Recent Developments in the Private Equity Market and the Role of Preferred Returns

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1. Introduction

The scale of private equity financing exploded in the late 1990s. Venture capital to entrepreneurial start-ups in internet-, computer-, and medical-related technologies soared, rivaling public financing of IPOs, and nonventure capital for middle-market expansions and corporate restructurings also rose sharply. Even with the stock market correction and scaling back of activity in 2001, the potential for enormous wealth gains for founders and returns far in excess of public stock market returns for capital providers has resulted in record numbers of new ventures and middle-market mergers and acquisitions.

Private equity is generally considered the most expensive source of finance, sought by firms that cannot support debt because of their high risk, and that have severe information problems and little track record to attract public equity. Such firms have difficulty raising capital because of the intensive need for due diligence by investors, and active management for a substantial period of time before returns are realized. These problems are solved in the private equity market by the limited partnership structure, the principal financial intermediary, that is managed by investment professionals, such as venture capitalists and buyout investors, known as general partners.[1] General partners are specialists that find, structure, and manage equity investments in closely-held private companies, and who gain their expertise by attaining a critical mass of investment activity that institutional investors could not attain on their own. Limited partnerships are among the largest and most active shareholders in their portfolio companies with significant means of both formal and informal control.

At the same time, the limited partnership itself needs to raise capital, and faces many of the

[1]For an overview of the limited partnership structure and the general partner compensation contract, see Sahlman (1990) and Fenn, Liang, and Prowse (1997).

same agency problems as does an entrepreneur raising external funds. Thus, the limited partnership employs organizational and contractual mechanisms to align the incentives of institutional investors who provide capital, and those who specialize in making the information-intensive investments, the general partners of the limited partnership. The principal feature of the limited partnership structure is the compensation contract – general partners assess an annual management fee, but the bulk of their compensation comes from sharing the profits of the portfolio of investments. These features are designed to protect institutional investors by ensuring general partner effort, limiting risk-taking, and screening unqualified general partners. In addition, the limited partnership has a finite life, and so general partners must build and maintain a reputation if they want to raise capital again. The compensation arrangement is particularly important because limited partners do not (and cannot, if they want to retain their limited liability status) exert the continuous and extensive oversight on the general partners' activities, as do general partners over the portfolio companies.

This arrangement has served the private equity market well, as evidenced by the growth in the participation of institutional investors, increased capital commitments, and the continuing dominance of limited partnerships, even as direct investments by strategic investors and limited partners have grown. Commitments to professionally-managed venture capital partnerships exceeded $90 billion in 2000, about ten times the amount in 1996 (Figure 1), and those to nonventure capital partnerships also rose sharply in the late 1990s. The number of new private equity partnerships formed also rose (Table 1). Still, average fund sizes rose sharply, and the amount of capital managed per general partner for both venture and nonventure funds was substantially higher in 2000 than in 1996.

Only a very few papers have studied the limited partnership contract or its evolution as the

number and size of funds have grown. Sahlman (1990) provides a broad overview of the compensation structure of venture capital contracts, and Fenn, Liang, and Prowse (1997) expand the discussion to nonventure limited partnerships. Gompers and Lerner (1999) examine the compensation features of a sample of 419 venture capital limited partnerships formed between 1978 and 1992, but they focus on management fees and the carried interest, or share of profits that the general partner earns. They find that general partners at young venture funds tend to receive higher management fees (in percentage terms) and lower carry, which they take as evidence of a model in which limited partners learn about the ability of the general partner to create returns. According to their model, general partners at young firms need less contract-related inducement (less carry) to exert effort because they will want to work hard to demonstrate their ability. Their theoretical analysis abstracts from the common requirement that general partners return capital to limited partners before they start sharing in returns. They also abstract from preferred returns, though this feature was not prevalent among the venture capital funds in their sample.

This paper examines closely the role of a preferred return to limited partners as an important modification to the more standard compensation contract, which is closer to pure equity, and tests alternative hypotheses for its increased use. A preferred return is the minimum rate of return to be paid to limited partners before general partners start to take their share of profits. This feature is over and above the nearly universal contract provision that general partners return capital before sharing profits. The preferred return is common in nonventure partnerships, but it is a new and apparently growing feature in venture capital partnerships. In a survey of 122 firms that managed private equity funds in 2000, Toll (2001) reports that preferred returns were included in 90 percent of buyout funds, while the fraction of venture capital funds with preferred returns was 35 percent, up from 19 percent in 1998. The most typical preferred return for venture capital funds

was 8 percent, the same as for nonventure funds, although two of 21 venture funds had a preferred return of as high as 25 percent. In some cases, limited partners trade off a higher minimum return at the expense of a greater share of the profits for the general partner.

