



Private Real Estate Portfolio Management

“Commitment Planning: Liquidity Constraints”

“History may not repeat itself, but it does rhyme a lot.” – Mark Twain

Introduction

During interactions with leading institutional investors, many of whom were battered by the Great Equity Meltdown, we noticed an increased focus on liquidity - what it means, how much is needed and how to avoid future illiquid situations. Before 2010, most investors used a variety of asset allocation models to optimize exposure to various asset classes in order to generate some expected rate of return or to maximize returns given an expected risk budget. One common theme we’ve seen is that some investors made very large commitments to private equity, real estate, and other illiquids, because they viewed these investments as an opportunity to generate high returns and diversify their portfolios. Unfortunately, their commitments were made in absolute dollars, and when the value of their overall portfolio fell substantially (as many did in 2008 and 2009) the undrawn portion of their commitments represented an unexpectedly large fraction of their overall portfolio value. In some cases, investors found that there was a real risk that they would not have sufficient liquidity to pay their undrawn capital as it was called and generate the portfolio income required to meet other organizational objectives. For a variety of reasons, certain types of investors are naturally more exposed to these liquidity shocks than others and, as a result, need to assess their liquidity situation throughout the commitment planning process.

Though monitoring liquidity has been discussed in the past (Reference 1), we are not aware of any concrete tools to evaluate the maximum size of new commitments that will allow investors to tolerate liquidity crises. We believe institutional investors would be well suited to develop and incorporate strict liquidity-based constraints in their allocation models that govern future commitments. These constraints would help prevent the mistakes of the past and avoid the anxiety many investors experienced over the last 24 months. Once investors establish an appropriate constraint, they will be better positioned to determine their annual investment pace and begin the difficult process of allocating a very scarce resource: 2010 real estate commitments. After investors determine their optimal commitment pace, they can begin to assess their near-term real estate investment opportunities and concentrate their future exposure with the managers most likely to generate alpha for their program.

We believe there are three key steps to establishing a liquidity constraint in commitment planning:

- 1) define the situations a portfolio should tolerate;
- 2) integrate liquidity constraints in commitment plans; and
- 3) evaluate the portfolio’s liquidity prior to every new commitment

Each investor has a different time horizon, target return and overall portfolio objective. As a result, each investor will face different circumstances in a crisis scenario. For purposes of this discussion and to demonstrate the liquidity constraint, we will use a few simple examples that may help guide an investor’s thoughts.

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Step 1: Defining a Crisis

We define a crisis as a situation where portfolio assets experience a broad, significant decline for some period of time. During the crisis, an investor will continue to be responsible for funding unfunded capital commitments and several other financial obligations (distributions to program beneficiaries, debt service, operating budgets, derivative contracts, etc.). To fund these obligations, the investor may be forced to sell some portion of its liquid assets. These net outflows are likely to increase during a crisis (i.e., an endowment’s share of the university operating budget), while external cash inflows are likely to decrease (i.e., donations and gifts plummet during a crisis). For purposes of discussion, we will assume that all undrawn commitments are called during the crisis. If an investor wants to plan for a crisis of several years, this is not an unreasonable assumption. This may be a conservative assumption for investors focused on planning for a shorter-term crisis. We would encourage investors to apply assumptions that are appropriate for their own portfolios. In summary, the variables we have identified to define the crisis are:

Variable	Definition	Assumption Guidance
P	Portfolio value	Value of total portfolio
L	Value of liquid asset portfolio as a fraction of portfolio value	Based on current value or an asset allocation model’s projected value
F	Percentage decline in liquid assets value	Assume a worst case scenario for which an institution wants to be prepared; 30-40% is, unfortunately, not unreasonable
K	Portion of portfolio’s liquid assets available for sale, as percentage of pre-crisis portfolio value	Assume the maximum percentage investor is willing to sell, though is likely lower than 100%
U	Unfunded obligations expected to be called during a crisis, as percentage of pre-crisis portfolio value	Assume all unfunded is called if an investor wants to prepare for a multi-year crisis
C	Annual non-real estate related portfolio cash outflows, as percentage of pre-crisis portfolio value	Assume a maximum value – likely higher than 5% of portfolio value
X	Annual non-investment portfolio inflows, as percentage of pre-crisis portfolio value	Assume a minimum value, as donations, employee contributions, etc. are likely to fall in a crisis
T	Length of crisis	Determined by investor based on risk tolerance, expressed in years
A	Available liquidity in a crisis	Defined by variables above, expressed as percentage of portfolio value
R	Required liquidity in a crisis	Defined by variables above, expressed as percentage of portfolio value

Using the variables defined above, we can arrive at a set of equations that define an investor’s need for liquidity:

$$A = KL(1 - F) + XT \quad (\text{Equation 1})$$

$$R = U + CT \quad (\text{Equation 2})$$

In order to stay liquid throughout a crisis, we can see that an investor needs to always have more available liquidity than required liquidity – that is

$$A \geq R \quad (\text{Equation 3})$$

To ensure liquidity in a defined crisis, an investor can build this requirement into his commitment planning process.

