

Q Group
October 19, 2011

Institutional Quality Hedge Funds

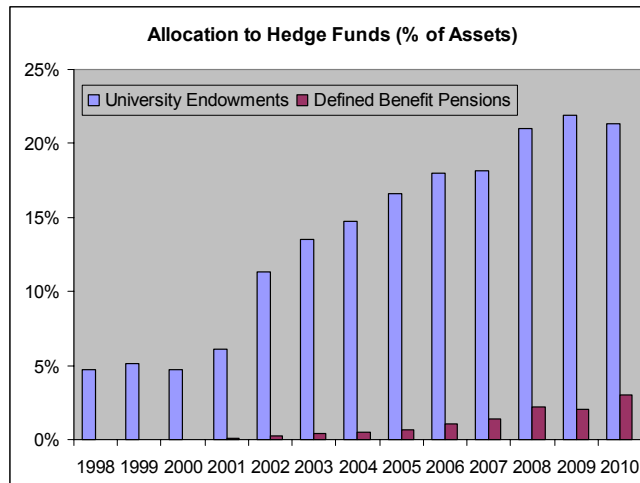
David A Hsieh

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Outline

- **Increase presence of institutional investors in hedge funds since 2001.**
- **Investment experience??**
- **Need: “Market portfolio” ~ CRSP VW index**
- **Problem: Incomplete AUM in public database**
- **Solution: Add large firms in private database**
- **Benefit: “Institutional quality” firms ~ S&P500**
- **Observations on firm size v performance**

Institutional Investors Are Increasing Allocation to Hedge Funds



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Investment Experience ?

- Q: What is the investment experience of the average dollar invested in hedge funds?
- A: Need the “market portfolio” of hedge funds, an asset-weighted return ~ CRSP VW index
- But hedge funds are private investment vehicles.
- AUM of the industry is incomplete.
- Need a proxy ~ S&P 500 index

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I. Sample Construction

- **Start** with **Public Databases (3)**. **Add** from public sources identities of mega hedge fund firms (2) and their AUM data; **collect** missing return data from **private sources**
- Public database (PD):
 - Merge **reporting firms** in Barclays Hedge, HFR and Lipper/TASS
 - Verify AUM against II 100, AR BDC where possible.
 - Sort by AUM, and divide into deciles (D01-D10).
- Add names and AUM of **non-reporting large firms** in surveys: II 100 and AR BDC.
- Find funds and returns of non-reporting large firms in private database.

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Public Data Set: Reporting Firms/Funds: Year End 2010

Source:	# of Firms	# of Funds	AUM (\$b)
Barclays	1,314	3,226	\$552
HFR	1,805	4,737	\$713
Lipper/TASS	1,412	4,122	\$717
Merge	2,442	6,606	\$1,322

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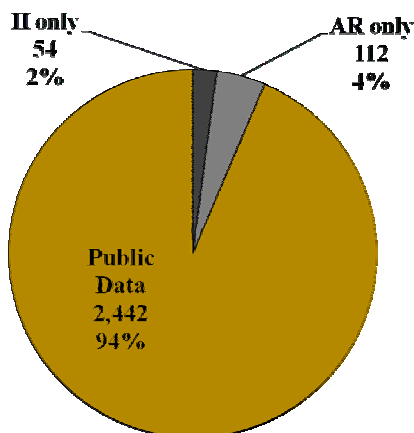
Non-reporting/Private Data Set Mega Firms/Funds: Year End 2010

Source	# of Firms	AUM (\$b)
Reporting firms (public)	2,442	1,322
II 100 firm added	54 (out of 100)	592 (out of \$1,231)
AR BDC firms added	112 (out of 330)	284 (out of \$1,701)
Total	\$2,608	\$2,199
Non-reporting/ Reporting	7%	66%
HFN Administrator Survey (AUA)		\$2,826

