



# Why is public company director pay different from private equity pay?

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Most institutional investors and their advisors view public companies and private equity as completely separate entities, each with their own ground rules. Each of these worlds has its own model of corporate director pay: market pay with 60% of pay in annual equity grants for public company directors and “2 and 20” for private equity. Most institutional investors and their advisors seem to believe that there is no way to compare the two approaches and no insight to be gained by trying to do so. In this paper, I will present an analytical framework that institutional investors and their advisors can use to compare the two models and show that there is great insight to be gained, for both approaches, by comparing the two. I’ll present evidence, using the framework and two highly regarded perfect pay plans, to show that neither approach is optimal for its setting and that both approaches could be improved by borrowing concepts from the other. In the final section of the paper, I’ll show some very limited signs of convergence and try to explain why the two separate approaches have persisted with so little effort at integration.

### **ISS and ILPA don’t provide the measures needed to compare public companies and private equity**

Institutional Shareholder Services (ISS) and the Institutional Limited Partner Association (ILPA) are the leading advisors to institutional investors on public companies and private equity, respectively. A brief comparison of their policies helps us understand why there is a “completely separate entities” view with little effort at reconciliation. While ISS and ILPA both say that “alignment” is their most important objective, they have different perceptions of alignment. ISS says that companies should “maintain appropriate pay-performance alignment”. It defines this as “peer group alignment” which is “the degree of alignment between the company’s annualized TSR rank and the CEO’s annualized total pay rank within a peer group.”<sup>(1)</sup> Pay and performance are mis-aligned when the CEO’s pay rank is greater than its TSR rank. ISS doesn’t view alignment as the correlation of individual company pay and performance over time. It views high cost as mis-alignment and focuses on controlling cost with little adjustment for performance. One of its three measures of “relative alignment”, Multiple of Median (MOM), compares CEO compensation to peers with no adjustment for performance.

ILPA says “alignment of interest is best achieved when the GP’s wealth creation is primarily derived from a percentage of profits generated from the GP’s substantial equity commitment to the partnership, after LP return requirements have been met.”<sup>(2)</sup> The ILPA principles don’t use the word “correlation” but its emphasis on fixed sharing of profits – which leads to a high correlation of pay and performance for an individual fund over time – suggests that it views alignment as correlation. While ISS has detailed mechanics for identifying peer groups and calculating excess compensation, ILPA has limited and quite general statements about cost. It says only that “fees should be reasonable and based on the normal operating costs of the fund.”<sup>(3)</sup> Neither ISS nor ILPA appears to use any measure of incentive strength, i.e., the sensitivity of pay to performance.

In sum, ISS focuses on cost while ILPA focuses on fixed sharing. There is no reason to believe that fixed sharing is unimportant in public company pay or that cost is unimportant in private equity pay. ISS and ILPA both need an analysis that allows them to measure four basic pay dimensions: incentive strength, alignment, performance adjusted cost and relative pay risk. I’ll show that the failure of ISS and ILPA to measure pay dimensions has had two negative consequences for institutional investors: first, the directors who follow the public company model have surprisingly weak and erratic incentives because ISS (and most institutional investors) don’t appreciate that setting target pay at market regardless of past performance undermines the incentive provided by equity compensation. Second, there has been very limited progress in improving on the 2 and 20 formula because the ILPA doesn’t provide a model pay plan that highlights changes that would significantly increase alignment or reduce performance adjusted cost. Important changes include eliminating carried interest for market performance and offsetting the management fee against the performance fee.

### **A few legal scholars have sought to learn by comparing public company and private equity governance**

While private equity practice is often dismissed as irrelevant to public companies<sup>(4)</sup>, several legal scholars have sought to draw on private equity corporate governance practice to improve public company governance and director compensation. Using practices in private equity (or public companies) to improve practices in public companies (or private

equity) is exactly what institutional investors (and their advisors) should be doing. But, so far, the mindset that they are completely separate entities with no lessons for each other has dominated institutional investor thinking.

In 2014, law professors Stephen M. Bainbridge of UCLA and M. Todd Henderson of the University of Chicago published “Boards-R-Us: Reconceptualizing Corporate Boards”<sup>(5)</sup>, and in 2020, law professors Ronald J. Gilson of Stanford University and Jeffrey N. Gordon of Columbia published “Board 3.0: What the Private-Equity Governance Model Can Offer to Public Companies”.<sup>(6)</sup> Both legal scholar teams start from the premise that most public company independent directors lack the time, knowledge, information and motivation to effectively monitor management. Bainbridge and Henderson argue that “independent directors tend to be generalists with little firm-specific knowledge, skills, or expertise. Modern boards thus tend to be ‘composed of individuals who are not qualified to assess the strategic viability of the corporations they direct’.”<sup>(7)</sup> Gilson and Gordon argue that independent directors are “heavily dependent on company management for information” and limited to using the stock price to evaluate management performance because they lack the detailed knowledge needed to evaluate management’s operating performance. “In large part because of these informational disadvantages,” they note, “we have seen a recurrent pattern in which boards composed of talented and successful people fail to monitor effectively the corporate managements they are charged with overseeing.”<sup>(8)</sup>

Both legal scholar teams argue that public company directors, to be more effective, need to function as a group and have access to additional staff. Bainbridge and Henderson argue for allowing firms – what they call Board Service Providers (BSPs) – to serve as directors. They “expect BSPs to have better access to information than do individual directors. Not only is the BSP likely to have better information about the firm it is serving, it will also have much more information about the particular questions it is considering, whether they be about compensation, strategy, finance, or the like.”<sup>(9)</sup> Gilson and Gordon, unlike Bainbridge and Henderson, don’t propose that a firm be a director but they do argue that the “empowered” directors all sit on a new “Strategy Review Committee” and control an internal “strategic analysis office”.<sup>(10)</sup>

Both legal scholar teams believe that their new directors should and will have stronger financial incentives to improve company performance than public company directors currently have. This is, in part, because group affiliations will strengthen incentives. Bainbridge & Henderson argue that “if an individual makes a decision, then only the individual’s reputation is at stake; if a firm of one hundred individuals make the same decision, the reputation of the entire firm is at stake....the stakes are one hundred times greater in the case of a firm making the decision.”<sup>(11)</sup> They conclude that BSP directors will have “higher-powered incentives.”<sup>(12)</sup> Gilson & Gordon say that “the 3.0 directors would be paid principally in the form of long-term stock based compensation”, but note that “since the 3.0 director would be a mid-career professional, additional implicit incentive would come from establishing a reputation for fostering and enhancing value creation for the company.”<sup>(13)</sup> They conclude that 3.0 directors will have “high-powered compensation”.<sup>(14)</sup>

### **We can use wealth leverage to measure director incentives in public companies and private equity**

Comparison with private equity leads both legal scholar teams to conclude that public company director incentives should be stronger, either “higher-powered” or “high powered”, but neither team makes an effort to measure public company director or private equity incentives. We’ll now measure public company and private equity incentives using two approaches: wealth leverage and pay leverage. We’ll start with wealth leverage because it’s easy to calculate and more intuitive than pay leverage. It gives us a good sense of differences in incentive strength, but it doesn’t give us three pay dimensions we get from pay leverage: alignment, performance adjusted cost and relative pay risk.

