently than other firms.*

Prior research shows that managers have legal and reputational incentives to voluntarily preempt effects of bad news MF or negative earnings news, in order to reduce litigation risk (Skinner (JAR 1994), Skinner (JAE 1997)). We argue that such incentives are particularly strong for a GC because minimizing litigation risk is one of his primary duties. Also, he has an incentive to build a good reputation as an effective advisor and monitor and serve his own interest (e.g., compensation, job security, and reputation). Thus, if the likelihood and frequency of MF disclosure are higher for firms with a GC in top management, this tendency should be more pronounced for bad than good news forecasts. Our second hypothesis concerns this proposition:

Hypothesis H2 *The likelihood and frequency of bad news forecasts, relative to good news forecasts, is higher for firms with a general counsel in top management than for other firms.*

If a GC in top management plays an effective governance role, he will advise top managers to issue fair and credible MFs. Also, he will know that any MF issued opportunistically may not be credible, or may even be misleading, which can trigger lawsuits against the firm. This is particularly true for forward-looking information such as MFs, since they are not formally audited by an external auditor. (Grundfest-Perino (1997) report that about 65% of all alleged corporate fraud cases filed by shareholders during 1996 (one year after the PSLRA) was because of some false or misleading forward-looking information disclosed by firms and that 14% of those cases were involved in forward-looking information only.) For these reasons, we posit that MFs issued by firms with a GC in top management are more accurate and less biased than those issued by other firms. This is consistent with the notion that strong governance can deter or reduce managers' opportunistic disclosure behavior, which in turn reduces the likelihood of shareholder lawsuits and lawsuit damages. Thus our third hypothesis is:

Hypothesis H3 *Management earnings forecasts issued by firms with a general counsel in top management are likely to be more accurate and less optimistically biased than forecasts issued by other firms.*

If the forecasts issued by firms with a GC in top management are more credible (i.e., less biased and more accurate), the market will perceive them to be of high quality. Therefore, the stock price reaction per unit of MF news is likely to be stronger for such firms than for other firms. This is consistent with the notion that strong governance increases the credibility of forecasts and induces stronger stock price reaction to a given level of news in MF. This is our fourth hypothesis:

Hypothesis H4 *The stock price reaction to management earnings forecast disclosure is stronger for firms with a general counsel in top management than for other firms.*

Frequency of management earnings forecasts (MFs)

The tables report the multivariate regression results for H1–H4. (For brevity, the results for the control variables included are not reported here (and hereafter). The original models include control variables such as board independence (OUTBOD), CEO duality (CEOCOB), insider ownership (INSDOWN), institutional ownership (INSTOWN), firm size (LSZ), book-to-market ratio of equity (LMB), change in return on asset (CROA), earnings volatility (EVOL), return volatility (RVOL), new share issuance (ISSUE), and analyst following (NAF).)

Table 1: Management Earnings Forecast (MF) likelihoods (MFD)

	Any	Bad news	Good news	Good/bad news
Intercept	–3.99***	–4.93***	–3.73***	–1.23
General Counsel (GC)	0.33***	0.41***	0.13***	0.17***
PrLitig	–0.10**	-0.01	–0.29***	0.15***
GC×PrLitig		0.61***	–0.15**	0.32**
Controls	Yes	Yes	Yes	Yes
#obs	20,478	20,478	20.478	7,903
Pseudo R^2 23%	24%	21%	20%	

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 1 shows the results for MF likelihood from logistic regressions (models 1-4) and MF frequency from Poisson regressions (models 5-8), after adjusting two-way (firm and year) cluster-robust standard errors. The results in column 1 are for H1, the case in which the likelihood of MF disclosure (MFD) is the choice variable and the variable of interest is GC. The estimated coefficient on GC is significant with the predicted (positive) sign (0.33), suggesting that GC firms are more likely to issue MFs than non-GC firms. This supports H1. The marginal effect of GC is 0.24, indicating that the probability of a firm issuing an MF is 24% higher for GC firms than for non-GC firms. Columns 2 and 3 report results from separate analyses for the likelihood of good and bad news MF issuance. While the estimated coefficients on GC are positive for both bad (column 2) and good (column 3) news, it is much larger for bad news. Results for the direct comparison between bad news and good news MF likelihood (using the sample only with good and bad news MF years) show that the coefficient on GC is significantly positive (column 4), indicating that the positive impact of GCs in top management on MF likelihood is stronger for bad than good news forecasts. This supports H2. The interaction variable GC × PrLitig is also significantly positive (column 4), indicating that the positive role of GCs on the likelihood of bad relative to good news MFs increases with *ex ante* litigation risk.

Test results for MF bias and accuracy

H3 concerns the *bias* in and the *accuracy* of MFs. Table 2 reports the OLS regression results. The results for MF *bias* (columns 1-2) show that the coefficients on GC are significantly negative (–0.0012),

indicating that MFs issued by GC firms are less optimistic (more conservative) than those issued by non-GC firms. The coefficient on PrLitig is negative and significant in both columns, indicating that the optimistic bias in MFs decreases in *ex ante* litigation risk. The coefficient on GC × PrLitig is significantly negative in column 2, suggesting that the negative impact of GCs in top management on forecast bias is more apparent when litigation risk is high.

Table 2: Management Earnings Forecast (MF) bias and accuracy

	MF Bias (MFB)×100		MF Error (MFE)×100	
Intercept	0.29	0.29	0.28	0.28
General Counsel (GC)	–0.12***	–0.12***	–0.18***	–0.18***
PrLitig	–0.15***	–0.10***	–0.19***	–0.12***
GC×PrLitig		–0.08***	–0.10***	
Controls	Yes	Yes	Yes	Yes
# of obs.	7,924	7,924	7,924	7,924
Pseudo R^2	0.29	0.31	0.22	0.26

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

The regression results for MF *accuracy* are shown in columns 3-4. The estimated coefficients on GC are significantly negative. Thus, absolute MF errors are reliably lower on average and thus MFs are more accurate for GC firms than for non-GC firms. The coefficient on PrLitig is significantly negative in both columns, indicating that MF accuracy is increasing in *ex ante* litigation risk. The coefficient on GC × PrLitig is significantly negative (column 4). Thus, the impact of GC on reducing MF errors becomes more pronounced as litigation risk increases. Together, the results in panel B are consistent with H3.

Test results for market reaction

H4 posits that the stock price reaction to MF surprise is stronger for GC firms than for other firms. Table 3 reports the OLS regression results. The estimated coefficients on MFSUR (MF surprise) are significantly positive, consistent with prior evidence (e.g., Skinner (JAR 1994); Kasznik-Lev (RAS 1995); Kothari-Shu-Wysocki (JAR 2009)). The coefficient on GC × MFSUR is also significantly positive (column 1), indicating that the price reaction to per unit of MF news is stronger for GC firms than for non-GC firms. This supports H4.

Table 3: Stock market reaction to Management Earnings Forecast (MF)

Intercept	–0.04***	–0.03***	–0.03***
MFSUR	0.69***	0.50***	0.44***
GC×MFSUR	0.35***	0.33***	0.54***
PrLitig×MFSUR		–0.65***	–0.89***
GC×PrLitig×MFSUR		0.65**	
GC	0.00	0.00	0.00
PrLitig	–0.01**	–0.005	–0.004
GC×PrLitig		0.002	0.003
Controls	Yes	Yes	Yes
# of obs.	7,802	7,802	7,802
Adj. R^2	0.0611	0.0655	0.0679

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

However, the equity market appears to be concerned about litigation risk. The coefficients on PrLitig × MFSUR are negative (columns 2 and 3), suggesting that litigation risk weakens the price reaction to MF surprise. The coefficient on GC × PrLitig × MFSUR is significantly positive (0.654), suggesting that the positive role of GCs in strengthening the price reaction to MF surprise is more apparent when litigation risk is high. It is interesting that the coefficient on PrLitig × MFSUR is more negative (–0.885) in column 3 than in column 2. Thus, the weaker price reaction related to PrLitig (i.e., the negative price reaction captured by PrLitig × MFSUR in column 2) is more apparent for non-GC firms (β_3) but is greatly mitigated for GC firms ($\beta_3 + \beta_4 = -0.23$). Thus, while the market appears to be concerned about firms' litigation risk involving MF disclosure, this concern is greatly alleviated if firms have a GC in top management. We interpret these results, along with the results for MF accuracy and bias, as evidence that the market appreciates the role of GCs in helping their firms issue high-quality forecasts and reduce litigation risk.

Summary and conclusions

Our results show that the likelihood and frequency of MF disclosure are higher for firms with a GC in top management (GC firms) than for other (non-GC) firms, suggesting that GC firms more likely issue MFs, particularly bad news MFs. The forecasts issued by these firms are less optimistic and more accurate than those issued by non-GC firms. The price reaction to MF news is stronger for GC firms than for non-GC firms. Together, the results suggest that GCs as a voluntary internal advisory/governing mechanism play an important role for their firms in making fair MF disclosure. They also suggest that the equity market recognizes the role of GCs for MF disclosures.

Unknown: Section from 'Tale of Genji Painting Scroll (E-maki)'. Japan, Heian Period, 12th Century. Empress Akiko and her lady-in-waiting Murasaki Shikibu know the ins and outs of court life. There was no Hollywood or Bollywood in 12th-Century Japan, but she writes an absorbing account of the court rituals—both the hidden and the open. Her Tale of Genji, considered world's first novel, is an intriguing and absorbing read even today. Her Tale of Genji was a frequent source of inspiration for the art of E-maki, picture scrolls. Only some sections of this one survive in the Tokugawa Art Museum and Gotoh Museum in Japan, but they are enough to illustrate the vibrant colors, expressive details, and cultural significance of the E-maki art. They resemble an illustrative comic book novel—possibly a predecessor of Manga.

