Principal/Agent Issues in
Real Estate Funds and Joint Ventures

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Abstract

The motivations created by the use of incentive fees (or promoted interests) in private equity (real estate or otherwise) are examined through the lens of traditional principal/agent problems. In general, in-the-money promotes tend to create conservative actions on behalf the manager (or agent) and out-of-the-money promotes tend to create risky actions. These incentives are, however, mitigated by a number of factors; including: the “moneyness” (the degree to which the promoted interest is in-the-money) of the promote, the dispersion of potential choices, concerns about future fund-raising efforts, and the changing shape of the manager’s utility curve over time (as the manager experiences other gains and losses). As these incentive fees are intended to improve the alignment of interests between the principal and the agent, this article suggests that lowering both the investor’s preferred return and the manager’s promoted interest – in a manner that maintains the expected value of the promoted interest – improves that alignment of interest. Finally, this article also suggests that the use of indexed preferences – rather than a fixed percentage – ought to better serve investors.
Principal/Agent Issues in Real Estate Funds and Joint Ventures

This article is intended to explore some of the behavioral aspects of investment managers and joint venturers as influenced by future incentive fees yet to be earned. To be clear, this article considers the interplay between various types of incentive fees — but most typically, an arrangement involving a preferred return payable to an investment partner and a promoted or carried interest payable to an operating partner — and the fund’s or venture’s risk and (gross) return characteristics. That is, the article examines the “endogenous” relationship between structure and the fund’s or venture’s risk/return characteristics. While these endogenous effects can be subtle, they are often quite powerful. Both investors and managers should understand these effects.

In this regard, there is a rich literature in economics having to do with the interactions between principals and agents, when the relationship between the agent’s efforts and the project’s outcomes is unobservable1 by the principal (in the parlance of the economists, this unobservable effort is a source of “asymmetric information.”) In one version of the classic setup, the principal is the owner of a firm and the agent is the manager of the firm — e.g., see Grossman and Hart (1983) and Harris and Raviv (1979) — and the firm’s profits reflect the manager’s efforts as well as random factors outside the manager’s control. In order to align the interests of the principal and the agent, the typical solution involves a contract designed to motivate the agent’s efforts; this is generally accomplished through the use of an incentive contract with a convex payoff tied to observable performance (e.g., profits, share price, etc.). Without such incentives, the manager would not expend costly effort; however, notwithstanding the incentive contract, the manager still expends less effort than if the manager owned the firm in its entirety. The difference in effort levels is often referred to as an “agency cost.”2

Clearly, it is an easy extension to delegated investment management, in which we consider the principal as the investor and the manager or the venture as the agent. The incentive contract with a convex payoff referred to above is analogous to the “pref and promote” structure also discussed above. These incentive structures are largely found in non-core funds or ventures — where effort is generally more difficult to discern than for core funds. And, these core funds are, in some sense, analogous to the mutual fund business; another

The author thanks the Pension Real Estate Association for its funding of a study that spawned this article. Additionally, the author would like to thank Jeff Fisher, David Geltmer, Jacques Gordon, Steve Kaplan, Ted Leary, Fred Lieblich, David Lewandowski, Derek Lopez, Greg MacKinnon, Paul Mouchakka, Randy Mundt, Devon Olson, Stavros Panageas, Martha Peyton, Tim Riddiough, Jack Rodman, Kevin Scherer, Roy Schneiderman, Jim Valente and Nathan Zinn as well as an anonymous referee for their helpful comments. Additionally, the author thanks Camilo Varela for his excellent research assistance.

1 In the alternative, there are significant costs to the principal when observing the agent’s efforts.

2 There are other examples of utilizing incentive contracts to solve agency costs (perhaps most notably in the area of employment contracts) — including for other alternative investments (e.g., see Anson (2012)).
instance of delegated investment management in which incentive fees are unusual. Interestingly, the finance literature – see Chevalier and Ellison (1997) and Lakonishok, et al. (1992) – suggests that the lack of incentive fees in the mutual fund industry does not produce lower levels of effort among active (v. passive) investment managers. The reasoning is tied to the highly scalable nature of the investment management business (i.e., as assets under management rise, revenues grow far more quickly than costs) and that the buildup in assets under management is generally tied to investment performance (i.e., managers with above-average returns typically grow assets faster than those with below-average returns).

Again, these (convex) incentive fees produce behavioral effects in the agent. This article addresses and illustrates these behavioral effects as a function of whether the manager’s promoted interest is likely to be realized. This article proposes and illustrates that lowering both the investor's preferred return and the manager’s promoted interest (expressed as a percentage of profits) may benefit the investor and the manager. Finally, this article also proposes that the use of an indexed-based (or floating) preferred return (as opposed to a fixed-rate preference) may create a better alignment of interest between the investor and manager.