Limited partners cite a number of reasons for using preferred returns. Toll reports that limited partners demand preferred returns to screen out general partners that are not confident of producing high returns and to discourage general partners from taking excessive risks, apparently because the general partner will want to ensure they achieve the preferred return goal. Preferred returns might also help to reduce general partner incentives to invest in too many overpriced deals when capital is ample. Gompers and Lerner (1996) have found that in periods of greater capital and greater demand for experienced general partners, limited partners receive less protection because of fewer covenants governing actions of the most skilled general partners. We interpret these stated reasons to indicate that limited partners turn to preferred returns to mitigate information problems they face because they cannot observe general partner's quality, and choice of effort and risk.

In this analysis, we consider carefully how preferred returns mitigate and exacerbate information problems between general and limited partners, drawing heavily from the literature on optimal contracting. In addition to the information problems concerning unobservable general partner effort, quality, and choice of risk, we also consider how preferred returns address the problem, unique to private equity partnerships, that the values of private investments held by the partnership are not observable to limited partners until the investments are exited. Our analysis indicates that preferred returns have some contracting benefits: They may mitigate inefficiencies that arise from unobserved general partner effort and quality, and they may entice general partners to exit their investments more quickly. However, we also find that preferred returns have a

contracting cost: They tend to exacerbate inefficiencies that arise from unobservable general partner choice of risk, and thus could lead to greater risk, not less as some limited partners expect. We refer to the umbrella hypothesis that variations in the use of preferred returns across private equity partnerships reflect variations in the types of information problems faced by these firms as the "contracting hypothesis".

In the second part of the paper, we derive implications of the contracting hypothesis and then examine whether the data are consistent with these implications. Our results, at this point, are drawn from Toll (2001), though we are in the process of acquiring additional data. We find more frequent use of preferred returns at (1) relatively inexperienced funds, consistent with their use to screen quality; (2) nonventure funds relative to venture funds, which could owe to the more narrow distribution of expected returns for nonventure investments, and which is consistent with preferred returns more effectively inducing general partner effort when actual returns provide clear signals of general partner effort; and (3) at venture capital funds raised in 2000 than at venture funds raised in 1998, consistent with the higher expected returns in 2000 reducing the option value of recklessly swinging for the fences. We plan to examine whether preferred returns are more prevalent at firms with greater capital or management fees per partner, which would suggest whether they are used to help prevent general partners from investing in over-priced deals and spreading themselves too thin. Given the number of venture capital funds formed by new firms in recent years, and the growth in fund sizes, the need to screen may help explain the increased prevalence of such returns in venture capital funds.

We also consider whether the data are consistent with two alternative hypotheses that are outside the framework of information problems. The first is that preferred returns reflect strong bargaining power among some limited partners. This "bargaining" hypothesis would predict

greater frequency of preferred returns at inexperienced funds, and lower GP carry at partnerships with preferred returns. The second alternative hypothesis is that some limited partners use preferred returns as a form of partial insurance. Limited partners (e.g., an investment manager at a large public pension fund) may be very risk-averse if their own compensation contracts limit their upside potential from investments. Our results support the bargaining hypothesis but not the insurance hypothesis.

The analysis of the preferred return is important because its use has expanded to venture capital funds in recent years, and it has implications for general partners' choice of effort and risk. In particular, it is important to assess whether this feature, which appears to be appropriate for nonventure investments, also yields net benefits for venture capital investments, which tend to be riskier than nonventure investments. The analysis also helps to clarify the conditions under which financial holding companies, that act as limited partners of their newly-formed merchant banking subsidiaries, or nonfinancial companies, that establish venture groups to make investments in firms with related technologies, should demand a preferred return.

Section II describes the mechanics of private equity partnership contracts and argues that the use of preferred returns represents an important change in the structure of the contract. Section III presents our analysis of the contracting benefits and costs of preferred returns. Section IV discusses empirical implications that would be consistent with the hypothesis that the incidence of preferred returns reflects variations in information problems across firms. Section V considers two alternative hypotheses. Section VI presents our preliminary results, and Section VII concludes.

II. Analysis of Preferred Returns in Private Equity Limited Partnership Contracts

a. Mechanics of Private Equity Limited Partnership Contracts

General partners earn a management fee, but most of their compensation is from the carried interest. As reported in Toll (2001), fees typically range from 1.5 percent of capital for larger nonventure funds to 2.5 percent for smaller venture funds.[2] Carried interest is predominantly 20 percent for all funds, although variation exists in how profits are defined to which the carried interest applies. General partners also receive distributions as a limited partner based on their own capital contributions to the fund. These contributions vary, but provide relatively small compensation relative to the carried interest. The median general partner contribution to venture capital funds is 1 percent, while about half of nonventure general partners make contributions of between 1.1 and 5 percent.