Wealth leverage is the ratio of percent change in director wealth to percent change in shareholder wealth.<sup>(15)</sup> We think of director wealth as the present value of expected future pay just as we think of shareholder wealth as the present value of expected future cash flows. We’ll make the simplifying assumption that the director’s wealth is limited to pay over the next ten years. For the private equity director, that’s the life of the fund. For the public company director, we assume ten years of tenure as a director. We’ll assume that the private equity fund has a market value of \$1 billion, so the director has a ten

**Figure 1 – Wealth leverage at the start of year 1**

|                                                   | Public Company Director |                   |                 | Private Equity Directors |                   |                 |
|---------------------------------------------------|-------------------------|-------------------|-----------------|--------------------------|-------------------|-----------------|
|                                                   | Dollars (\$000)         | Percent Of Wealth | Wealth Leverage | Dollars (\$000)          | Percent Of Wealth | Wealth Leverage |
| Company/fund market value                         | 1,000,000               |                   |                 | 1,000,000                |                   |                 |
| Director market pay                               | 193                     |                   |                 |                          |                   |                 |
| Retainer/annual asset fee                         | 77                      |                   |                 | 20,000                   |                   |                 |
| Percent of pay in equity/carried interest percent | 60%                     |                   |                 | 20%                      |                   |                 |
| Present value of fixed pay                        | 624                     | 40%               | 0.00            | 162,156                  | 66%               | 0.00            |
| Outstanding equity/carried interest               | 116                     | 7%                | 1.00            | 84,955                   | 34%               | 1.79            |
| Present value of future equity                    | 821                     | 53%               | 0.00            |                          |                   |                 |
| Total wealth                                      | 1,561                   |                   | 0.07            | 247,112                  |                   | 0.62            |

year option on \$1 billion of value and an annual asset fee of \$20 million. In practice, many partners of the private equity firm would be sharing in this pay but they would all have similar wealth leverage so we can treat them all as one person for our wealth leverage analysis.

### Public company director wealth leverage at the start of year 1 is only 0.07

Figure 1 shows the calculation of wealth leverage for the public company and private equity directors. For the public company director, we use company size – \$1 billion in market value – to calculate market pay for the director, \$193,000.<sup>(16)</sup> The director receives 40% of market pay in cash and 60% in equity. Once the first year equity grant is made, the director's wealth has three components: the present value of the cash retainers, the outstanding equity grant and the present value of the future equity grants. The present value of the cash retainers is \$624,000 using a risk-free discount rate of 5%. The outstanding equity grant has a value of \$116,000 (60% of market pay) and the present value of the future equity grants is \$821,000 using a risk-free discount rate of 5%. A risk-free discount rate is appropriate for the future equity grants because they will always be 60% of future market pay (which we assume is constant). The director's equity grant has leverage of 1.0 because a 1% change in shareholder wealth increases the value of the equity grant by 1%, but the other two components of the director's wealth have leverage of 0. Since the outstanding equity grant only represents 7% of the director's wealth, the public company's wealth leverage in year one is only 0.07.

### Private equity director wealth leverage at the start of year 1 is 0.62, 9x greater

Figure 1 shows that the private equity director's wealth leverage is almost nine times greater, 0.62. The private equity director's wealth has two components: the present value of the annual asset fee and the present value of the carried interest. The annual asset fee is \$20 million and has a present value of \$162 million, using the risk-free discount rate of 5%. The carried interest has a present value of \$85 million, calculated from the Black-Scholes model using a stock volatility of 0.40, the median volatility of S&P 1500 companies with market value of \$1 billion. We can use the Black-Scholes model to calculate the leverage of the carried interest. It's 1.79, which means that a 1% increase in shareholder wealth increases the Black-Scholes value of the carried interest by 1.79%. When we take a weighted average of the leverage of the asset fee and the carried interest, we find that the private equity director's wealth leverage is 0.62.

### Three lessons from this wealth leverage comparison

Figure 1 has several important lessons. First, many investors are inclined to think that having 60% of one's pay in equity is analogous to having 60% of one's wealth in equity. That's not right. With 40% of one's wealth in cash and 60% in equity, one would have wealth leverage of 0.60. Figure 1 shows that first year wealth leverage with 60% of pay in equity is barely a tenth of wealth leverage with 60% of wealth in equity. Second, many investors are inclined to use percent of pay at risk or in equity as a proxy for

**Figure 2 – Wealth leverage at the start of year 5**

|                                                              | Public Company Director |                   |                 | Private Equity Directors |                   |                 |
|--------------------------------------------------------------|-------------------------|-------------------|-----------------|--------------------------|-------------------|-----------------|
|                                                              | Dollars (\$'000)        | Percent Of Wealth | Wealth Leverage | Dollars (\$'000)         | Percent Of Wealth | Wealth Leverage |
| Company/fund initial market value                            | 1,000,000               |                   |                 | 1,000,000                |                   |                 |
| Company/fund expected year 5 market value                    | 1,610,510               |                   |                 | 1,610,510                |                   |                 |
| Company/fund current market value                            | 2,011,357               |                   |                 | 2,011,357                |                   |                 |
| Director market pay                                          | 193                     |                   |                 |                          |                   |                 |
| Retainer/annual asset fee                                    | 77                      |                   |                 | 20,000                   |                   |                 |
| Percent of pay in equity/carried interest percent            | 60%                     |                   |                 | 20%                      |                   |                 |
| Future value of past fixed pay                               | 447                     | 20%               | 0.00            | 116,038                  | 25%               | 0.00            |
| Present value of future fixed pay                            | 350                     | 15%               | 0.00            | 90,919                   | 19%               | 0.00            |
| Outstanding equity (median shares)/carried interest          | 962                     | 42%               | 1.00            | 260,719                  | 56%               | 1.44            |
| Present value of future equity                               | 525                     | 23%               | 0.00            |                          |                   |                 |
| Total wealth                                                 | 2,284                   |                   | 0.42            | 467,677                  |                   | 0.80            |
| Expected value of year 0 total wealth                        | 2,098                   |                   |                 | 363,889                  |                   |                 |
| Ln (actual director wealth/expected director wealth)         | 0.08                    |                   |                 | 0.25                     |                   |                 |
| Ln (actual shareholder wealth/expected shareholder wealth)   | 0.22                    |                   |                 | 0.22                     |                   |                 |
| Average wealth leverage year 0 to the end of year 5          | 0.38                    |                   |                 | 1.13                     |                   |                 |
| Average/current wealth leverage with lowest year 1-5 shares  | 2.37                    |                   | 0.63            |                          |                   |                 |
| Average/current wealth leverage with highest year 1-5 shares | -0.28                   |                   | 0.33            |                          |                   |                 |

