PRIVATE EQUITY: RISKS AND NEW DEVELOPMENTS

VINCENT MAURIN & PER STRÖMBERG

STOCKHOLM SCHOOL OF ECONOMICS
SWEDISH HOUSE OF FINANCE

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Overview

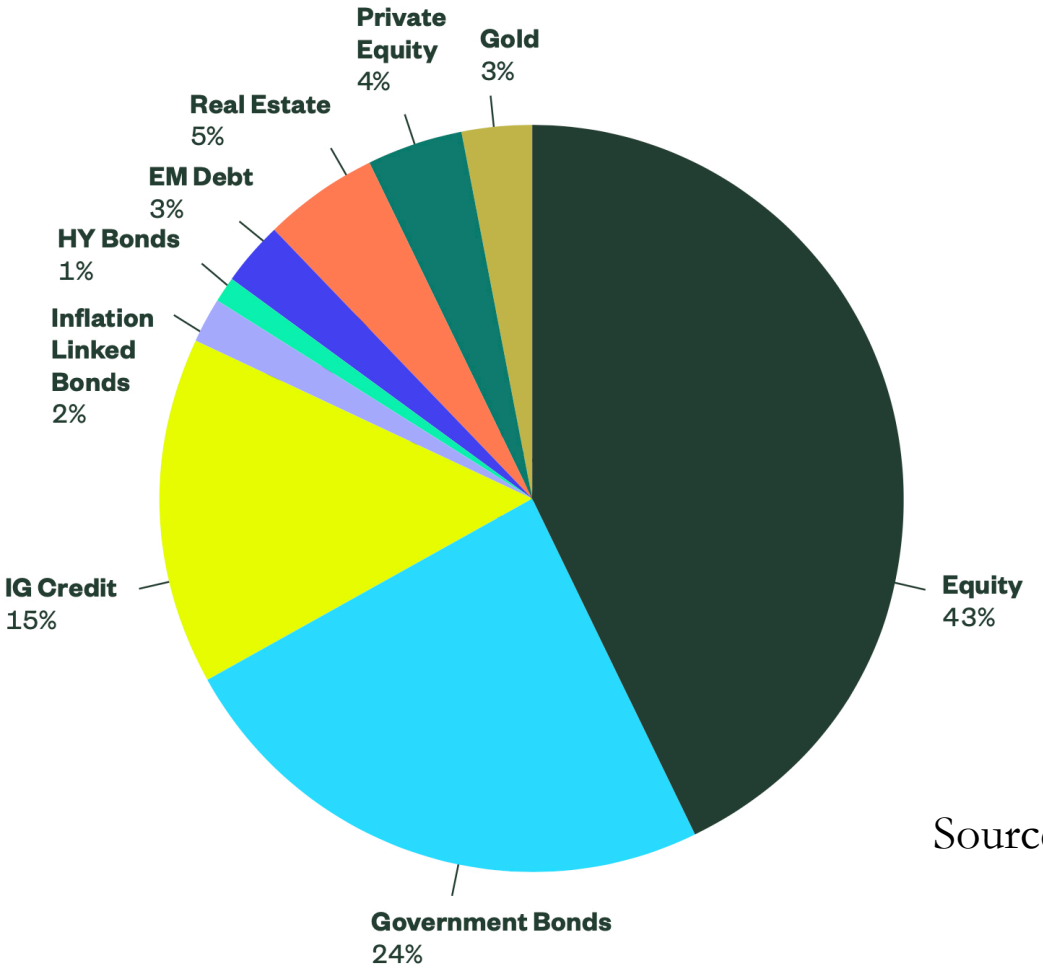
1. Private Equity: The Asset Class
   - Sizing PE
   - The PE Model & Fund Structure
   - Role of Leverage

2. Risks in Private Equity
   - Macro perspective: leverage and default risk
   - Investors' perspective: liquidity risk

3. New Developments in Private Markets
   - PE Innovation: Subscription Lines, Securitization, NAV lending,…
   - Growth of Private Debt Market.

1. PRIVATE EQUITY: THE ASSET CLASS

PE IN THE GLOBAL MARKET PORTFOLIO (2021)



