Tickling the Dragon's Tail

A MODEL OF THE SYSTEMIC IMPACT OF INCREASED ILLIQUID ASSET HOLDINGS IN TIMES OF MARKET STRESS

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Executive summary

For several years, we have been concerned about the rapid growth of private market asset holdings by many investors and the market-wide consequences of reduced asset liquidity in times of market stress. Like the early and dangerous experiments of the Manhattan Project, are investors tickling the tail of a sleeping dragon? To better understand the potential consequences of this risk, we employ an agent-based model to evaluate how private and public markets might respond to a market shock and the need for some investors to sell assets to meet cash flow needs. We completed this work in early 2022, as markets began to fall, offering a glimpse of the potential risk that our modelling was intended to reveal.

The Problem

In times of market stress, the sources of cash shrink while the uses of cash remain constant or may even increase.

Sources of cash:

01 Liquid assets: Prices fall with the market shock and with pressure from forced selling.
02 Private assets: Distributions dry up as markets fall, and they lag as the market recovers.
03 Contributions: As asset prices fall, plan sponsors are typically less able to fund their pension. As wealth declines, so do gifts to endowments and foundations.

Uses of cash:

01 Private equity capital calls: These fixed dollar amounts are not rescaled as markets fall.
02 Organic cash needs:

- **Pension plan benefits:** Payments do not fall with asset values and may rise if they are inflation linked.
- **Endowment and foundation disbursements:** Payments remain high at the outset of a market shock, as they are typically based on multi-year trailing asset values. Therefore:
  - It takes time for lower asset values to be reflected in the base.
  - The asset base remains high due to lagged and partial write-downs in private market assets, which tend to be a large part of the asset base for these investors.

This imbalance between the sources and uses of cash can trigger a liquidity squeeze and result in the forced selling of assets.

Key questions

How might the increasing allocation to illiquid assets impact liquid assets?

This is akin to second-hand smoke—an investor need not be invested in illiquid assets to be impacted by the activity of other investors' illiquid asset holdings. Liquidity demands of illiquid assets are first met by selling liquid public market assets, which bear the initial impact of any liquidity squeeze. In many cases, investors holding the least amount of illiquid assets are hurt the most.

What are the implications for illiquid assets?

The nature of this problem is that it has a tipping point in the size of the illiquid allocation. The tipping point is the point at which illiquid assets must be sold to finance cash needs. Once the tipping point is breached, the more illiquid assets held the worse the performance.

What are the key factors that determine a breach of the tipping point?

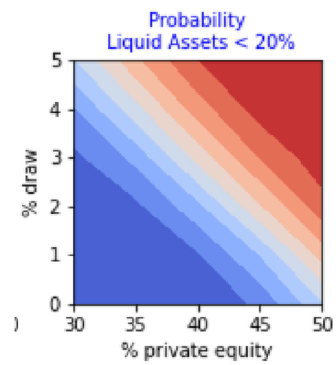
Market shock and market fragility are the key determinants of whether a breach occurs.

- **Market shock:** The larger the shock and the longer the duration of the drawdown, all else equal, the higher the probability of breaching the tipping point.
- **Market fragility:** The more fragile the market, the more likely a breach for a given market shock. Market fragility is determined primarily by two things:
  - **Organic cash flow:** The larger the cash drain on liquid assets, the more fragile the system.
  - **Illiquid allocation:** The larger the illiquid allocation, the more fragile the system. Each dollar allocated to illiquid assets results in one less dollar available to fund liquidity needs. The larger the illiquid allocation, typically the larger the capital commitment, which exacerbates the drain on liquid assets.

Results

The graph below presents one view of our tipping point results, illustrating the probability that liquid assets drop below 20% of plan assets during a three-year period that includes (and follows) a 3-standard-deviation market shock. Deep blue represents a 0 to 10% probability and deep red represents a 90% to 100% probability. Shades in between deep blue and deep red represent 10% probability increments.

For smaller private market allocations and smaller organic cash flow needs, it is very unlikely that liquid assets fall below 20%—contrast this with large (5%) organic cash flow needs and a large starting illiquid allocation (50%), which results in almost certainty that liquid assets will fall below 20% of plan assets. The graph also makes clear the idea of a tipping point, moving from deep blue to deep red, and it helps to highlight the key determinants of market fragility—organic cash flow needs and the size of the illiquid allocation.



Conclusion

As investors have allocated more assets to illiquid investments such as private equity, market fragility has increased in the sense that a market shock would likely be exacerbated by forced selling of assets to meet liquidity needs. Liquid assets bear the initial brunt of liquidity-driven selling as they are sold first. However, under certain conditions, a tipping point is breached and illiquid assets must be sold. Large holders of illiquid assets could be hurt most. But this is not all bad news. A fragile market also opens up opportunities.

- **Preservation of liquid capital:** Explicit protection strategies may become paramount, as preserved capital can be deployed to buy up assets (public or private) at liquidity-distressed prices. For investors with less-liquid assets, protection helps keep the solvency wolves at bay.

- **Trend following strategies:** Many of these strategies are likely to be well-rewarded, as persistent selling pressure to meet cash flow needs results in trending asset prices.
- **Liquidity analysis:** For investors with larger illiquid balances and significant cash outflows, liquidity analysis may clarify risk exposure and help to better map out next steps.

Investors benefited from large allocations to illiquid assets while asset prices rose and liquidity was abundant. However, these allocations could prove problematic for all investors if asset prices fall and liquidity becomes increasingly scarce.

For further information

We want to help clients build for successful outcomes, defend portfolios against uncertainty, and create long-term financial well-being. To learn more, investment professionals can contact us.

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