Miriam Schwartz-Ziv and Michael S. Weisbach

What do boards really do? Evidence from minutes of board meetings

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(please cite only the original publication, not FAME)

Board of directors are a key part of corporate governance. Both academics and practitioners have had a longstanding interest in understanding how boards work. A major difficulty in conducting research on boards of directors is that their day-to-day work is private. Accordingly, scholars are, generally, able to examine only observable public data which documents only a small portion of a boards' work.

For this reason, empirical finance studies have generally examined how the way in which boards are structured affects observable variables concerning the firm, such as CEO turnover and firm acquisition. Theoretical studies on boards have the advantage of being able to model the actual every-day working of boards. Such studies generally start from a premise about what kinds of decisions boards make (managerial or supervisory), as well as the process by which these decisions are made. However, the uncertainty about the underlying assumptions of the theoretical models characterizing real world boards limits the applicability of this research.

In this paper, we supplement existing research, which is primarily based on publicly available data, with private data on the detailed minutes of board meetings. This paper is the first to analyze the content of board minutes in a systematic fashion. The advantage of the minutes we analyze is that they record everything that happened at the meetings and provide a clear picture of what boards actually do.

We examine minutes for 11 business companies in which the Israeli government has a substantial equity interest (government business companies, or GBCs), each set of minutes covering a year of meetings within the 2007–2009 period. These minutes show the details of board and board-committee meetings, including all the statements made by every participant in each meeting. As such, they are significantly more detailed than minutes of American companies. We transform the minutes into a quantitative database that characterizes the board meetings, allowing us to assess the way in which the boards work and interact with management.

For each issue discussed, we describe what was discussed, whether an update was delivered or a decision was made by the board, whether there were any dissenting votes, whether the decision followed the recommendation of the chief executive officer (CEO), whether the board took an initiative to modify or define more broadly the actions to be taken, whether the board requested to receive further information or an update, and whether the board was presented with at least two proposals to consider. This database consists of the minutes from 155 board meetings and 247 board-committee meetings, in which 2,459 decisions were made or updates were given.

Do boards make managerial decisions or monitor the managers?

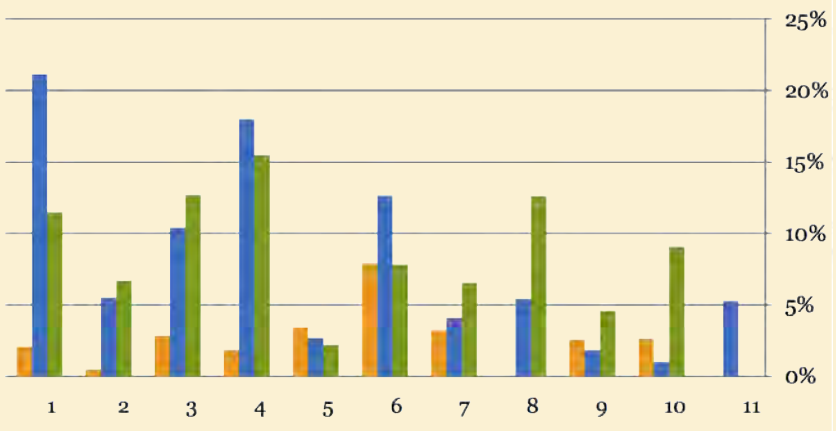
A fundamental problem in the theoretical literature on boards of directors is that it has not agreed on the process by which boards govern the firm. Some studies, including Song-Thakor (JF 2006), Adams-Ferreira (JF 2007), and Harris-Raviv (RFS 2008), adopt a "managerial" approach to boards of directors that presumes boards make managerial decisions such as which projects to undertake, and which employees to hire.

Alternatively, the "supervisory" approach, adopted by models such as Hermalin-Weisbach (AER 1998), Almazan-Suarez (JF 2003), and Raheja (JFQA 2005), starts from the assumption that the main function of boards is to monitor and assess the CEO, rather than to intervene in particular issues. The minutes data allow us to do the somewhat unorthodox testing of the underlying assumptions made in each of the two approaches, in addition to testing their predictions. Consistent with the supervisory approach, for the sample of GBCs we consider, boards discuss issues we classified as supervisory approximately two-thirds of the time. In addition, most of the time boards go along with the CEO's wishes: In only **2.5%** of the cases did boards partially or completely vote against the CEO. In addition, we find that in only **1%** of the time was the board presented with more than one alternative to choose from.

However, we also find evidence suggesting that some of the time boards do play a managerial role. On average, in 8.1% of the issues discussed the board took an initiative on its own, implying that it actively participated in shaping the decision in these cases. In addition, in 8% of the issues the board requested to receive further information or an update. Because a number of issues are discussed at every meeting, boards played an active role on at least one issue in the majority of meetings.

Figure 1 reports, on firm level, the frequency boards (1) requested an update, (2) took an initiative, or (3) did not vote in line with the CEO, out of all 2,459 issues discussed. On meeting level, in 63% of the meetings, boards took at least one of these three actions. The latter findings suggest that boards can be characterized as active monitors. Most commonly, they supervise and monitor management. However, on occasion they actively make managerial decisions themselves.

Figure 1: Boards requesting updates, taking initiatives, or voting against CEOs



For the 11 GBCs examined (numbered from 1 to 11 on the x-axis), this figure presents the percentage of cases boards took an initiative (green bars), requested an update (blue bars), or did not vote in line with the CEO (orange bars) at board meetings.

Taken together, our findings suggest that boards can be characterized as active monitors. Boards are active, but their main focus tends to be on supervising management rather than dictating the specifics of how the company should be run. This picture of boards, taken from the minutes of their meetings, complements much previous research. Our findings suggest that incorporating both supervisory and managerial roles simultaneously into future discussions of board behavior is a potentially fruitful research direction. Theoretically, models in which boards can both supervise managers and sometimes take over managerial tasks themselves are likely to be more realistic than those currently in the literature.

A potential concern with this analysis is the extent to which the boards of our sample of Israeli government-controlled companies reflect other companies. While it is impossible to know exactly how different our firms' governance is from that of privately held companies in both Israel and the rest of the world. The directors of GBCs have the same fiduciary responsibilities as directors of private and public Israeli firms, which are very similar to those of American directors. In addition, the GBC directors are explicitly required to maximize their firm's profits, and our reading of the minutes suggests that they take this responsibility seriously. Furthermore, the board dynamics we find are similar to those reported in interview-based studies, which are most often based on publicly traded U.S. companies. For these reasons, the relationship between a CEO of a GBC and his board, and among the directors of GBCs, is likely to be similar to the corresponding relationships in other boardrooms.

To understand the role of boards of directors, we believe it is necessary to observe to the extent possible how they actually function. To do so requires the kind of data for which we have access for our sample but is impossible to obtain for most firms. Our hope is that opening up the black box of the board for these companies will allow improved formal modeling of boards and lead to a better understanding of empirical findings.

Sotatsu Tawaraya (1570–1643): Waves at Matsushima. Edo Period, Japan, 1624. This is one of the six-panel folding screens capturing the magnificent coast of Matsushima, set on a gold-leaf background. Sotatsu was the most influential court artist of the Edo period, known for its restrictive social class system, monitored customs, and closed borders. Yet it was not all bad for the artists. On the one hand, they suffered a lack of exposure and freedom. On the other hand, the economic stability and boom allowed the merchant class to indulge in the Arts. (This "on the one hand, on the other hand" was written by an economist.) The Edo period ended when Commodore Perry sailed into Tokyo Bay in 1854. In 1868, the city of Edo became the city of Tokyo. This painting is exhibited in the Freer and Sackler Gallery at the Smithsonian.

Katherine Guthrie, Jan Sokolowsky, and Kam-Ming Wan

CEO compensation and board structure revisited

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Contrary to a well-publicized JF study by Vidhi Chhaochharia of the University of Miami and Yaniv Grinstein of Cornell University, we find that the director independence requirements imposed by the major stock exchanges in 2003 did not help rein in CEO pay. In a nutshell, the original results are largely driven by the pay of the late Steve Jobs at Apple and Kosta Kartsotis at Fossil, and neither case fits the story of board structure affecting CEO pay.

The promise of board independence

To better convey the practical importance of our finding, let us provide some context. Shareholders delegate the tasks of monitoring and advising management to corporate directors. So it was only natural to point the finger at boards in the wake of the many accounting scandals and run-away executive compensation that caught the public's attention in the early 2000s. Exactly why boards failed their monitoring responsibilities is not well understood and remains a hotly debated topic.

One compelling explanation is the story of captured directors: directors with ties to the company (e.g., current executives, recent employees, major business partners) cannot be expected to be effective monitors, lest they suffer the wrath of the powerful CEOs they are supposed to oversee. In fact, this story was so compelling that the ensuing regulatory reforms focused heavily on director independence requirements. The Sarbanes-Oxley Act (SOX) of 2002 required audit committees to be comprised solely of independent directors. The NYSE and NASDAQ followed suit and expanded the requirement to nominating and compensation committees, and they mandated that the majority of directors on a board be independent.

Regulators and investors hoped that greater director independence would significantly improve corporate governance, but the independence mandates also risked interfering with firm's value-maximizing governance choices, such as impeding boards' role as advisors and reducing competition for the CEO position. Given these potential costs, at least some evidence of their purported benefits in the provision of corporate governance is needed.