**Building Blocks: Utility, Effort & Likelihood**

We next need a few building blocks with which we can better appreciate the behavioral aspects of incentive fees. First among them are the ideas of utility and prospect theory (e.g., see Friedman and Savage (1948) and Kahneman and Tversky (1979)). The basic premise is quite simple: In our case, investors (principals) and managers (agents) prefer bigger gains to smaller gains but at a declining rate, which leads to risk aversion. These concepts are illustrated in Exhibit 1.

**Exhibit 1: Illustration of Utility Theory and Risk Aversion**
The curve represents the individual’s utility over a range of gains and losses. At some point, the utility of future gains begins to slow. This decline in the marginal utility of gains gives rise to risk-averting behavior. Perhaps an example perhaps bests illustrate the point. Consider a gamble or a prospect in which an individual will either receive $1 million with certainty (represented by the circle) or will receive either $2 million or $0 (represented by the two squares) with equal probability. Exhibit 1 indicates that the utility of $2 million is less than twice the utility of $1 million and, accordingly, risking a certain $1 million for the chance of winning $2 million but losing everything is unacceptable to this individual. More formally, decision makers consider the probabilities associated with uncertain outcomes when evaluating these prospects; the utility \( u \) of each outcome is weighted by its probability (as shown by the triangle for the gamble of winning $2 million or losing everything) and the prospect with the higher expected utility is preferred. Using our two-outcome illustration:

\[
\begin{align*}
&u($1,000) > \left( \frac{1}{2} \right) u($2,000) + \left( \frac{1}{2} \right) u($0).
\end{align*}
\]

Second, let’s consider some positive relationship between the manager’s efforts and the venture’s or fund’s asset-level returns. (Unfortunately, there is little empirical research suggesting the precise shape of this relationship.) Exhibit 2 illustrates one potential relationship.

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3 Each individual has his/her own utility function; the curvature of which may differ from that shown above. It is believed that individuals generally display risk-averting behavior with regard to gains and risk-seeking behavior with regard to losses. This is reflected in the concave portion of the curve for gains and the convex portion for losses. If an individual were risk-neutral, then the curve would become a straight line.

4 Kahneman and Tversky (1979) argue that individuals use decision weights (a tendency to overweight low-probability events and to under-weight high-probability events) – rather than probabilities – to assess such prospects, relative to the individual’s initial wealth.

5 For purposes of simplifying this illustration, the random effects of the market’s idiosyncratic factors have been ignored.
The central idea is that low managerial effort leads to below-market results and high managerial effort leads to above-market results – notwithstanding the idiosyncratic effects of random factors on the venture’s assets\(^6\) – with some notion that the marginal productivity of effort is declining at high effort levels (so, no matter how hard the manager works, there is some inherent limit on returns). However, expending effort is costly to the manager; therefore, the manager must believe it is plausible that its promoted interest will end up “in the money” (i.e., is likely to be realized). Exhibit 3 presents one potential relationship (here too, there is little empirical support) between the manager’s effort and the likelihood of the manager realizing its promoted interest.

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\(^6\) Henceforth, this article will use the terms “funds” and “ventures” interchangeably.
Let’s now examine these building blocks (i.e., utility, effort and likelihood) in light of the manager’s promoted interest.

**In-the-Money Promote and Its Behavioral Effects**

Over the life of the venture, but particularly after the midpoint of the investment’s expected life, the manager partly views the venture’s performance through the prism of the likely promoted interest. To the extent that the promoted interest is likely to end up “in the money,” the manager tends to take conservative actions (sometimes referred to as “hugging the benchmark” or, in other cases, “closet indexing”) in order to preserve its promoted interest.

To better understand this assertion, consider the following illustration. Assume that the venture’s performance currently exceeds the investor’s preferred return and, accordingly, the manager’s promoted interest is “in the money” at some interim date ($t_1$). Further assume that, for convenience, the manager has two choices: $a$) take a conservative action such that the promoted interest remains “in the money” at the venture’s termination date ($t_1 = t_2$) or $b$) take some risky action such that the promoted interest either doubles ($t_1 = t_2$) or falls to zero ($t_1’$), with equal probability, at the venture’s termination date. These concepts are illustrated in Exhibit 4.

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7 This article uses the term “manager” to refer to the (typically, corporate) entity that may also be referred to as the general partner, managing member, operating partner, etc. Generally, each of these entities are controlled by one or two industry leaders, but supported by a number of key executives, who also participate in the promoted or “carried” interest. Consequently, there are also issues of organizational incentive compensation – see, for example, Prenderagst (1999) – to be considered.
To help orient the reader: The bell-shaped curve represents the venture’s expected return before the manager’s promoted interest, while the kinked line represents the manager’s promoted interest at varying levels of venture profitability. The circle on the inclined portion of the kinked line represents the manager’s promoted interest at some interim date \((t_1)\) which is currently “in the money.” If the manager takes the conservative action, it is expected that its promoted interest will remain unchanged \((t_1 = t_2)\). The two squares represent the two possible outcomes (of equal probability) if the manager takes some risky action; its promoted interest either doubles \((t''_2)\) or falls to zero \((t'')\) at the venture’s termination date.

