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The Importance of Asset Allocation in Managing Private Equity Commitments

- Two important factors make achieving the full potential of a private equity commitment very challenging
  - The time lag between capital commitment and capital investment
  - The uncertainty of the timing and size of the distribution of invested capital
- This article discusses potential solutions to these issues by presenting hypothetical asset allocations for capital commitments prior to actual drawdown—ranging from a conservative cash portfolio to a diversified global portfolio. The article suggests ways to better manage private equity distributions

November 1999

Investment Management Research

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Demand for Private Equity

Over the past five years sophisticated high net worth individuals and institutional investors have committed over $230 billion to U.S.-based private equity funds.[2] These commitments span the entire private equity spectrum - from venture capital to leveraged buyouts - and involve diverse industries in both developed and emerging markets. A key factor driving investor demand is the belief that due to the lack of public information, access to deal flow and skill in identifying good investments may be more amply rewarded in the private markets than in the highly competitive and efficient public markets.

The Challenges to Achieving the Full Return Potential of a Private Equity Commitment

Despite the diverse profiles of private equity investments and investors, two important issues commonly arise:

- There is usually a substantial lag between the time at which capital is committed to a private equity fund and the time at which that capital is drawn down for investment. To achieve the return potential of a capital commitment, investors must carefully manage the investment of that committed capital during the drawdown period.
- Because private equity investments are ultimately "returned" to investors over a period of years, a reinvestment plan should be established that takes into account the uncertainty inherent in the timing and magnitude of distributions of invested capital.

Managing Committed Capital Prior to Drawdown

In this article, we address both of these investment issues: We show that to achieve the full benefits of private equity, both committed capital and distributions need to be invested in vehicles that have the potential to earn returns that are close to the targeted private equity return. We highlight key investment issues and illustrate a range of hypothetical asset allocations for the management of committed capital during the drawdown period. The choice of allocation ultimately should be customized to reflect each investor's risk tolerance, tax status and the availability of alternative sources/uses of capital.

Managing Reinvestment of Capital Distribution

We suggest various alternatives for the reinvestment of capital distributions. These alternatives range from potential public market investments to involvement in ongoing private equity programs. There are no simple answers to the reinvestment problem, but armed with an understanding of some key concepts and tradeoffs, we believe that private equity investors will be in a better position to achieve the full return potential of the private equity market.

[1] The author wishes to express appreciation to Neil Bresolin, David Burrows, Phil Cooper, Thomas Dobler, Laura Garner, Barry Griffiths, David Kupperman and George Walker for their many thoughtful comments, suggestions and analytical insights.

[2] Source: Private Equity Analyst Newsletter, January 1999. (1999 Asset Alternatives, Inc.)

Investing in Public Versus Private Markets

In the public markets, once an investor identifies an investment that is consistent with his/her goals and objectives, the only required actions are to "write a check" and either hold for the "long run" or determine when it is time to liquidate a position and realize gains or losses. When these two actions are completed, the investment return can be calculated by comparing the price gain/loss and the dividends received, if any (including reinvestment income), to the original price. This calculated investment return, which involves the future value of the investment (the final price), is called the *total return*.

In the private equity market, the investor can neither control the holding period nor simply "write a check" in the amount of the investment. Rather, the investor first makes a *commitment* and, at a later time, transmits specific amounts of funds to the general partner in response to capital calls (*drawdowns*). The timing and size of capital calls are not known until they are announced, and these calls may extend over a three- to five-year period. The partnership agreement specifies the deadline for responding to capital calls, with two weeks being fairly common. The consequence of failing to meet a capital call may be severe (the investor may lose his/her entire position), so adequate liquidity is critical.