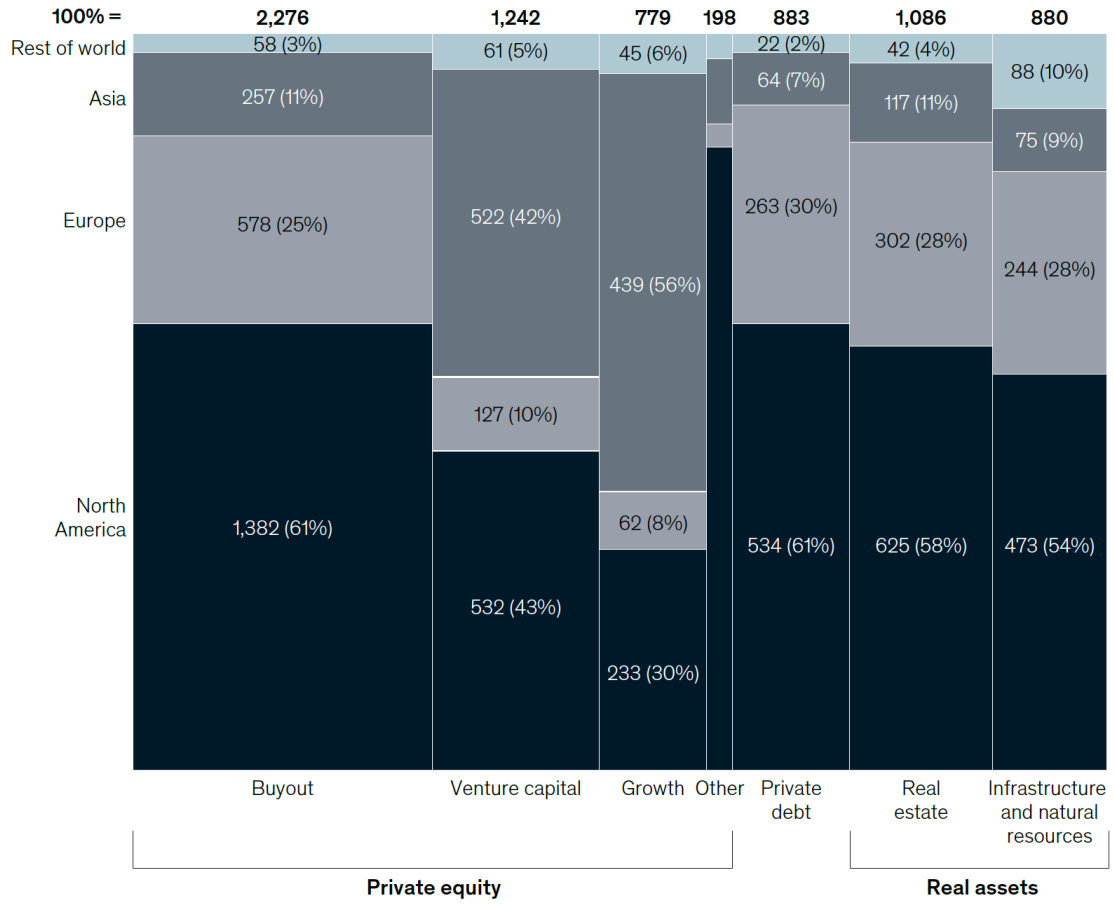
Source: *State Street*

- Global Market Portfolio ~ USD Tr180
- Private Equity ~ USD Tr7.5

Private Markets

Private market closed-end assets under management surpassed $7.3 trillion.

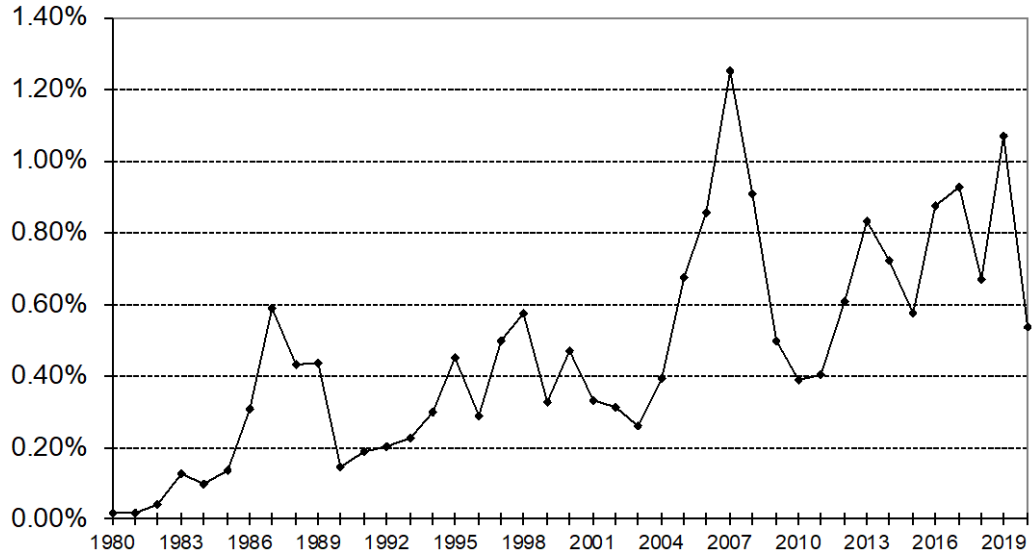
Private market assets under management, H1 2020, $ billion



Note: Figures might not sum to 100%, because of rounding.
Source: Preqin

Sizing PE

Commitments to Private Equity / LBO Partnerships in U.S.
as Fraction of Stock Market Capitalization 1980 - 2020



Source: Private Equity Analyst, Pitchbook, Steven N. Kaplan

Why Private Equity?

- Unlike some other forms of asset management: not a zero-sum game !

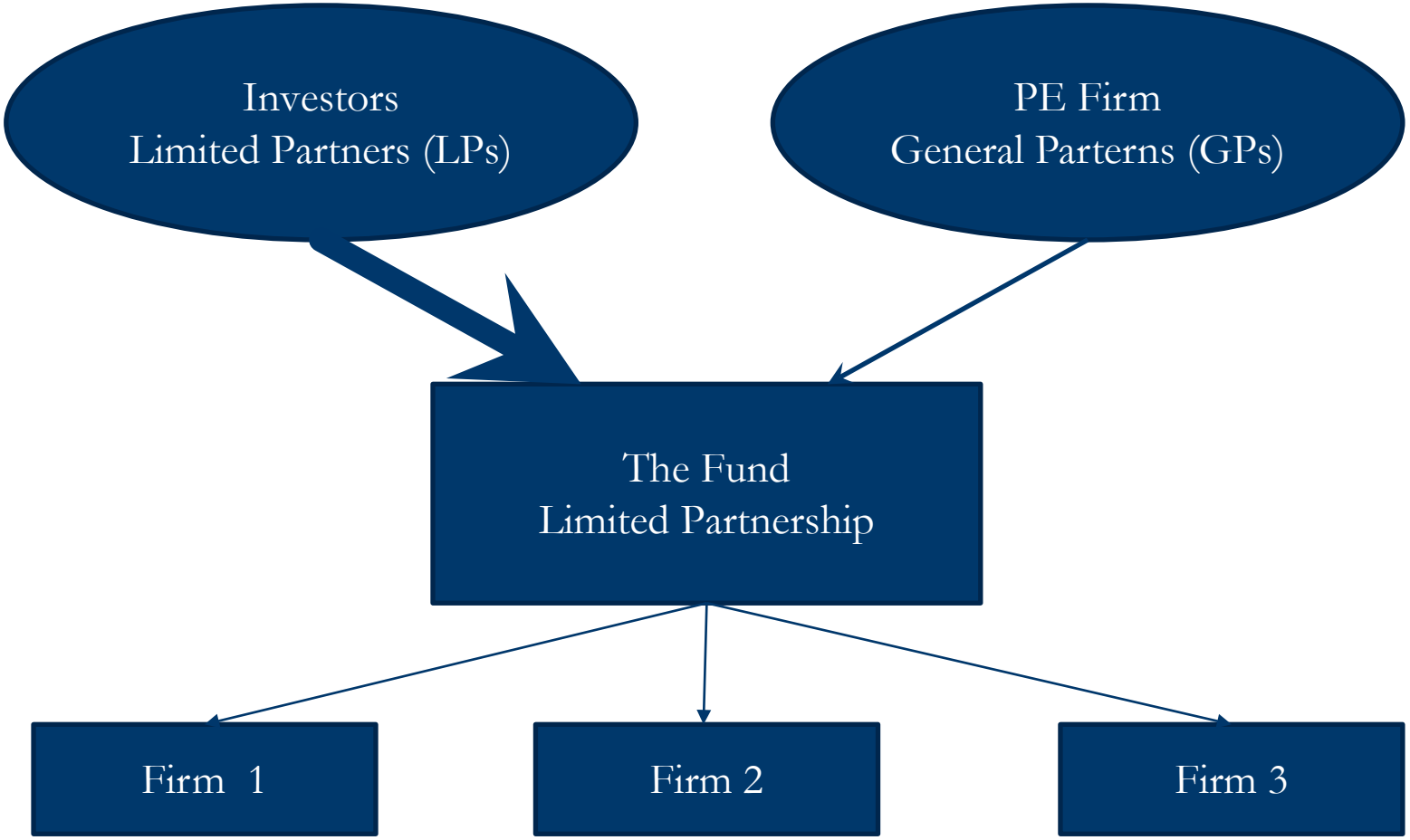
- Value creation: financial, governance and operational engineering