Assuming that the manager is risk-averse, the utility of maintaining the existing (in-the-money) promote is greater than the expected utility of the gamble which results in the promote either doubling or falling to zero, as illustrated in Exhibit 5.

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8 More specifically, let’s assume that the venture’s (gross) expected return is normally distributed, with a mean of 12% and a standard deviation of 15%.
Because the utility of preserving the existing promote \( (t_1 = t_2) \) is greater than the expected utility of gambling on the promote either doubling \( (t''_2) \) or falling to zero \( (t'_2) \) — at the venture termination date for the risk-averse manager,\(^9\) the manager takes on the conservative action of maintaining the existing promote.\(^9\) Whether or not the manager’s conservatism conflicts with the investor’s utility is only answerable if we also know the utility curve of the investor and where the manager and investor currently resides on their respective curves.

While the tradeoffs between conservative and risky actions can be illustrated in myriad ways, let’s utilize the following simple example: Assume that a significant amount of the venture’s properties have leases which are about to expire at some interim date \( (t_1) \). Further assume that the manager can either execute new (triple-net) leases with strong-credit tenants at $12 per square foot or with weak-credit tenants at $14 per square foot and that the market-clearing capitalization rate is 6% in the case of strong-credit tenants and 7% in the case of weak-credit tenants. So, the current market value of the new lease is $200 per square foot in either case. At the investment’s termination date \( (t_2) \), the strong-credit tenants are still expected to be valued at the market-clearing capitalization rate of 6% and, therefore, will

\(^{9}\) A risk-neutral manager would be indifferent between the certain promote \( (t_1 = t_2) \) and the gamble of the promoted interest either doubling \( (t''_2) \) or falling to zero \( (t'_2) \), with equal probability.

\(^{10}\) The notion that managers act in economically rational manner is challenged by the branch of economics referred to as behavioral economics (e.g., Thaler (2000) and Tversky and Kahneman (1974)). While irrationality might seem attributable to certain real estate developers, a robust critique of behavioral economics can be found in chapters 8 and 9 of Epstein (2003).
continue to be worth $200 per square foot – thereby preserving the manager’s promoted interest ($t_1 = t_2$). On the other hand, the weak-credit tenants have some economic event$^{11}$ that will either be favorably or unfavorably resolved, with equal probability, before the venture’s termination date. If the economic event is favorably resolved, the market-clearing capitalization rate for these tenants will fall to 6% (the same as strong-credit tenants) and, therefore, the leased space will increase in value to $233 per square foot – thereby doubling the manager’s promoted interest ($t''_2$); if the economic event is unfavorably resolved, the market-clearing capitalization rate will jump to 8.4% and, therefore, the leased space will decrease in value to $167 per square foot – thereby erasing the manager’s promoted interest ($t'_2$). These tradeoffs$^{12}$ are summarized in Exhibit 6.

### Exhibit 6: Illustration of Manager’s Choice between Strong- and Weak-Credit Tenants

When Manager’s Interim Promote Is "In the Money"

<table>
<thead>
<tr>
<th>Tenant Type</th>
<th>Lease Rate/sq. ft.</th>
<th>Capitalization Rate</th>
<th>Building Value/sq. ft.</th>
<th>Lease Rate/sq. ft.</th>
<th>Capitalization Rate</th>
<th>Building Value/sq. ft.</th>
<th>Value of Promoted Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong</td>
<td>$12.00</td>
<td>6.0%</td>
<td>$200.00</td>
<td>$12.00</td>
<td>6.0%</td>
<td>$200.00</td>
<td>$t_1 = t_2$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$14.00</td>
<td>7.0%</td>
<td>$200.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

In this simple example, the manager is best served (in the sense of maximizing expected utility) by selecting the conservative action – as indicated by the region highlighted by the dashed lines of Exhibit 6 – and thereby preserving its existing in-the-money promoted interest. It should also be noted that this sort of behavior is not confined to managers with incentive fees. As noted earlier, core funds – generally operating without an incentive fee – are still motivated to post above-average returns, as a means of attracting greater assets under management. Consequently, a manager without an incentive fee, which has so far realized above-average performance, is also more likely to prefer the conservative action.

### Out-of-the-Money Promote and Its Behavioral Effects

Assume the same fact pattern as above, except that the manager’s promoted interest is “out of the money” at some interim date ($t'_1$). Further assume that, for convenience, the manager has two choices: $a$) takes a conservative action such that the promoted interest remains out of the money at the termination date ($t'_2$) or $b$) take some risky action such that the expected

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$^{11}$ Here too there are myriad possibilities; however, let’s consider just a few of such events: bringing a new product to market, adjudication of a major lawsuit, the final status of a pending patent, a change in technology, etc.

$^{12}$ This is an illustration about risk-taking – not skill (which is the persistent ability of an investment manager to produce positive risk-adjusted returns). This illustration presents what is often referred to as a “fair” gamble, wherein the certain outcome equals the expected value of the gamble: $t_1 = t_2 = (\frac{1}{2})t''_2 + (\frac{1}{2})t'_2$. 