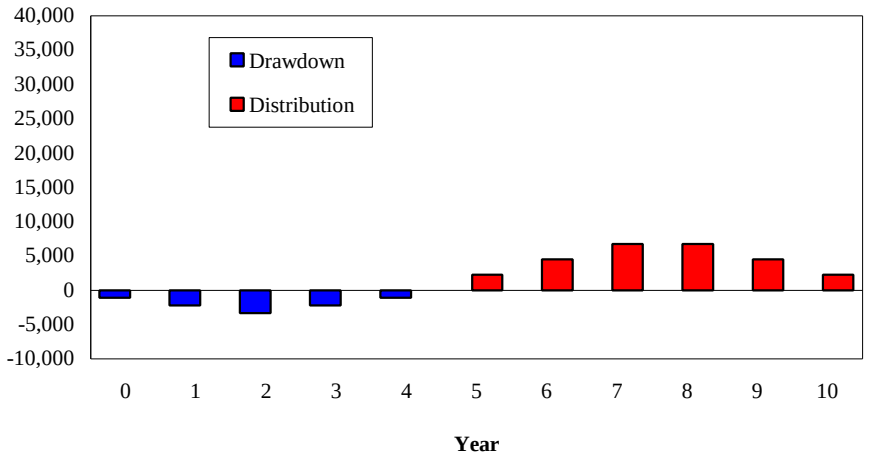
"Distributions" From Private Equity Investments

Private equity investments are used to finance transactions, such as venture capital deals and leveraged buyouts that enable management to restructure businesses and create new value. Ultimately, these businesses will *distribute* capital, earnings and (one hopes) incremental capital to the original investors. The timing and size of the distributions are determined by the general partner, with the final distribution likely to be some combination of cash, proceeds of strategic sales and *Newco (New Company)* stock. The time from the initial commitment to the final distribution is typically between five and ten years, although drawdowns are occasionally returned as soon as one year after they are called. Because there is no ready market for limited partnership interests, the investor who (for some reason) wishes to sell a limited partnership interest is likely to have to settle for a substantial markdown in the investment value.

Hypothetical Cash Flows: Timing and Extent of Drawdowns and Distributions for Two Hypothetical Private Equity Investments

Investment A in Figure 1 represents a pattern of drawdowns and distributions that typically occurs with private equity funds. Such investments are the primary focus of this article. In this example, only 11% of the capital is required immediately. At the end of the first year, another 22% of the initial commitment is called. The second-year drawdown is 34%; the third call is for 22% and the final call is 11%. Soon after the capital commitment is fully invested, the general partner begins returning capital. At first, the magnitude of distributions grows but ultimately the distributions level off and then decline in value.

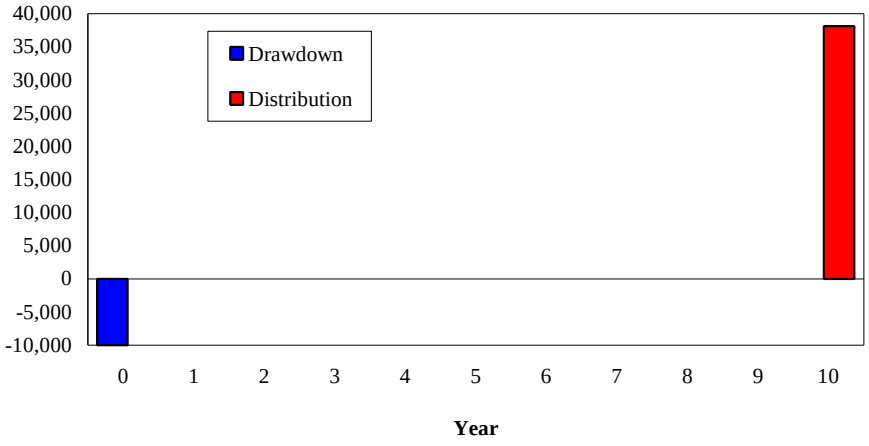
Figure 1A: Timing and Extent of Drawdowns - Investment A*



The Challenges to Achieving the Full Return Potential of a Private Equity Investment

Investment B is representative of a single deal with only one drawdown and one distribution. This single investment/single payout cash flow pattern is fairly common for leveraged buyouts and is similar to the implicit cash flows of a public equity investment. In this case, investment of committed capital and reinvestment of distributions ceases to be an issue.

Figure 1B: Timing and Extent of Drawdowns – Investment B*



Hypothetical investments C and D are illustrative examples of the range of drawdowns and distributions that can lead to the same internal rate of return as investment A.