incentive strength. Figure 1 shows that private equity directors have much higher wealth leverage than public company directors even though their initial percent of pay at risk, 34%, is much lower than the public company directors' percent of pay in equity. This shows that percent of pay at risk or in equity is not a good proxy for incentive strength. Third, the wealth leverage analysis makes it clear that public company directors would have much stronger incentives if their equity compensation was awarded on a fixed share basis. In Figure 1, 53% of the director's wealth in year 1 is the present value of future equity awards. When future equity awards are 60% of market pay, regardless of past company performance, their leverage to shareholder wealth is zero. If they were granted on a fixed share basis, their leverage to shareholder wealth would be 1.0. This would raise the public company director's wealth leverage in Figure 1 from 0.07 to 0.60.

Some companies used to have annual fixed share option grants. For example, General Electric's 1996 Stock Option Plan for Non-Employee Directors provided for annual grants of options on 6,000 shares for each director for the years 1997-2003.<sup>(17)</sup> Fixed share equity grants are rare now due to the advent of disclosure of director dollar total compensation starting in 2006 and the push by ISS

to get companies to set director target total compensation at the median of peer companies.

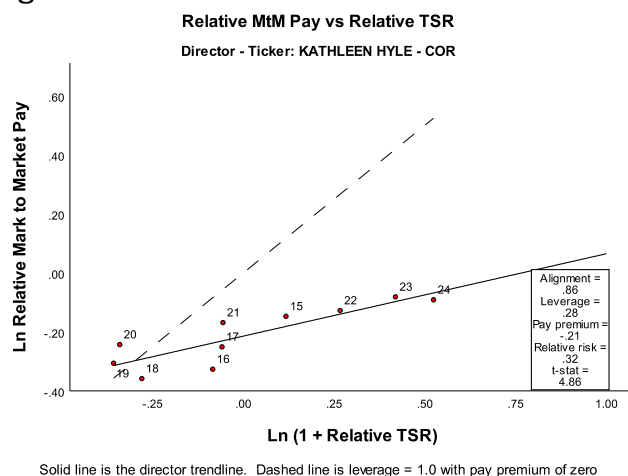
Figure 2 shows wealth leverage at the end of year 5 when the public company director is holding five years of equity grants.

Figure 2 shows two measures of wealth leverage. The first is current wealth leverage, that is, the percent change in wealth that results from a 1% increase in current shareholder wealth. This is the same measure shown in Figure 1. Figure 2 also shows five year average wealth leverage. Five year average wealth leverage is the ratio of the five year log change executive wealth divided by the five year log change in shareholder wealth. Both wealth changes are measured as the ratio of actual to expected wealth.

### **The "performance penalty" in equity grant shares leads to huge variation in five year wealth leverage for public company directors**

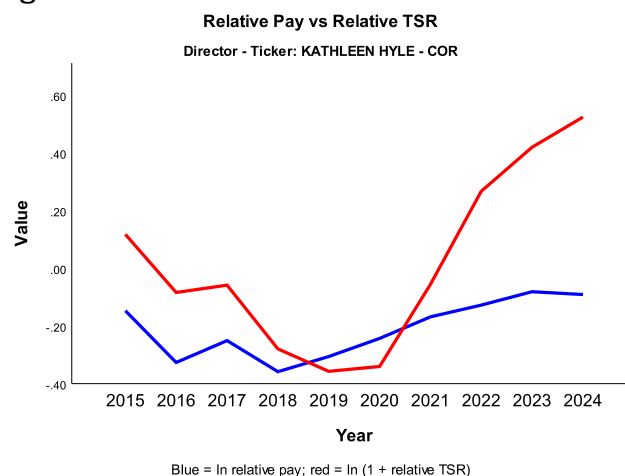
Comparing Figure 2 to Figure 1 shows that neither plan provides constant wealth leverage. For public company directors, current wealth leverage increases from 0.07 to 0.42, and, for private equity directors, current wealth leverage increases from 0.62 to 0.80. The variation in wealth leverage for public company

Figure 3



directors is more extreme and more capricious than it is for private equity directors. The extreme variability of public company director wealth leverage is a consequence of setting target pay equal to market pay regardless of past performance. Target dollar pay that is independent of past performance creates a systematic “performance penalty”: increases in the stock price are penalized by reductions in equity grant shares and declines in the stock price are rewarded by increases in equity grant shares. The cumulative shares granted depend on the price path, so two directors can have very different stock holdings even though the stock has the same cumulative return. Figure 2 shows fifth year wealth leverage assuming a five year annualized return of 15%. When we simulate annual returns using a Monte Carlo simulation with 1,000 five year scenarios, the number of shares granted (assuming 100 million shares outstanding) over the five year period ranges from 19,330 to 319,915. For the 21 scenarios with a 15% annualized five year return, the range is 38,130 to 110,780 with a median of 65,200. A director will have higher current and average wealth leverage in those scenarios where the director is granted more shares. Current wealth leverage is 0.42 for the directors with median shares granted, but falls to 0.33 for directors with the low shares granted and rises to 0.63 for the directors with the high shares granted. Five year average wealth leverage is 0.38 for the directors with median shares granted, but falls to -0.28 for directors with the low shares granted and rises to 2.37 for the directors with the high shares granted. This is severe shortcoming of the conventional wisdom on executive and

Figure 4



director pay. Incentive strength is the capricious result of the price path, not the deliberate result of the pay plan designer.