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value of the promoted interest either improves substantially \((t'')\) or remains at zero \((t'2)\), with equal probability, at the termination date. These concepts are illustrated in Exhibit 7.

Exhibit 7: Illustration of Manager's Choices
when the Promoted Interest is "Out of the Money"

To help orient the reader: As before, the bell-shaped curve represents the venture’s expected return before the manager’s promoted interest, while the kinked line represents the manager’s promoted interest at varying levels of venture profitability. The circle on the flat portion of the kinked line represents the manager’s promoted interest at some interim date \((t_1)\) which is currently “out of the money.” If the manager takes the conservative action, it is expected that its promoted interest will remain unchanged \((t_1 = t_2)\). The two squares represent the two possible outcomes if the investment manager takes some risky action; its promoted interest either improves substantially \((t'''\text{)}\) or remains at zero \((t'\text{)}\) at the venture’s termination date.

Clearly, the utility of maintaining the existing (out-of-the-money) promote is less than the expected utility\(^{13}\) of the gamble which results in the promoted interest either improving substantially or remaining at zero, as illustrated in Exhibit 8.

\(^{13}\) While Exhibit 8 utilizes a declining marginal utility of future gains (i.e., risk-averting) to be consistent with the previous section, this result holds regardless of the manager’s utility function and, therefore, whether the manager is risk-averting, -seeking or -neutral.
Because the utility of preserving the existing promote \( (t_1 = t_2) \) is less than the expected utility of gambling on substantially improving the promoted interest \( (t'') \) or remaining at zero \( (t'') \) – with equal probability – at the termination date, the manager takes on the risky action hoping to improve the promoted interest. This risk-taking is often in conflict with risk-averse investors.

Assume the same fact pattern as before in terms of market rents for strong- and weak-credit tenants. At the termination date \( (t_2) \), the strong-credit tenants are still expected to be valued at the market-clearing capitalization rate of 6\% and, therefore, will continue to be worth $200 per square foot – thereby preserving the manager’s out-of-the-money promoted interest \( (t_1 = t_2) \). On the other hand, the weak-credit tenants have some economic event that will either be favorably or unfavorably resolved, with equal probability. If the economic event is favorably resolved, the market-clearing capitalization rate for these tenants will fall to 6\% (the same as strong-credit tenants) and, therefore, the leased space will increase in value to $233 per square foot – thereby substantially improving the manager’s promoted interest \( (t'') \); if the economic event is unfavorably resolved, the market-clearing capitalization rate will jump to 8.4\% and, therefore, the leased space will decrease in value to $167 per square foot – thereby keeping the manager’s promoted interest \( (t'') \) out-of-the-money. These tradeoffs are summarized in Exhibit 9.
In this simple example, the manager is best served by selecting the risky action – as indicated by the region highlighted by the dashed lines of Exhibit 9 – and thereby giving the manager a 50% chance of realizing a substantial promoted interest. As noted earlier, this sort of behavior is not confined to managers with incentive fees. Consequently, a (typically, core) investment manager without an incentive fee, which has so far realized below-average performance, is also more likely to prefer the risky action.

“Moneyness” and Volatility

While it is apparent that the manager has an economic incentive to favor (subject to the caveats described earlier) the riskier strategy when its current promoted interest is out-of-the-money (see Exhibits 7-9), it is not necessarily the case that the manager has an economic incentive to favor the conservative strategy when its current promoted interest is in-the-money (see Exhibits 4-6). When the manager decides in favor of either the risky or conservative strategy, the manager compares the probability-weighted utility of the expected promoted interest given the proposed/future action to the utility of the current promoted interest. In so doing, there are the twin issues of the “moneyness” (i.e., the degree to which the current promoted interest is in-the-money) and the dispersion of the expected promoted interest given the proposed risky action – against the backdrop of the manager’s utility function.

To illustrate the second point, Exhibit 4 is recreated below – as Exhibit 10 – with an overlay of another possibility with greater dispersion (i.e., volatility). To be more specific, the manager can now select a strategy which pays off either at \( t'''_2 \) (as illustrated by the light-shaded box) or \( t''''_2 \) (as also illustrated by the light-shaded box), with equal probability. While it ultimately depends on the curvature of the manager’s utility function, it should be clear that – at some point – as the dispersion of the outcomes of the riskier strategy widens the

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14 In the same way that this example does not rely on the manager exhibiting risk aversion, the weak-credit tenant’s chances of a favorable outcome does not have to equal 50%. Indeed, the chances may be less and the manager may still make the riskier choice (i.e., leasing to the weak-credit tenant). This is a form of risk-shifting or “asset substitution” – see Jensen and Meckling (1976) – which is traditionally considered in cases of an “under-water” borrower. Indeed, the intuition is the same: some out-of-the-money convexity prompts risk-seeking behavior.
manager selects the risky strategy, even though its current promote is in-the-money. This is due to convex nature of the promoted interest (i.e., the kinked line in Exhibits 4, 7 or 10), which truncates the manager’s promoted interest at zero while permitting an unlimited upside.