If run-away CEO pay was a symptom of poor board oversight and director independence was the cure, as many believed at the time, then one would expect CEO pay to decline in firms that were not previously compliant with the new independence requirements relative to those that were already compliant. This is precisely what Chhaochharia-Grinstein (JF 2009) find. Specifically, in a sample of 865 large, publicly traded firms in the U.S., they estimate that board independence leads to a 17.5%

reduction in CEO pay. This result confirms that independent directors are effective at preventing managers from using their influence to increase their pay.

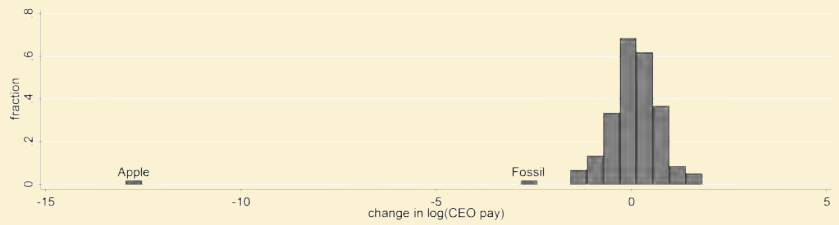
Chhaochharia and Grinstein's study proved highly influential, in part due to its empirical design. Comparing changes in pay between firms that were already compliant with the mandatory independence requirement and firms that were not compliant strengthens one's confidence in attributing the change in compensation to board independence. The effect of independence on pay does not merely reflect (i) permanent differences between compliant and noncompliant firms, (ii) other factors that might have induced firms to voluntarily adopt board independence, or (iii) common time trends in CEO pay.

Taking a closer look at the data

However, in our JF paper we show that Chhaochharia and Grinstein's results are misleading. Using those authors' data and methodology, we identify two noncompliant firms whose CEOs experienced unusually large decreases in their compensation around the board independence mandate: Apple's Steve Jobs and Fossil's Kosta Kartsotis. In other words, the causal effect of board independence on CEO pay identified by Chhaochharia and Grinstein reflects extraordinary events at two companies, but is not generalizable to other large publicly traded firms.

The outliers' influence on the average change in CEO pay becomes apparent in Figure 1. The histogram captures changes in CEO pay from the pre-event period (average over fiscal years 2000–2002) to the post-event period (2003–2005) among firms that had to make changes to their boards to be in compliance with the new regulations (hereafter,"noncompliant firm").

Figure 1: Logged compensation changes



Kosta Kartsotis (Fossil) and Steve Jobs (Apple) were extreme outliers. This had a large influence on the results in Chhaochharia and Grinstein.

Table 1 shows the compensation for Kosta Kartsotis and Steve Jobs from 1998–2011. Neither Kartsotis' nor Jobs' reduction in pay can be attributed to greater board independence. Motivated by Fossil's poor stock performance in the preceding year, Kosta Kartsotis urged his board to eliminate his $255,000 salary in 2005 (his total compensation dropped to $180 in life insurance premiums paid for by the company). At the time, Kosta and his brother Tom—founder of Fossil, former CEO, and chairman of the board in 2005—held about 30% of the firm's shares.

Table 1: CEO Pay at Fossil and Apple, 1998–2011

Year	Kosta Kartsotis	Steve Jobs
1998–1999	$255,035	$1
2000	$255,035	$600,347,351
2001	$255,021	$83,996,129
2002	$255,017	$93,016,179
2003	$255,324	$74,750,001
2004	$255,220	$1
2005	$180	$1
2006–2011	$0–$4,266	$1

In the second half of the sample, Kosta Kartsotis and Steve Jobs were compensated very differently from how they were compensated in the first half of the sample.

Similarly, after rejoining Apple in 1997 Jobs insisted that Apple's board routinely pay him $1. However, his total compensation rose to over $600 million in 2000 and fell back to the symbolic $1 in 2004. The temporary spike in Jobs' compensation in 2000–2004 reflects the reestablishment of his ownership stake in Apple—the company he co-founded, was forced to leave, and rejoined as savior in 1997—and an aircraft he was awarded in 1999 for his successful performance as interim-CEO.

Particularly noteworthy, Apple did not need to replace or add any directors to become compliant by 2003. Continuing director Millard Drexler turned "independent" in 2003, because his and Jobs' interlocking relationship ended (Drexler resigned as CEO of Gap Inc. in 2002 and Jobs quit his directorship a few days later). Consequently, Apple should not have been classified as a noncompliant firm and changes in Jobs' pay should not be attributed to the imposed independence requirement.

Table 2 shows just how sensitive the estimated effect of board independence on CEO pay is to removing the outliers (the estimates are imputed from multivariate regressions that account for differential changes in firm performance, as reflected in revenues, profitability, and stock returns, as well as industry effects). Columns 1 and 2 show that excluding the observations of Apple and Fossil (i.e., 12 out of 5,190 firm-year observations) reduces the estimated magnitude of the effect of board independence on CEO pay from –17.5% to –4.6%, which translates into pay cuts of $362,000 and $95,000, respectively, for a typical noncompliant firm's CEO. In other words, Jobs' and Kartsotis' compensation arrangements are responsible for three quarters of the originally reported effect of board independence on CEO pay. Removing them from the sample renders the estimate economically insignificant and statistically indistinguishable from zero.

Table 2: The effect of board independence on executive pay

CG's published results	Excluding Apple & Fossil	Non-CEO top executives
–17.5%	–4.6%	–3.1%

If mandating director independence really strengthened directors' bargaining positions vis-à-vis top executives, then we would also expect non-CEO executives' pay to decrease in noncompliant firms. After all, the same directors who negotiate CEOs' compensation packages are also responsible for the pay of other top executives. Column 3 shows that the independence effect on non-CEO executives' pay is an immaterial –3.1% (which is also statistically indistinguishable from zero).

Removing the outliers further reveals that executive pay rose in firms with noncompliant compensation committees relative to those with compliant committees. Two implications of these findings are worth emphasizing. First, our evidence suggests that decisions are reached at the committee level rather than the board level. Second, requiring independence improves executives' bargaining position.

Concluding remarks

What accounts for the rise in executive pay among those noncompliant firms? One potential explanation is that non-independent directors differ from independent directors in other dimensions that make them more effective monitors. For example, we find that only 3.2% of independent directors, but 35.6% of non-independent directors have voting rights of 1% or more in their firms. It is also plausible that the additional workload imposed by SOX and the exchange listing requirements pushed compensation issues down on the priority list, especially among noncompliant firms. Between 2001 and 2004, the meeting frequencies of audit and nominating committees almost doubled and quadrupled, whereas the meeting frequency of compensation committees remained just about unchanged. Even after satisfying the independence mandate, previously noncompliant firms have a lower representation of independent directors on their boards (58% on average in our sample) than compliant firms (77%). Their independent directors are more likely to be spread thin, as there are fewer of them to fulfill the committees' responsibilities.

In sum, having more independent directors on corporate boards does not seem to lead to lower CEO pay. Perhaps director independence is not the silver bullet to corporate governance problems it was thought to be. Perhaps the new independence requirements were not stringent enough. Or perhaps there was nothing to fix in executive compensation. Determining which of these interpretations is correct remains an open and pertinent research question.

Kobayashi Kiyochika (1847–1915): Sumida River by Night. Japan, 1881. The Smithsonian describes this serene painting as follows: "On September 3, 1868, the city called Edo ceased to exist. Renamed Tokyo ("Eastern Capital") by Japan's new rulers, the city became the primary experiment in a national drive toward modernization. Kobayashi Kiyochika, a minor retainer of the recently-deposed shogun, followed his master into exile. When he returned to his birthplace in 1874, Kiyochika found Tokyo filled with railroads, steamships, gaslights, telegraph lines, and large brick buildings—never-before-seen entities that were now ingrained in the cityscape. Self-trained as an artist, Kiyochika set out to record his views of Tokyo." Kiyochika's use of light and shadows—as opposed to the usual colorful cityscape—represents a new way of seeing, a new visual vocabulary. Kiyochika's prints experienced a revival in the 20th century as the symbol of a critique of modernity. This painting is part of the Robert Muller Collection at the Smithsonian, which has the most comprehensive collection of 20th-century Japanese prints.

Frederick L. Bereskin and David C. Cicero

CEO compensation contagion: Evidence from an exogenous shock

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Throughout 1995, there were a number of court rulings dealing with Delaware law that strengthened firms' ability to use poison pills to resist hostile takeover threats. A "poison pill" enables a firm to dilute a shareholder's stake in the firm when it crosses a certain threshold. The general objective of a poison pill is to enable a firm to resist a hostile takeover. The effect of a poison pill is particularly strong at a firm with a classified board, since the poison pill would generally necessitate the nominees of the hostile bidder to be reelected over two consecutive years. In 1995, Delaware court rulings provided increased validity to poison pills, and enabled managers of firms to "just say no" to threatened hostile takeovers. These developments in effect shielded CEOs from the pressures of the corporate control market, and may therefore have led to increased CEO entrenchment which could exacerbate agency problems under certain circumstances. The exogenous nature of these court rulings, and the fact that they only applied directly to a subset of firms, enables us to study their impact on CEOs ability to extract managerial rents. One of the most direct aspects of corporate contracting to examine in light of these legal changes is CEO compensation.