  → Kaplan & Stromberg (2009)

- Why is PE value creation hard to achieve in a public setting?
  - Passive, uninformed shareholders in public companies
  - Price to pay for active ownership: lack of liquidity and diversification
  - Top PE investors develop unique skills

- Plenty of evidence on growth, productivity, and efficiency gains in companies.

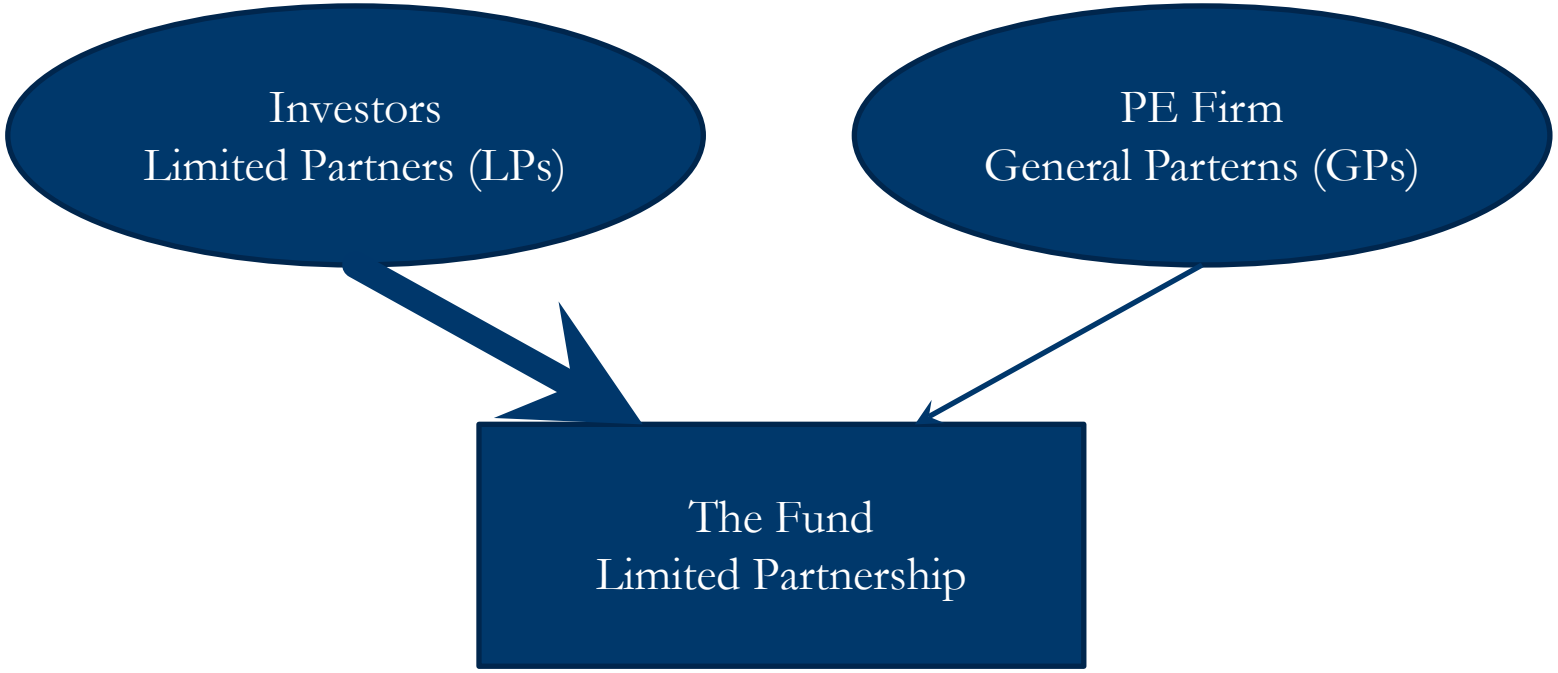
PE Fund Structure



PE Fund Structure

- Commit cash at fund inception
- Provide cash as needed
- Pay management fees: ~2%
- Get cash back + 80% profits

- Have all decision rights
- Earn management fees
- Earn carried interest: 20% of profit above hurdle rate of 8%



