Asset manager funds

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- Total worldwide institutional capital was $64 trillion in 2012
- Institutions delegated $48 trillion of this capital
  - $5 trillion to institutional mutual funds
  - $43 trillion to strategy-specific investment vehicles that hold the assets of a small number of clients
    - Asset managers combine strategy allocations for marketing purposes into fund-like structures which we call "asset manager funds"
  - Delegated institutional assets represent 29% of worldwide investable assets
  - In comparison, retail mutual funds held $27 trillion in 2012
- Yet minimal research on this form of intermediation
  - Asset manager funds do not fall under the disclosure rules of 1940 Investment Company Act

- Important large literature focuses on particular samples of institutions or subsets of asset classes
    - e.g., Ippolito and Turner (1987), Lakonishok, Shleifer, and Vishny (1992), Coggin, Fabozzi, and Rahman (1993), Blake, Lehmann, and Timmerman (1999), Del Guercio and Tkac (2002), Ferson and Khang (2002), Dyck and Pomorski (2012), Brown, Garlappi, and Tiu (2010), and Lerner, Schoar, and Wang (2008)

- A smaller literature studies asset managers specifically, focusing often on agency issues related to investment decision-making as well as performance
    - e.g., Coles, Suay and Woodbury (2000), Bange, Khang and Miller (2008), Goyal and Wahal (2008), Goyal, Busse and Wahal (2010), Lewellen (2011), and Jenkinson, Jones, and Martinez (2015)

- But data has hindered an aggregate look at asset manager holdings and performance across asset classes

1. Profile of asset manager funds
   - Aggregate fees paid for this form of delegation
   - Extent of active management
2. Gross alpha relative to the market
   - Adding-up implications
3. Performance from the perspective of institutions
   - Sharpe (1992) model to explain how asset managers achieve performance
4. Examine whether institutions could have done as well if they had managed capital in-house

- Consultants assist pension funds, endowments and other institutional investors in delegating investment mandates (strategy allocations) across asset managers
  - Goyal and Wahal (2008) document that a vast majority of institutions use consultants when delegating
- Asset managers promote their services to consultants by providing strategy-level information packaged into fund-like records
  - Quarterly AUM, client counts, and fee structure
  - Monthly performance

Our dataset

- 22,020 asset manager funds
- 3,186 asset management firms
- $25 trillion in AUM as of 2012

Database quality, selection, and survivorship biases

- Business model of Consultant depends on data reliability
  - Regular audits
  - Managers are GIPS compliant
- Data free of incubation/survivorship biases:
  - Each investment product associated with a creation date
  - Dead products kept in the database

Tests following Blake, Lehmann, and Timmermann (1999)

❶ **Representativeness:** Do the data over- or underweight any asset classes?

❷ **Selection:** Are there differences in performance as a function of coverage?

❸ **Robustness:** Additional tests to address lingering concerns

Independent variable	Dependent variable:			
	Net return		Net return minus benchmark	
Coverage (%)	0.00285	0.00085	0.00072	0.00085
	(1.41)	(6.22)	(3.22)	(6.22)
Month × Strategy FE	No	Yes	No	Yes
Adjusted R^2	0.04%	0.04%	0.01%	0.01%

- Coverage (%): percentage of AUM for which the manager provides returns data to the Consultant
- Selective reporting would imply that managers with greater Coverage (%) appear to have worse performance

Institutional assets ($ in billions)

Table 1 Panel A

Year	Pensions & Investments AUM	Worldwide investable assets	
		Total	% held by asset managers
2000	22,659	78,884	28.7%
2001	23,028	75,512	30.5%
2002	23,275	76,603	30.4%
2003	29,134	93,933	31.0%
2004	32,815	108,514	30.2%
2005	37,166	116,104	32.0%
2006	42,751	134,293	31.8%
2007	46,759	157,057	29.8%
2008	36,809	134,650	27.3%
2009	42,294	152,190	27.8%
2010	44,443	164,610	27.0%
2011	43,644	164,709	26.5%
2012	47,603	174,786	27.2%
Average	36,337	125,526	29.3%

Consultant's database ($ in billions)

Table 1 Panel B

| Year | AUM | % of P&I* | AUM with returns | |
			Raw	Without backfill
2000	6,759	29.8%	5,708	3,275
2001	7,048	30.6%	5,899	3,955
2002	7,367	31.7%	6,409	4,479
2003	10,096	34.7%	8,615	6,556
2004	11,837	36.1%	10,541	8,408
2005	13,310	35.8%	12,234	9,744
2006	16,377	38.3%	15,305	12,640
2007	29,174	62.4%	26,237	22,962
2008	23,126	62.8%	19,487	17,101
2009	26,693	63.1%	22,702	20,812
2010	27,999	63.0%	24,767	23,184
2011	27,501	63.0%	24,612	23,579
2012[†]	27,944	58.7%	24,959	24,598

[†] Year 2012 Consultant assets as of June 2012.

* Consultant's database covers 83% of asset manager firms.

Characteristic	Mean	SD	Percentiles		
			25	50	75
AUM (millions)	1,619.7	7,307.6	73.2	285.3	1,030.5
Clients	201.1	4,833.8	1.6	5.8	23.1
AUM per client (millions)	258.2	1,494.1	9.6	48.4	176.6
Age	9.8	7.6	4.5	7.7	13.0

- Number of managers: 3,186
- Number of funds: 22,020
- Median fund: 6 clients; $285 million in capital
- Breakdown of assets:
  - 47% in fixed income vs. 40% in equities
  - 43% in U.S.