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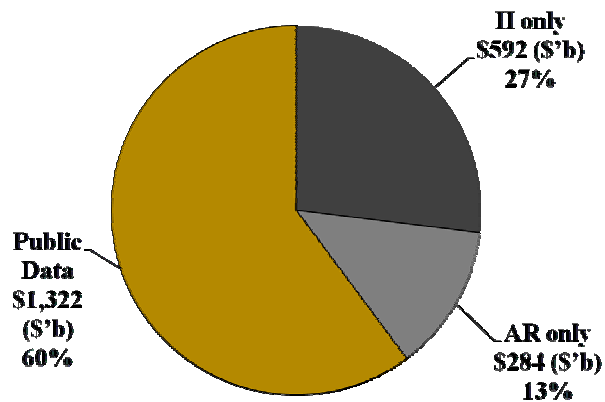
Total Number of Firms at Year End 2010



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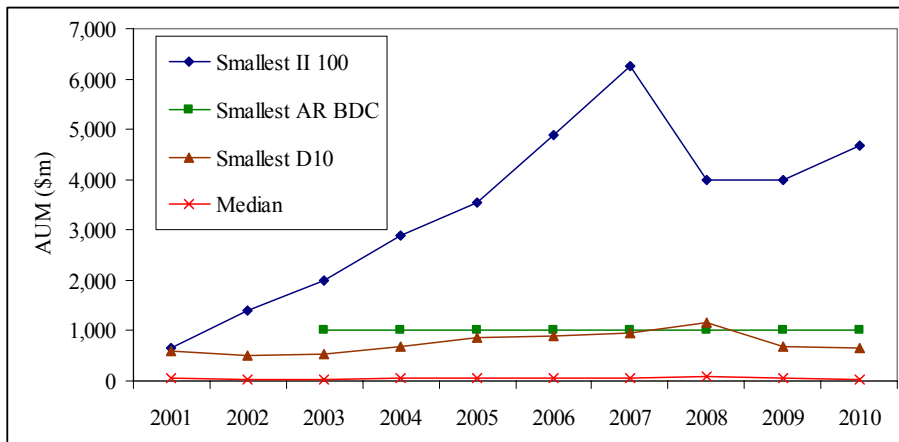
Total AUM at Year End of 2010



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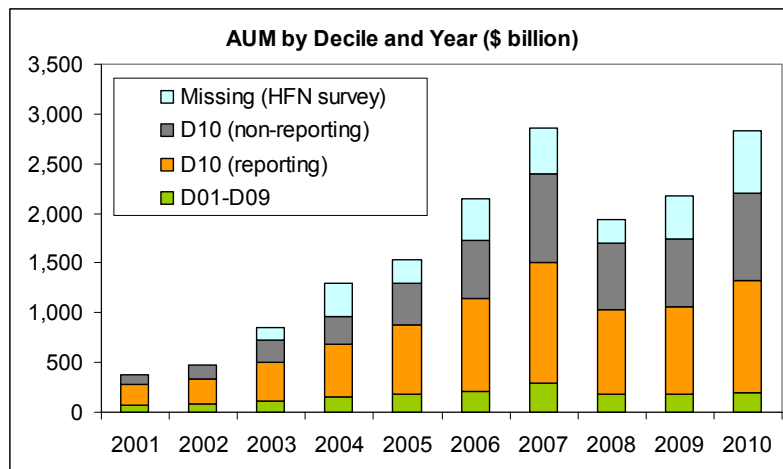
Firm Size Comparison: 2001-2010



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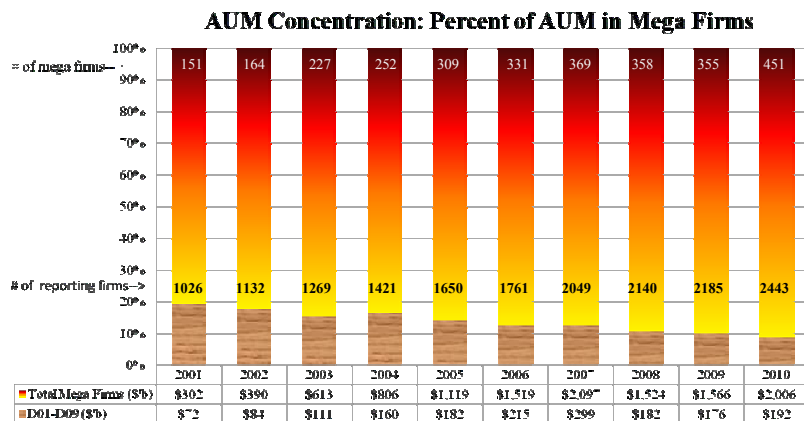
Dominance of Mega Firms: 2001-2010