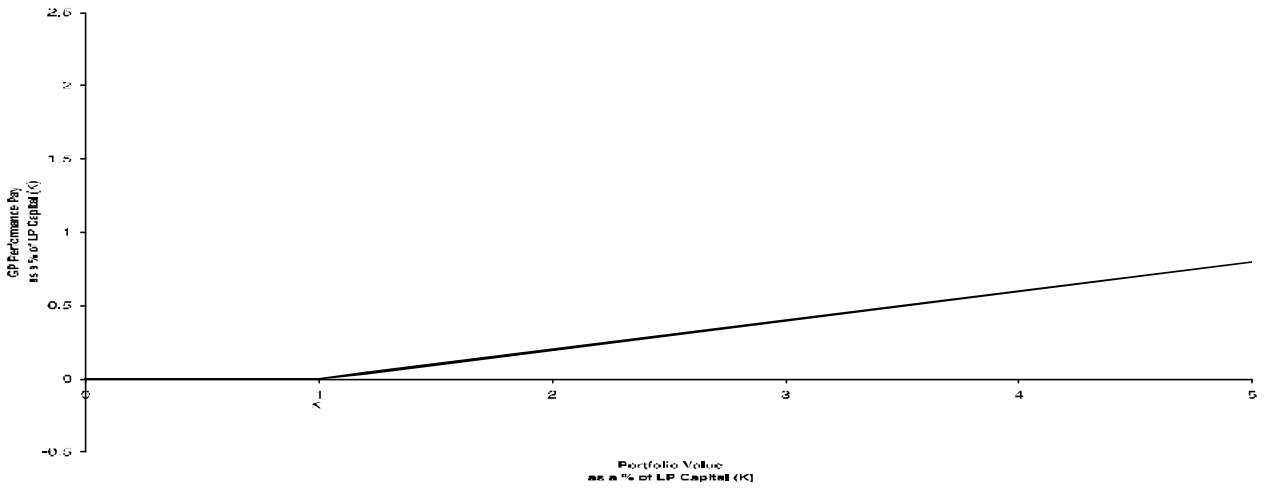
Nearly all contracts between general partners (GP) and limited partners (LP) at private equity firms stipulate that limited partners be paid back their capital before general partners share in portfolio returns, and some contracts require that limited partners first obtain a "preferred return" in addition to capital.

The impact of preferred returns on the limited partnerships contracts and the precise mechanics of preferred returns and general partner carry are illustrated with examples. Consider two contracts from private equity partnerships that raise $K in capital and exit all investments after 10 years. The first contract specifies a GP carry of 20% and no preferred return. As Figure 1 shows, the GP must return $K to limited partners before sharing in 20 percent of the profits. Since the investments are exited after 10 years and say the expected portfolio value after 10 years is

[2]See also Sahlman (1990), Fenn, Liang, and Prowse (1997), and Gompers and Lerner (1999).

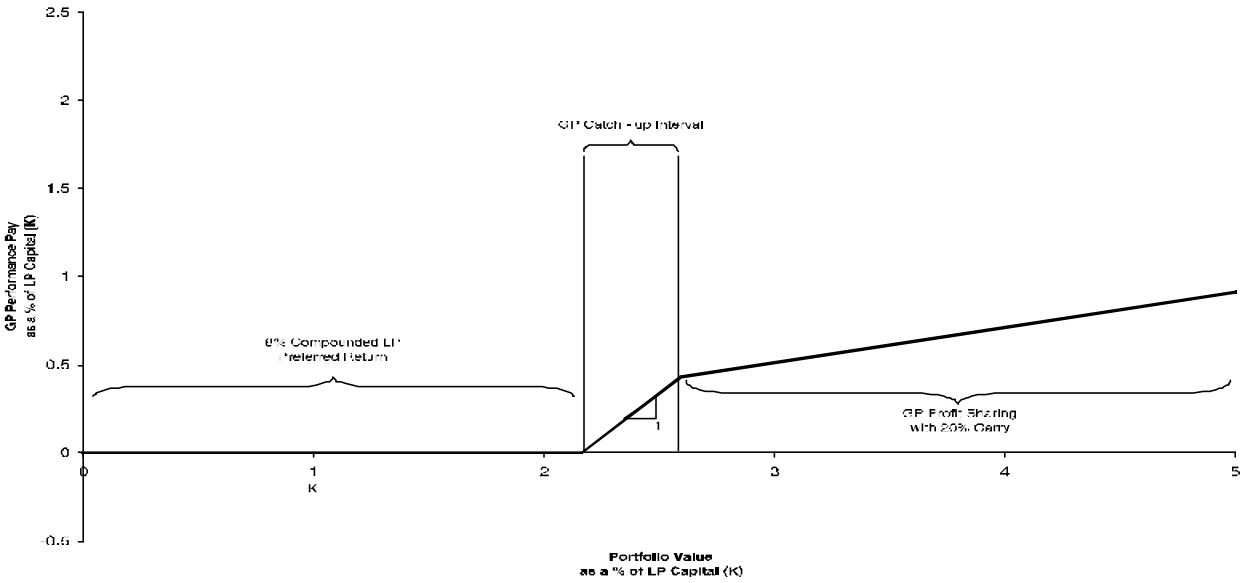
about $3.5K (15 percent compounded annually), the contract requirement that the GP first return capital seems nearly irrelevant. Indeed, without preferred returns, and with a long investment horizon, the mapping of portfolio returns to GP profits looks very similar to a pure equity contract, which would be a straight line out of the origin.