Of course, our proposed model defines a simple situation - each investor’s circumstances may be different, requiring a more complex model. For example, many assets aren’t purely liquid or illiquid in the real world – different assets have different friction costs, and liquidity may vary over different planning horizons. In addition, various fractions of undrawn capital may be called over different planning horizons. It may be useful to think of different asset classes as being vulnerable to different crisis conditions, over different planning horizons, in different combinations. Crisis models can be as complex as the situation an investor wants to define, but the best should not be the enemy of the good. It is probably more useful to have a simple crisis model that forms an investor’s worst-case scenario than try to have an overly complicated model that fails to capture unforeseen risks.

Step 2: Integrate Liquidity Constraints in Commitment Planning

Landmark has developed quantitative tools to help forecast future cash flows from existing and planned commitments. This model is an extension of the Takahashi-Alexander “Yale Model” (Reference 3) and is largely based on historical cash flow curves. Using Landmark’s cash flow module, we simply identify the undrawn capital remaining at any time and add a check for an investor’s liquidity based on a set of defined crisis variables. Other investors may use different tools to plan commitments, but any effective tool should include all of the variables needed to test the liquidity constraints defined above. Landmark has also developed a commitment planning module that facilitates such comprehensive analysis of a commitment program. For illustrative purposes, we have used our forecasting and planning modules to explore how an investor that has an existing private equity real estate portfolio may test its portfolio for liquidity after experiencing the market volatility of the past 24 months.

Investor Definition

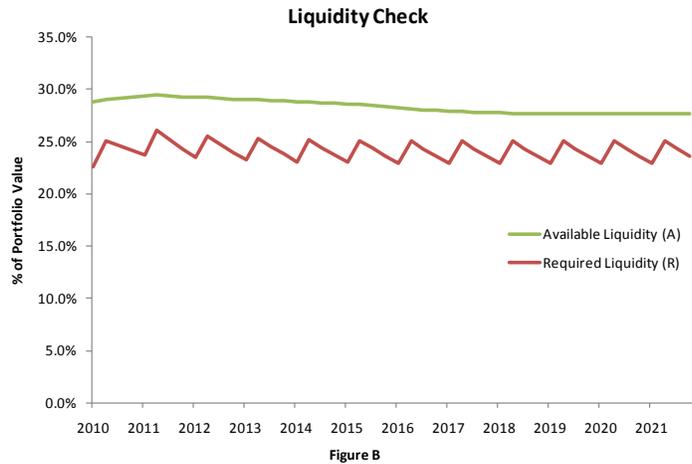
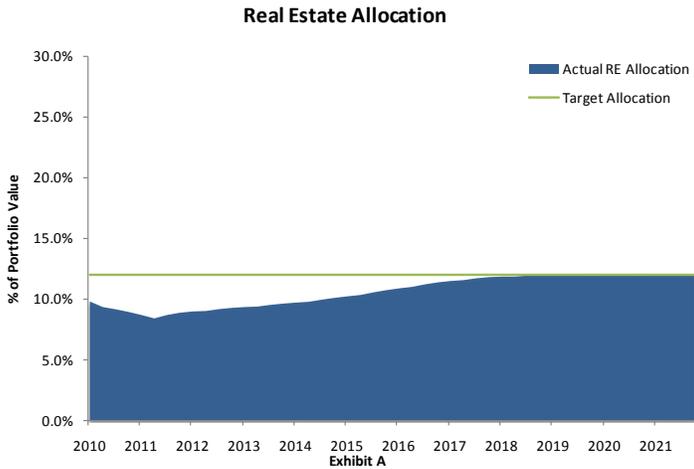
In our examples, we assume the investor began investing in real estate in the mid-1990s, committing capital at a steady, growing pace to build his real estate portfolio up to about 10% of total portfolio value, with 5% consistently allocated to non-real estate illiquid assets. To evaluate the liquidity constraint in each situation, we will assume the following variables:

Variable	Definition	Assumption (as a % of total value, P)
F	Percentage decline in liquid assets value	25%
K	Portion of portfolio’s liquid assets available for sale, as percentage of pre-crisis portfolio value	35%
C	Annual non-real estate related portfolio cash outflows, as percentage of pre-crisis portfolio value	6%
X	Annual non-investment portfolio inflows, as percentage of pre-crisis portfolio value	3%
T	Length of crisis	3

It should be noted that the case study portfolio assumptions are relatively conservative for many institutions, particularly family offices and members of the endowment and foundation communities, where total illiquid unfunded obligations can represent 30-50% of total illiquid portfolio value. Though these assumptions may appear conservative, the results of our analysis will highlight the importance of monitoring liquidity carefully.

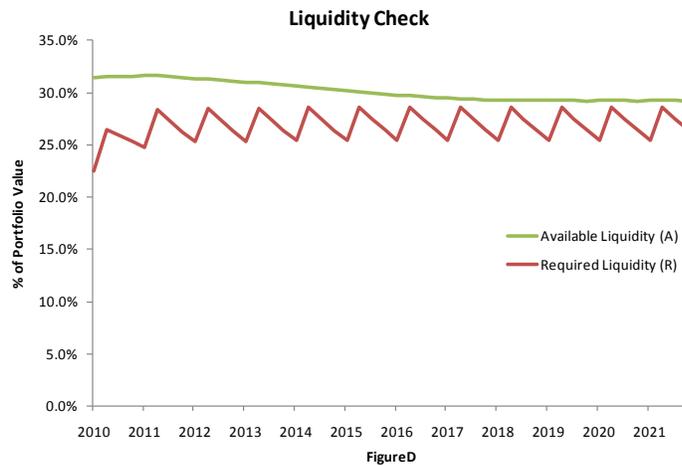
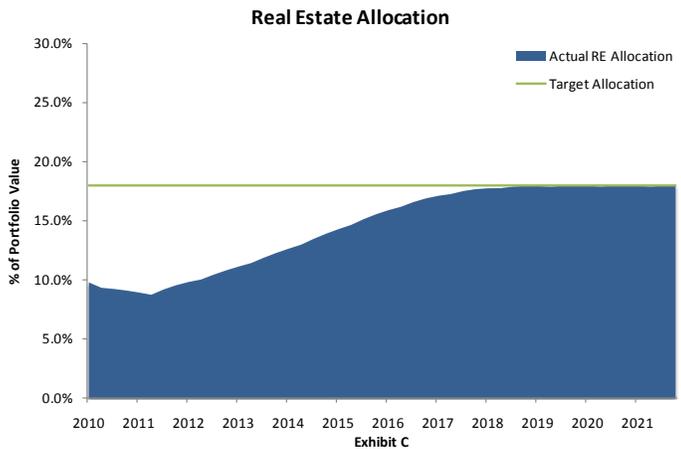
Case 1: Target Real Estate Allocation of 12%

In our first case, let’s assume the investor wants to increase his allocation to real estate to 12% from its current 10% level. Based on Landmark’s commitment module, the investor can slightly increase its commitments on an annual basis and reach a 12% allocation without breaching his target allocation or liquidity constraint at any point. We see the sawtooth-shaped line for required liquidity, R, because we have modeled new commitments as being made once a year – clearly the worst case from a liquidity point of view.



Case 2: Slowly Achieve Target Real Estate Allocation of 18%

It was pretty simple for the investor to increase his allocation to 12%, but what if the investor wants to significantly increase his allocation to real estate? For example, the investor may be an underfunded pension plan and believes an increased real estate allocation of 18% will help the program meet future obligations. Let’s assume that the investor steps up his commitment sizes every year by 50%, but maintains a steady commitment pace.

