IPO Investing

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Pre-IPO investing: private equity

- There has been substantial recent growth in private equity market
- What have been the returns from private equity investing? What have been the risks?

The returns to venture capital

- Liang Peng, “Building a venture capital index”
- A venture capital index (VCI) from 1987 to 1999 is constructed based on almost 13,000 rounds of venture capital financing in over 5,600 firms
  - data from Thomson Financial (VentureEconomics)
- Basic problem in building a VCI: missing data
  - returns can only be computed from initial investment to final payout upon exit (acquisition or IPO)
  - What if firm has not gone public or been acquired?
    - Some firms go out of business, others remain “alive”

VCI construction process

- Two "sub-indices" are developed
  - Determine returns for subsample where firms have exited
  - Determine returns for subsample that has gone out of business (making crude assumptions about payout on exit)
- For "unfinished" firms, the chance of success is determined using a probability model
  - Firms are assigned based on this model to one of the two sub-indices
- The overall VCI is computed as a weighted average of sub-indices

Some evidence on VC exits

- Outcomes, as a percentage of VC investment rounds during the 1987-1999 period, are as follows:

– IPO	25%
– Acquisition	20%
– Out of business	9%
– Remain private	46%

The VCI: returns and risk

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
NAV	1.1	2.5	5.1	5.8	8.7	8.7	12.3	13.9	20.8	45.5	45.6	80.2	592.
VCI (% ret)	22.3	24.2	49.3	-5.9	46.2	-4.4	57.2	10.0	58.4	169.	-0.4	70.6	681.
VCI (% vol)	17.1	19.4	9.5	29.9	19.1	38.3	18.1	21.9	21.7	29.9	38.3	70.3	59.0
Nasd (% ret)	-15.7	15.4	19.2	-17.8	56.9	15.5	14.8	-3.2	39.9	22.7	21.6	39.6	85.6
Nasd (% vol)	9.7	3.5	3.0	7.2	5.5	4.2	3.4	3.3	2.8	5.1	6.1	9.0	8.4

NAV indicates amount invested in venture capital pools (book value) in $Billion

The returns to private equity investment

- Moskowitz and Vissing-Jorgensen, “The private equity premium puzzle”
- This study takes a broader view of private equity investing, going beyond venture capital
- Additional sources of data
  - Survey of Consumer Finances (US national surveys of ~ 4000 individuals)
    - Provides information on all investments with self-reported valuations
  - Federal Reserve’s Flow of Fund Accounts
    - Reports income of corporate and non-corporate firms

Patterns of private equity investment

	1989	**1992**	**1995**	**1998**
Mean % of individual net worth invested in private equity	*44*	*48*	*38*	*41*
Mean % of private equity held in one firm (for those with positive private equity investment)	*78*	*83*	*83*	*85*
Amount invested in private equity ($ trillion)	*3.7*	*3.8*	*4.3*	*5.8*
Market value of public equity (NYSE, AMEX, Nasdaq) in $ trillion	*3.2*	*4.3*	*6.6*	*12.4*

Private equity returns

Annual returns (% per year)	**90-92**	**93-95**	**96-98**
Private equity			
Survey of Consumer Finances	11.5	18.2	23.5
Flow of Funds Account	10.2	16.7	18.9
Public equity (NYSE/Amex/Nasdaq)			
All public firms	11.0	14.6	24.7
Small firms	30.5	20.3	22.0

Some tentative conclusions

- Private equity market is very large
- Venture capital is a relatively small (but growing) part of the private equity market
- Returns to venture capital have been impressive but risks are higher too
- Returns to other private investments have been less impressive
- What are the opportunities going forward?