There are competing theories for how compensation might change in response to a change in takeover pressure. Under a hypothesis that boards of directors design compensation contracts that maximize shareholder value ("optimal contracting"), CEO compensation should not generally increase in response to the reduced likelihood of hostile takeovers. In fact, to the degree that these CEOs' tenures are less risky after the rulings, it is possible that optimal CEO compensation levels would decrease. In contrast, managerial entrenchment would suggest that CEOs with less vulnerability to hostile takeovers would have greater power to negotiate, or "skim", higher compensation.

Managerial compensation increases when laws protect managers

We show that firms susceptible to managerial entrenchment increased their CEO compensation after the Delaware legal rulings. These include Delaware-incorporated firms with staggered boards that do not have a large outside blockholder. Although the court rulings applied to all Delaware-incorporated firms, managers at firms with these conditions arguably enjoyed the greatest increase in protection since there is no powerful outside shareholder to counter management and a capture of the board of directors by a bidding firm following a failed hostile takeover would take multiple years. As a result of this unexpected, exogenous shock to their corporate governance system, we estimate that the decisions led to an increase in abnormal CEO compensation at these firms of approximately $694,000 (32.9%).

The exogenous nature of this shock to CEO compensation enables us to establish this result (and argue for causality) using a "differences-in-differences" methodology, where we examine the effect of

the shock on the treated group of firms compared to a group of control firms. We use this framework to identify changes over time in compensation across firms sorted by their susceptibility to the new rulings. The general form of our differences-in-differences regression is

$$y_{i,t} = \alpha_t + \beta_i + \gamma \cdot X_{i,t-1} + \delta_1 \cdot \text{Del}_i \times \text{ClassBoard}_i + \delta_2 \cdot \text{Del}_i \times \text{After}_t$$

$$+\delta_3 \cdot \text{Del}_i \times \text{ClassBoard}_i \times \text{After}_t + \epsilon_{i,t},$$

where i indicates firm; t indicates year; $X_{i,t-1}$ is a vector of firm-specific control variables; Del_i is defined as one if the firm is incorporated in Delaware as of 1994, and zero otherwise; ClassBoard_i is defined as one if the firm has a classified board as of 1994, and zero otherwise; and After_t is defined as one if the year is after 1995, and zero otherwise. The dependent variable of interest is the log of the total level of compensation. The coefficient of interest in our analysis is δ_3; this coefficient indicates how much of a change in compensation for Delaware-incorporated firms with staggered boards around the legal changes is different from the change observed among other firms.

Table 1: Effect of Delaware anti-takeover rulings on CEO compensation

Variable	Firms with no blockholder	Firms with blockholder
DelawareAfter	–0.257**	0.128
ClassBoardAfter	–0.056	0.085
DelClassBoardAfter	0.284**	–0.181
ScaledWPS	–0.173*	–0.168***
$\text{PPS}_{\text{Grant}}$	0.117***	0.121***
Other control variables	Yes	Yes
Firm fixed-effects	Yes	Yes
N	1,145	1,472
R^2	52.5%	64.6%

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

This table examines the determinants of CEO compensation prior to and following the legal rulings in 1995. The dependent variable is the natural log of total compensation. DelawareAfter is a dummy variable equal to one if the firm was incorporated in Delaware in 1994, and the year is 1997 or later. ClassBoardAfter is a dummy variable equal to one if the firm had a classified board in 1994, and the year is 1997 or later. DelClassBoardAfter is a dummy variable equal to one if the firm was incorporated in Delaware in 1994, had a classified board in 1994 and the year is 1997 or later. ScaledWPS is the scaled wealth-performance sensitivity from Edmans-Gabaix-Landier (RFS 2009) divided by 100. $\text{PPS}_{\text{Grant}}$ is pay-for-performance sensitivity derived from option and stock grants in that year. Other control variables included are discussed in our *JFE* article.

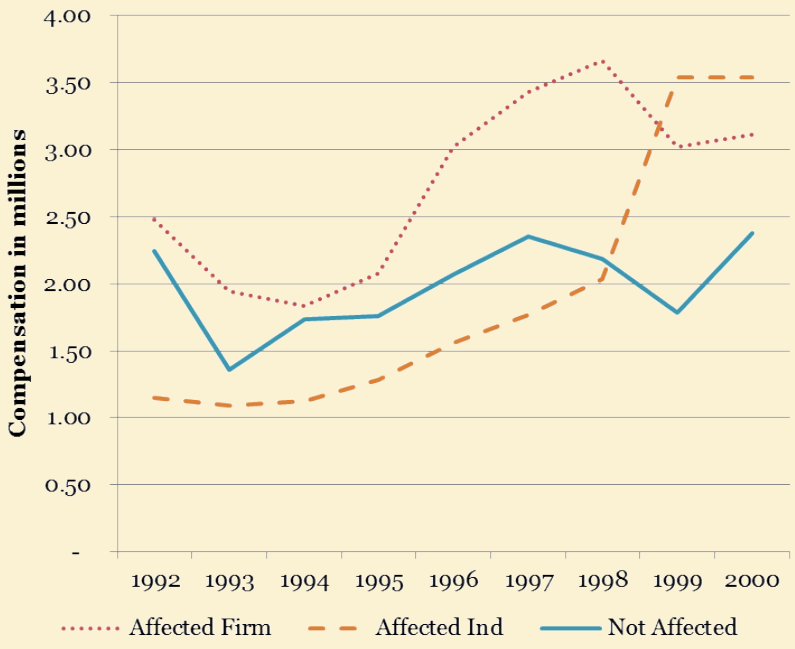
Table 1 shows that the effects of the rulings are concentrated among those firms that have less powerful external monitors (the full results, with additional robustness specifications of the table are in our paper published in the JFE). The first column of this table shows that CEOs at firms without blockholders receive higher compensation following the court rulings. The coefficient of DelClassBoardAfter in our first specification is 0.284, reflecting an increase in CEO compensation of

approximately $694,000 (32.9%) at affected firms, following the rulings. In contrast, we do not find significant evidence that CEOs at firms with blockholders experienced compensation increases. We also find that the increases in CEO compensation are larger among firms with weaker governance across other dimensions (measured with the level of CEO ownership, and the proportion of inside directors on the board).

Increased compensation also spreads to other firms

After identifying the increase in compensation among firms that are directly affected by the court rulings, we then show how these compensation patterns spread across other firms. We focus on firms in industries with a high proportion of firms that were directly affected by the Delaware legal rulings. This analysis follows from Gabaix-Landier (QJE 2008)'s model. Their highly cited paper develops a competitive equilibrium model of executive compensation and shows empirically that the average firm-size in the economy is a significant determinant of CEO compensation, because it proxies for CEOs' outside opportunities. Of most importance for our purposes, their equilibrium model also predicts a "contagion" effect, whereby competition for CEO labor causes a shock to compensation at a subset of firms to propagate through the economy. Gabaix and Landier suggest that even if 10% of firms pay their CEOs twice as much as competing firms, the compensation of all CEOs would double in equilibrium.

Figure 1: Compensation across affected groups, 1992–2000



This figure presents the median compensation across three groups of firms: (1) Delaware-incorporated firms with a staggered board and no blockholder ("Affected firm"); (2) firms that are not incorporated in Delaware, do not have staggered boards, and in which *at least* 10% of the firms in the two-digit SIC industry-group are Delaware-incorporated with a staggered board and no blockholder ("Affected ind"); and (3) firms that are not incorporated in Delaware, do not have staggered boards, and in which *less than* 10% of the firms in the two-digit SIC industry-group are Delaware-incorporated with staggered boards and no blockholder ("Not affected").

We test the "compensation contagion" hypothesis, focusing on the firms most likely to be *indirectly* affected by the court rulings: Firms not incorporated in Delaware without staggered boards that are only in industries with a significant proportion of firms that were directly affected by the rulings. We separate firms into three broad groups:

Affected firms group: Firms that are incorporated in Delaware, have staggered boards, and no blockholder;

Not affected industry group: Firms that are not incorporated in Delaware, do not have staggered boards, and less than 10% of firms in the SIC two-digit industry-group are "Affected firms";

Affected industry group: Firms that are not incorporated in Delaware, do not have staggered boards, and more than 10% of firms in the SIC two-digit industry-group are "Affected firms." (The median percentage of directly affected firms across industries for our sample period is 10%.)

Our compensation contagion results are best conveyed graphically. Figure 1 shows the sharp increase in CEO compensation among affected firms from 1994 to 1997, consistent with our first set of results discussed above. The figure also shows evidence of compensation contagion, in that CEOs of firms in the affected industry group also experience increased compensation, albeit with a two to three year delay. This finding is reasonable when considering the expected delays of both discovering the compensation at directly affected firms and entering into a new compensation contract.

Table 2: CEO compensation contagion

Variable	1992–1995, 1998–2000	1993–1995, 1998–2000	1992–1995, 1999–2000	1993–1995, 1999–2000
AffectedInd	–0.111	–0.101	–0.114	–0.105
AffectedIndAfter	0.294***	0.282***	0.337***	0.329***
Other control variables	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes
N	800	753	683	636
R^2	71.6%	72.3%	71.7%	72.5%

*, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

This table examines the determinants of CEO compensation prior to and following the legal rulings in 1995 for firms without staggered boards that are not incorporated in Delaware. The dependent variable is the natural log of total compensation. AffectedInd is an indicator variable equal to one if at least 10% of firms in the two-digit SIC industry-group have staggered boards, no blockholder, and are incorporated in Delaware. AffectedIndAfter is equal to one if AffectedInd equals 1 and the year is 1998 or later. Other control variables included are discussed in our JFE article.