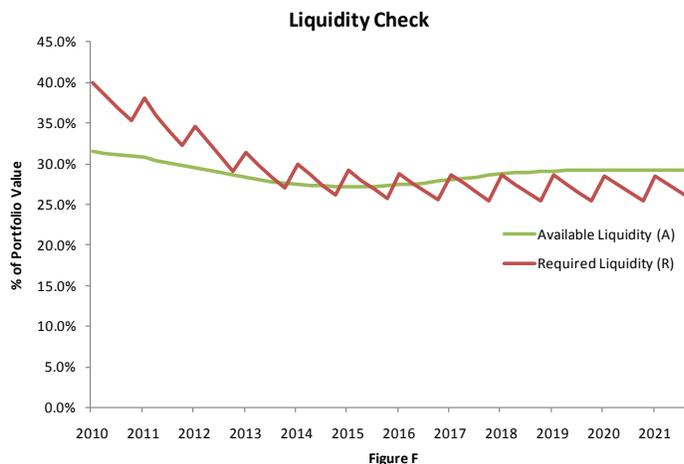
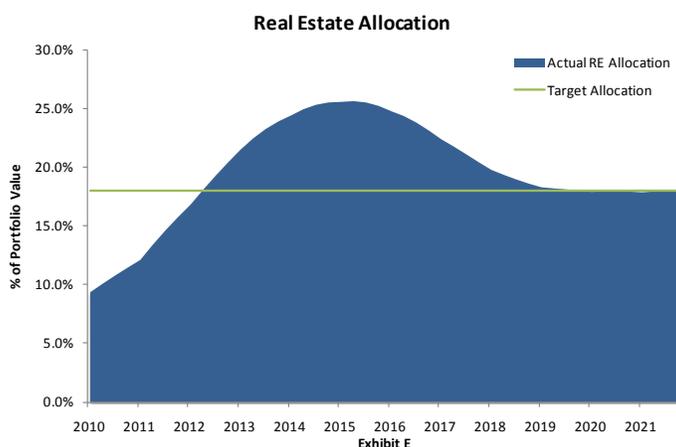


We can see above that the investor successfully reaches his target real estate allocation over 6-8 years without being over-allocated at any point. As the investor reaches his target allocation, the required and available liquidity gap narrows considerably. Landmark believes this reinforces the concept of checking a program’s liquidity constraint as each fund commitment is made, as any one decision can materially impact the liquidity balance.

Case 3: Quickly Achieve Target Real Estate Allocation of 18%

In this example, we will assume the investor wants to increase his allocation to real estate, but believes that this year is THE year to invest in private equity and makes significantly outsized commitments in 2010. This strategy is not uncommon when investors try to rapidly meet their target allocations to real estate or when they attempt to capitalize on a perceived market opportunity. While an outsized commitment strategy does achieve the investor’s allocation objective more quickly than a steady commitment schedule, these commitment plans create vintage concentration, temporary over-allocation and potentially subject an investor to liquidity problems in a crisis scenario.

Using Landmark’s commitment planning module, we can evaluate the investor’s allocation and liquidity position using Equations 1 and 2 to see if and when he becomes constrained. We can see below in Figure E that the investor is able to reach his target allocation much more quickly than through a steady commitment schedule. But the investor becomes over-allocated, reaching a peak allocation of 26% and remains above his new target allocation for a period of 4-5 years.



We also see that liquidity required during the crisis is projected to be substantially greater than available liquidity for several years and only matches available liquidity in later years. Therefore, we conclude the investor has created a commitment plan that creates liquidity risk in a crisis. While this doesn’t necessarily mean the investor should not increase his allocation or make a large commitment early on, the investor should evaluate his decision to over-commit from a liquidity perspective.

If the investor decides to move forward with this plan, there are portfolio management tools that can be deployed to de-risk the portfolio on an allocation and liquidity basis. For example, the investor could sell some older real estate funds to reduce legacy relationship exposure and recycle cash from that sale into new commitments; pursue a structured secondary transaction that reduces some portion of total unfunded commitments; or purchase “crisis insurance” to protect the portfolio during a downturn.