IPOs as an “alternative investment”

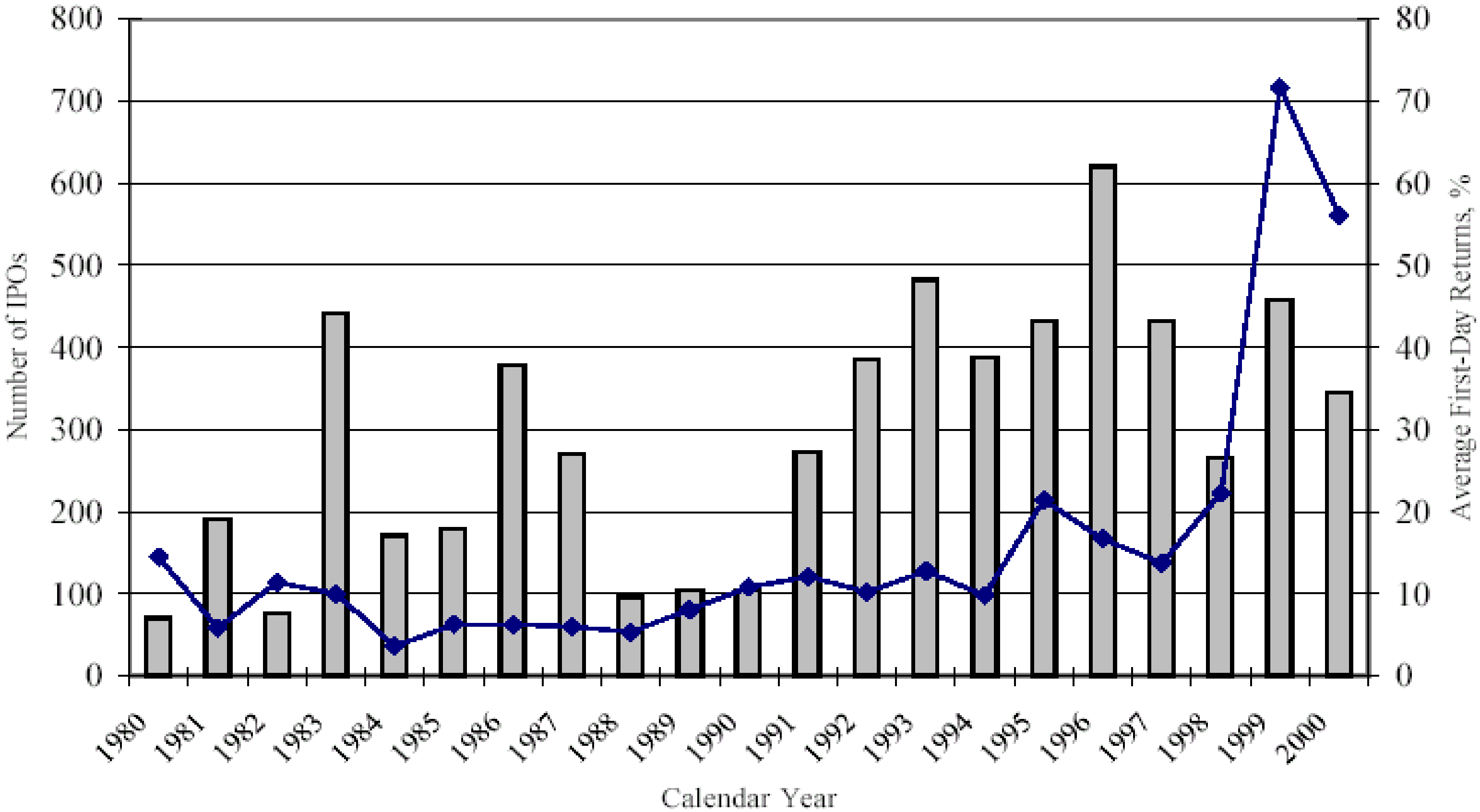
- Some standard “facts” about IPOs
  - First day returns are large and persist over time and across countries
    - US average underpricing (1960-2000) is 18.4%
    - Canada average underpricing (1960-2000) is 6.3%
  - Long run (3 to 5 year) performance of IPOs has been poor
    - US IPOs from 1970-98: average annual 5-yr return is 10.7%
    - Average return on similar sized “seasoned” firm is 14.1%
- Conclusion: if you can’t get in and out quickly, don’t bother investing in IPOs (“IPOs are hazardous to your wealth”)