Wealth leverage for private equity directors is also variable but in a more systematic and understandable way. As the carried interest gets more in the money, the leverage of the carried interest declines but that is more than offset by the increase in the carried interest as a percent of wealth. The net result is that wealth leverage rises as the carried interest gets more in the money, peaking at 1.00 when the carried interest is deeply in the money. As the carried interest goes out of the money, the leverage of the carried interest increases but that is more than offset by the decline in the carried interest as a percent of wealth. The net result is that wealth declines as the carried interest goes out of the money. In 15% of the simulation cases, fifth year wealth leverage falls below the beginning wealth leverage shown in Figure 1, 0.62. In these cases, which all have five year annualized returns worse than -15%, median fifth year wealth leverage declines to 0.32, with a low of 0.01. This variability in wealth leverage is a significant shortcoming of private equity director pay. We will show below how to design a pay plan that has constant leverage.

### We can use pay leverage to measure director incentives in public companies and private equity

Wealth leverage is an easy, and intuitive, analysis that helps us see some big differences between “2 and

20” and market pay with 60% of pay in annual equity grants. Wealth leverage shows that “2 and 20” provides stronger, and much more consistent, incentives than market pay with 60% of pay in annual equity grants. But wealth leverage doesn’t answer several important questions: what’s the incentive to increase controllable performance, that is, relative shareholder wealth, net of expected performance? What’s the pay premium at expected performance? What’s the correlation of relative pay and relative performance? Is relative pay more variable than relative performance?

An alternative, but more complicated, analysis, what we call pay leverage, does answer these questions. Figure 3 shows a ten year pay leverage analysis for Kathleen Hyde, a director of Cencora. Cencora, formerly named AmerisourceBergen, is a drug wholesaler and distributor with \$294 billion in 2024 sales. In 2024, it had 46,000 employees and \$1.5 billion in net income.

Figure 3 is a scatterplot showing 10 observations of relative pay and relative performance. The vertical axis shows the natural log of relative pay and the horizontal axis shows the natural log of relative shareholder wealth, i.e.,  $1 + \text{relative TSR}$ . Relative pay is cumulative actual pay divided by cumulative market pay where actual pay is measured on a mark to market basis. The scatterplot covers the ten years from 2015 through 2024. The plot point labelled “15” shows cumulative pay and performance for the one year 2015. The plot point labelled “22” shows cumulative pay and performance for the 8 years 2015-2022. Mark to market pay for Hyle is the sum of her cumulative cash retainer plus the year end value of her cumulative equity grant shares. We assume that she holds equity grant shares for five years before selling them. Mark to market pay includes the year end value of unsold shares and the sale value of previously sold shares. Our holding period assumption is a little more demanding than Cencora’s requirement that directors in their sixth and subsequent years of service hold five times their cash retainer in stock. Over the ten years shown in Figure 3, Hyle received, on average, 57% of her annual board compensation in stock, so holding five years of stock grants provides a holding of at least 6.6 times the cash retainer (assuming no stock appreciation).<sup>(18)</sup>

Market pay, \$441,300 in current dollars, is the average pay of directors in Cencora’s GICS industry, Health

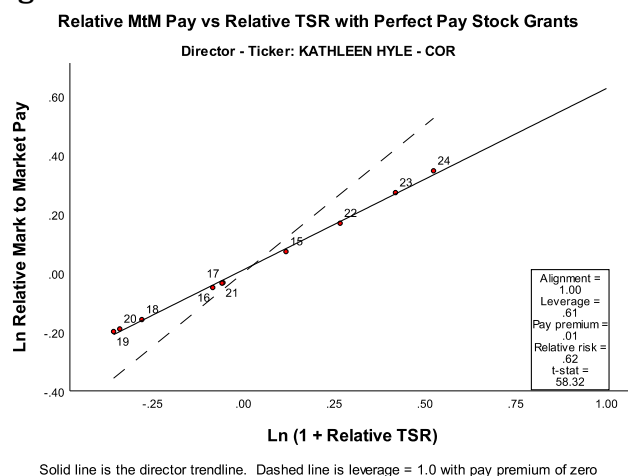
Care Providers and Services (351020), adjusted to reflect Cencora’s revenue at the start of the ten year period. We don’t adjust market pay for subsequent increases in Cencora’s revenue so we don’t lose the pay leverage that is correlated with revenue growth. Relative TSR is equal to  $[(1 + \text{TSR}) / (1 + \text{industry TSR})] - 1$ , where industry TSR is the market weighted return of S&P 1500 companies in Cencora’s GICS industry, Health Care Providers and Services. Actual pay, market pay, company shareholder wealth and industry shareholder wealth are all adjusted for inflation before we calculate relative pay and relative TSR.

The solid line in Figure 3 is the regression trendline relating  $\ln$  relative pay to  $\ln(1 + \text{relative TSR})$ . The dashed line is a reference line (for comparison) with a slope of 1.0 and an intercept of zero. The regression trendline gives us four pay dimensions. The slope of the trendline is the sensitivity of relative pay to relative performance, what we call pay leverage. It tells us the percent change in relative pay associated with a 1% change in relative shareholder wealth. For Hyle, pay leverage is only 0.28. This is slightly above the mean (0.24) and median (0.22) pay leverage of S&P 1500 public company directors, measured over ten year periods ending in 2016 and later years. It’s a little below the five year average director wealth leverage, 0.38, that we found in Figure 2. The horizontal axis in Figure 3 shows that Cencora had significantly positive cumulative relative TSR in 2022-2024 and significant negative cumulative relative TSR in 2018-2020, but all the points are close to the trendline. This shows that both the director penalty for poor performance in 2018-2020 and the director reward for superior performance in 2022-2024 were quite modest. This is evident in Figure 4, which shows a time series plot of Hyle’s relative pay and relative performance.

### **Three more pay dimensions: Pay alignment, the pay premium at industry average performance and relative pay risk**

The second pay dimension shown in Figure 3 is the correlation of relative pay and relative performance, what we call pay alignment. Pay alignment for Hyle is 0.86. This tells us that relative pay and relative performance are highly correlated even though pay leverage, the sensitivity of relative pay to relative performance, is small, only 0.28. The square of pay alignment tells how much of the variation in relative pay is explained by relative performance. Pay

**Figure 5**



alignment (r-sq) for Hyle is 74%. This is well above the median pay alignment (r-sq) of public company directors, 33%, and puts Hyle above the 80th percentile of 31,663 S&P 1500 public company directors over the years 2007-2024.