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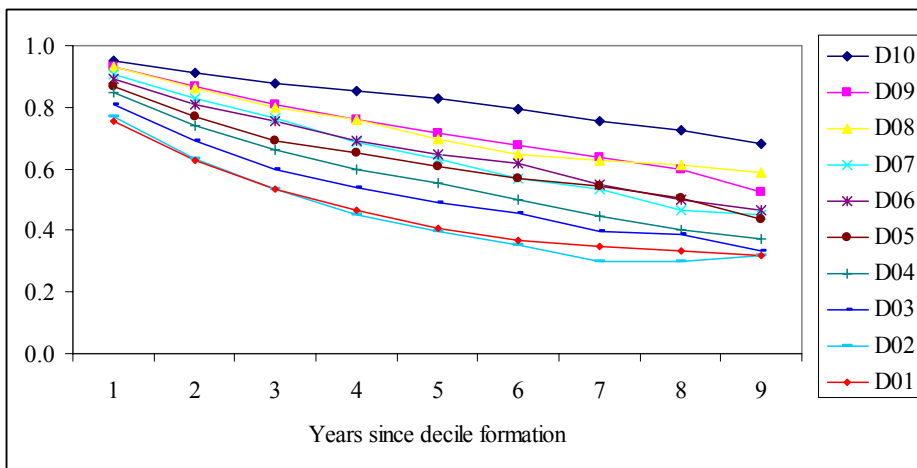
AUM Concentration: Percent of AUM in Mega Firms (Total Sample)



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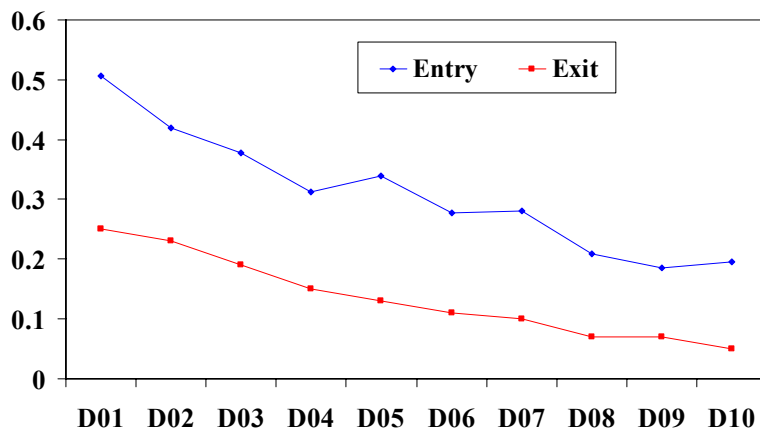
Firm Survival Probabilities, by AUM Decile



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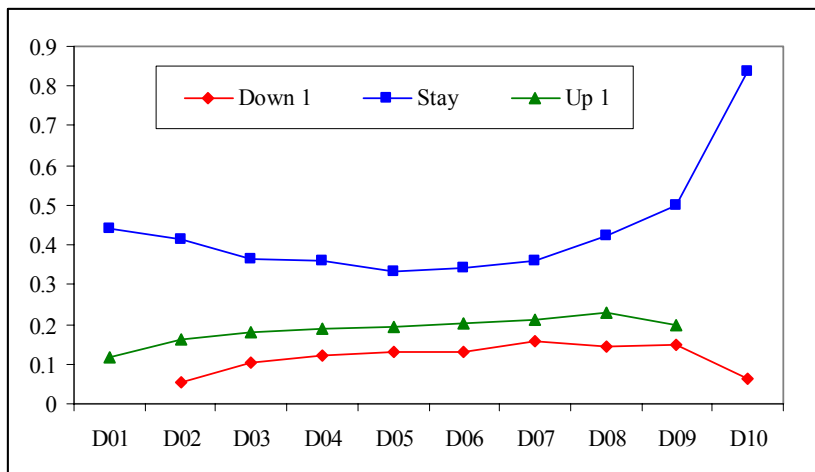
Annual Entry and Exit Rates, by AUM Decile



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Annual Transition Rates, by AUM Decile



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Qualitative Characteristics

- Large firms manage >80% of AUM.
- Large firms survive longer.
- Large firms tend to stay large.
- Large firms have less entry and less exit.