Other Financial Considerations

We can think of marginal utility as encompassing more than just the profits earned from the promoted interest in the current venture. Another aspect is, for example, the impact of the venture’s return on the manager’s track record (see, e.g., Chung, et al. (2012)). If it is the case that the venture’s return at the current level (which, in turn, produces a promoted interest equal to \( t_1 = t_2 \)) places the manager’s performance in the top tier of its competitors, then this level of return may be sufficient for future fund-raising efforts. Similarly, if it is the case that losing the gamble on the risky action (i.e., the promote of \( t_2' \) is realized) and, in turn, this produces a venture-level return which is merely mediocre with regard to the manager’s peers, then this prospect may severely damage the manager’s future fund-raising efforts. As a stark example, assume the venture’s return is 20% per annum with conservative actions (i.e., \( t_1 = t_2 \)); but, it is either 40% if the risky action succeeds (i.e., \( t_2'' \)) or 0% if the risky actions fails (i.e., \( t_2' \)). It may well be the case that the investment manager’s future fund-raising efforts are more harmed by a return of 0% than helped by a return of 40%. If so, the manager concludes it is best to select the conservative action, thereby producing a return of 20% and not jeopardizing future fund-raising efforts.\(^{15}\)

\(^{15}\) Robinson and Griffiths (2012) suggest that cash-flow distributions and liquidations also occur earlier when the manager’s carried interest is in-the-money.
In a similar vein, most managers view the current venture as one of a series of future offerings. As such, managers wish to avoid undue risk-taking (and other imprudent behavior) because it may damage the manager’s track record – an important ingredient when raising capital for future offerings. As a result, managers are inclined to avoid excessively risky actions and, instead, focus their efforts elsewhere (e.g., on other ventures). That is, managers may “limp” through the current venture – trying to avoid excessive under-performance relative to its peers, while concentrating resources and efforts elsewhere. Clearly, this result is sub-optimal for the investor.

Moreover, funds generally have “cornerstone” investors, large and (likely) recurring sources of capital, that disincentives the manager from attempting to maximize the current venture’s promoted interest at the expenses of future business. Additionally, the marketing costs of a fund are typically very high; thus, the brand (or reputation) of the manager can also discourage the manager from being excessively short-term focused.

Furthermore, Ross (2004) reminds us, in a slightly different context, that the manager’s utility curve may change shape as the manager experiences gains (and losses) from this venture and/or others and, accordingly, it can be precarious to make universal statements about risk-averting v. -seeking behavior.

Finally, Panageas and Westerfield (2009) find, in a study focusing on (non-real estate) hedge funds with high-water marks, that the indefinite (or, at least, indeterminate) life of these funds has a disciplining effect on fund managers such that they consistently refrain from selecting the risky action – as illustrated above – as a means of improving the expected value of their option-like promoted interest. In the same regard, Figge, et al. (2012) find that this disciplining effect fades in private-equity funds with finite lives. This indefinite (or indeterminate) fund life is a key distinction between many private-equity funds and most non-core real estate funds, where the latter generally specifies a five- to ten-year investment horizon.

**Improving Alignment of Interests by Lowering Prefs & Promotes**

If most (non-core) real estate funds lack the indefinite (or indeterminate) life of non-real estate private equity funds, what can real estate investors do to improve alignment of interests with their managers? What is a rational mechanism for invoking more effort (and, therefore, higher expected returns) from the managers (but without unduly compensating the manager or without invoking excessive risk-taking)? At least one approach to consider is lowering both the investor’s preferred return and the manager’s promoted interest.

As a means of examining this approach, let’s consider our earlier example in which the venture’s expected return is 12% per annum, with volatility of 15% (as with Exhibits 4 and 7) and let’s further assume that the investor receives a preferred return ($\psi$) of 12% per
annum and the manager receives a promoted interest ($\kappa$) of 20% of the residual profits. Under these assumptions, the investor’s net expected return is 10.8% and the difference of 1.2% (i.e., 0.12 - 0.108 = 0.012) represents the manager’s expected promote.\(^{17}\) Let’s consider this example as the “base case” – as indicated in the left-most column of numbers in Exhibit 11. Then, let’s consider decreasing the preferred return in increments of one percentage point (as we move left to right across Exhibit 11) and solving for the manager’s promote percentage ($\kappa$) such that investor’s expected net return\(^{18}\) remains unchanged at 10.8% and, therefore, the expected value of the manager’s promoted interest also remains unchanged at 1.2% over all pref-and-promote combinations.