Figure 1: GP Return Mapping with No Preferred Returns



The second contract augments the first with a preferred return of 8%. As shown in the Figure 2, the GP receives no variable compensation until the portfolio value is more than 200% of K (8% compounded annually), obtain all marginal increases in portfolio value as they catch up to their 20% carry, and then share all marginal increases according to the 20% carry.

Figure 2: GP Return Mapping with Preferred Returns



The difference between the two contracts is striking. With preferred returns, the possibility that GPs do not earn any variable compensation because of a low portfolio value is no longer trivial, and the mapping between portfolio returns and GP profits bares little resemblance to a pure equity contract. However, the two contracts are similar in that they both reward GPs for higher portfolio returns. This fundamental performance sensitivity tends to induce effort on the part of the general partner. Preferred returns accentuate the performance sensitivity of the contract by pushing GP variable compensation to higher portfolio returns. However, there are costs associated with higher preferred returns. In the following section, we provide a detailed discussion of the contracting costs and benefits of preferred returns.

Not surprisingly, the performance aspects of the limited partnerships contracts are similar to the performance aspects of the contract between a venture capital firm and entrepreneurs. In both types of contracts, investors tend to have high priority claims when the investment values are

low, and share returns when investment values are high. This asymmetric sharing is explicit in the partnership contract, which specifies that capital must be returned along with possibly a preferred return before the GP shares in the profits.

In the contract between venture capitalists and entrepreneurs, asymmetric sharing is achieved through the use of convertible preferred equity. These securities, issued by the entrepreneur and held by the venture capitalist, give the venture capitalist priority over common shareholders (e.g., the entrepreneur and managers), and in some cases a preferred return, when the conversion option is not exercised. The option is not exercised when the value of the entrepreneur's firm is relatively low, such as when the entrepreneur's company is liquidated or acquired. The option tends to be automatically exercised when the value of the entrepreneur's firm is high, such as after an initial public offering greater than a certain size (see Gompers (1997) for a complete analysis of convertible securities in venture capital investments).

III. Contracting Benefits and Costs of Preferred Returns

Our analysis of the contracting benefits and costs of preferred returns considers four information problems - effort, risk, talent, and value of portfolio firms prior to exit.[3] Table 2 provides a summary of these costs and benefits.

First, we consider arguably the most important information problem: unobservable GP effort. GP effort is thought to be critical to the success of any private equity firm, but because GP effort is unobservable, a contract cannot be written on GP effort. Hence, GPs are not able to pre-

[3]While we do not explicitly discuss how these factors influence GP carry, there is likely to be a trade-off between preferred returns and shares. All else equal, an increase in preferred returns would require an increase in carry to keep LP expected returns constant.

commit to a particular effort level. Preferred returns mitigate this information problem by not rewarding GP for low returns, which essentially punishes GP for signals of low GP effort. The notion that optimal contracts tend to reward informative signals of effort is canonical in the contract theory literature.

On the other hand, in a multi-period model where GP can observe the current value of their portfolios between each round of effort, preferred returns may have an adverse effect on GP effort. In particular, preferred returns may induce GPs to "give up" when the portfolio value drops to the point where raising it above the preferred return is unlikely.[4] One contract covenant that mitigates this adverse consequence of preferred returns is the no-fault divorce clause, which allows limited partners to remove general partners or dissolve the fund without cause. In Toll's (2001) sample, 44 percent of venture funds and 60 percent of buyout funds had no-fault divorce clauses.

The second information problem we consider is unverifiable GP choice of risk. Preferred returns may induce GP to take excessive risk (i.e., "swing wildly for the fences").[5] As discussed by Sahlman (1990) and Fenn, Liang, and Prowse (1997), GP variable compensation may be thought of as a call option that entitles them to a share of the increase in portfolio value, where the cost basis of the fund is the exercise price of the option, and the life of the fund is the life of the option. In this context, it is easy to see why general partners have the incentive to swing for the fences, since the value of the option increases in risk. Moreover, as the option gets more "out-of-the-money," because of a preferred return, the payoff for an increase in risk is even greater.