- Institutional investors prefer large firms. Possible reasons: cost, career concerns, etc.

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Firm as the Unit of Analysis

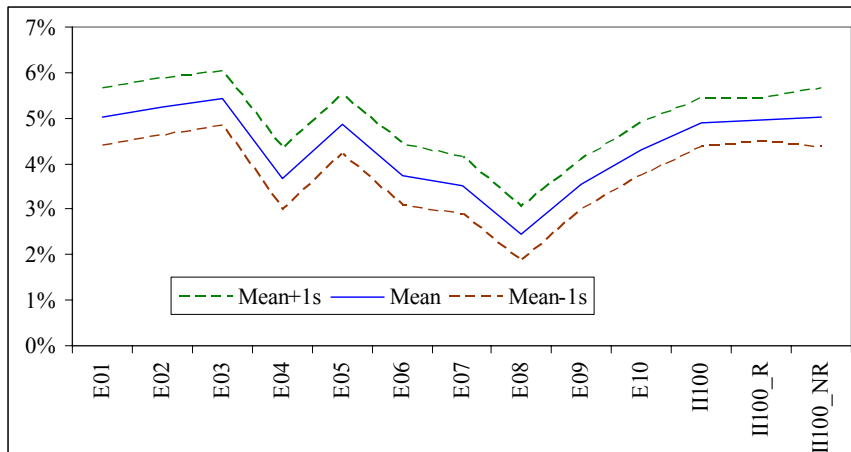
- We propose to study firms, rather than funds, for two reasons.
- Demand side: institutional investors look at firms and strategies, not single funds.
- Supply side: if Berk and Green (2004) applies to funds, one way to increase firm size is to add funds, typically with different styles.
- Information: 13/F, II 100, AR BDC @ firm level.

II. Performance in Firms with AUM >\$50m

- Small firms are hard to follow, due to high entry and exit rates.
- Small firms' data are hard to verify.
- Indexers have imposed size cut offs.
- We do the same here. Start AUM at \$50m.

- Sort firms in PD by deciles: E01, E02, ..., E10
- Add non-reporting II 100 and AR BDC firms.