In Table 2, we show that this contagion effect remains evident when implementing our regression specifications. The variable of interest, AffectedIndAfter, shows that firms that are in the "Affected

industry group" experience increased CEO compensation despite not being directly affected by the court rulings. The coefficients in this regression implies an approximate $616,000 (34.1%) increase in CEO compensation among firms in the Affected industry group, compared to firms in the Not affected industry group.

The final point in our summary is the relevance of our results for understanding the sharp increase in CEO compensation during the 1990s. Our estimates of abnormal CEO compensation across the economy during this period are considerably lower when one accounts for the impact of the Delaware legal rulings. In particular, average annual abnormal increases in CEO compensation are estimated at $741,000 without controlling for the impact of the legal rulings, compared to $570,000 otherwise. Thus, it is important to control for legal changes that impact the corporate-control environment when evaluating the determinants of CEO compensation.

In conclusion, we showed how firms' CEO compensation practices changed in response to exogenous changes at other firms with which they may have competed for executive talent. CEO compensation at a small subset of firms spread to competing firms. A portion of compensation increases during the 1990s appears to have been driven by such a shock that emanated from court interpretations of Delaware corporate takeover law.

Unknown artist: Khusraw discovers Shirin bathing in a pool (miniature in the manuscript by poet Nizami). Persia, 12th century. Nizami is a celebrated Persian poet from the 12th century. He wrote the famous tragic romance Khusraw and Shirin, which still permeates Iranian folklore and fine arts. The above scene is a famous moment: When King Khusraw lays his eyes on Princess Shirin for the first time, he falls in love with her. Due to several blunders, the lovers never really unite while alive, but are buried together. (Does them a lot of good, doesn't it?) Persian miniature art was widely used in manuscripts for illustrations. It influenced Mughal and Ottoman miniatures in India and Turkey. Some rare manuscripts and miniatures, including some of Nizami's, are owned by the Metropolitan Museum of Art in their Islamic Gallery.

Lucian A. Taylor

CEO wage dynamics: Estimates from a learning model

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This paper examines how learning about a CEO's ability affects the level of her pay. I find that CEO compensation responds asymmetrically to good and bad news: the average CEO captures approximately half of the surplus from good news about her ability, but completely avoids the negative surplus from bad news about her ability. This "downward rigid" pay does not appear to be a result of weak governance. Instead, it may be optimal for risk-averse CEOs who would like insurance against compensation decreasing in response to bad news. In return, risk-averse CEOs are willing to start at a significantly lower pay for this insurance. Since CEOs capture roughly half of the positive surpluses from good news, CEOs and shareholders appear to have roughly equal bargaining power over these surpluses.

There is a considerable debate over the level of executive pay and how it should respond to news about the CEO's ability. A number of scholars (Jovanovic (JPE 1979), Harris-Holmstrom (RES 1982), Gibbons and Murphy (JPE 1992)) argue that CEOs should capture 100% of the surplus from good news, because they could always threaten to take their skills elsewhere at no cost. A few papers (Gabaix-Landier (QJE 2008), Tervio (AER 2008), Alder (2009), Nguyen-Nielsen (2010)) provide estimates of how much CEOs capture from the value they create, and they find numbers varying widely between 2% and 80%. The difference in this paper is that I develop a measure for the surplus created by new information each year, and I allow the estimate of the CEO's share to be different when the surplus is positive and when it is negative. My findings also relate to the discussion on how much say CEOs have in their compensation, since CEOs' share of surplus reflects their bargaining power with shareholders. Finally, Harris-Holmstrom find that CEOs will accept lower wages in return for downward rigidity. In this paper I find that when CEOs are very risk-averse, the savings from these initially lower wages are large. The findings in this paper have implications for CEO compensation contracts, corporate governance and shareholder value.

The model

The approach in this paper is to fit a model to the data. The model consists of CEOs with different abilities. Shareholders and CEOs themselves learn about this ability over time, and use what they learn to update their beliefs about how much the CEO will contribute to future firm profits. The change in this perceived contribution, positive or negative, is a surplus that the CEO and shareholders split according to some predetermined ratio. For example, suppose that after a year of high profits we update our beliefs about a CEO's ability, and as a result the CEO's perceived contribution to next year's profits increases by $10 million. If the CEO obtains a $5 million raise for the following year, then the CEO captures half of the $10 million surplus and shareholders pocket the rest. One main result

of this paper is that the CEO's share of positive surpluses is roughly half, but her share of negative surpluses is zero. In other words, when new information suggests the CEO is well suited for the job, the CEO captures about half of the benefit of this positive information, on average. However when new information suggests the CEO is not well suited for her job, her compensation does not decrease in response, on average; she captures none of that negative surplus.

Next, I provide more details about the model and how I arrive at my conclusions. Again, CEOs are born with different ability levels that do not change over their tenure. No one knows what this ability level is, not even the CEOs themselves. Everyone learns about ability over time by observing two types of signals: the firm's realized profit and a shared, additional signal. The additional signal is unrelated to current profitability, and can be thought of as any additional information that an investor might use to judge the quality of a CEO: for instance, the specific actions and choices of the CEO, the performance of individual projects, the CEO's strategic plan, the firm's growth prospects, and media coverage.

The firm's profitability each year depends on CEO ability, aspects of the firm that do not change over time, and random shocks that hit the firm and its industry. At the end of each year, investors and shareholders observe realized profitability, as well as the additional shared information mentioned above, and use these two signals to update their beliefs about the CEO's innate ability.

A CEO's yearly compensation equals a pay level plus a random component that depends on the firm's stock return and the CEO's pay-performance sensitivity. The focus of this paper is the level of pay, not the random component that depends on the CEO's bonus and holdings of stock and options. The CEO's pay level is equal to the previous year's pay level plus the CEO's share of the surplus from learning. For example, suppose that last year's profits were lower than expected, causing the CEO's perceived contribution to next year's profits to drop by $20 million. If the CEO's pay level drops by $2 million compared to the previous year, we would say that the CEO "captures" 10% of the negative $20 million surplus.

I call the CEO's share of positive surpluses θ^{up} and her share of negative surpluses is θ_{down}, and I estimate the value of these two (and a few other) parameters. The data sample contains 20,700 firm-year observations and 4,545 CEOs from S&P 1500 firms from 1992–2007. I estimate parameter values using the simulated method of moments (SMM), an estimation technique that finds the parameter values that make the model match the data as closely as possible. Specifically, I ask the model to fit two main features of the data. First, I ask the model to fit the observed stock return volatility during a CEOs' tenures. In both the model and the actual data, stock return volatility decreases with CEO tenure. Second, I ask the model to fit the sensitivity of changes in the level of CEO pay to the previous year's stock return. In both the data and the estimated model, changes in pay are much more sensitive to positive lagged returns than to negative lagged returns. Overall, I find that the model fits the data quite well.

Results

I find that profitability is a very noisy signal of CEO ability, with the profitability shock's standard deviation estimated at about 36%. The additional shared signal however is much more precise, with a standard deviation estimated at about 3.3%. In other words, the additional signal of CEO ability is less noisy than the firm's profits. This result is consistent with research showing that investors use other signals beside profitability to judge CEO ability (Cornelli-Kominck-Ljunqvist (JF 2013), Taylor (JF 2010)). I also find that the standard deviation of prior beliefs about CEO ability is 4.1%, which

implies a difference in average profitability between the 5th and 95th percentile CEOs of 13.6% of assets per year, which is quite large.

The estimate of θ_{down} is not statistically significant from zero, while the estimate of θ^{up} is 48.9% with high statistical significance. In other words, CEOs avoid negative surpluses while capturing roughly half of positive surpluses.

With this model, I am able to run a counterfactual scenario to estimate the savings (or cost) to firms of having downward rigid pay. I ask how much more we would have to pay CEOs if their pay were not downward rigid. I compare the existing net cost to firms to a case where $\theta_{\text{down}} = \theta^{\text{up}} = 0.49$, meaning the CEO's share of a surplus is the same whether the surplus is positive or negative, i.e. about half. When the CEO's relative risk aversion is 0.5, fairly low, the average firm spends 13% ($7.3 million) more on CEO pay under this new scenario without downward rigidity. With a relative risk aversion of 4, the cost to the firm is multiplied by 7.6, representing a $356.4 million increase compared to the case with downward rigid pay. This amount is a non-negligible fraction of the average firm's assets. In sum, I find that we would have to pay CEOs significantly more if CEOs are sufficiently risk averse and if their pay were (counterfactually) not downward rigid. The reason why is that CEOs' pay would become much riskier if it were not downward rigid, so we would have to pay CEOs more to convince them to take the job.

It is also interesting to examine *why* surpluses are shared the way they are. To begin answering this question, I measure how parameter estimates vary across firms. I find that θ^{up} is significantly higher in firms with higher institutional ownership, a proxy for governance strength. This result undermines the notion that CEOs capture more of the surplus from positive news because of weak governance. Similarly, CEOs' share of the surplus from bad news (θ_{down}) does not increase with higher institutional ownership (in fact it seems to decrease, though not significantly so). In other words, CEOs avoid negative surpluses even in firms with strong governance.