More recent evidence on IPOs

- Short run returns
  - Have become extremely large
  - There is evidence that returns are predictable and exploitable

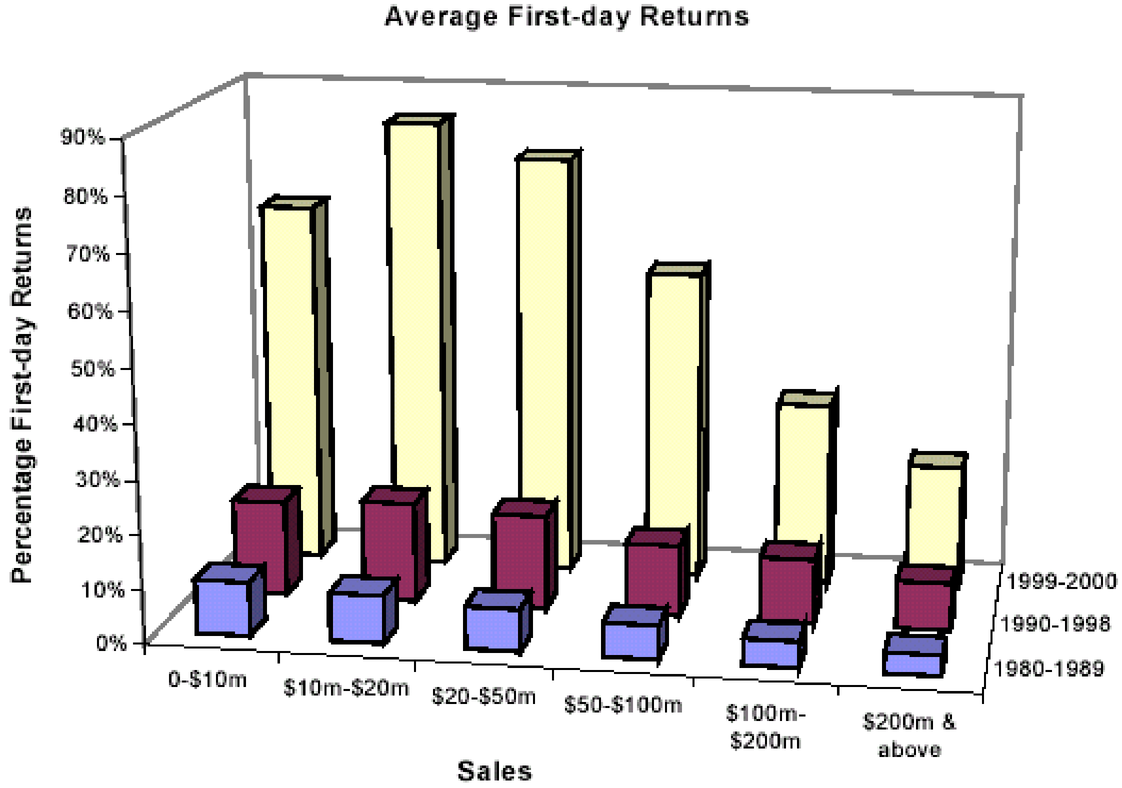
- Long run returns
  - On average, returns are not inferior for IPOs
  - A number of strategies have been identified where information at the time of the IPO can be used to identify IPOs that have abnormally *positive* long-run stock returns

IPO initial returns



Source: Loughran and Ritter “Why has IPO underpricing increased over time?”

The internet "bubble"



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Are initial returns predictable?