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[4]Holmstrom and Milgrom (1987) make this point in a generic principal-agent model.

[5]For risk to be costly, swinging for the fences must itself be costly. This would be the case if swinging substantially increases portfolio variance at the expense of expected returns (i.e., if it is reckless).The fact that contract covenants exist that preclude specific high-variance investment strategies suggests that swinging for the fences is indeed a costly option. One such covenant, discussed by Sahlman (1990) and Fenn, Liang, and Prowse (1997), limits the percentage of capital that GP may invest in a single firm.

The third information problem, unobservable GP quality, creates a need to screen less talented GPs. Preferred returns help dissuade less talented GPs from raising a fund because they are less likely to earn any variable compensation.[6] Whether such screening is effective clearly depends on the size of the fixed management fees and outside opportunities for the general partners. Unobservable GP quality may be less of a concern for more established firms, since their track records may be used to reveal quality. In addition, screening concerns, as discussed in the next section, may be conditional upon the size of the partnership.

The fourth information problem, GP private information about the value of portfolio investments prior to their exit, may create an incentive for GP to delay exiting investments. GP variable compensation is highly leveraged, giving a GP less incentive to exit investments than would an LP that has provided the vast majority of capital. This information problem has not been considered in the literature on optimal contracts, to our knowledge, but clearly plagues the limited partner relationship. Investment returns at exit, say from an IPO or a merger, are public and verifiable, but the value of investments prior to exit is difficult for outside parties to observe and nearly impossible for them to verify.

A preferred return to a partnership contract, all else equal, may mitigate the GP's incentive to delay exiting investments because preferred returns create the potential for a delay to reduce the GP's realized share of profits. Without a preferred return, the GP always receives a fixed share of the profits (i.e., the carry). With a preferred return, the GP only receives the carry when the portfolio value is greater than or equal to the level at which the GP catches up to the carry. This threshold portfolio value increases with delay, since delay implies that the preferred return, which

[6]This argument is analogous to that in Gompers (1997) for why the convertible nature of securities held by GPs help screen entrepreneurs.

must be paid before GP even begin to catch up to their carry, is compounded over a longer time period. If the rate at which the portfolio value increases over the delay period is less than the preferred return, delay brings the portfolio value closer to and possibly below the threshold level.

IV. Empirical Implications of The Contracting Hypothesis

We discuss four cross-sectional empirical implications of the "contracting" hypothesis that the incidence of preferred returns reflects variations in information problems across firms. These implications are outlined in Table 3.

1. Preferred Returns Are More Prevalent Among Partnerships with Lower Expected Variance of Investment Returns

This first implication follows from the fact that when return distributions are narrow, higher returns become more informative about GP effort and so preferred returns, which only reward GP for high returns, will more effectively induce GP effort. Moreover, GPs with investment strategies that tend to produce tighter return distributions may find it difficult to swing recklessly for the fences without deviating substantially from their investment strategies and markedly lowering portfolio expected returns.

2. Preferred Returns are More Prevalent Among Partnerships with Higher Expected Investment Returns

Higher expected returns, all else equal, also increase the contracting benefits of preferred

returns.[7] With higher expected returns, GPs are less likely to find themselves in a situation in which they are so far out of the money that effort is pointless. In addition, with higher expected returns, higher preferred returns are necessary so that GPs are only rewarded when they exert effort. Higher expected returns also reduce the option value of recklessly swinging for the fences. The intuition for this assertion is found in Carpenter (2000). She shows that a risk-averse agent, that is compensated with a share of profits after it returns capital and a preferred return, chooses higher variance distributions when the value of the portfolio falls.

3. Preferred Returns are More Prevalent Among Partnerships with Limited Track Records

As firms develop track records, there is less need to screen for quality, reducing a potential benefit of preferred returns. Additionally, while one tends to think of younger firms as having less reputation to protect, young firms might be less inclined to swing recklessly for the fences, since their potential gain from performing well (raising a larger fund in the future) may exceed the gain from swinging recklessly for the fences with a small fund. Established GPs with large funds may also tend to be wealthier and possibly more diversified, which would also make them more inclined to swing recklessly for the fences.

4. Preferred Returns are More Prevalent Among Partnerships with greater capital per general partner.

The size of a partnership relative to the number of general partners is likely to enhance the

[7]Note all else is not likely to be equal, as higher expected returns are likely to coincide with higher portfolio variance. Nevertheless, we find it useful to think about these factors separately, and then consider the possible trade-off between the two when we attempt below to explain the cross-sectional and time-series variation in preferred returns.

screening benefit of preferred returns. Partnerships that are large relative to their number of GPs require exceptionally talented GPs to produce high portfolio returns. Even GP that are able to earn high returns at small partnerships may have difficulty earning such returns at large partnerships where their effort may be spread out over larger and greater numbers of portfolio firms. However, without preferred returns all GPs, regardless of talent, may have an incentive to raise large partnerships because they have a leveraged position in the partnership relative to limited partners. Preferred returns at large partnerships help screen the less-than-exceptionally talented GP by reducing the probability that they will earn variable compensation.