\(^{17}\) To better understand this determination, see Pagliari (2007) or (§III.B of) Pagliari (2013). Essentially, the expected value of the manager’s promoted interest, $E[\pi]$, can be given by:

$$E[\pi] = \kappa \int_{\psi}^{\infty} f(x)(x - \psi)dx$$

Moreover, any normal distribution [$x \sim N(\mu, \sigma^2)$] which is truncated beginning at $\psi$ can be viewed as having a conditional mean of $E[x | x \geq \psi] = \mu + \sigma \lambda(\alpha)$ and a conditional variance of:

$$Var[x | x \geq \psi] = \sigma^2 \left[1 + \delta(\alpha)\right];$$

where: $\delta(\alpha) = \lambda(\alpha)(\lambda(\alpha) - \alpha), \quad \lambda(\alpha) = \frac{\phi(\alpha)}{1 - \Phi(\alpha)}$, $\alpha = \frac{\psi - \mu}{\sigma}$, $\phi(\alpha) =$ the probability density function of $\alpha$, and $\Phi(\alpha) =$ the cumulative distribution function of $\alpha$ – see Greene (2011). I thank Greg MacKinnon for referring this citation to me.

\(^{18}\) The investor’s expected net return ($E[\eta]$) is simply the venture’s expected return ($\mu$) less the expected value of the manager’s promoted interest:

$$E[\eta] = \int_{-\infty}^{\infty} f(x)(x)dx - \kappa \int_{\psi}^{\infty} f(x)(x - \psi)dx = \mu - E[\pi]$$
To help orient the reader: The top highlighted (or shaded) row represents the lowering of the investor’s preferred return in increments of one percentage point (such that the investor’s preferred return begins at 12% and ends at 0%). The next highlighted row represents the investment manager’s promoted interest (ranging from 20% to 8.7%) such that the investor’s expected net return of 10.8% is unchanged across all pref-and-promote combinations. Of course, this also implies the expected value of the manager’s promoted interest also remains constant at 1.2%, as shown in the third highlighted row. The bottom highlighted row represents the volatility of the manager’s promoted interest. Finally, the four dashed boxes are meant to highlight some of the equivalent pref-and-promote combinations as a means of facilitating the discussion. In an approximate manner, a “20 over a 12” (i.e., a 20% promote and a 12% preferred return) is equal (in terms of the manager’s expected promoted interest) to a “15 over a 9” or a “12.5 over a 6.”

From an implementation standpoint, notice that the change in the manager’s promoted interest (necessary to preserve constant expected net returns) does not move in a ratable manner with a change in the investor’s preferred return. For example, the manager’s promoted interest is 20% when the investor’s preferred return is 12%. However, dropping the preferred return in half to 6% does not imply that the manager’s promoted interest also drops in half (to 10%); instead, the promoted interest drops only to 12.6% (i.e., drops by approximately 37% rather than 50%). So, investors and managers must exercise care and rigor when framing a discussion about the tradeoffs involved when changing the preferred return and the promoted interest. Their views on expected (venture-level) returns impact the computations necessary to solve for these equivalencies. Of course, their views may differ.
and, consequently, investors and managers may have differing views on what pref-and-promote structures constitute equivalent outcomes.\textsuperscript{19}

Two important insights can be gleaned from Exhibit 11. These insights can make the reduction in the preferred return and in the promoted interest a “win/win” for both the investor and the manager.

First, the uncertainty of the manager realizing its promoted interest fades as the investor lowers its preferred-return requirement. This is intuitive and statistically observable (see the bottom highlighted row above);\textsuperscript{20} in fact, the volatility of the manager’s promote falls almost by half (over the entire range of preferred returns). Therefore, the risk-averse investment manager (i.e., one who cares about the trade-off between \( E(\pi) \) and \( \sigma_\pi \)) should be willing to accept a lower promoted interest \( (\kappa) \) than that shown above. How much less is a function of the manager’s risk aversion. Specifying the form of the manager’s risk aversion and solving for the lower promoted interest is beyond the scope of this paper.\textsuperscript{21} Obviously, a further reduction in the manager’s promoted interest (i.e., beneath the amounts already shown in Exhibit 11) improves the investor’s expected return – as compared to the base case. Therefore, both parties find it in their best interests to collaborate on lowering the preferred return and the promoted interest beyond, as an example, those combinations shown in Exhibit 11.

\textsuperscript{19} Interestingly, the European Securities and Markets Authority (ESMA) requires that European Union members incorporate the Alternative Investment Fund Managers Directive (AIFMD) into domestic law and that managers of alternative investment funds (AIF) must be authorized under AIFMD by their national regulator. The basic principle of the AIFMD is that manager remuneration policies must promote sound and effective risk-management. See Rodrigues (2013).

\textsuperscript{20} To be more explicit: The probability that the manager’s promoted interest \( (\pi) \) is in-the-money is 50\% when the investor’s preferred return \( (\psi) \) is 12\% and increases to approximately 65\% when the investor’s preferred return is lowered to 6\% – given our assumptions about the distribution of gross returns. However, the expected value of the manager’s promoted interest \[ E(\pi) \] is identical under both scenarios – because we have purposefully lowered the manager’s share \( (\kappa) \) of excess profits as the investor’s preferred return is lowered. Said another way, the manager’s promoted interest is characterized by lower probabilities and higher amounts in the first scenario and by higher probabilities and lower amounts in the second scenario – such that, on average, the expected values are identical under both scenarios.