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Figure 1C: Timing and Extent of Drawdowns - Investment C*

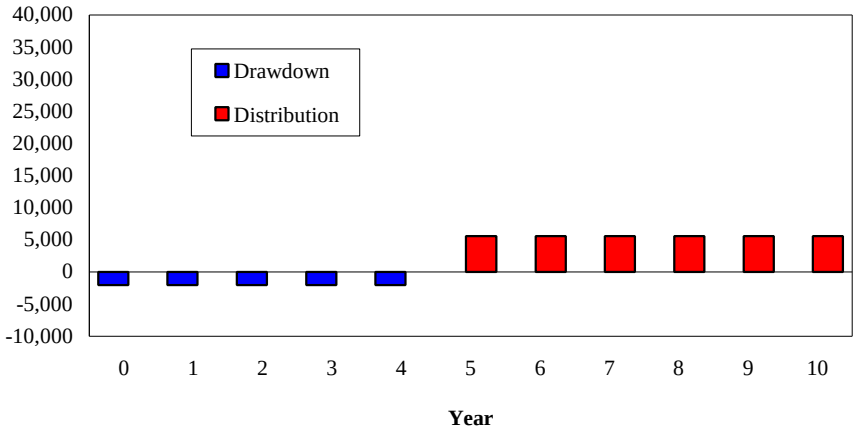
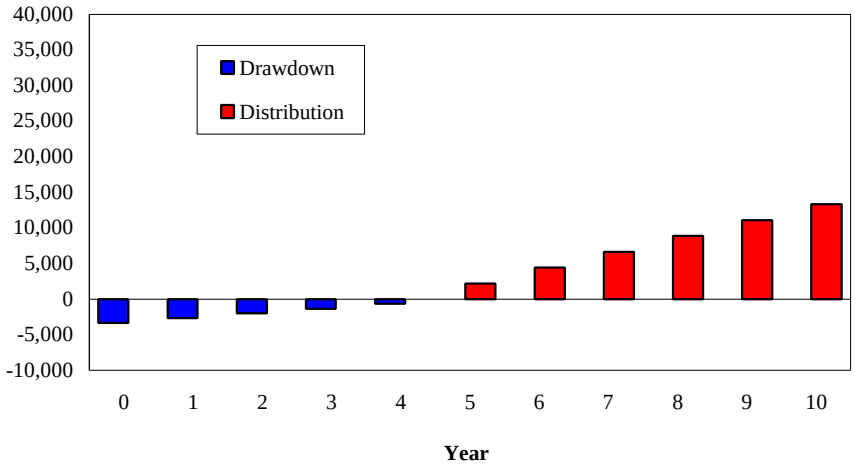


Figure 1D: Timing and Extent of Drawdowns - Investment D*



The Difference Between Total Return and Internal Rate of Return

Equity investors implicitly think in terms of the future value of their invested capital. As an example, imagine an investor who buys 10,000 shares of a $100 stock for a total investment of $1,000,000. Over the next ten years, the investor receives dividends and (for comparison purposes) we assume those dividends are reinvested in Treasury bills. At the end of the ten years, the investor sells the stock at a net price of $600 per share.

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Sample Investment

Buy 10,000 shares at $100 per share	Total Investment:	$1,000,000
Receive dividends of $16,000 per year	Total Dividends:	$160,000
Reinvest dividends in T-bills	Total Reinvestment Income:	$31,736
Sell stock in 10 years at $600 per share	Total Proceeds of Sale:	$6,000,000
	Total Assets After 10 Years	**$6,191,736**

For illustrative purposes only.

The above hypothetical cash flows imply that the original investment grew at a compound rate of 20% per year, from $1,000,000 to $6,191,736. This 20% growth rate is the annualized *total return* on the investment.

The cash flows for a private equity fund such as investment A in Figure 1 are quite different from the implicit cash flows in the example above. The "return" that is quoted for a private equity investment is, in actuality, the "internal rate of return (IRR)" of the investment. The standard IRR calculation is not the same as the total return calculation that is applied to public equity. Like most new businesses, private equity investments are evaluated in terms of the *present value* of the cash flows that the business is expected to generate. The IRR is calculated so that the present value of the drawdowns (using a 20% discount rate) is exactly the same as the present value of the distributions (using a 20% discount rate). Despite the dramatic differences in the example cash flows, investments A, B, C and D (Figure 1) all have the same 20% IRR.

Achieving Total Return Expectations: Asset Allocation for Committed Capital

The *present value*-based internal rate of return that is used to measure private equity performance, enables investors to compare investment opportunities without consideration of reinvestment. In contrast, the total return on investment dollars is a measure that enables investors to compare the *future value* of their investments that is, their terminal wealth. Because reinvestment is typically a critical component of the future-value based total return, *the IRR for a private equity partnership is not likely to be the same as the total return on the "block" of capital that is committed* to that partnership.