5. Preferred Returns Coincide with Greater GP Carry.

To the extent that information problems do not alter the GPs' expected share of portfolio returns, higher preferred returns would coincide with increased GP carry, all else equal. This assumes that the level of management fees is held constant.

V. Other Hypotheses and Their Empirical Implications

1. Some Limited Partners Have More Bargaining Power

Because limited partners with more bargaining power obtain a greater share of the partnership's rents, it is possible that preferred returns are simply a tool for rent extraction, all else equal. The first empirical implication of the bargaining explanation is that preferred returns are more likely when GPs have limited track records, because LP bargaining power is likely to be high in this case. The "bargaining power" hypothesis also implies that preferred returns will not coincide with greater GP carry. Indeed, one might expect that limited partners with bargaining

power would demand both preferred returns and lower carry.

2. Some Limited Partners are Purchasing Insurance

Preferred returns make limited partner compensation less variable, and so provide partial insurance against lower portfolio returns. Public pension fund managers may have an incentive to purchase this type of insurance. Such managers may not share in the upside of their investments but may be penalized harshly for poor performance. The first implication of the "insurance" hypothesis is that partnerships that rely to a greater extent on public pension funds will be more likely to have preferred returns. The next two empirical implications derive from the fact that insurance may have more value to limited partners when the partnership return distribution poses more risks. Therefore, we assert that this hypothesis would imply that compensation contracts at partnerships with higher variance and lower expected returns would be more likely to contain preferred returns. Our last implication is that general partners may receive substantially higher carry as compensation for the insurance provided by the preferred returns.

VI. Preliminary Results

Our preliminary results to date provide support for three predictions of the contracting hypothesis that we were able to test with statistics found in Toll (2000). First, we find that preferred returns are more prevalent in nonventure funds than in venture capital funds – in 2000, 90 percent of buyout and 35 percent of venture capital funds reported preferred returns. Second, we find that the incidence of preferred returns at venture capital funds increased from 18 percent in 1998 to 35 percent in 2000. This increased use in two years coincides with a period in which

realized returns skyrocketed, from 17 percent in 1998 to 146 percent in 1999, suggesting that expected returns could also have risen. Third, we find that preferred returns are more common at young firms, defined as those that are first- or second-time funds, consistent with their use to help screen general partners capable of generating returns higher than the preferred rate. A fourth implication, that preferred returns are more likely in funds with greater capital under management per general partner, has not yet been tested.

The alternative hypothesis that preferred returns reflect strong bargaining power of limited partners is consistent with our finding that preferred returns are more frequent at young, inexperienced funds. To distinguish whether this motivation is more important than screening unobservable general partner quality, we need to turn to the relationship between preferred returns and carry. Under the contracting hypothesis, limited partners demand a preferred return and are willing to reduce the GP carry, while in the case of limited partners' strong bargaining power, inexperienced funds may have to provide a preferred return and accept a lower carry. We do not yet have statistical results to report on the relationship between preferred returns and carry.

The alternative hypothesis that preferred returns are used as an insurance mechanism finds very little support in our empirical analysis thus far. If limited partners look to preferred returns to provide insurance, we should observe greater frequency at funds with venture capital funds because they have wider return distributions than buyout funds, and in periods where expected returns are relatively low. The observed pattern of preferred return use does not line up with these predictions. However, we have not yet been able to test for whether partnerships funded largely by public pension funds, those investors thought to be the most risk-averse, are more likely to offer preferred returns.

VII. Conclusion

Participants in the private equity market have gained considerable experience as the market has grown dramatically in the past two decades. While one might expect the limited partnership structure to have evolved a bit as the industry grew, the basic structure of the compensation contract between limited and general partners has remained intact, and continues to rely principally on the prospect of large compensation when partnership profits are high. However, one structural change that has substantially modified these compensation contracts is the inclusion of a preferred return to limited partners. We have examined the role of preferred returns in mitigating contract inefficiencies between general and limited partners, when general partners' effort, risk, and quality are unobservable, and when the value of portfolio investments are not observable to limited partners until general partners exit the investments. We then considered a number of firm-level factors that influence the use of preferred returns, and how they might explain the existing patterns we observe in their use.