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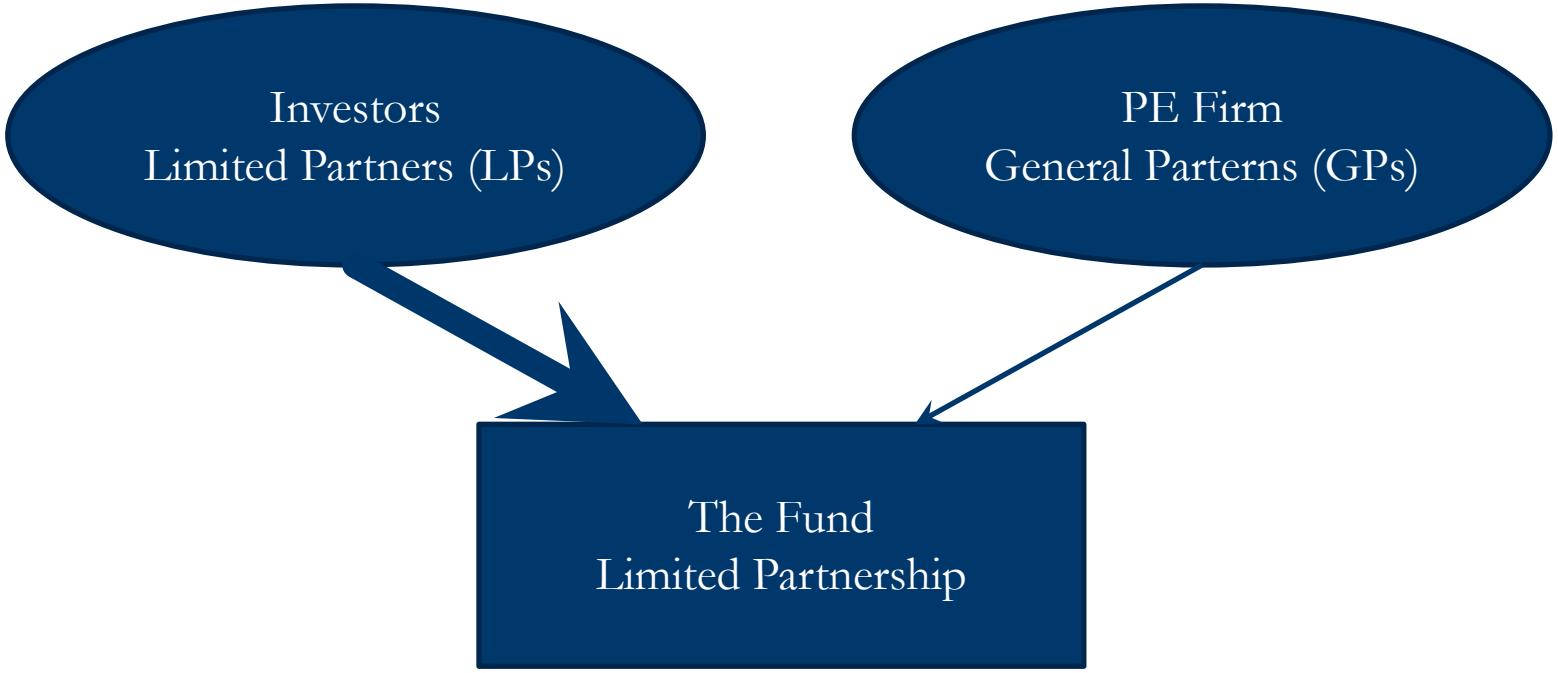


- Benefits of fund structure:
  - High-powered incentives for GPs
  - Discipline via repeated fundraising
- Costs to investors:
  - Effective fees ~ 6,7%
  - Imperfect alignment interest

THE ROLE OF LEVERAGE IN PE INVESTMENT

- PE Funds finance deals using significant leverage

  → NB: Debt is raised at the firm level not at the portfolio level.

  "Our philosophy is to lever our deals as much as we can, to give the highest returns to our limited partners"

  Practitioner's quote from Axelson, Strömberg, and Weisbach (2009)

- Why so much leverage?
  - **View 1**: PE investors are savvier, better understand debt benefits
    - tax/incentives benefits for firm management
    - public companies seem underleveraged (Graham 1996)
  - **View 2**: Arbitrage debt vs. equity market: buy when "debt is cheap"
  - **View 3**: Debt solves the free-rider problem in M&A (Grossman & Hart 1980)
  - **View 4**: Use of debt prevents GPs from overinvesting (ASW2009)

WHY ARE BUYOUTS LEVERAGED?

Axelson, Strömberg, and Weisbach (Journal of Finance, 2009)

- Fund structure harnesses benefits of joint project financing
  - GP is incentivized to pass on bad investments not to contaminate fund returns
  - Similar flavour to cross-pledging benefits in corporate finance → Laux (2001)

- With noncontingent financing in place, however, GP may invest in bad times
  - GP goes for broke with bad investment if no good deal before
  - Caused in part by otherwise optimal equity-like GP compensation

- Deal-by-deal debt financing by third-party (imperfectly) restores dicipline!
  - GP can only raise debt when market conditions are good
  - But still bad (good) investments financed (overlooked) in good (bad) times

WHY ARE BUYOUTS LEVERAGED?

- Predictions from Axelson, Strömberg, and Weisbach (JF, 2009)
  1. LBO funds will use as much debt as they can to finance a deal
  2. PE funds will overinvest in hot debt markets
  3. Returns will be negatively correlated with fundraising activity

- Predictions align with empirical evidence & industry view.

- Axelson et al. test empirical determinants of LBO leverage
  - Compare private firms with public firms
  - Look at firm-specific vs. macro predictors of leverage

EMPIRICAL DETERMINANTS OF PE LEVERAGE

Axelson, Jenkinson, Strömberg, and Weisbach (JF, 2013)

- No strong firm-level predictor of leverage for private LBOed firms

  → LBO leverage mostly explained by time-series factors.