Finally, I show that the paper's main conclusions are robust to a number of model extensions. First, I estimate the model using a new vesting measure that accounts for stock- and option-based compensation the year that it vests rather than the year it is granted. I find that pay is still downward rigid, and the share of positive surpluses is still close to half for the CEO, though higher at 68%. Second, I change the model to have the board of directors decide at the end of each year whether to fire or keep its CEO. The main model has CEO tenure pre-determined and independent of the CEO's performance. Again, the main conclusions are unchanged, with pay still downward rigid and θ^{up} at 49.4% compared to 48.9% previously. Third, where firm quality was previously a known and constant component, I allow it to be unobserved initially just like CEO talent. Agents learn about firm quality at the same time as they learn about CEO ability. The only parameter that changes significantly as a result is the estimated volatility of profitability shocks, which is expected to decrease since uncertainty about the firm's quality now accounts for some of the volatility in stock returns. I also discuss the effects of allowing persistent shocks to profitability (rather than one-year shocks as before), including effects from the turnover of non-CEO executives, and allowing earnings volatility, sharing rules and CEO ability to vary over time.

Conclusion

I estimate a model in which agents learn gradually about a CEO's ability, and the CEO and shareholders split the surplus resulting from a change in the CEO's perceived ability. CEO pay responds asymmetrically

to good and bad news about ability. The level of pay does not drop after bad news, implying the average CEO has downward rigid pay. This result is consistent with the model of Harris-Holmstrom (RES 1982), in which firms optimally insure employees by offering a long-term contract with downward rigid pay. I find that offering downward rigid pay allows firms to pay risk-averse CEOs significantly less, on average. Following good news about CEO ability, the level of pay rises enough for the average CEO to capture roughly half of the positive surplus. This result implies that CEOs and firms have roughly equal bargaining power over these positive surpluses, on average. The asymmetric response is significantly stronger in firms with more institutional ownership, suggesting the result is not driven by weak governance.

This paper's goal is to measure the surpluses from learning and how they are split. An important next step is to understand why surpluses are split the way they are. The cross-sectional analysis begins to answer this question, but there is still important work to be done. Also, this paper focuses on the level of CEO pay while abstracting from incentive compensation. Understanding how strong of incentives and what types of incentives managers should have continues to be an important area for future research.

Unknown artist: Bhutanese thanka of Mount Meru and the Buddhist Universe. Bhutan, 19th century. Bhutan is the only country to use Gross National Happiness as its official measure of economic progress. GNH was a term coined in 1972 by Bhutan's fourth Dragon King. It symbolized his commitment to modernization, balanced with preservation of its Buddhist spiritual culture. Bhutan's strong Buddhist foundations are expressed in the form of "thanka"—detailed and fine paintings with water color, mineral, or organic pigments on silk or paper, with Buddhist themes, with a typically circular arrangement. This thanka is displayed in the large fort of "Trongsa Dzong," now used for administrative purposes.

Richard W. Carney and Travers Barclay Child

Changes to the ownership and control of East Asian corporations between 1996 and 2008: The primacy of politics

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Emerging economies will account for half of the world's GDP by the end of this decade. China will probably overtake the United States as the world's biggest economy around that time. This raises a question: is the world also witnessing a shift from the age of liberal capitalism to the age of state capitalism? From 2004 through 2009, 120 state-owned companies made their debut on the Forbes list of the world's largest corporations, while 250 private companies fell off it. State companies now control about 90 percent of the world's oil and large percentages of other resources.

We systematically document the rise of state ownership in East Asia. We observe that state ownership has increased in eight of the nine countries in our sample (Singapore is the exception). Moreover, this phenomenon is not restricted to domestic firms—we reveal many cases of foreign state ownership as well. At the same time that state ownership has increased, family ownership has declined, although it remains the dominant type of corporate ownership.

We investigate changes in the ownership and control structures of East Asia's largest publicly traded companies from 1996 to 2008. Focusing on Hong Kong, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand, we gather data for 1,386 firms in 2008, which are among the largest 200 companies on each respective stock exchange. Ownership data for 1996 is provided by Claessens-Djankov-Lang (JFE 2000), and includes 1,606 listed firms in the same region.

Data

We determine the identity of ultimate owners possessing more than ten percent of outstanding shares, and a number of other corporate governance characteristics. In particular, we classify firms according to ownership type: whether they are widely held or owned by a family business group, a widely held financial institution, a widely held corporation, the state, or a foreign government. Additionally, we calculate the level of voting and cash flow rights enjoyed by each owner, whether a pyramidal ownership structure is in place, and whether the executive has any relation to the largest owner of the firm.

Table 1: Control (%) of publicly traded companies in East Asia

Country	Number of corporations	Widely held	Family	State	Widely held financial	Widely held corporation	Foreign State
1996							
Hong Kong	200	0.0	65.5	4.0	10.5	20.0	
Indonesia	178	0.6	68.6	10.2	3.8	16.8	
Japan	200	72.5	6.8	2.5	16.5	1.8	
Korea	200	26.0	51.8	6.8	4.3	11.3	
Malaysia	200	0.5	56.9	19.4	13.1	10.1	
Philippines	120	1.7	42.1	3.6	16.8	35.9	
Singapore	200	2.5	53.3	21.8	12.0	10.4	
Taiwan	141	2.9	65.6	3.0	10.4	18.1	
Thailand	167	2.2	56.5	7.5	12.8	21.1	
East Asia nine	1,606	13.3	51.6	9.2	10.9	16.1	
2008							
Hong Kong	158	6.3	60.6	28.0	3.5	0.9	0.6
Indonesia	132	3.8	57.3	14.1	3.6	13.4	7.8
Japan	136	57.4	9.6	6.3	6.6	19.1	1.1
Korea	159	28.9	54.5	6.9	2.7	6.0	0.9
Malaysia	154	2.6	51.5	39.7	1.4	2.2	2.6
Philippines	114	3.5	78.5	5.2	3.3	6.1	3.4
Singapore	131	8.4	60.2	20.5	3.8	1.7	5.3
Taiwan	163	57.1	13.8	9.2	2.5	17.5	0.0
Thailand	149	30.9	37.8	12.8	3.4	6.7	8.5
East Asia nine	1,296	22.9	46.1	16.2	3.4	8.2	3.3
Change							
Hong Kong		6.3	–4.9	24.0	–7.0	–19.1	
Indonesia		3.2	–11.3	3.9	–0.2	–3.4	
Japan		–15.1	2.8	3.8	–9.9	17.3	
Korea		2.9	2.8	0.2	–1.5	–5.3	
Malaysia		2.1	–5.4	20.3	–11.7	–7.9	
Philippines		1.8	36.4	1.6	–13.5	–29.8	
Singapore		5.9	6.9	–1.3	–8.2	–8.7	
Taiwan		54.2	–51.8	6.2	–7.9	–0.6	
Thailand		28.7	–18.7	5.3	–9.4	–14.4	
East Asia nine		9.6	–5.5	7.0	–7.6	–6.8	

Changes to ownership and control

Table 1 highlights key findings regarding changes in corporate ownership patterns. Across East Asia, family ownership has generally declined from 1996 to 2008, though it remains the most dominant form of ownership. Taiwan, Thailand, and Indonesia underwent the most pronounced shifts away from family business group control. By contrast, family groups in the Philippines actually strengthened their control; Japan, South Korea, and Singapore also saw no decline in the dominance of family ownership.

Meanwhile, state ownership has been on the rise. In 1996, only Singapore and Malaysia were characterized by high state ownership in publicly traded firms. Over the transition period to 2008, every country (except Singapore) experienced an increase in state involvement. Hong Kong, Malaysia, Taiwan, and Thailand had the most dramatic shifts, leading to a seven percent rise in the amount of East Asian firms controlled by the state. Foreign state ownership also emerged as important, especially in Thailand and Indonesia. In terms of outward foreign investment by the state in other countries' listed firms, Singapore and Malaysia were the biggest regional players.

We determine whether the patterns we observe are driven by changes within firms, or the set of a nation's largest publicly traded firms has itself changed. To answer this, wherever possible we trace the historical evolution of each firm in our dataset. Indeed we find that firms in the 1996 dataset underwent changes in ownership consistent with the patterns outlined above. In the wake of the Asian Financial Crisis, many family-owned firms went bankrupt, and the state gained majority control of others. At the same time we observe a change in the composition of newly listed firms, with a relatively large number of state-owned firms appearing on the scene.

While the East Asian economies have undergone considerable change in terms of corporate ownership, the manner in which stakeholders consolidate control over their firms has remained relatively static. The separation of ownership and control, as measured by the ratio of cash flow rights to voting rights, underwent little change. Family business groups still tend to leverage control more than the state and widely held institutions. The separation of ownership and control has increased the most in state-owned firms, however, especially when the firm is listed abroad.

Other means by which ultimate owners enhance control include: pyramidal ownership structures, where shares are held via another publicly traded firm; exclusive ownership arrangements in which a single entity controls over ten percent of company stock; and blood or employment relations with firm executives. With the notable exceptions of Thailand and South Korea, the use of pyramids has generally declined, amounting to a ten percent drop across the region. However, such pyramidal and cross-shareholding arrangements play an important role in accounting for widely held ownership in Japan, Korea, Taiwan, and Thailand. At the same time, exclusive ownership arrangements have risen 42% on average. As in 1996, around 70% of firms in 2008 employed executives with either a blood relation to the controlling family or previous employment history with a widely held owner.

The primacy of politics

Significant changes to the prevailing forms of corporate ownership have only emerged when dramatic changes to the political system have also occurred. As displayed in Table 2, important political changes occurred in several countries at the end of the 1990s, including Hong Kong, Indonesia, Taiwan, and Thailand. In each of these countries, ownership shifted in a new direction. In Hong Kong, the handover to China in 1997 corresponded to a major increase in the prevalence of state ownership. In Indonesia, the collapse of the Suharto regime in 1998 was followed by a decline in family ownership. In Taiwan, the Kuomintang's 55-year reign came to an end in 2000 and we observe a dramatic decline in family business group control. In Thailand, the 1997 Constitution (drafted by the first popularly elected Constitutional Drafting Assembly) created a directly elected bicameral legislature and was followed by a large fall in family ownership as well as a substantial increase in widely held ownership.