\textsuperscript{21} Nevertheless, it may be important to some readers as how to proceed. So, here is a sketch of the approach: Identify the form of the manager’s risk aversion (e.g., power, quadratic, logarithmic, etc.) and parameterize that form. As just one of many possible examples, consider the case of power utility: \( u(w) = \frac{w^{\chi}}{\chi - 1} \), where: \( w = \text{wealth (restate } E(\pi) \text{ into } $) \) and \( \chi = \text{the coefficient of relative risk-aversion} \). Then, solve such that the manager’s expected utility is identical under both combinations of preferred returns \( (\psi_1 \text{ v. } \psi_2) \) and promoted interests \( (\phi \text{ v. } \phi_2) \), given the distribution of venture-level returns \( (\mu, \sigma) \):

\[
\begin{align*}
    \left[ u\left( \phi\int_{\psi_1}^{\psi_2} (x-\psi_1)f(k) \right) \right] dx &= \left[ u\left( \phi_2\int_{\psi_1}^{\psi_2} (x-\psi_2)f(k) \right) \right] dx.
\end{align*}
\]
Second, Exhibit 11 treats the venture-level returns as static (or exogenous). They are not. As noted earlier, the venture’s expected return is a function of the manager’s effort and, in turn, the manager’s effort is a function of the likelihood that the manager’s promoted interest will be “in the money.” That is, venture-level returns are endogenous. Consider Exhibit 12 as an illustration of this endogeneity.

Exhibit 12: Illustration of Market Opportunity Set
vis-a-vis Investment-Specific Returns as a Function of Manager’s Effort

Exhibit 12 contrasts the market’s opportunity set with an attempt to illustrate that venture-specific returns improve and risk declines as the manager applies more effort. As the venture-specific returns cross the market’s opportunity set, the venture produces positive “alpha” (i.e., positive risk-adjusted returns). Again, this increasing application of effort is a function of lowering the investor’s preferred return and thereby improving the likelihood that the manager’s realized promote will be in-the-money.

These two insights suggest that both the investor and the manager can benefit by reducing the preferred return and the promoted interest. The lowered pref improves the chances of the manager realizing its promoted interest; so, the manager is willing to accept yet a lower promote which, in turn, leads to more effort and higher returns on average. In essence, this reduction can create a “win/win” situation for both the investor and the manager. Anecdotally, it seems that market transactions often lead, in the other direction, to higher prefs. While this result may permit the investor some initial euphoria, such an arrangement may ultimately be to the detriment of both parties.
Naturally, investors may want to temper the reduction in their preferred return. At the onset, an elimination of the preferred return seems an extreme movement. That being said, two observations bear repeating: First, the finance literature suggests that the lack of incentive fees in the mutual fund industry does not produce lower levels of effort among active investment managers (i.e., the competitive nature of the (highly scalable) investment-management business induces effort without any promote). Second, many (non-real estate) private-equity/hedge funds are structured such that the fund manager receives a fraction (generally 20%) of the increase in the fund value in excess of the last-recorded maximum without a preferred return.

**Fixed v. Indexed Preferences?**

So far, we have expressed the investor’s preferred return in terms of a fixed percentage over the life of the investment. Of course, an alternative is to consider a variable percentage that is tied to some underlying index. In so doing, there is a wide variety of choices; clearly, the selection of a fixed spread and of one of these indices depends on the venture’s investment strategy (i.e., its expected risk/return characteristics); investors would like to avoid paying incentive-management fees for performance which mirrors an appropriate passive index. Some of the more-often-used indices\(^\text{22}\) include:

- A fixed spread (i.e., a risk premium) over the realized inflation rate – as it is often argued that commercial real estate acts as a hedge against (unanticipated) inflation.

- A fixed spread over a floating interest rate – as it is often argued that equities ought to provide a return premium over debt products.

- A fixed spread over the NCREIF Index – as the manager, in principle, ought to be able to produce positive “alpha” (i.e., positive risk-adjusted returns).

- A fixed spread over a levered NCREIF Index – a variation of the approach above, in which the NCREIF Index is restated for leverage characteristics (i.e., leverage ratio and cost of indebtedness) similar to the venture.

The potential mismatch between a fixed and index-based (or floating) preference is often greatest for ventures with long investment horizons, where the difference between expected and realized market conditions is often greatest. These differences often include a capital-market component (e.g., rising or falling capitalization rates) which is beyond the control of the manager; to reward or penalize the manager for such events is often unfair to both the manager and the investor. Accordingly, an index-based preference serves to remove some of the unintended consequences of a fixed preference – particularly those relating to uncontrollable capital-market effects.

\(^{22}\) Note that the fixed spread should vary with the index and the venture’s characteristics.
It is often the case that initial expectations about venture-level performance vary from realized performance. With the passage of time, uncertainties about future performance may begin to narrow while the expectation of likely performance may shift, as suggested in Exhibit 13.