The third pay dimension in Figure 3 is the pay premium at industry average performance. This is the intercept of the regression trendline, that is, the point where the trendline intersects the y-axis extended from  $x = 0$ . It's expressed in natural logarithms but we can convert to a percentage pay premium by taking the anti-log. Hyle's log premium of -0.21 corresponds to a percentage "premium" of -19%.<sup>(19)</sup> This is a measure of performance adjusted cost. It tells us that Hyle's mark to market pay is 19% below cumulative market pay when Cencora's relative TSR is zero, that is, when Cencora TSR matches the industry.

The fourth pay dimension in Figure 3 is relative pay risk. Relative pay risk, 0.32 for Hyle, is the ratio of relative pay volatility to relative shareholder wealth volatility. Hyle's relative pay risk says that Hyle's relative pay has only a third of the variability of relative shareholder wealth at Cencora. Pay leverage, as a regression coefficient, is the product of pay alignment and relative pay risk. Since pay alignment has a maximum value of 1.0, low relative pay risk – like 0.32 for Hyle – is a recipe for low pay leverage. The last number shown on the graph is the pay leverage t-statistic. The t-statistic expresses pay leverage as a multiple of the standard error of pay leverage and lets us estimate the probability that the

measured pay leverage is just due to random sampling error. For a trendline based on 10 observations, a t-statistic of 1.833 implies a 5% probability that positive pay leverage that large could result from random sampling error, and a t-statistic of 2.821 implies a 1% probability that positive pay leverage that large could result from random sampling error. Hyle's t-statistic of 4.86 implies that the probability that her pay leverage is due to chance is less than 4/100 of one percent.

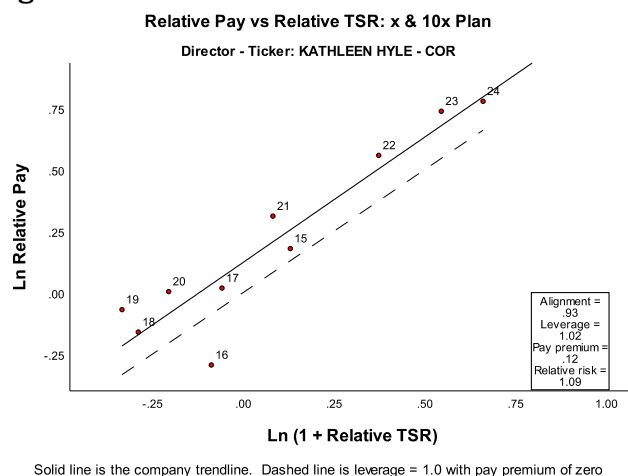
## Why we don't do a wealth return scatterplot

Before we do more with pay leverage, let me explain why we don't do the scatterplot using wealth returns. To calculate director wealth returns, we need to project future compensation each year for the remainder of the ten year period. And to project future compensation, we need to decide how future compensation changes in response to past performance. In other words, we need to decide whether a company uses competitive pay policy, fixed share grants or something in between. But the goal of our analysis is to demonstrate how compensation responds to past performance, that is, to show whether a company uses competitive pay policy, fixed share grants or something in between. Thus, using wealth returns forces us to make assumptions about the very thing we are trying to determine.

## A perfect correlation pay plan

A great benefit of the pay leverage analysis is that it prompts one to ask, "is there a pay plan that provides a perfect correlation of relative pay and relative TSR?". As I discovered in 2012, there is a simple pay plan with annual grants of performance shares that provides a perfect correlation of relative pay and relative TSR.<sup>(20)</sup> It has pay alignment of 1.0, pay leverage of 1.0 and a pay premium at industry average performance of 0.0. The perfect correlation pay plan differs from conventional practice in four ways. First, target pay is not market pay, but market pay adjusted for trailing relative TSR. Target pay is equal to market pay  $\times (1 + \text{relative TSR})$  where relative TSR is measured from the start of the ten year measurement period to the grant date. Second, 100% of pay is in stock. Third, vesting takes out the industry component of the stock return. At any point in time, the expected vesting multiple is  $1/(1 + \text{the industry return})$  where the industry return is measured from the grant date to the current point in time. Fourth, all cash paid out prior to retirement, i.e.,

**Figure 6**



the end of the measurement period, is treated as a draw against the value of the performance shares.

A help to understanding the logic of the perfect correlation pay plan is the realization that a perfect correlation of relative pay and relative performance requires every dollar of pay to reflect every year's relative TSR. By making target pay equal to market pay adjusted for the trailing relative TSR, we ensure that the value of each performance share grant reflects the relative TSR up to the time of grant.<sup>(21)</sup> By making the vesting multiple equal to  $1/(1 + \text{the industry return from the date of grant})$ , we ensure the value of each performance share grant reflects the relative TSR of each year after the grant.

The conventional approach to performance shares is misguided and fails to take out the industry component of the stock return. Conventional practice is to make the vesting multiple equal to  $[1 + \text{relative TSR}]$  but this doesn't take out the industry component of the stock return; it just leverages the industry return based on the relative return. We can see this if we expand the stock component of the vesting stock value. The vesting stock value is equal to beginning stock value  $\times (1 + \text{TSR}) \times (1 + r\text{TSR})$ . Since  $1 + \text{TSR} = (1 + i\text{TSR}) \times (1 + r\text{TSR})$  where  $i\text{TSR}$  is the industry return and  $r\text{TSR}$  is the relative return, we can express the vesting stock value as beginning stock value  $\times (1 + i\text{TSR}) \times (1 + r\text{TSR}) \times (1 + r\text{TSR})$ . From this expression, we can see that the vesting stock value retains the industry component of the stock return and leverages it by a factor of  $(1 + r\text{TSR})$ .

We want to use the pay leverage analysis to answer three questions. First, does the perfect correlation pay plan suggest improvements in the public company director pay model? Second, does the private equity director pay model provide higher leverage or alignment than the public company pay model? Third, does the perfect correlation pay plan suggest improvements in the private equity director pay model?

## Public company director pay with perfect pay stock grants

Figure 5 shows pay leverage for a modified public company director pay model. Pay at the start of the first year is the same as the public company director pay model, i.e., total compensation is equal to market pay with 40% of total compensation paid in cash and 60% in a stock grant. Cash compensation remains 40% of market pay for each year of the ten year period. The difference is that the annual stock grant follows the provisions of the perfect correlation pay plan. The grant at the start of the ten year period, and each subsequent grant, does not vest until the end of year ten and is subject to a performance condition. The performance condition makes the vesting multiple equal to  $1/(1 + \text{the industry return from the date of grant})$ .