By contrast, the other countries that experienced little or no political change did not witness major shifts in the prevailing pattern of corporate ownership. Where change did occur, it tended to reinforce the pre-existing dominance of certain ownership types. In Japan, no political transformation occurred comparable to the above, and corporate ownership simply shifted between two forms of widely held ownership. Korea faced tremendous pressures to reform its corporate governance practices in the wake of the 1997 financial crisis, but the country did not experience major political change in terms of fundamentally new institutions or the decline of a regime; we observe the dominance of family and widely held ownership prevailing in 2008. Malaysia also suffered some of the worst effects of the financial crisis, yet the political regime remained intact; we witness a further consolidation of state control over publicly listed firms. The Philippines also faced substantial problems in the wake of the Asian Financial Crisis, but again there were no major political changes comparable to those countries discussed above. The corporate ownership arrangements simply reinforced prevailing patterns, corresponding to a substantial increase in family ownership. Singapore, by comparison, went relatively unscathed by the financial crisis, its political system went unchanged, and its ownership arrangements did not exhibit any major shifts between the two points in time, with family and state ownership predominating.

Table 2: Political changes and ownership changes

Country	Political Change	Ownership Change
Hong Kong	Handover to China in 1997	Significant increase in state ownership where there was previously almost none
Indonesia	End of Suharto regime and democratization ensuing in 1998 with a new constitution	Decline in family ownership
Japan	No change	Neutral change; a decline in widely held ownership matched by a rise in ownership by widely held corporations
Korea	Little change	Small changes to ownership arrangements
Malaysia	No change	Rise in state ownership reinforces pre-existing importance of the state
Philippines	No change	Rise in family ownership reinforces pre-existing importance of families
Singapore	No change	Little change
Taiwan	End of the Kuomintang's 55-year rule in 2000	Significant decline in family ownership matched by significant rise in widely held ownership
Thailand	Democratization ensues in 1997 with a new constitution	Significant decline in family ownership matched by significant rise in widely held ownership

The findings suggest that implementing corporate governance reforms that lead to greater widely held ownership is often accompanied by political reform. A second important finding is that state ownership is on the rise across all types of political regimes. New forms of state capitalism are emerging across East Asia in which the merits of the state are blended with those of the market.

Marc Chagall (1887–1985): The Fiddler, Russia, 1912. Chagall is often described as a "quintessential Jewish artist." The motive of this painting is from the Sholem Aleichem's book "Tevye and his Daughters," later popularized in the Fiddler on the Roof. It is the story of a poor religious Jewish family in Tsarist Russia. Chagall's paintings often reflected themes from his Hassidic Jewish childhood in Russia. Chagall and many other Jewish artists became so popular after World War I that it has been almost forgotten that visual art was not a traditional part of Jewish culture before the 18th century, unlike music and theater. The traditional rabbinical interpretation considered visual art to be "graven images." This changed when the Jewish community assimilated into Eastern Europe and later into the Western modern art movement. Is this Eastern or Western Art? We couldn't decide, but when the referee (Swati Desai) asked us to include it, we had no choice.

Chitru S. Fernando, Anthony D. May, and William L. Megginson

The value of investment banking relationships: Evidence from the collapse of Lehman Brothers

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The question of whether firms derive value from investment banking relationships has received considerable attention in the literature, especially since the increasingly competitive market for investment banking services would suggest that firms can switch investment banks costlessly. Extant research has failed to come up with an unambiguous answer, due in part to the difficulty in measuring the value of relationship capital.

In our JF paper, we examine whether investment bank-client relationships create valuable relationship-specific capital for client firms, using stock market evidence from the period surrounding the collapse of Lehman Brothers. The sudden collapse of Lehman Brothers on September 14, 2008 (then the fifth largest investment bank in the world) provides a unique natural experimental setting to measure the value of the relationships that client firms had with Lehman. Whereas large U.S. financial institutions in distress have almost invariably been prevented from declaring bankruptcy by being acquired by other large institutions (often with the intervention of the U.S. government), Lehman was explicitly allowed to fail. This unprecedented collapse was all the more shocking since Barclays Bank had been negotiating an acquisition with Lehman's managers right up to Saturday, September 13, 2008, the day before Lehman announced the largest bankruptcy filing in U.S. history. When stock market trading resumed on Monday, September 15, 2008, Lehman's stock lost virtually all its value, the U.S. stock market experienced one of its worst single-day losses, and the entire global financial system was pushed to the edge of collapse.

Lehman's equity underwriting clients suffered significantly

We examine how the Lehman collapse affected industrial firms that received underwriting, M&A advisory, analyst, and market-making services from Lehman by studying how their stock prices reacted on Monday, September 15 and over various short-term windows around that day. We address two specific research questions: First, did Lehman's collapse impact its investment banking (IB) clients over and above the impact the firm's collapse had on the equity market in general, and second, did the impact of Lehman's failure vary with the type of IB service received, client characteristics, and/or the strength of the client's relationship with Lehman? These questions are central to understanding how intermediaries create value for their clients. To our knowledge, this is the first study that attempts to isolate the value of the investment bank relationship to clients using a broad group of client firms and all major investment banking services.

In conducting our event study, we begin by constructing samples of firms that correspond to the following categories of investment banking services provided by Lehman: (1) equity underwriting, (2) debt underwriting, subdivided into straight and convertible debt clients, (3) M&A advising, (4) market making on the New York Stock Exchange (NYSE), and (5) equity analyst coverage. We use Securities Data Corporation's (SDC) Global New Issues databases to identify firms that employed Lehman as the lead or co-lead underwriter in at least one public equity, straight debt, or convertible debt offering made in the U.S. market during the ten years preceding Lehman's bankruptcy. We use SDC's Mergers and Acquisitions database to identify acquiring firms that used Lehman as a financial advisor in at least one completed acquisition of a U.S. target announced during the same time period. We identify firms for whom Lehman was the NYSE specialist at the time of the bankruptcy using the NYSE Post and Panel file and firms covered by a Lehman equity analyst at the time of the bankruptcy using Thomson's I/B/E/S database. We confine our samples to non-financial, non-utility firms listed in the Center for Research and Security Prices (CRSP) and Compustat databases with publicly traded common stock (CRSP share codes of 10 or 11). We also screen our samples and exclude a small number of firms that disclosed material derivatives or other financial exposure to Lehman in their SEC filings.

Using standard models of abnormal stock returns, which adjust for overall market movements and firm risk, we estimate the abnormal returns of Lehman's client firms during the day of and days surrounding September 15 (the day of Lehman's formal bankruptcy filing). The table below tabulates the average cumulative abnormal stock returns (CARs) of Lehman's client firms during a period that spans five trading days prior to one trading day after September 15. The abnormal returns are estimated using a four-factor model that includes market, size, book-to-market, and return momentum factors.

Table 1: Cumulative Announcement Returns (CAR) by client category

Client Category	Average	#Firms
Equity underwriting	–4.85%***	184
Straight debt underwriting	–0.37%	53
Cvt. debt underwriting	–5.25%	7
M&A advisory	+1.30%	87
NYSE Specialist	+0.03%	151
Lehman Analyst	–0.38%	633

Equity issuers having used Lehman for equity underwriting lost 4.85% of their market value from one week before to one day after Lehman's bankruptcy. Other effects were small and/or rare.

As shown in the table, we find that firms that used Lehman as lead underwriter for one or more equity offerings during the 10 years leading up to September 2008 suffered economically and statistically significant negative abnormal returns. The 184 equity underwriting clients that we study lost 4.85% of their market value, on average, during the period that spans the week before to one day after Lehman's bankruptcy filing, amounting to approximately $23 billion in aggregate, risk-adjusted losses. We arrive at similar value loss estimates and conclusions using alternative return generating models, which are

reported in our JF article. Using linear regression methodology, we also find that losses were especially severe among equity underwriting clients that had stronger and broader underwriting relationships with Lehman, including those that floated a large number of equity offerings with Lehman and those that also engaged Lehman for debt and convertible debt underwriting. Losses were also higher for smaller, younger, and more financially constrained firms. As shown in the preceding table, none of the other client groups were significantly adversely affected by Lehman's bankruptcy, on average.

These results show that Lehman's collapse did, in fact, impose material losses on its customers, but for the most part these losses were confined to those companies that employed Lehman for equity underwriting. Furthermore, to the extent that investors partially anticipated Lehman's failure prior to the days surrounding Lehman's bankruptcy announcement, these estimates may actually understate the losses suffered by Lehman's equity underwriting clients. More broadly, these results tell us that underwriting is the principal portion of the overall investment banking relationship that is irreplaceable without significant cost and whose value will be forfeited if the relationship were to be involuntarily ruptured. While most of the investment bank services we study have potential to create relationship-specific capital, our findings suggest that except for equity underwriting, all the other investment bank services appear to be transactional rather than relationship-based. Indeed, even across Lehman's equity underwriting clients, our cross-sectional analysis shows that an equity underwriting relationship with Lehman was especially valuable for firms that had a high degree of dependence on Lehman to access the capital market, especially smaller, younger, and more financially constrained firms. This finding also implies that larger and financially stronger firms (who typically generate the highest volume of business for investment banks) adopt a relatively more transactional stance toward investment banks, even when they seek equity underwriting services.