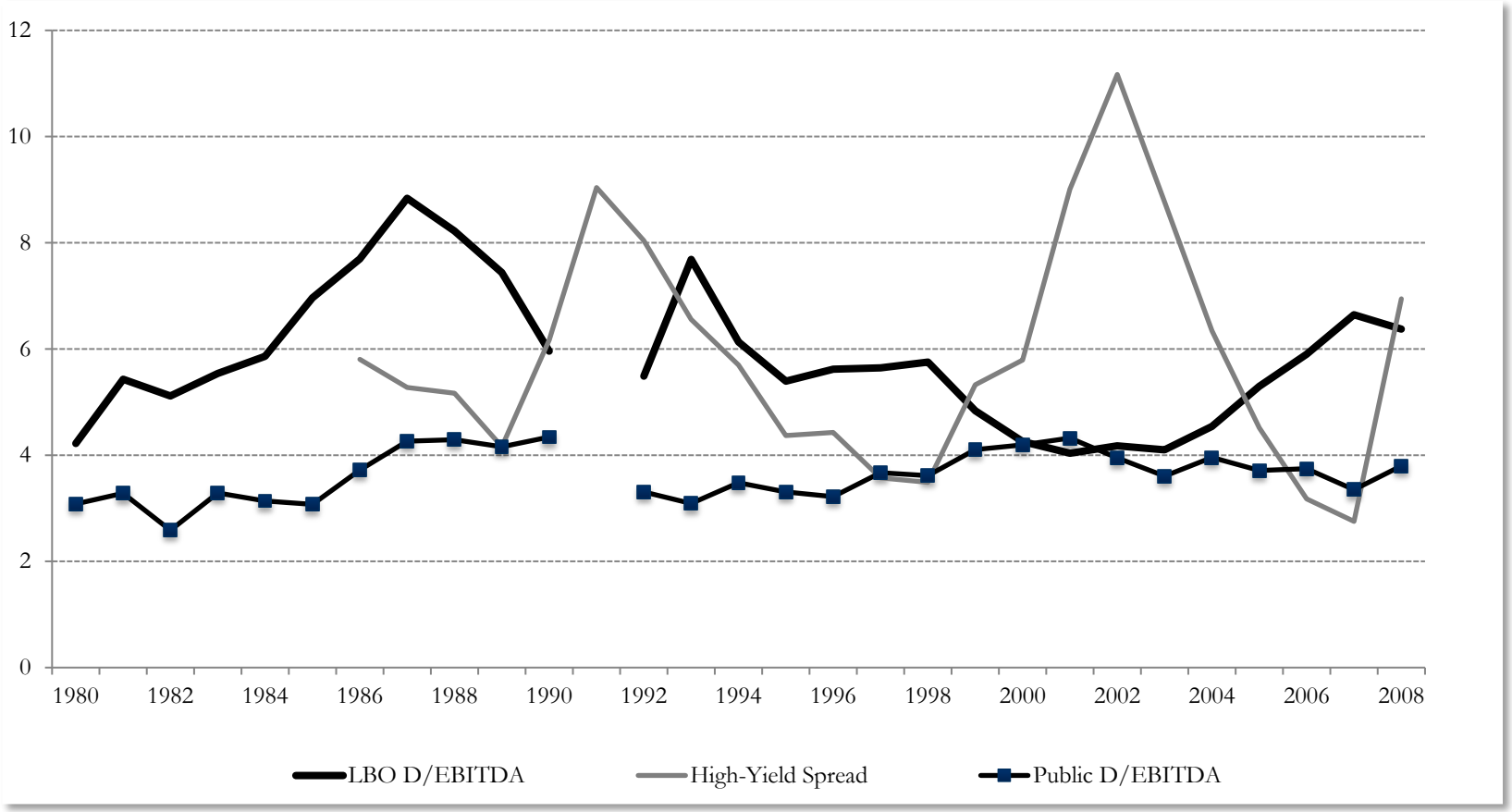
- Different result for public firms: firm-level predictors matter!

- Yet, pre-LBO leverage of private firms in line with that of matched public firms

- So what drives private firms leverage?

Accessibility of Debt

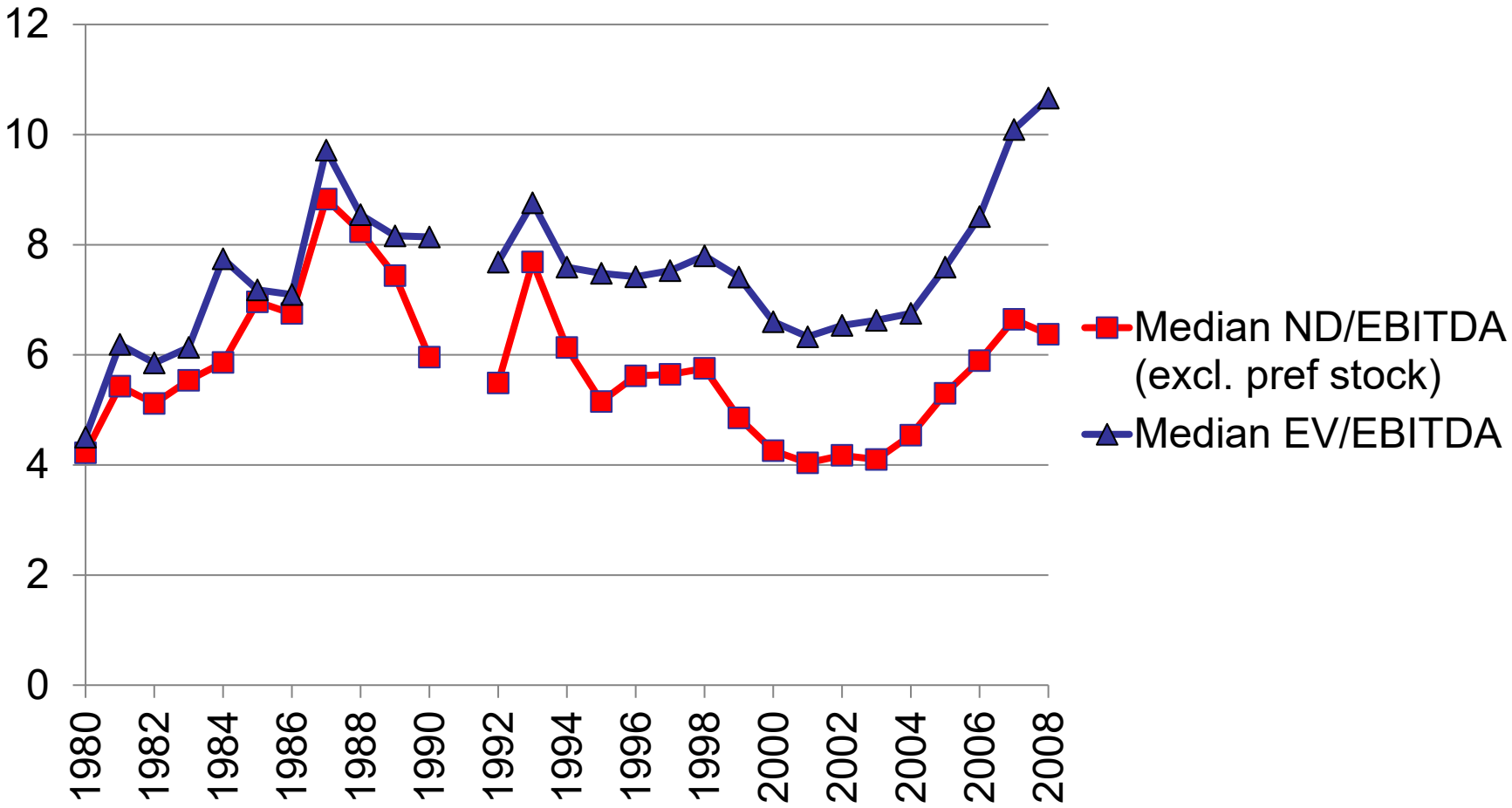
Accessibility of debt = only systematic predictor of PE leverage!