In order to compare the *total return* on capital committed to private equity with the total return on an immediate investment in public equity, we must consider how the capital commitment is invested during the drawdown period. We also must evaluate the reinvestment of distributions up to the point of the final distribution, at which point the limited partnership is terminated. The analysis of the reinvestment of distributions is addressed in a later section of this article.

We now pose the question: *When is a 20% IRR the same as a 20% total return?*

The answer to this question is easy to state but not so easy to achieve*:*
The total return will be the same as the IRR if both committed capital (prior to drawdown) and all distributions are invested at the same 20% return as the quoted IRR.

Total Return of a Hypothetical Investment

We illustrate the importance of investment during the drawdown period, by calculating the total return and future value of a $1,000,000 investment in the private equity fund illustrated in Figure 1A. We consider a range of investment rates for the committed capital and we assume that all distributions are invested to return 20%. The impact that investment during the drawdown period has on terminal wealth is dramatic. Each 5% drop in the investment return results in about a 1% decline in the total return. Because the total return is compounded over the full term of the private equity investment, the effect of differences in total return on terminal wealth can be substantial.

Figure 2. Future Value of a $1,000,000 Investment for Various Returns on Committed Capital* (Internal Rate of Return = 20%; Reinvestment Rate for Distributions = 20%)

Investment Return for Committed Capital	Total Return For Ten Year Period	Future Value of Initial $1,000,000 Investments
0%	15.96%	4,395,900
5%	17.08%	4,838,796
10%	18.12%	5,286,948
15%	19.09%	5,738,484
20%	20.00%	6,191,738

Asset Allocation Alternatives

The table in Figure 2 implicitly *questions investors' natural temptation to maintain their capital commitments in "safe" liquid investments* such as municipal money markets or Treasury bills. Such short-term investments offer the advantage of immediately available cash and the guarantee of return of principal. But, this "insurance" and liquidity advantage can be very costly, leading to a significant drag on the total return on committed capital. For example, if committed capital is kept in short-term investments yielding 5%, the total return for the private equity investment may be only 17%, even if the IRR is realized and all distributions are invested with a targeted 20% return.

Safe Liquid Investments

Diversified Public Equity Investments

At the other extreme, an investor might choose to invest committed capital in a diversified public equity portfolio, thereby maintaining significant upside potential. However, there is a substantial risk that, if a capital call occurs during adverse markets, additional cash infusions from other sources may be required.[3]

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[3] In rising markets, the investor also may be reluctant to reduce equity exposure. In this case, by using S&P futures, the investor can maintain the desired level of exposure quickly, efficiently, and at a relatively low cost.

Diversified Portfolio of Investments

A third alternative is to invest committed capital in a well-diversified portfolio that includes a range of asset classes such as fixed income, domestic and international equity and other investments that have low correlation with both equity and fixed income. Generally speaking, *investors should establish an asset allocation policy for capital commitments and an asset allocation policy for the totality of investable assets.* The key difference between these two allocation policies is that for capital commitments more attention must be paid to short-term liquidity needs and to the possibility of short-term losses.

Alternative Target Allocations

Figures 3 and 4 compare the performance of four different target asset allocations over the last 13 years, highlighting the best and worst 6- and 12-month periods. This illustration shows that while cash never had a negative return over any 6-month period, the annualized compound return from cash was only 5.89%. This return on committed capital generally would lead to a significant reduction in the realized total return on capital, in comparison to the targeted IRR (of say, 20%) on the private equity fund

Figure 3. Alternative Target Allocations for Private Equity Commitments

Asset Class	Cash Portfolio	U.S. Equity Portfolio	Diversified Domestic Portfolio	Diversified Global Portfolio
Cash	100%	0%	0%	0%
Investment Grade Bonds	0	0	15	10
High Yield Bonds	0	0	15	10
U.S. Equity	0	100	60	45
International Equity	0	0	0	15
Uncorrelated Assets (DFLP)	0	0	10	20
Total	**100%**	**100%**	**100%**	**100%**

Asset classes are represented by the following indices: Cash (Merrill Lynch 91-Day T-Bills); U.S. Investment Grade Bonds (Lehman Intermediate Government/Corporate); High Yield Bonds (Merrill Lynch High Yield Master); U.S. Equity (S&P 500); International Equity (MSCI EAFE); and Uncorrelated Assets (Directors Fund LP).