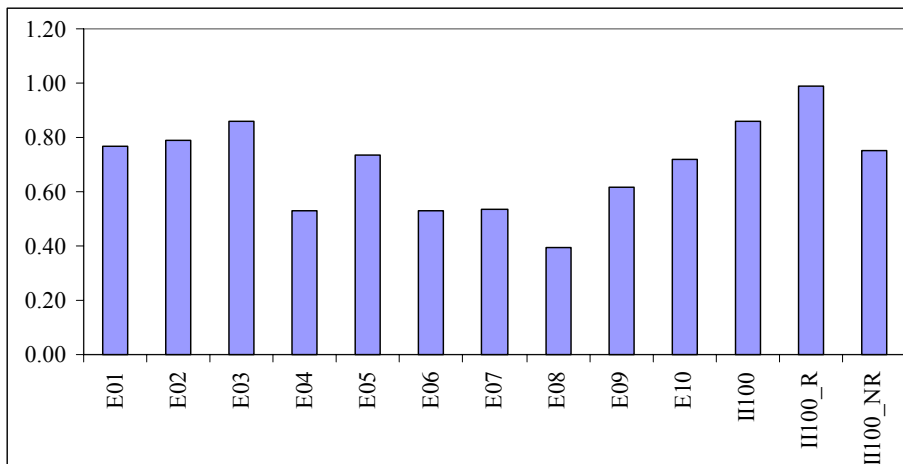
Annual Excess Returns by AUM Decile



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Sharpe Ratio by AUM Decile



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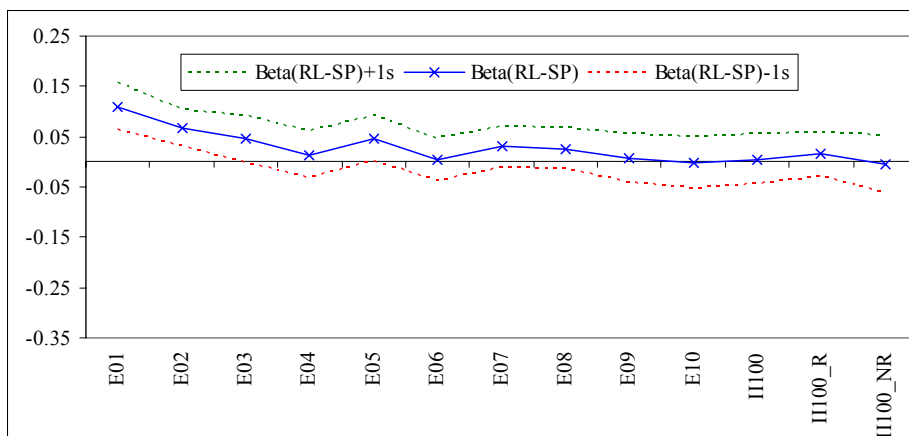
Major Risk Exposures of Hedge Funds

- Equity risk: S&P500
Russell 2000 – S&P500
Emerging market equity
- Bond risk: 10 year treasury
Moody's Baa – 10 year treasury
- Volatility: Straddles on FX, 3m rates, bonds
- These are meant to capture common exposures in the industry.

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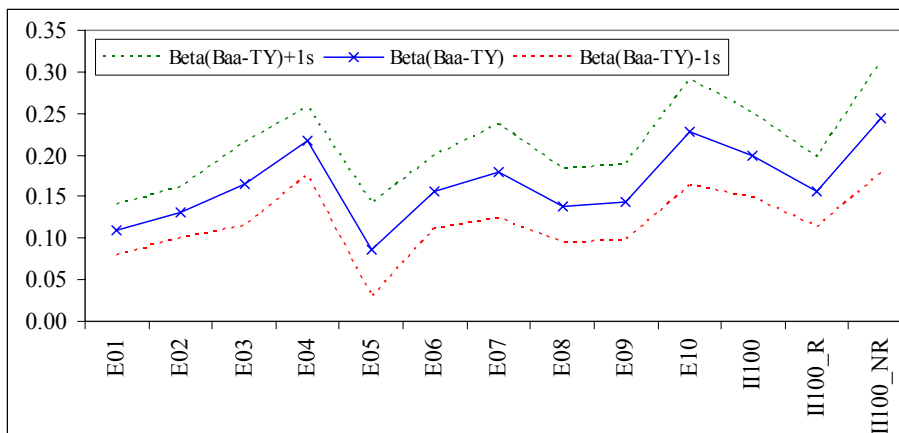
Russell 2000-S&P 500 Exposure



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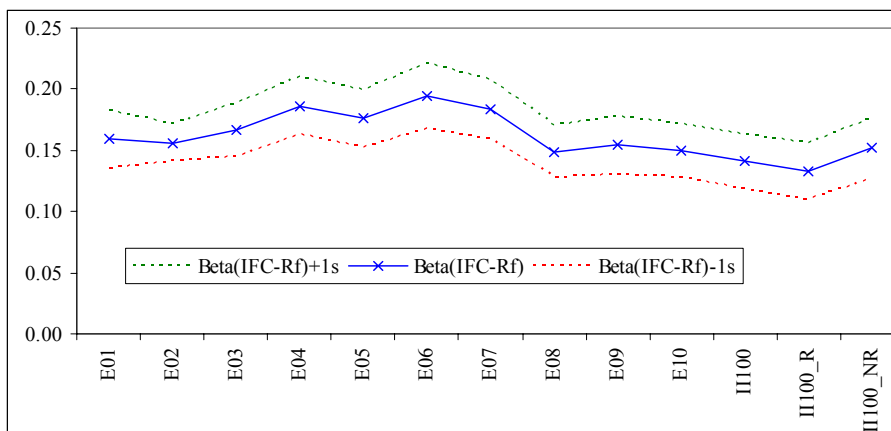
Credit Spread Exposure