- Source: Axelson, Jenkinson, Strömberg & Weisbach (2013)

Credit Cycles

Beyond leverage, pricing and activity also determined by credit cycle



Conclusions so far

- LBO leverage driven by accessibility of debt
  → not optimal capital structure trade-off for portfolio company

- LBO leverage drives up transaction prices

Inconsistent with:

- Optimal capital structure story
- Beneficial market timing story

Consistent with:

- Agency/compensation model
- PE funds competition

2. PRIVATE EQUITY: RISKS

- **Macro perspective: leverage and default risk**
- Investors' perspective: liquidity risk

Leverage and default Risk

Excess PE leverage → higher costs from firm default?

YES CAMP

- PE funds lever more their portfolio companies than matched public firms
- Higher leverage → higher risk of default
- Higher firm default → higher deadweight costs from financial distress
- Concurrent evidence of lower investor returns when deals are highly levered

Leverage and default Risk

Excess PE leverage → higher costs from firm default?

NOT NECESSARILY CAMP

- PE funds are better at handling high debt levels. Why?
  1. Locked-in LP capital → easier equity infusion
  2. Desire to maintain reputational capital

- Lower PE fund returns with high leverage = redistribution btw sellers & buyers

↪ Hotchkiss, Smith & Strömberg (2021) investigate this question empirically

Hotchkiss, Smith & Strömberg (2021)

- Unbalanced panel of 2,151 leveraged loan, non-IG borrowers (97-10)
  - 46% are PE-backed at some point.
  - 26% default at some point.

- **Benefit**: both PE- and non-PE-backed firms voluntarily choose to lever up

- Tracks which firms default and how these firms resolve financial distress
  1. Are PE-backed firms more likely to default?
  2. What is the role of PE funds in resolving distress?

PE PORTFOLIO COMPANY DEFAULTS

	PE-backed			Non-PE-backed		
Panel Year	N	# of defaults	% defaulting	N	# of defaults	% defaulting
1998	173	2	1.2	771	10	1.3
1999	245	13	5.3	901	26	2.9
2000	306	19	6.2	868	39	4.5
2001	330	30	9.1	828	41	5.0
2002	321	19	5.9	789	36	4.6
2003	332	13	3.9	748	20	2.7
2004	359	11	3.1	679	16	2.4
2005	369	6	1.6	621	11	1.8
2006	368	9	2.4	569	10	1.8
2007	354	4	1.1	492	4	0.8
2008	343	22	6.4	397	26	6.5
2009	325	47	14.5	299	52	17.4
2010	273	6	2.2	235	2	0.9
All years	4,098	201	4.9	8,197	293	3.6

HSS (2021) RESULTS

- PE-backed vs. non-PE-backed companies
  - Higher leverage
  - No difference in default probability | leverage
- PE-backed firms have lower distress cost| default & leverage
  - More likely to restructure out of court
  - More likely to reorganize in bankruptcy
  - Defaulted company more likely to survive as going concern
  - No difference in recovery rate: redistribution creditors/equity holders?
- Effect related to dry powder availability and distress expertise
- Does not seem driven by selection into lower distress cost firms

WELFARE IMPLICATIONS

- Upside of PE investment
  - PE ownership increases efficiency, productivity etc.
  - PE-backed firms resolve default more efficiently

- Downside of PE investment: higher leverage
  - Less costly default is still costly

- Macro implication: debt dependence exacerbates cycles

2. PRIVATE EQUITY: RISKS

- Macro perspective: leverage and default risk
- **Investors' perspective: liquidity risk**

Allocation to Private equity

- US institutional investors allocate ~ 24% to private markets
  - Private equity
  - Private debt
  - Infrastructure
  - Real estate
  - Multi-alternative solutions

Source: *Blackrock 2023 Private Market Survey*

- Institutional investor would allocate ~ 5.5% to private equity
  - Based on value weighted private allocation (data DWS)
  - Compare with 3.7% estimate for PE/market portfolio.

INVESTING IN PE

- Typical investors in private equity:
  - Pension funds
  - Endowments
  - Sovereign wealth funds
  - Insurance companies
  - Family offices /High net worth individuals

- Value proposition for investors of the PE asset class:
  - Outperformance relative to other asset classes (hotly debated)
  - Diversification of risk relative to 100% public market allocation
  - Operational improvement of companies away from public market scrutiny

- PE is not an homogeneous asset class: access matters!

Illiquidity of PE

- Illiquidity of underlying assets
  - Almost necessary feature of PE
  - Not necessarily a direct concern to fund investors

- Illiquidity of investors's commitment to PE funds
  - First outflow = exit can take 5-7 years
  - Can be mitigated by secondary market (more later).

- Funding liquidity risk due to drawdowns of invested capital
  - Fund managers have discretion about timing and size of capital calls.
  - Concern that capital is called when funding cost is high for investors.

LIQUIDITY RISK OF PE INVESTMENTS

Robinson & Sensoy (2016) study cash flow risk of PE investments

- Some PE cash flow risk is idiosyncratic
  - potential for diversification within and across vintages
  - Not obvious due to ticket size and importance of access to funds.
- There exists a procyclical systematic component to PE cash flows!
  - Distributions are more sensitive than calls to market conditions
- Funds that call more capital in bad times overperform.

The Price of Liquidity Risk

Maurin, Robinson, Strömberg: A Theory of Liquidity in PE (MS 2022)

- **Model ingredients**
  1. Fund structure with bundled investment to ↑ GP incentives.
  2. Liquidity shock hits in bad time → capital call costly to Limited Partners
  3. LPs have ≠ tolerance to liquidity shock (∝ investors' funding risk)

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- **Result 1**: GP distort call pattern: invest less than optimal in bad times

- **Result 2**: "Illiquidity-tolerant" LPs can earn a return premium
  - Investing with these premium LPs is more profitable for GPs
  - GP competition for premium capital → scarcity rent for these LPs.