- Lowry and Schwert, “IPO market cycles”
  - More IPOs tend to be filed after periods when initial returns are most positive (and fewer are subsequently withdrawn)
  - Initial returns are positively correlated over time

- Loughran and Ritter, “Why don’t issuers get upset about leaving money on the table” (Review of Financial Studies 2001)
  - Underpricing more positive if offer price is revised upward
    - Revisions are predictable
  - Underpricing also more positive if IPO follows period of positive market return

Factors affecting price revisions in IPOs

Lowry and Schwert, "Biases in the IPO pricing process"

Factor	**Effect on price adjustment**
Technology stock	*positive*
Underwriter reputation	*positive*
Nasdaq listing	*negative*
Volatility of past IPO initial returns	*negative*
Market return over the filing period	*positive*

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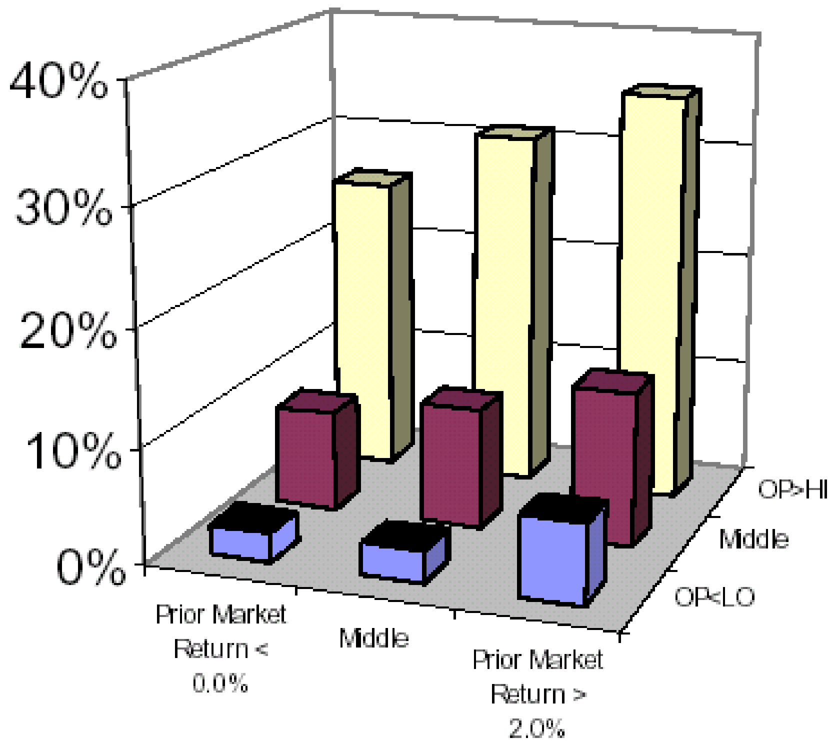
Past market return has an independent effect on IPO initial returns



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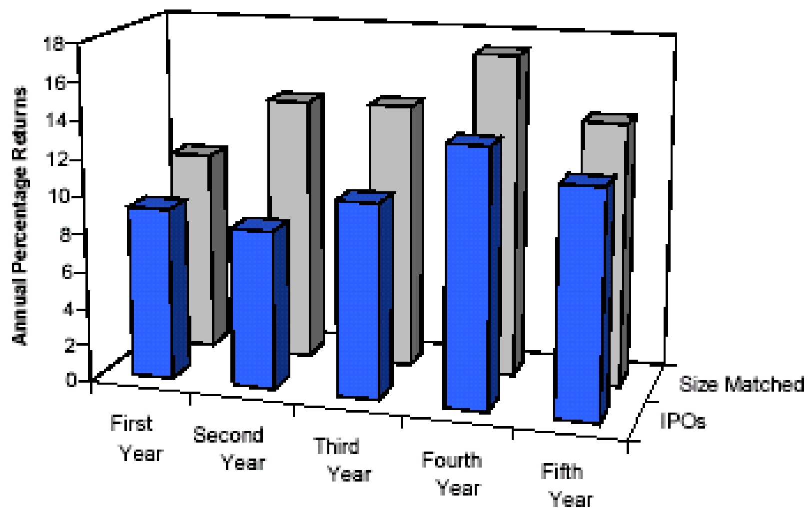
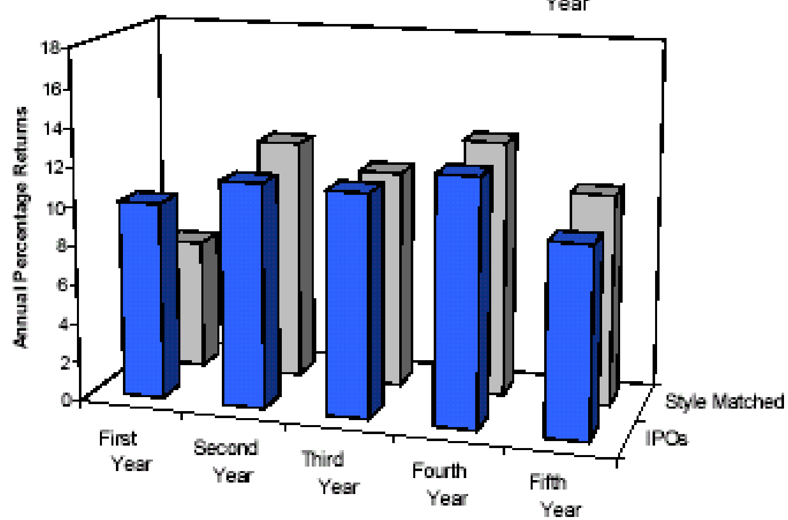
Longer-run performance of IPOs