Figure 5 shows that perfect pay stock grants raise Hyle's pay leverage from 0.28 to 0.61, roughly equal to her initial percent of pay in stock. The increase in pay leverage comes from a big increase in relative pay risk, from 0.32 to 0.62, and a modest increase in pay alignment, from 0.86 to 1.00.

Simulation of the public company director pay model with perfect pay stock grants shows that it provides much more consistent pay leverage and much higher alignment than current director pay practices. In simulations for 7,559 ten year periods ending in 2016-2025 for S&P 1500 directors with 55% to 65% of pay in equity on average, perfect pay stock grants cause median pay leverage to jump from 0.28 to 0.61 and median pay alignment ( $r\text{-sq}$ ) to jump from 38% to 99.8%. Perfect pay stock grants do not give all directors the same pay leverage (because the perfect correlation pay plan only allows cash as a draw against the value of the performance shares) but they make pay leverage far more consistent. The coefficient of variation for actual pay leverage in the 7,559 ten year periods is 1.87; that means that the standard deviation of actual pay leverage is 1.87

times the mean of actual pay leverage. Using perfect pay stock grants reduces the coefficient of variation to 0.18, a decline of more than 90%.

### **Public company director pay with an “x and 10x” pay plan**

Figure 6 shows pay leverage for Hyle with a pay plan that mimics the private equity director pay model. The “2 and 20” pay model provides an upfront option on equity worth ten times the value of the annual asset fee. For Hyle, we have created an “x and 10x” pay plan where x is the annual cash retainer and 10x is the amount of stock underlying an upfront at the money option. We calibrate x so that the expected present value of future pay is equal to the present value of future market pay where market pay is the average pay of directors in Cencora’s industry adjusted to Cencora’s revenue size. For Hyle, the present value of future market pay is \$2.174 million, x is 215,000 and the Black-Scholes value of the option on 10x of stock is 703,000. This means that the private equity director pay model has only 32% of pay at risk, on a present value basis, much less than Hyle’s average percent of pay in equity for the ten years 2015-2024, 57%. Figure 6 shows the private equity director pay model provides much higher pay leverage and alignment than Hyle’s actual pay despite having a much lower percent of pay in equity. Pay leverage is 1.02, 3.6 times greater than Hyle’s pay leverage of 0.28 in Figure 3. Pay alignment is 0.93, modestly greater than Hyle’s pay alignment of 0.86 in Figure 3.

When we compare the pay leverage and alignment provided by the private equity pay model to actual pay leverage and alignment for other directors with 55% to 65% of pay in equity, we find similar results. Pay leverage is higher for 85% of directors; median pay leverage is 0.85, 3.9 times greater than median pay leverage of 0.22. Pay alignment (r-sq) is higher for 70% of directors; median pay alignment (r-sq) is 61%, almost double median pay alignment (r-sq) of 33%. Pay leverage with the private equity pay model is also more consistent. The coefficient of variation for private equity pay leverage is 0.88 but 2.08 for actual pay leverage.

### **Perfect pay stock grants provide more consistent pay leverage than the x and 10x plan**

While the private equity pay model is better than the public company model for most directors, it doesn’t

match the pay leverage consistency or pay alignment provided by perfect pay stock grants. We compared the private equity pay model with perfect pay stock grants across a sample of 31,911 ten year periods for directors. The private equity pay model provides higher, but less consistent, pay leverage. Median pay leverage is 0.85 for the private equity pay model but only 0.61 for a public company pay model with an initial 60% of market pay in perfect pay stock grants. But pay leverage is much more consistent with perfect pay stock grants. Pay leverage for perfect pay stock grants has a coefficient of variation of 0.20, while pay leverage for the x and 10x pay plans have a coefficient of variation of 0.88, more than 4 times more. Median pay alignment (r-sq) is 0.61 for the x and 10x pay plans, but 0.998 for the pay plan with perfect pay stock grants. The x and 10x pay plan provides higher alignment (r-sq) for only 39 of 31,911 ten year periods.

### **Applying the pay leverage model to private equity**

We have not applied the pay leverage analysis to a “2 and 20” formula. To do that, we need a market pay trendline for private equity funds. The needed trendline would express the present value of total fees, i.e., the asset fee and the carried interest, as a function of fund size. The present value of this market fee would then be allocated to years to match the timing of the fund’s fees. In Figure 1, the present value of first year pay, i.e., the first year asset fee and the carried interest, is 42% of the present value of all ten years’ pay.<sup>(22)</sup> To match the structure of the fund’s fees, we would allocate 42% of the present value of market fees to the first year. Allocating market pay to match the utilization of resources gives more accurate pay leverage measures.<sup>(23)</sup>

There is evidence that larger funds charge lower asset fees. One study found that funds under \$1 billion, with an average size of \$452 million, charged an average asset fee of 2%, while funds over \$5 billion, with an average size of \$8.279 billion, charged an average asset fee of 1.5%.<sup>(24)</sup> This implies that a doubling in fund size is associated with an 87% increase in asset fee.<sup>(25)</sup> By contrast, a doubling in company size is typically associated with about a 30% increase in executive pay. Since rates of return tend to decline as funds get bigger, it’s possible that a doubling in fund size is associated with a smaller percentage interest in the total return. Creating market pay trendlines for private equity fund would

be a great way for the ILPA to promote pay leverage analysis of private equity fees.