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Can explain/consistent with

- Persistent return heterogenity across LPs
- Return persistence for funds (w/o unobservable GP skill) due to matching
- Funds that draw more capital in bad times deliver higher return (RS 2016)

SECONDARY MARKET FOR FUND CLAIMS

(Secondary) market emerged to transact LP commitments to PE funds

Findings when adding secondary market in our model

- Shortage of liquid capital (premium LPs) → discount to Net Assset Value (NAV)

  ↪ Consistent with Nadauld et al. (2019), Albuquerque et al. (2018)

- Discount increases with fraction of uncalled capital

- Secondary market development → lower return heterogeneity in primary market

Future Work? Decompose Discount to NAV in the data

Discount = Adverse Selection + Liquidity Shortage + Funding Risk

3. PRIVATE EQUITY: NEW DEVELOPMENTS

- **Optimizing returns: new financial techniques**
- Beyond private equity: the rise of private debt

OPTIMIZING RETURNS

Subscription Lines

- Fund starts
- LPs commit capital

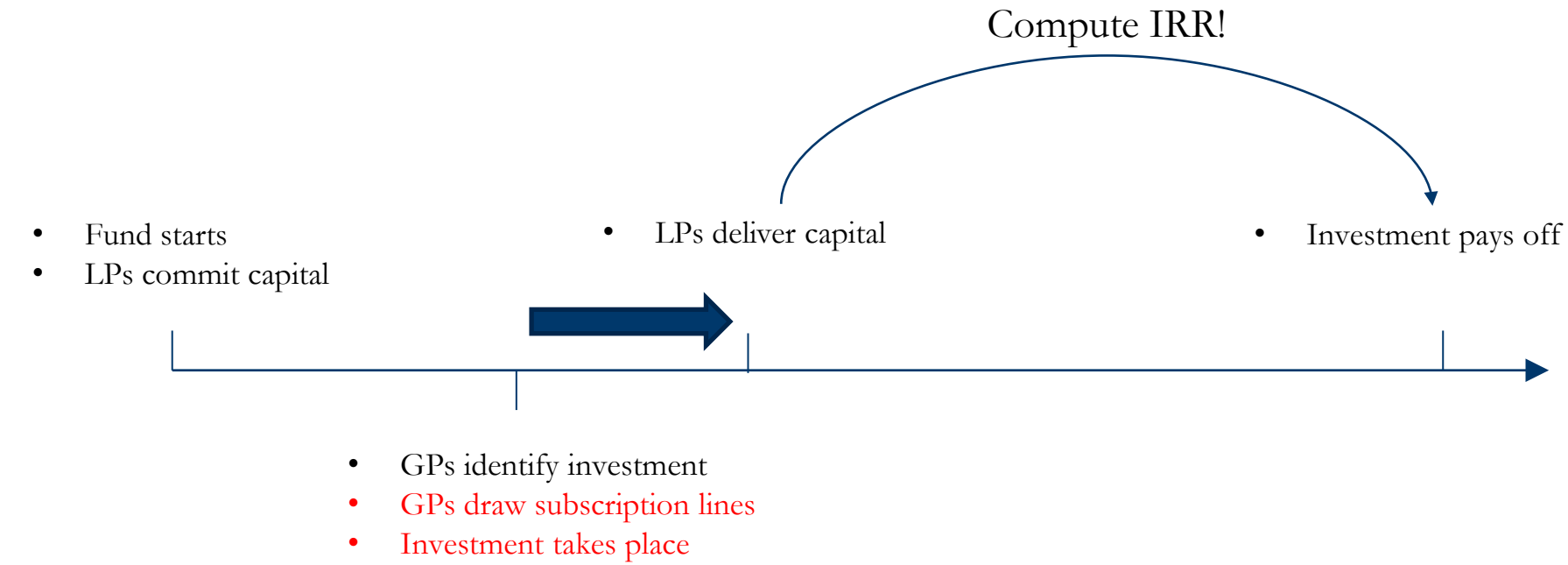
- LPs deliver capital
- Investment takes place

- Investment pays off

- GPs identify investment
- GPs call capital

OPTIMIZING RETURNS

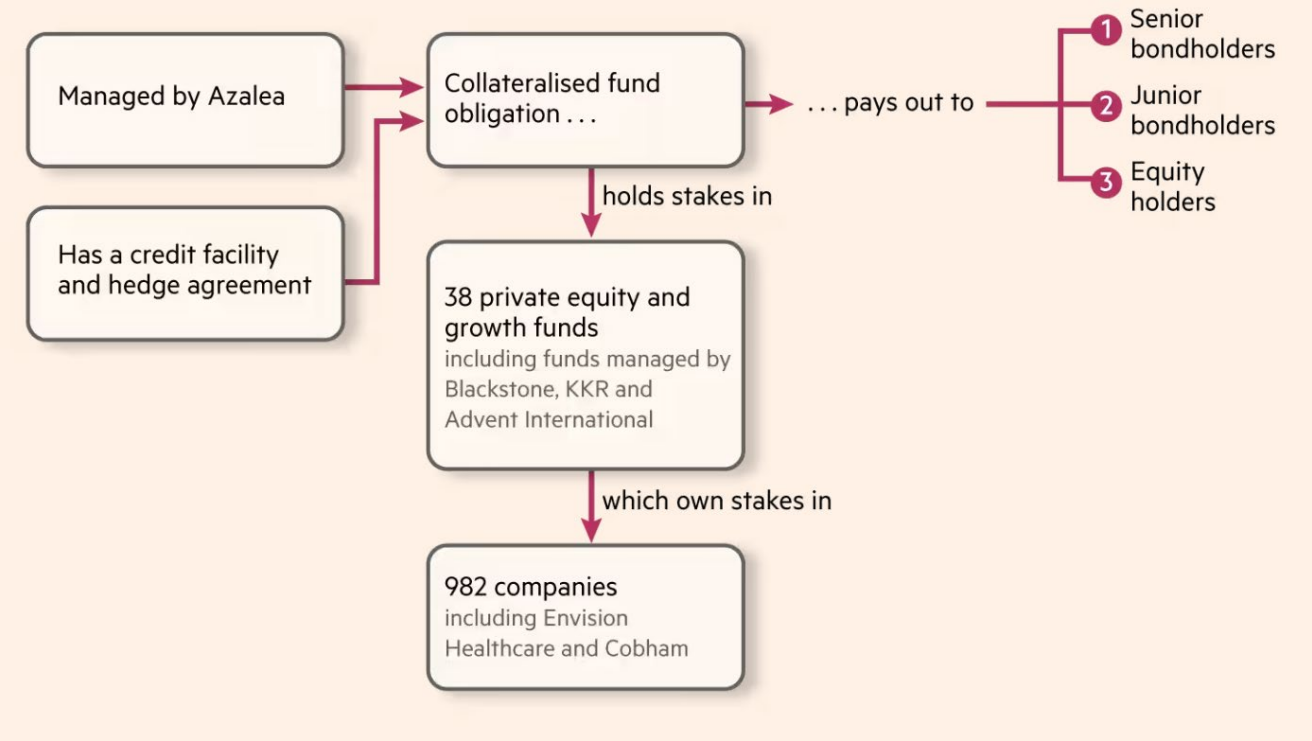
Subscription Line = Loan by Bank against Capital Draw Downs



- **Legitimate use**: short-term borrowing (1 month) investment agility
- **Gaming use**: long-term borrowing (1 year): manipulate IRR at investors' expense!
  ↪ Increases maturity and risk of banks' exposure.