Figure 4. Historical Performance of Alternative Target Allocations For Private Equity Commitments*

Historical Performance (1987 - 98)	Cash Portfolio	U.S. Equity Portfolio	Diversified U.S. Portfolio	Diversified Global Portfolio
Annualized Compound Return	5.89%	17.77%	15.40%	14.98%
Annualized Volatility	0.50	15.14	9.67	9.08
Worst 12-Month Period	3.13	-17.75	-4.54	-4.76
Best 12-Month Period	9.10	52.02	38.09	36.09
Worst 6-Month Period	1.53	-19.36	-8.34	-4.72
Best 6-Month Period	4.64	27.57	19.29	22.32

Past performance is not indicative of future results, which will vary.

Indices are unmanaged, and the figures for the index do not reflect any fees or expenses. We strongly recommend that these factors be taken into consideration before an investment decision is made. Investors cannot invest directly in indices.

* The returns stated are gross and do not include the deduction of investment advisory fees. The performance stated above does not represent the performance of any fund or separate account managed by Goldman, Sachs & Co., GSAM or any other brokerage account.

U.S. Equity Portfolio

In contrast to cash, the U.S. Equity portfolio had a 17.77% compound return over the last 13 years, but these strong returns were accompanied by significant volatility. In fact, there was one 6-month period over which the equity return was -19.36%. Clearly, if a capital call occurred during this period, the investor would have been in a significant loss position. In that case, the investor might have had to access other funds in order to meet the capital call and there would have been a substantial impact on the total return.

Diversified U.S. and Global Portfolios

The diversified portfolio in Figure 3 includes investments in a range of asset classes. The key difference is that the Diversified Global Portfolio includes international equity, and the allocation to uncorrelated assets is twice the allocation in the Diversified U.S. Portfolio. Uncorrelated assets may have the dual advantage of potentially reducing overall portfolio risk while providing higher returns than cash or bonds.

Both diversified portfolios had strong returns over the full 13 years, and both had similar downturns over the worst 12-month period. However, from the perspective of the need for cash at the time of a capital call, the global portfolio appears more attractive because it has less risk (has lower volatility) than the diversified U.S. portfolio. From a downside perspective, we see that the worst 6-month period for global portfolio entailed a –4.7% loss, as compared with a –8.3% loss for the domestic portfolio.

Other Considerations for Capital Commitments

The asset allocation embodied in the global portfolio in the previous section is similar to the allocation that a fairly aggressive investor would consider. In fact, because of the diversified nature of this portfolio, its volatility over the last 12 years was only 9.08%, significantly lower than the 15.14% volatility of equity. One may argue that *if an investor is willing to bear the risk of a private equity investment, the same investor also should be willing to take equity risk with capital commitments*.

A key argument against taking that equity risk with uncalled capital is the possibility of an asset decline at the time of a capital call. However, as long as the capital commitment represents a modest portion of total assets (about 5% to 10%), it may be relatively easy to establish liquidity if a capital call occurs under adverse market conditions. For example, the investor may use margin to borrow against existing positions. Also, if the investor has established an adequate line of credit, then short-term borrowings may be used to meet the capital call. However, for individuals who make very large commitments to private equity (for example, 50% of assets), adequate liquidity may be more critical.

To gain additional perspective on drawdowns, we refer again to Figure 1 Investment A. In this "typical" example, drawdowns extend over four years. Thus, a poor market in any one year (except the last) many have only a minor effect on the availability of funds for that year. For example, suppose an investor commits to private equity fund A and wants to maintain some level of protection against adverse markets. It may be good policy to have one year's worth of estimated capital calls in liquid, low-risk investments and to invest the balance according to the asset allocation of the rest of the portfolio.

Weak markets in the early years may well impact the ability to meet future capital calls, if the markets do not recover quickly enough. But such market conditions would be ongoing and therefore of no surprise to the investor. Thus, there may be sufficient "lead time" to access other capital sources.

Levels of Funding to Meet Commitments

When the drawdown period is expected to extend over three or four years, *the investor may only need to "set aside" some fraction of the actual commitment*. For example, in Figure 1 investment A, if a five percent return on committed capital is anticipated, only about $900,000 would have to be invested to meet a total of $1,000,000 in capital calls. And if a 10% return were anticipated, only about $800,000 would have to be invested.