At the risk of oversimplifying, Exhibit 13 illustrates three such possibilities with regard to evolving market conditions: they deteriorate, remain consistent or improve *vis-à-vis initial expectations*\(^23\) (which are illustrated by the shaded region). If the manager's carried interest (or incentive fee) is designed with a fixed preference, then the two diverging cases (*i.e.*, deteriorating and improving conditions) can create significant imbalances between the investor and the manager (assuming that the manager met the investor's expectations in all other respects).

In the case of improving market conditions and a fixed preference, the manager is unjustly rewarded and the investor unfairly penalized because improving market conditions (*e.g.*, falling capitalization rates) have improved venture-level performance without commensurate effort and expertise from the manager. In other words, the investor paid an incentive fee when the manager failed to outperform the passive benchmark.

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\(^{23}\) The use of “market conditions” is meant to imply an element of returns about which the manager has little to no control. As a result, the manager’s carried interest may be unfairly penalized or unjustly enriched when such conditions significantly diverge from the initial expectations.
The case of deteriorating market conditions and a fixed preference is less straightforward. In such cases, we find that the manager is unfairly penalized because deteriorating market conditions (e.g., rising capitalization rates) have worsened venture-level performance due to no fault of the manager. However, the story does not necessarily end there. Instead, it is often the case that the manager's effort and expertise are integral components to the venture’s future success. It may be the case that, without a reasonable likelihood that the manager’s carried interest will end up “in the money,” the manager will choose to focus its effort and expertise on other ventures (in which, the investor may not be involved). Provided that the investor does not find the manager dishonest, incompetent and/or financially distressed, the investor and the manager may rationally look to renegotiate the fixed preference downward – such that there is now a reasonable likelihood that the manager’s carried interest will end up “in the money” and, therefore, the manager will choose to focus its effort and expertise on the investor’s venture.

We should also note that this sort of renegotiation is also found in corporations with stock-option plans for senior management. When it is determined by the corporation’s board of directors that the company’s share price has fallen due to no (or little) fault of senior management, then the strike price of these options is often reset to a lower value such that senior management now expects there is a reasonable likelihood that their stock options will end up “in the money” and, accordingly, senior management is sufficiently motivated to help improve the fortunes of the company.

The point of examining the deviating cases coupled with a fixed preference is to illustrate the “tails I win/heads you lose” circumstance it might create for the manager. In case of improving conditions, the manager is unjustly enriched when employing a fixed preference; in the case of the deteriorating conditions, the manager’s carried interest (or some portion of it) is often preserved by lowering the investor’s fixed preference. Much of this circumstance can be avoided by using an index-based (rather than a fixed) preference.

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24 For a robust treatment of renegotiating and, more generally, bargaining, see Schelling (1956).

25 Perhaps there is no greater collision of these forces than with regard to the so-called “zombie” funds – those funds, typically non-core, which employ substantial leverage and, during the downturn in asset prices, find themselves in multiple instances of the loan’s book value exceeding the asset’s fair market value. Particularly when the loan is non-recourse, the fund’s equity position can be thought of as a call option on the future value of the property. As the manager continues to collect fees, investors naturally ask whether the manager is merely “milking” the fund for its fees before the fund ultimately has to “throw in the towel” (i.e., transfer the property’s deed to the creditor)? Or, in the alternative, is the manager rightfully attempting to recover lost equity (perhaps employing some of the risk-shifting practices cited earlier as a way to improve the odds of recovery)? In many cases, it is extremely difficult to know the likelihood of recovery and, therefore, whether the fees paid for the manager’s ongoing efforts are foolish or prudent. Unfortunately, it is easy to believe the worst of intentions by the other side (i.e., investors vis-à-vis managers) in such perilous times.
Conclusions

This article has examined a simple “pref and promote” structure, as typically found in non-core funds and ventures – where the manager’s effort is generally difficult to discern. These convex incentive structures are likely to produce behavioral effects in the manager. This article addresses and illustrates these behavioral effects as a function of whether the manager’s promoted interest is likely to be realized. To the extent that the promoted interest is likely to end up “in the money,” the manager tends to prefer conservative actions. To the extent that the promoted interest is likely to end up “out of the money,” the manager tends to prefer risky actions. However, these behavioral effects are often mitigated by the manager’s desires about future fund-raising efforts – where adverse reputational effects (due to either excessively conservative or risky actions) may thwart such future efforts. This article then proposes and illustrates that lowering both the investor’s preferred return and the manager’s promoted interest (expressed as a percentage of profits) may benefit the investor as well as the manager. This win/win situation is the result of the endogenous effects of the manager expending more effort. Finally, this article also proposes that the use of an indexed-based (or floating) preferred return (as opposed to a fixed-rate preference) may create a better alignment of interest between the investor and manager – particularly in those instances in which the market moves (either favorably or unfavorably) substantially away from initial expectations.
References