OPTIMIZING RETURNS

Securitization = PE fund participations → securities



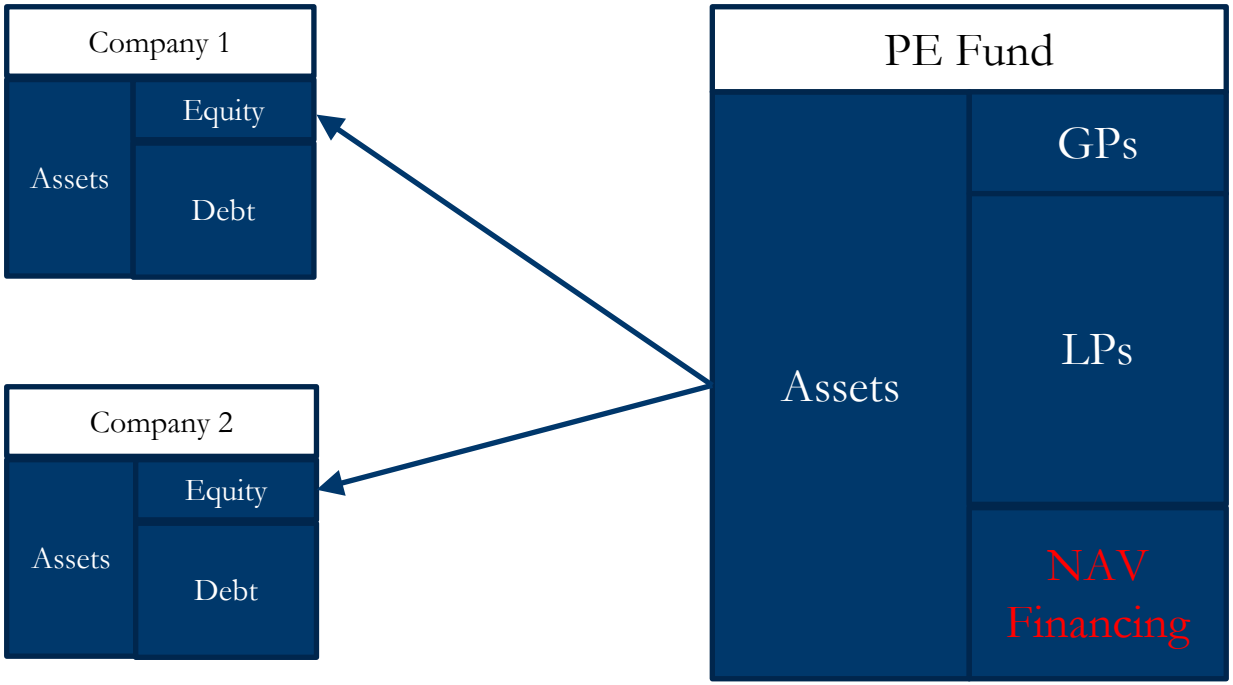
Azalea (Temasek Holdings) CFO. Source: Financial Times

- Brings private equity to the masses!
- Concerns that exotic financial structures just moved from public to private markets!

OPTIMIZING RETURNS

NAV Financing: Borrow against the Net Value of Fund

- PE funds typically borrow at the portfolio company level
- NAV financing: borrow against the whole portfolio (extensive use during COVID)



OPTIMIZING RETURNS

- Subscription lines/securitization /NAV financing generate liquidity from illiquid assets

  ↪ breathing space in times of acute stress (e.g. COVID 19)

- Concern for investors: may improve returns on papers only (borrowing is costly!)

- Main concern: these financial techniques just add debt to very leveraged investments

  The rise [of securitization] is one illustration of how post-crisis regulation, rather than ending the use of esoteric structures and risky leverage, has shifted it into a quieter, more lightly regulated corner of the financial world.

  Financial Times

3. PRIVATE EQUITY: NEW DEVELOPMENTS

- Optimizing returns: new financial techniques
- **Beyond private equity: the rise of private debt**

PRIVATE EQUITY VS. PRIVATE DEBT

- Private equity firms are mostly on the demand side of credit market
  - Borrowing at the portfolio level company
  - Subscription lines against capital commitments
  - NAV financing, etc…

- Traditionnal supply of credit: bond market/banks/syndicated loans.

- Private debt market filled some of the gap left by banks after GFC:
  - CLOs: Collateralized Loan Obligations (relatively well studied)
  - **Private Debt Funds**, defined by Trier, Jang, Kaplan, and Schulze (2022) as
    - closed-ended funds (~ PE)
    - who make direct senior loans (~ banks)

PRIVATE DEBT FUNDS

Trier, Jang, Kaplan, and Schulze – A Survey of Private Debt Funds (2022)

(Sample: AUM = $B180 ~ 25% of market)

- **What is the appeal to investors in private debt funds?**
  - Funds target levered returns significantly above BB-rated bonds
  - (with significant less leverage than banks and CLOs)

- **What do they do differently from banks?**
  - Complement bank financing (small firms with few/no tangible assets)
  - Allow firms to use more leverage

- **How do GPs in private debt funds monitor their portfolio companies?**
  - cash-flow based covenants (~ banks)
  - Negative or incurrence covenants (~ CLOs)

CONCLUSION

- **Private equity uses leverage (not only!) to turn around portfolio companies**
  - Leverage increases risk of default and financial distress
  - Very cyclical component to private equity investment
  - Costs must be weighted against documented efficiency gains

- **Implications and concerns for financial stability**
  - Growth of private equity/public equity + use of leverage
  - Exotic financial innovations make it to private markets

- **Curtailing risks in banks → risks move to private markets?**

  ↪ e.g. private debt funds

THANK YOU FOR YOUR ATTENTION!