This study has significant implications for investment banks and the corporate clients they serve. While clearly establishing the presence of relationship-specific capital in equity underwriting, the findings highlight the importance for investment banks of establishing and maintaining reputation, which persists as the primary means by which investment banks can attract and retain higher quality clients. At the same time, however, equity underwriting client firms that switch banks should factor in the cost of any lost relationship-specific capital in their decision to switch.

Goddfried Lindauer (1839–1926): Portrait of Hinepare (Maori). New Zealand, 1890. Painting Maori subjects in a European style was a distinct New Zealand art form in the 19th century. This Maori woman wore chin decorations, jade jewelry, and a woven cloak. (Are these rabbit ears?) The portrait artists usually came from Europe. Lindauer was one of them. Several Maori chiefs commissioned him to paint their portraits. New Zealand's most exported wine, Lindauer, is named after this artist.

Viral Acharya and Hassan Naqvi

The seeds of a crisis: A theory of bank liquidity and risk taking over the business cycle

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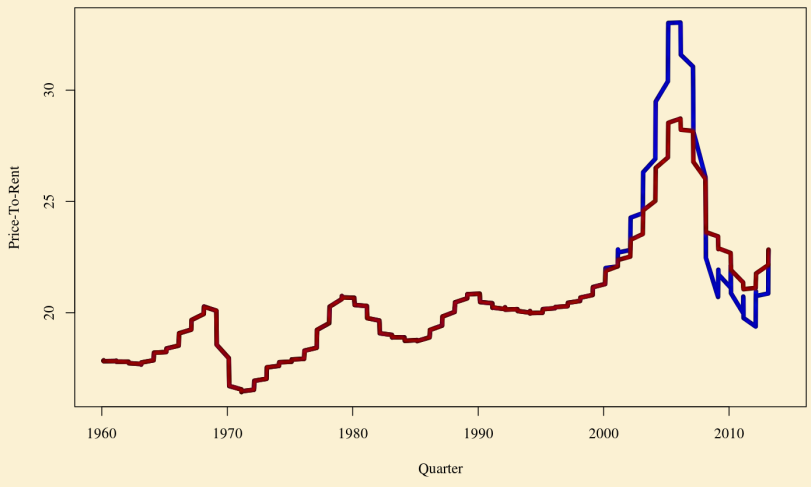
The global economy experienced interesting times after the bursting of the NASDAQ bubble in 2002. The Federal Reserve ran a loose monetary policy subsequent to the burst of this bubble. More specifically the Fed Funds rate dropped from 5.98% in January 2001 to 1.73% in January 2002 and stayed in this region till the end of 2005. Easy availability of credit fuelled U.S. asset prices. The ratio of debt to national income in the U.S. went up from 3.75-to-1, to 4.75-to-1 in the five-year period from 2002 to 2007. During this time house prices increased at a rate of 11% per year. As shown in Figure 1, during this period the house price to rent ratio increased at an alarming rate. The increase in house prices continued until mid-2006, after which there was a steep decline in housing prices.

Figure 1: Price-to-rent ratio, loan performance HPI, and BLS owners' equivalent rent



House prices had increased to unusually high price levels by 2008.

In our JFE paper, we argue that the influx of liquidity in the banking system sowed the seeds of the financial crisis. Traditionally liquidity has been thought of as a panacea whereby an influx of liquidity into banks is tantamount to a healthier banking system. However, as Lord Turner, Chairman of the

Financial Services Authority, aptly put it, "We need a new philosophical approach... which recognizes that market liquidity is beneficial up to a point but not beyond that point..." (Financial Times, 2010)

Liquidity shields banks from failure, but managers push more loans

We show in our paper that excessive bank liquidity distorts managerial incentives and perpetuates an agency problem inside banks. In practice, bank managers have an incentive to give out excessive loans because their compensation is increasing in the volume of loans advanced. The Bureau of Labor Statistics finds that "most (loan officers) are paid a commission based on a number of loans they originate." (BLS, Occupational Outlook Handbook, 2008–2009). Since the compensation of bank managers is tied to loan volume rather than long run profitability bank managers usually have an incentive to engage in excessive lending.

A study by the Office of Comptroller of Currency (OCC) found that "management driven weaknesses played a significant role in the decline of 90% of the failed and problem banks the OCC evaluated. ... Directors' or managements' overly aggressive behavior resulted in imprudent lending practices and excessive loan growth." (OCC, 1988). More starkly the OCC found that 73% of the failed banks had indulged in excessive lending. Similar evidence came to the fore after the financial crisis of 2007–2009 when it was revealed that in the period preceding the crisis mortgage lenders, traders and risk centers in most of the financial institutions had been receiving substantial bonuses based on the size of their risky positions, rather than their long-run profitability.

We setup a model whereby the bank hires a risk-averse manager. The manager needs to exert effort in order to sell loans but nevertheless the bank can also punish the manager if he acts over-aggressively by issuing too many loans.

The bank depositors experience liquidity shocks and can thus withdraw their money from the bank early. If too many depositors run and withdraw early and the bank has insufficient reserves to service the withdrawals then the bank faces a penalty cost proportional to the liquidity shortage that it suffers. The penalty cost can be interpreted as a fire-sales cost of having to prematurely liquidate its assets to service withdrawals or alternatively it can simply be that the bank needs to get emergency funding from the central bank from its discount window at penal rates.

Subsequent to any early withdrawals by the depositors the bank can decide whether or not to conduct an audit in order to infer if the manager had acted over-aggressively by indulging in excessive lending. However, such audits are costly and thus the bank will not have an incentive to audit in all states of the world. If an audit is carried out and in the event that it is inferred that the manager had acted over-aggressively then the bank can punish the manager by imposing a penalty.

In this setup we show that the optimal contract offered to the manager is such that it maximizes the expected net profits of the bank subject to the participation constraint (which ensures that the manager accepts the contract) and the incentive constraint (which ensures that the manager has an incentive to exert effort in order to sell loans) and a limited liability constraint (which imposes an upper limit to any penalties imposed on the manager).

It can then be shown that the managerial compensation contract is such that bonuses are increasing in loan volume. Furthermore, the principal conducts an audit only if the liquidity shortfall suffered by the bank is sufficiently large. Intuitively, the managerial bonuses are increasing in loan volume so that the manager is incentivized to exert effort. Also, if the liquidity shortfalls are substantial then that

sends a signal to the principal that the manager had most likely acted over-aggressively and given out too many loans. Thus the bank has an incentive to conduct an audit if the liquidity shortfalls are high enough. On the other hand, for insignificant or no liquidity shortfalls the bank avoids conducting a costly audit given that the likelihood of the manager having acted over-aggressively is low.

Aggressive lending can lead to asset price bubbles

The bank manager clearly faces a trade-off. If he acts over-aggressively he can potentially earn higher bonuses. However, if he acts over-aggressively and gets caught in the process then he is punished in which case he is worse off. The manager resolves this trade-off by acting over-aggressively only if the bank has sufficiently high liquidity (in the form of higher deposits) to begin with. This is because if ex ante bank liquidity is high then the likelihood of a liquidity shortfall is lower and hence the bank manager is more likely to get away from issuing excessive loans. On the other hand, if bank liquidity is already low to begin with and on top of that the manager issues excessive loans then the bank is more likely to conduct an audit in which case the manager will get caught. Given these results it can then be showed that an asset price bubble is created for high enough bank liquidity.

Bubbles are more likely when investors sense increased risk...

We argue that asset price bubbles are more likely to be formed when macroeconomic risk is high enough. Intuitively, if the macroeconomic risk is sufficiently high then investors prefer to deposit their endowments in banks rather than making direct entrepreneurial investments. This is because bank deposits are perceived to be safer investments vis-á-vis direct entrepreneurial investments especially in the presence of deposit insurance. Even in the absence of deposit insurance entrepreneurial moral hazard is likely to be high in bad times and hence it is more efficient for the investors to invest in banks during these times rather than face duplication of monitoring costs. Empirical evidence supports our hypothesis. Gatev-Strahan (JF 2006) find that as spreads in the commercial paper market increase, bank deposits increase because investors are more apprehensive of the risk in the corporate sector when macroeconomic risk is high.

...and when central banks inject liquidity

Bubbles are also more likely to be formed when the central bank injects liquidity into the banking sector by adopting a loose monetary policy. Historical evidence supports this. For instance, in the late 1980s a property bubble was formed in Finland and Sweden when the monetary authorities steadily expanded credit in the economy. In Japan a real estate was bubble subsequent to a loose monetary policy adopted by the Bank of Japan in 1986. In the United States, the housing bubble was formed after the Fed reduced the federal funds rate to 1% in 2003. Our model suggests that a central bank pursue a "leaning against liquidity" approach, i.e. expand credit during times of a liquidity crunch (in order to boost investment) but to adopt a contractionary monetary policy when banks are awash with liquidity so as to draw out their excess reserves.

Anak Agung Gde Anom Sukawati: Photo of the Painting 'Mask Dancer'. Bali, 1966. Our final piece is a painting from Bali. Balinese paintings have had international patronage since the 1930s, even before the movie Eat, Pray, and Love. Past patrons included famous visitors such as Charlie Chaplin and Margaret Mead. Bali became an enclave for Western artists, who brought secular themes, individual expression, better paper, and better techniques to the traditional Balinese intricate, dramatic, and busy painting style. Balinese paintings from this amalgamation are now called "Modern Traditional Balinese Paintings". Even today, Bali has a thriving visual art scene that produces such paintings for the Western tourists—sometimes mass-produced in China.