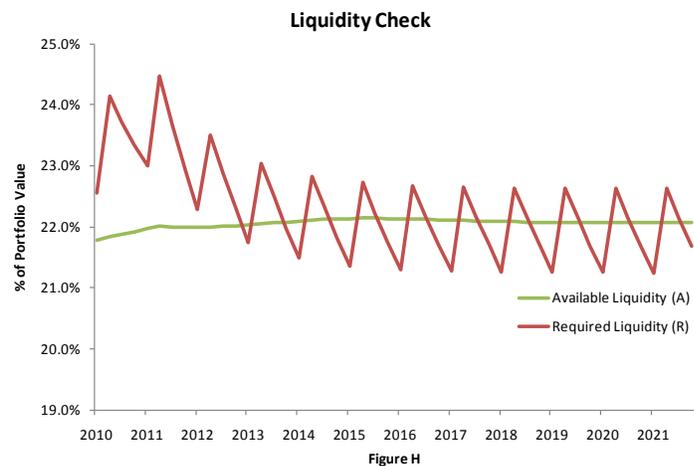
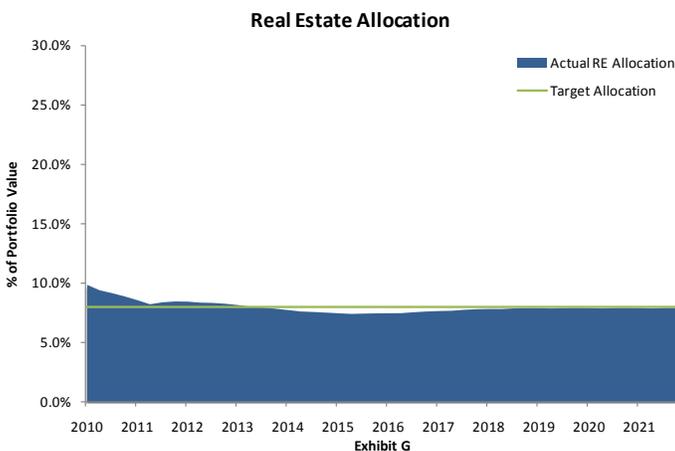
Case 4: Reduce Target Real Estate Allocation to 8%

After the events of the last 24 months and the expected performance of some recent vintages, many investors are re-evaluating their real estate return assumptions and the value of illiquid assets in a portfolio context. In some cases, this evaluation might drive an investor to reduce his target allocation to real estate. In this situation, the investor is implicitly placing a larger premium on liquidity than he has in the past. One way the investor might express a higher liquidity requirement is to reduce the amount of the liquid portfolio that can be sold to meet

capital calls and cash flow requirements. In this example we set K , the fraction of liquid assets available for sale, to 20%, rather than 35% as in the previous examples.

Now that the new constraints have been set, there are several ways for the investor to reduce his target allocation. The chosen route will likely be guided by the investor’s new risk tolerance and time horizon to achieve his new target allocation. If an investor wants to reduce his allocation quickly, he can reduce exposure through a secondary sale or structured transaction. If the investor has more time, the program can avoid commitments to the asset class for some period of time until the existing portfolio has wound down to his target allocation. This process, however, leaves an investor sitting on his hands and keeps the portfolio from investing through economic cycles. Finally, as we assume in the example below, the investor can simply reduce his commitments until the portfolio right-sizes itself.

As shown below, the investor will have a real estate allocation that is higher than his 8% target for about three years. However, the program’s liquidity position is at risk in the crisis scenario we defined. Due to the investor’s implied premium on liquidity, less cash is available during the crisis than in previous cases. As a result, the investor may want to reevaluate his target allocation or liquidity premium before executing his commitment plan. Alternatively, the investor may want to explore reducing illiquid exposure to quickly bring liquidity needs and resources back into balance.



Step 3: Evaluate the Portfolio’s Liquidity Prior to Every New Commitment

Commitment planning based on asset allocation models is valuable, but recent events have taught us that the investment environment can change very quickly. If there is a large downturn, such as the crisis contemplated in the examples above, investors may need to respond immediately, rather than waiting for the next year’s commitment planning cycle. The commitment planning module developed by Landmark illustrates that it is relatively easy to check whether or not a portfolio is becoming vulnerable to a future liquidity crisis. The available and required liquidity from Equations 1 and 2 can be evaluated before every new commitment is made, or periodically throughout the year, to determine current vulnerability to a future crisis. Depending on the results, the investor might wish to suspend new commitments, execute a secondary market solution or pursue both in order to meet specific organizational objectives and optimize the portfolio’s long-term performance.

Conclusion

As investors put capital commitments on hold in 2008 and 2009, general partners also hit the brakes on fundraising efforts. However, many general partners have come back to the market in 2010. Concurrently, many investors are re-evaluating their future real estate commitment plans while struggling to find ways to assess and compare managers. Because of the large supply-demand imbalance between available investor dollars and new investment opportunities, we expect to continue to see an even larger premium on limited partner capital throughout 2010 than was experienced in 2009. Now that investors have determined how much capital they would like to commit this year, investors must concentrate on understanding which managers actually add value and generate alpha rather than why a significant percentage of managers claim to be “top quartile”. Stay tuned.

References

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3. D. Takahashi and S. Alexander, “Illiquid Alternative Asset Fund Modeling”, January 2001

Data

Data used to generate Figures A through H is from Landmark’s proprietary toolkit, which uses historical cash flow curves and an extension of the Takahashi-Alexander “Yale Model” to generate cash flow projections for a given portfolio.

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