Ritter, "Investment banking and security issuance"

Compared to size-matched portfolios, IPO returns look inferior

Compared to size *and* book-to-market matched firms, IPO return are comparable

Long-run IPO investment strategies

- Krigman, Shaw and Womack, "The persistence of IPO mispricing and the predictive power of flipping" (Journal of Finance, 1999)
  - Use first day returns and measures of "flipping" to generate a profitable trading strategy
- Purnanandam and Swaminathan, "Are IPOs underpriced?"
  - Use comparable based valuation models to identify firms more likely to outperform in the long-run
- Dunbar and Foerster, "Second time lucky: The performance of withdrawn IPOs that return to the market"
  - Previously withdrawn IPOs generate positive long-run performance

Initial returns and "flipping"

- Flipping "inferred" from intraday data
  - Flipping is defined as the ratio (by value) of seller-initiated (i.e. above bid-ask quote midpoint) large block trades (>10,000 shares) to total volume of trading on the first day of trading for the IPO (using NYSE TAQ database)
  - Mean flipping ratio is 31% (median is 28%) for IPOs from 1993 to 1995

- Investment strategy
  - Buy firms in "low flipping" group (less than 18.5% day 1 flipping) where day 1 return is positive (but not *too* high)
  - Abnormal (size adjusted) *one-year* return is 30%

IPO “intrinsic value”

- For IPOs, ratios of price to sales, price to EBITDA and price to earnings are computed based on the IPO offer price
- Similar ratios are computed for “comparable firms”, matched on industry, sales and EBITDA profit margin
- Overvaluation = IPO firm ratio / matching firm ratio
  - Average for IPOs from 1980 to 1997 is 1.5

- Investment strategy
  - Buy IPOs in bottom third based on overvaluation measure (median measure of 0.6) and sell IPOs in top third (median measure of 4.5) starting one year after an IPO
  - Average abnormal annual stock return of 10% over the following four years

Previously withdrawn IPOs

- Approximately 20% of all IPOs are withdrawn after filing with the SEC
- Only approximately 8% of those firms ever return to be public companies
- In 2000, approximately 50% of all IPO filings were withdraw
  - Big pipeline of previously cancelled deals

- Dunbar and Foerster examine one-year buy and hold abnormal returns (relative to size and book-to-market matched portfolios)
  - For all returning IPOs from 1985 to 1999, average abnormal return is 7%
  - For firms returning in 1999, average abnormal return is 40%

Conclusions

- Recent evidence suggests some good opportunities for IPO investing
  - Purchase IPOs when number of filings increases
  - Purchase IPOs when recent market returns have been strong
  - Focus on segments of the IPO market for long-run investment strategies
    - Look to IPOs with little flipping
    - Look to IPOs that appear undervalued relative to peers at the time of the offering
    - Consider investing in previously withdrawn offers