As an alternative to lowering the invested capital, *the investor could maintain the full $1,000,000 in a fairly aggressive allocation*, as in the diversified global portfolio. In this case, the investor would be overfunding the commitment. This overfunding has the advantage of providing a cushion against adverse markets. Further, by investing the $1,000,000 in an allocation that is fairly aggressive, there may be very little to "give up" in return in relation to the anticipated IRR.

Achieving and Maintaining a Desired Level of Private Equity

Because private equity commitments tend to be drawn down fairly slowly and capital distributions may begin soon after the final drawdown, some investors may increase the level of commitments in order to maintain their invested dollars at targeted levels. The subject of the "optimal" level of commitments is complex and is not the primary focus of this article.[4] However, we can offer some perspective within the current context.

In the example above with a 10% return, we saw that it might take less than 80% of the capital commitment to fulfill that commitment. Thus, an investor who anticipates a 10% return on uncalled capital might commit $1,250,000, knowing that this would require only a $1,000,000 investment. Further, by investing that $1,000,000 fairly aggressively during the drawdown period, the investor may reach a return on capital that is close to the private equity return, especially in strong equity markets.

[4] The issue of overcommitment to private equity is addressed in a special report on private equity, in *Pensions and Investments*, June 14, 1999, p.19. In this article, commitment levels are suggested that are as high as twice the desired level of exposure to private equity.

Re-Investment of Distributions

In Figure 1A, the first capital distribution occurs in year five and is larger than any of the drawdowns. To evaluate the total return on committed capital over the ten-year term of the limited partnership, we must consider how that first distribution will be invested for the next five years. The same considerations apply to all future distributions, which are even larger than the first. As with investment of committed capital, the impact of different reinvestment rates on the total return is substantial. Figure 5 illustrates this effect for a range of reinvestment returns. For example, reinvesting at 10% instead of 20% leads to a total return of only 17.15%, 285 basis points less than the IRR.

Figure 5. Future Value of a $1,000,000 Investment for Various Returns on Distributed Capital (Internal Rate of Return = 20%; Investment Rate for Committed Capital = 20%)

Investment Return for Distributions	Total Return For Ten-Year Period	Future Value of Initial $1,000,000 Investments
5%	15.72%	4,305,694
10%	17.15%	4,867,857
15%	18.58%	5,494,585
20%	20.00%	6,191,738

Past performance is not indicative of future results, which will vary. The returns stated above are used for illustrative purposes only and are not actual returns. There can be no assurance that the returns stated herein will be achieved.

In contrast to committed funds, with distributed funds (that are not committed to other private equity investments), there is no need to be concerned about capital shortfalls. Thus, those distributions can more readily be invested aggressively in order to increase the likelihood of bringing the total return to the level of the IRR. Thus, for example, the investor might invest capital distributions in a diversified portfolio of domestic and international equity and special investments. Another alternative would be to invest distributions in the same proportion as the asset allocation that is targeted for the full portfolio of investible assets.

The problem with the above alternatives is that they remove the investor from the private equity market and are unlikely to enable the investor to gain the full potential of private equity. A better solution would be to participate in an ongoing program of private investments. Such a program should be designed so that future drawdowns occur in tandem with distributions. In this case, the investor embarks on a path of continuing involvement in private equity partnerships. In ideal circumstances, investment of committed capital becomes less of a problem because the funds for drawdowns are supplied, in a timely fashion, by the distributions.

Summary and Conclusions

In order to achieve private equity-like total returns on *committed capital* the investor needs to carefully manage the investment of uncalled capital during the drawdown period *and* the reinvestment of distributed capital. While it is tempting to maintain capital commitments in short-term instruments, such a policy is likely to adversely impact the total return. By maintaining a more modest cash position (to cover anticipated near-term drawdowns) and investing the balance of the capital commitment in a diversified global portfolio, the investor increases the likelihood that the total return will approach the targeted internal rate of return of the private equity investment.

Reinvestment of distributed capital is as important as investment of committed capital. In this case, it is advantageous to participate in a continuing program of exposure to private equity. Ideally, it will be possible to reinvest distributions in response to capital calls associated with new commitments. But, it is inevitable that there will be times when distributions result in an excess of cash. In this case, that cash will need to be re-deployed to other parts of the overall investment portfolio.