Our analysis suggests that less risky investments are better suited to using preferred returns, consistent with their greater use in nonventure versus venture capital partnerships. However, we have seen an increased use of preferred returns in venture capital partnerships in recent years. Our analysis suggests that preferred returns in venture capital funds may have been favored in recent years because limited partners in the recent expansion of the private equity market have had a greater need to screen less-experienced general partners as well as more-experienced general partners seeking to raise larger funds. To the extent that the recent expansion slows substantially, or that capital in the industry shrinks as returns fall, the contracting hypothesis of preferred returns would suggest that fewer venture capital funds will offer preferred returns. However, we have also found some limited evidence consistent with the hypothesis that preferred returns have been

demanded by limited partners with relatively strong bargaining positions. In a period of shrinking returns and thus relatively strong bargaining positions by limited partners, we may observe an increase in preferred returns at venture capital funds as fund raising slows. Additional empirical work is needed to assess the relative importance of the contracting and bargaining hypotheses.

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Table 1. Number and Average Size of New Private Equity Partnerships Formed from 1980 to 2000

	Venture Capital		Non-Venture Capital	
	Number of New Partnerships Formed	Average Partnership Size ($ millions)	Number of New Partnerships Formed	Average Partnership Size ($ millions)
1980	51	39.7	4	45.8
1981	68	18.2	4	31.7
1982	72	21.3	13	42.1
1983	127	32.0	17	80.8
1984	100	29.9	21	144.4
1985	108	27.0	22	131.4
1986	100	36.3	28	179.0
1987	112	36.2	46	341.9
1988	96	35.2	45	236.9
1989	103	52.9	85	142.1
1990	75	35.3	60	134.3
1991	42	35.4	30	135.0
1992	70	51.4	64	178.0
1993	91	43.2	79	213.5
1994	129	55.6	108	190.1
1995	152	54.1	107	255.0
1996	151	69.8	98	303.8
1997	202	77.2	132	369.0
1998	233	119.0	155	394.8
1999	465	129.0	189	327.0
2000	542	170.0	140	507.0

Sources: Venture Economics and National Venture Capital Association.

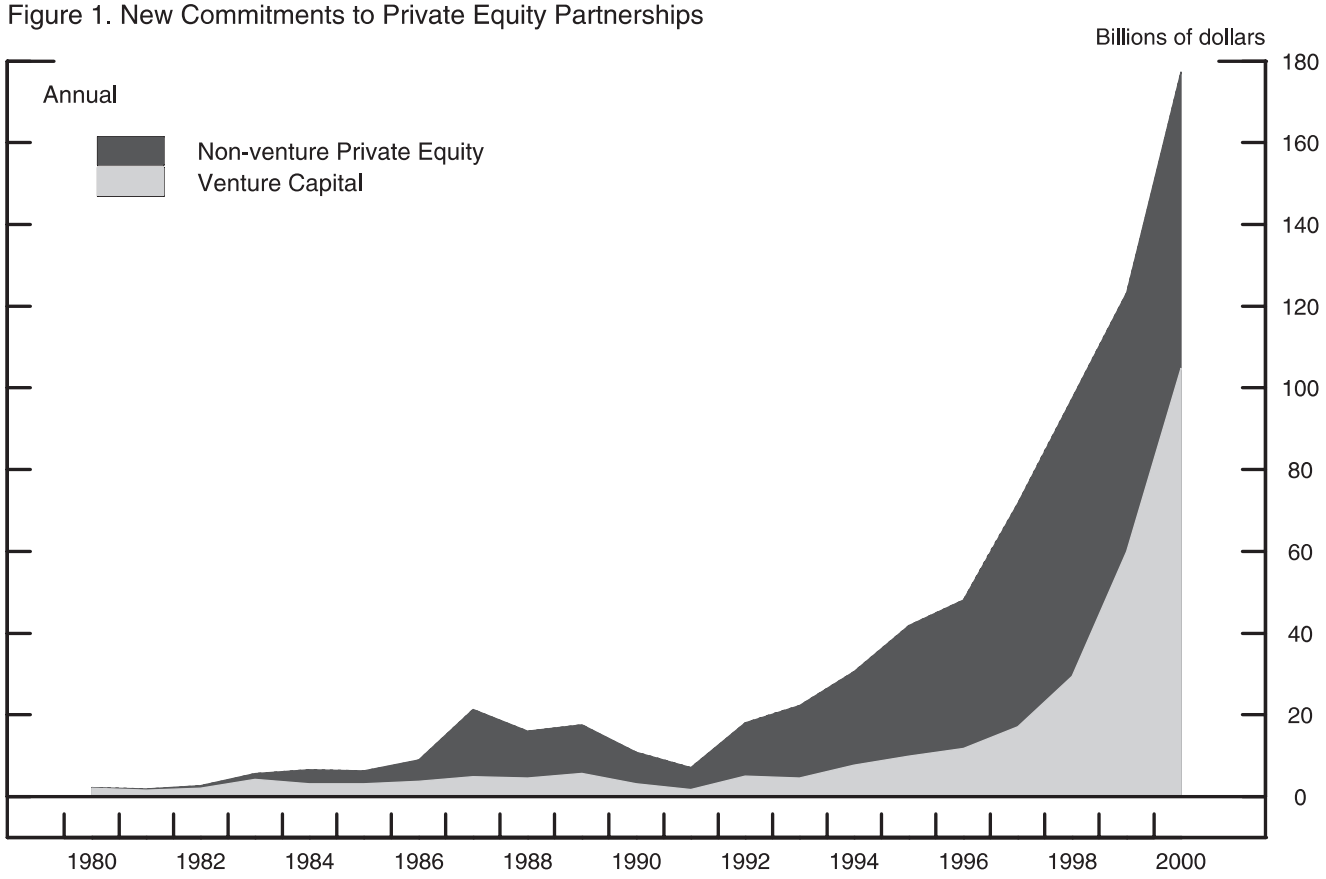
Table 2: Information Problems and the Costs and Benefits of Preferred Returns