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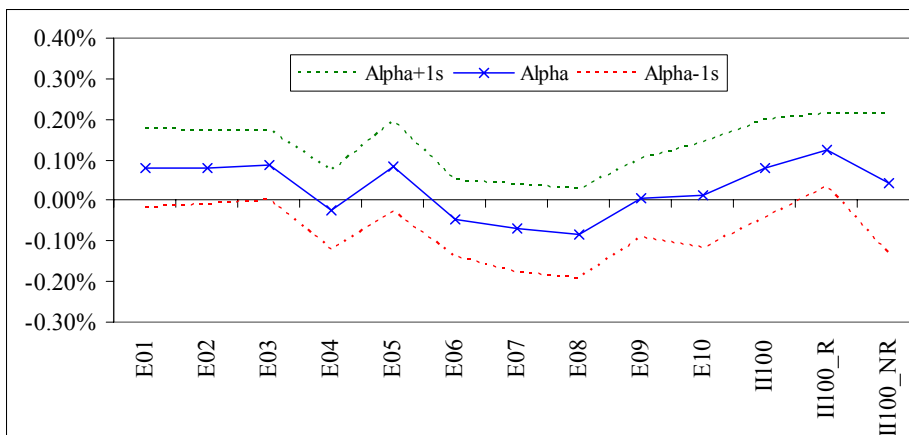
Emerging Market Equity Exposure



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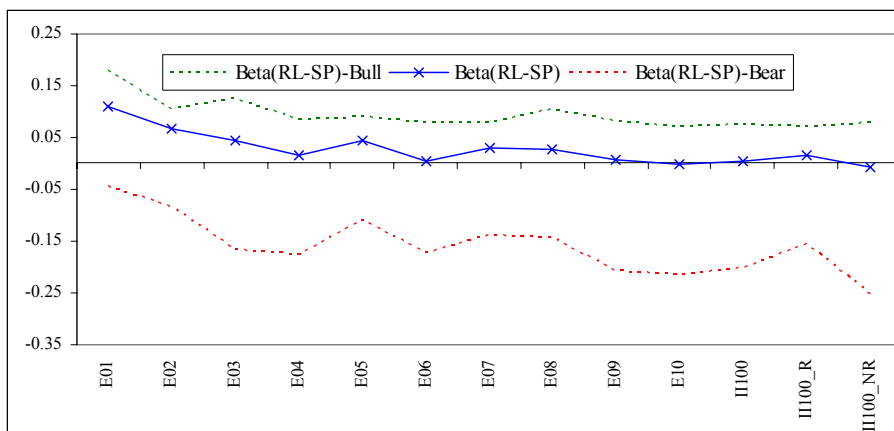
Monthly Alpha vs 8 Risk Factors



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Bull vs Bear Market Exposure



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Return Comparison Across AUM Deciles

- Excess return, Sharpe ratio, and alpha: U-shaped pattern across deciles.
- Large firms have less equity exposure.
- Large firms have more credit spread exposure.
- All firms have strong emerging market exposure.
- Equity risk is lower in bear market.
- **Implication: equal weighting across funds puts most of the weight on small firms.**

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III. Delisting Bias of Firms >\$50m AUM

- Debate on delisting bias: funds stop reporting due to bad returns vs good returns
- From private sources: 1,373 funds (share classes) have 15,371 monthly returns after delisting from public databases. 410 are still alive.
- Worst: -100%. Best: 84.15%. Average: 0.27%
- ***Delisting bias is negligible!!!***

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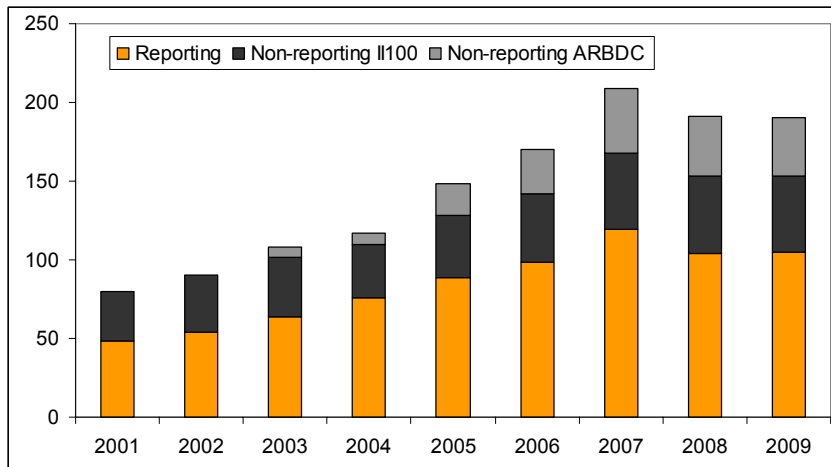
IV. Institutional Quality Firms: The “S&P500” Analog