### **There is a growing embrace of two separate worlds guided by conflicting concepts**

For public company director and executive pay, there has been a growing embrace of the conventional wisdom that companies should have 50th percentile target pay with a high percent of pay at risk. Public company director pay has increasingly converged around market pay, measured as average director pay for companies of the same size in the same industry. For U.S. S&P 1500 directors, the standard deviation of the log difference from market pay has declined from 0.70 in 2002 to 0.31 in 2024. And the average percent of pay in equity has risen from 27% in 1997 to 59% in 2025. <sup>(26)</sup>

Similar trends have taken place in executive pay. A 2024 study by Jochem, Ormazabal & Rajamani found that the average deviation of CEO pay from the median of the company's size adjusted industry group had fallen by 45% since 2007. <sup>(27)</sup> The average percent of S&P 1500 CEO pay at risk has risen from 74% in 2006 to 85% in 2023 and the average percent of pay in equity has risen from 46% to 63%. <sup>(28)</sup>

In private equity, there has been little need for convergence because "2 and 20" has been widely embraced for more than 30 years. One study that looked at 210 private funds between 1989 and 2012 concluded that "fund terms in the PE industry have been remarkably stable over time." <sup>(29)</sup>

### **Two model pay plans show that the conventional wisdom is not optimal**

It's possible that public companies and private equity have different director pay models because each model is optimal for its setting. But two noted optimal pay plans suggest otherwise. One is an optimal investment manager fee plan developed by Don Raymond, the chief investment strategist of the Canada Pension Plan Investment Board. The second is the "Dynamic CEO Compensation Plan" developed by Wharton finance professor Alex Edmans and three colleagues. Edmans' plan was a finalist for the Harvard Business Review/McKinsey Management Innovation of the Year Award in 2012.

Raymond developed a fee structure in 2003 that provides three significant improvements over "2 and

20". <sup>(30)</sup> First, the performance fee is based on sharing in the manager's cumulative excess return relative to a benchmark, not sharing in the gross return. Second, a portion of the performance fee is deferred until the manager's time adjusted information ratio gets to 1.0. <sup>(31)</sup> This ensures that the plan pays for skill, not luck. Third, the asset fee is treated as an advance of the performance fee, so the performance fee is offset by the asset fees paid. The performance fee paid in a year is the cumulative performance fee earned, i.e., the adjusted information ratio x the sharing percentage x the cumulative excess return, minus the cumulative prior fees paid (including prior asset fees). A successful manager, i.e., one who earns a performance fee greater than the asset fee, will just earn a fixed share of his excess return.

Raymond's plan doesn't suggest that "2 and 20" is the optimal fee structure. It highlights three major weaknesses of "2 and 20" and draws on a concept from public company executive pay, i.e., using relative performance to isolate and reward management's contribution to value. In a conversation with the author in 2013, Raymond said that they published the fee structure because they were afraid someone else might patent it. He also said about half of their external managers were currently using the fee structure.

Edmans and three colleagues published their "Dynamic CEO Compensation" plan in the Journal of Finance in 2012. <sup>(32)</sup> Under the plan, the CEO's total compensation consists solely of the payouts from a "Dynamic Incentive Account" or DIA. The company creates the DIA by depositing into the account the present value of expected future market pay for the CEO through retirement and then investing x% in stock and (1 - x)% in cash. The account is constantly rebalanced to maintain the target percent of wealth in stock. The percent invested in stock represents the CEO's wealth leverage. The DIA eliminates the "performance penalty" created by providing target dollar pay regardless of past performance. When the stock price declines, the CEO is not granted additional shares nor allowed to maintain his prior cash compensation. Instead, the CEO must give up cash to purchase additional shares to maintain the DIA's percent equity at x%. Edmans and his co-authors derive a formula to determine the annual payout from the DIA and prove that the formula ensures that the CEO has sufficient equity to maintain effort in future periods and no incentive to behave myopically (by, for example, inflating earnings and cashing out).

“Dynamic CEO Compensation” certainly does not suggest that providing annual pay at market with 60% of pay in equity is optimal compensation for an executive or a director.

### **There is a little bit of convergence**

A significant number of public companies have recognized that front-loaded equity awards provide much stronger incentives. One recent study found that 9% of companies used a front-loaded equity grant at least once between 1993 and 2022.<sup>(33)</sup> Here are four examples. In 2011, Apple granted CEO Tim Cook restricted stock with a grant date value of \$376 million. In 2018, Telsa granted CEO Elon Musk stock options with a grant date value of \$2.3 billion. In 2019, Alphabet granted CEO Sundar Pichai restricted and performance stock with a grant date value of \$276 million. In 2020, Palantir Technologies granted stock and options to CEO Alexander Karp with a grant date value of \$1.1 billion. In all four cases, the total compensation far exceeded the ISS “High Concern” standard for CEO pay as a multiple of median pay.

Large, upfront equity grants make executive pay much more like private equity pay, but, unfortunately, none of these companies provided a measure of incentive strength to help investors think in a more meaningful way about incentive strength and to demonstrate that the conventional public company approach to executive and director pay leads to weak leverage and alignment. The Apple board said, in its 2012 proxy, that the “determination of the amount of the RSU award was subjective. There was no formula or peer group ‘benchmark’ used in determining the award amount. Rather, the award was the product of the Board’s business judgment...”. The Tesla board said, in its 2019 proxy, “the basic premise is simple – Elon’s compensation will be 100% aligned with the interests our stockholders....Elon’s only compensation will be a 100% at-risk performance award, which ensures that he will be compensated only if Tesla and all of our stockholders do extraordinarily well.” The Alphabet board said, in its 2020 proxy, that “we grant equity awards... to reinforce management’s focus on long-term shareholder value and commitment to the company.”

On the private equity side, some institutional investors have shared the public company emphasis on increasing the percent of pay at risk and

negotiated fee contracts that provide a lower asset fee and a higher carried interest. For example, the Teachers Retirement System of Texas has negotiated hedge fund fees that give the hedge fund the greater of 1% of assets or 30% of gains.<sup>(34)</sup>

### **Why don’t we see a lot more convergence?**

A recent paper by Juliane Begenau and Emil Siriwardane shows that multiple fee structures are common within the same private equity fund.<sup>(35)</sup> They show that some limited partners are repeatedly successful in negotiating for lower asset fees and/or lower carried interest. This paper suggests that bargaining for lower fees within the conventional private equity fee structure is a more cost-efficient strategy for an institutional investor than attempting, as Don Raymond did, to completely reform the fee structure. This may be one reason why there is little evidence of convergence.

Collective actors are more likely candidates to lead convergence than individual institutional investors. But the collective actors, like ISS and ILPA, who are limited to public companies or to private equity, may have little interest in convergence because it undermines their exclusivity and exposes them to more competition. That suggests that collective actors who cover both public companies and private equity, such as the Council of Institutional Investors, may be the best candidates for leading convergence.