Information Problem	Benefit of Preferred Returns	Cost of Preferred Returns
I. GP Inability to Commit to Effort	Higher preferred returns tend to push GP compensation toward signals of higher effort and remove compensation away from signals of lower effort.	Higher preferred returns may lead GP with portfolios that are performing poorly to stop putting in effort.
II. GP Inability to Commit to Not Swing Recklessly For the Fences		Higher preferred returns magnify the incentive to swing recklessly for the fences by increasing the option value associated with risk-taking.
III. Unobservable GP Quality	Higher preferred returns provide more screening power because less talented GP are less likely to earn variable pay.	
IV. GP private information about the value of portfolio investments prior to exiting such investments.	Preferred returns may make delay costly to GP by reducing GP realized share of portfolio profits.	

Table 3: Hypotheses, Predictions, and Preliminary Results

Hypotheses	Empirical Predictions	Preliminary Results
I. Incidence of preferred returns reflects variation in information problems across firms.	Preferred returns are more likely at partnerships with tighter return distributions.	90% of LBO funds have preferred returns. 35% of venture funds have preferred returns.
	Preferred returns are more likely at partnerships with higher expected returns (time series prediction).	19% of venture capital firms had preferred returns in 1998 35% of venture capital firms had preferred returns 2000, a year of higher expected returns.
	Preferred returns are more likely at partnerships in which general partners have shorter track records.	• 40% of venture firms on their first or second fund have preferred returns. • 11% of venture firms with more than two funds have preferred returns.
	Preferred returns are more likely at partnerships in which the size of the portfolio is large relative to the number of general partners.	N/A
	Positive correlation between preferred returns and carry.	N/A
II. Incidence of preferred returns reflects variation in limited partner bargaining power.	Preferred returns are more likely at partnerships in which general partners have shorter track records.	• 40% of venture firms on their first or second fund have preferred returns. • 11% of venture firms with more than two funds have preferred returns.
	Negative or no correlation between preferred returns and carry.	N/A
III. Incidence of preferred returns reflects variations in insurance motives across limited partners and across firms.	Preferred returns are more likely at partnerships with wider return distributions.	90% of LBO funds have preferred returns. 35% of venture funds have preferred returns.
	Preferred returns are more likely at partnerships with lower expected returns (time series prediction).	19% of firms had preferred returns in 1998 35% of firms had preferred returns 2000, a year of higher expected returns.
	Preferred returns are more likely at partnerships for which capital is raised mostly from public pension funds.	N/A
	Positive correlation between general partner carry and preferred returns.	N/A

Figure 1. New Commitments to Private Equity Partnerships



Source. Venture Economics.

Billions of Dollars

Year	Total	Venture	Non-Venture
1980	2.3	2.1	0.2
1981	1.8	1.6	0.3
1982	2.6	2.0	0.6
1983	5.6	4.2	1.4
1984	6.6	3.2	3.5
1985	6.3	3.1	3.2
1986	8.9	3.7	5.1
1987	21.2	4.8	16.4
1988	15.9	4.5	11.4
1989	17.5	5.6	11.9
1990	10.8	3.1	7.7
1991	7.1	1.8	5.3
1992	18.0	5.0	13.0
1993	22.3	4.5	17.7
1994	30.6	7.6	23.0
1995	41.8	9.9	31.9
1996	48.2	11.8	36.4
1997	71.7	17.1	54.6
1998	97.4	29.4	68.0
1999	123.2	60.0	63.2
2000	177.3	104.8	72.5
1980-2000	737.1	289.8	447.3

Source. Venture Economics.