- Institutional Quality (“IQ”) firms = all firms with AUM higher than the E09-E10 cutoff.
- In numbers: 8-10% of all firms (80 – 218 firms)
- Manage 60-75% of the AUM.
- AUM-weighted return of IQ firms ~ S&P 500.

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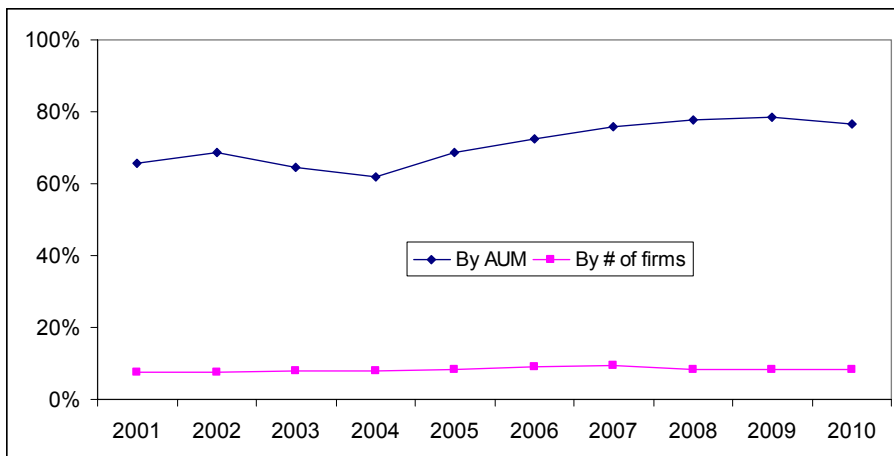
Number of IQ firms by year



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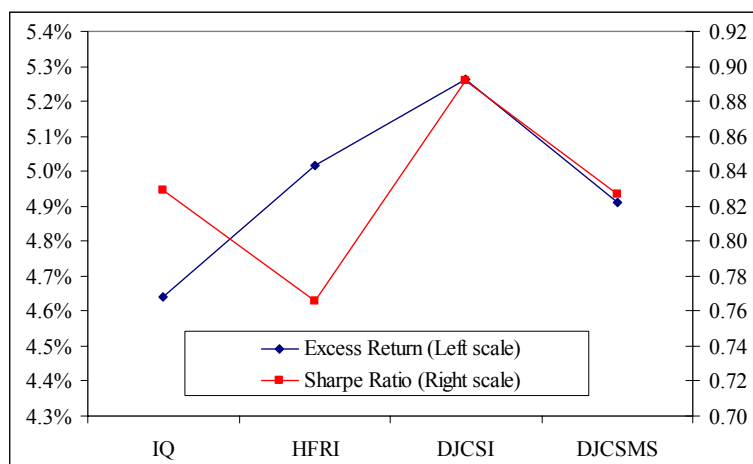
IQ firms as percent of all firms



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Comparison with Selected Indices



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Conclusions: adding missing mega firms

- **Good news:** adding ~100 non-reporting mega firms greatly increase AUM coverage of assets in the industry.
- **Bad news:** commercial databases' share of total industry AUM is declining.
- **Good news:** reporting and non-reporting firms of similar size have similar survival/performance characteristics.
- **Bad news:** survival and performance differ across firm size. So weighting scheme is relevant.

Conclusions: adding missing mega firms

- **Good news: An AUM-weighted portfolio of IQ** firms provides a good proxy of the market portfolio of hedge funds and only requires collecting data from a manageable number of non-reporting firms.