The big data vendors such as S&P Global, Bloomberg, Factset, Equilar and MSCI seem like good candidates to develop pay versus performance analytics that can be applied to public companies or to private equity, and thus, encourage convergence. But my experience has been that these firms have been very reluctant to lead the market. A senior executive at one of these firms told me the pay leverage analysis in Figure 3 has “tremendous merit” but “I don’t think we’re the right team to build it... We’re focused on helping our clients” achieve their objectives. A senior executive at another one of these firms told me that the pay leverage analysis in Figure 3 was an “intellectual contribution to the field of corporate governance” but added that “our interest is not in innovations around pay analytics and incentive setting.” An executive at a third of these firms told me that a proposal to add the pay leverage analysis in Figure 3 to the firm’s products had gone to the firm’s board but been rejected as too controversial.

## Conclusion

Our analysis has shown that public company director and private equity fund pay are driven by conflicting concepts. Public company director pay focuses on establishing target dollar pay, setting it equal to market pay regardless past performance and relying on annual equity grants to provide strong incentives. Private equity fund pay focuses on fixed sharing and front-loaded equity (i.e., carried interest) without using any concept of dollar target pay. The same investors support target dollar pay for public company directors and front loaded fixed sharing for private equity funds and don't make any effort to decide whether one approach is better and should be used for both or even whether one or both approaches could be improved by borrowing ideas from the other.

We have shown that pay leverage analysis can be applied to measure the same pay dimensions for both public company director pay and private equity fund pay. We have used this analysis to show that private equity pay concepts would provide stronger and more consistent incentives for public company directors but also that private equity fund pay (and public company director pay modeled on private equity fund pay) could be further and substantially improved by adopting the concepts that come out of the perfect correlation pay plan. The perfect correlation pay plan draws on both private equity and public company pay concepts because it provides for fixed sharing – a private equity fund concept – in a measure that isolates management's contribution to value – a public company executive pay concept.

1. ISS STOX, Proxy Voting Guidelines
2. ILPA, Principles-3.0, 2019, p.9.
3. ILPA, Principles-3.0, 2019, p.9.
4. Catherine McCormick, the judge in the Delaware court challenge to Elon Musk's pay dismissed the argument the Musk's pay was justified by pay practices in venture capital and private equity. "That argument", she wrote, "has one obvious problem: Tesla is not a privately held portfolio company." *Tornetta vs Musk*, C.A. 2018-0408-KSJM, p. 187.
5. Stanford Law Review, Vol 66, pp.1051-1120. Four years later, Bainbridge and Henderson expanded on their argument in a book, *Outsourcing The Board: How Board Service Providers Can Improve Corporate Governance*, Cambridge University Press, Cambridge, England, 2018.
6. Journal of Applied Corporate Finance, Vol 32, No 3 (Summer).
7. Bainbridge & Henderson, *Boards-R-Us*, p. 1066.
8. Gilson & Gordon, *Board 3.0*, p. 1.
9. Bainbridge & Henderson, *Boards-R-Us*, p. 1078.
10. Gilson & Gordon, *Board 3.0*, p. 8.
11. Bainbridge & Henderson, *Boards-R-Us*, p. 1090.
12. Bainbridge & Henderson, *Boards-R-Us*, p. 1059.
13. Gilson & Gordon, *Board 3.0*, p. 8.
14. Gilson & Gordon, *Board 3.0*, p. 9.
15. For small changes in shareholder wealth. For all changes, wealth leverage is the ratio of the log change in director wealth to the log change in shareholder wealth. For small changes, the percent change and the log change are very similar,
16. This is market pay for directors in Health Care Providers and Services (GICS 351020). We use a director from a company in this industry for our pay leverage analysis in Figure 3.
17. General Electric, 1999 proxy statement, p. 12.
18. The stock grant value is  $1.33 (= 57\% / (1 - 57\%))$  times the cash retainer, so holding five years of stock grants provides a stock value, assuming zero stock appreciation, of  $6.6 (= 5 \times 1.33)$  times the cash retainer.
19. The percentage pay premium is equal to  $100 * [\exp(-0.21) - 1]$ .
20. Stephen F. O'Byrne, 2012, "Achieving Pay for Performance", Conference Board Director Notes, Vol 4, No 24 (December).
21. This also means that the present value of expected future pay has pay leverage of 1.0. This, in turn, implies that wealth leverage, like pay leverage, is 1.0. In other words, pay leverage and wealth leverage are equal for the perfect correlation pay plan.
22. The first asset fee has a present value of \$20 million, the carried interest has a present value of \$84.955 million and total ten year fees have a present value of \$247.112 million.  $(\$20 + \$84.955) / \$247.112 = 42.47\%$ .
23. See Stephen F. O'Byrne, Matching market pay to grants captures more pay for performance, *OpenAccessGovernment* 49.
24. See Ingo Stoff and Reiner Braun (2014), "The Evolution of Private Equity Fund Terms Beyond 2 and 20", *Journal of Applied Corporate Finance*, Vol 26, No 1 (Winter), pp. 65-76.
25. The slope of the trendline relating ln asset fee dollars to ln fund size is 0.901. The impact of a doubling in fund size is  $2 \times 0.901 - 1 = +87\%$ .
26. Calculated from S&P's Execucomp database.
27. Torsten Jochem, Gaizka Ormazabal, and Anjana Rajamani, "Why Have CEO Pay Levels Become Less Diverse?", available at [ssrn.com/abstract=3716765](https://ssrn.com/abstract=3716765).
28. Calculated from S&P's Execucomp database.
29. Ingo Stoff and Reiner Braun (2014), "The Evolution of Private Equity Fund Terms Beyond 2 and 20", *Journal of Applied Corporate Finance*, Vol 26, No 1 (Winter), pp. 65-76.
30. See Donald M. Raymond (2008), "Paying (Only) for Skill (Alpha) – A Practical Approach", CFA Institute Conference Proceedings Quarterly (June)
31. The time adjusted information ratio is  $IR \times \text{the square of time (in years)}$ .
32. Alex Edmans, Xavier Gabaix, Tomasz Sadzik and Yuliy Sannikov (2012), "Dynamic CEO Compensation", *Journal of Finance*, Vol LXVII, No 5 (October) pp, 1603-1647.
33. Rafael Copat and Sunil Parupati, "Front-Loaded Equity Awards: An Efficient Contracting or Rent Extraction Tool?", available at [www.rafaelcopat.com/research](http://www.rafaelcopat.com/research).
34. Institutional Investor, "Inside Texas Teachers Hedge Fund Power Move", March 21, 2017.
35. Juliane Begenau and Emil N. Siriwardane, "Fee Variation in Private Equity", *Journal of Finance*, Vol LXXIX, No 2 (April), pp. 1199-1247.



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