- Philippon (2014): Annual cost of financial intermediation is 1.9% of investable assets

- Using Greenwood and Scharfstein (2013): Securities intermediation accounts for $726 billion

- Back of the envelope breakdown of fees paid in 2012 for securities intermediation:
  - $87B for retail mutual funds (French, 2008; Bogle, 2008)
  - $313B for worldwide individual trading (Barber et al., 2009)
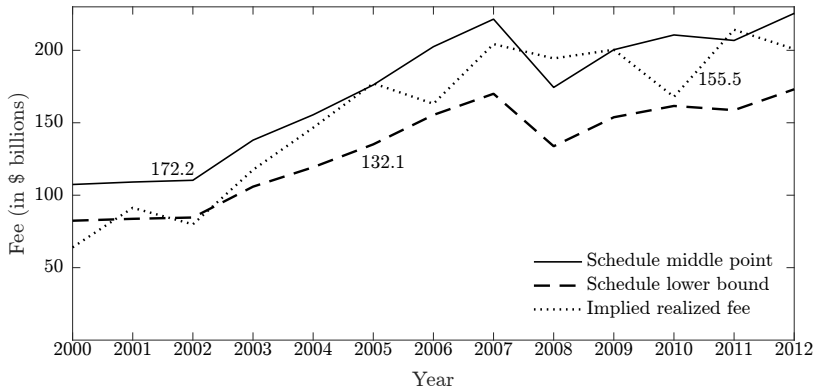 - ??? for institutional asset management

Asset class	Mean (bps)	
	Value weighted	Equal weighted
All	47.4	62.1
U.S. public equity	49.6	36.1
Global public equity	58.4	68.4
U.S. fixed income	28.9	29.7
Global fixed income	32.0	36.2
Asset blends	40.1	55.9
Hedge funds	91.0	112.3

Aggregate fees

$172 billion per year on average over the sample period

- Gross alpha: Subtract out asset class returns
  - U.S. equities, global equities, U.S. fixed income, global fixed income, hedge funds, or asset blend
- Cluster standard errors by month as if a value-weighted regression with beta equal to one

Year	Gross returns			Net returns			
	$\hat{\alpha}$	$t(\hat{\alpha})$	Tracking error	$\hat{\alpha}$	$t(\hat{\alpha})$	Information ratio
All	1.19	3.19	8.72%	0.72	1.93	0.08

- Average dollar earns a return 119 basis points above the market
- Tracking error estimate suggests active management
  - Petäjistö estimates that the average tracking error for active retail mutual funds is 7.1%

| | Annualized gross alphas | | | | | | Total |
| | Public equity | | Fixed income | | Asset | Hedge | gross |
Year	U.S.	Global	U.S.	Global	blends	funds	alpha
2000	4.37	−4.49	−1.54	5.52	8.52	−10.74	1.10
2001	2.90	−4.56	−0.36	5.07	5.25	−8.82	0.39
2002	0.12	9.57	−1.43	−7.16	−3.76	−3.89	0.97
2003	1.53	7.52	3.08	−5.38	−11.93	−5.65	1.74
2004	1.56	3.50	1.53	−2.28	−4.98	0.37	1.25
2005	2.18	−8.36	0.93	12.65	4.95	4.76	0.16
2006	−1.12	4.11	0.92	−3.14	−5.21	−3.25	0.25
2007	0.36	2.72	−1.00	−6.39	−4.15	−5.29	−0.56
2008	1.01	1.95	−7.28	−9.67	13.95	2.83	−1.09
2009	0.42	1.96	8.53	6.89	−8.06	12.90	4.55
2010	0.55	5.00	2.50	1.10	−2.59	9.51	2.71
2011	−2.02	1.17	0.87	4.87	1.83	6.77	1.91
2012	−2.23	1.19	4.61	6.29	−2.87	3.67	2.54
Average	0.86	1.66	0.72	0.42	−0.61	0.11	0.82
Total	0.36	0.43	0.19	0.12	−0.05	0.12	1.19

The adding-up constraint

Asset managers achieve gross alpha of 119 basis points over the market

Translates into $432 billion per year: $172 billion for asset managers and $260 billion for institutions

- Delegated institutional assets, on average, represent 29% of worldwide investable assets

  $\Rightarrow$ *everyone else*'s returns are 49 basis points lower <u>before fees</u>

| Asset class | Gross returns | | | | | Net returns | | |
	$\hat{\alpha}$	$t(\hat{\alpha})$	Tracking error	$\hat{\beta}$	R^2	$\hat{\alpha}$	$t(\hat{\alpha})$	IR
All	1.99	4.44	7.87%	0.88	64.5%	1.52	3.39	0.19
U.S. public equity	0.93	1.84	8.02%	1.00	85.6%	0.43	0.86	0.05
Global public equity	1.73	1.34	9.36%	1.05	77.1%	1.15	0.89	0.12
U.S. fixed income	0.95	1.86	4.07%	0.97	64.3%	0.66	1.30	0.16
Global fixed income	4.39	4.71	6.71%	0.44	32.8%	4.08	4.37	0.61
Asset blends	2.30	3.21	5.22%	0.54	47.0%	1.92	2.69	0.37
Hedge funds	2.22	2.64	7.91%	0.55	13.5%	1.31	1.56	0.17

- Average betas below 1.0 → Alphas grow in size and significance
- Large tracking errors remain—Del Guercio and Tkac (2002) report median pension tracking errors to be 5.9%
- *Note*: 93 basis points gross alpha for U.S. public equity. In line with Busse, Goyal, and Wahal's (2010) insignificant gross alpha of 64 basis points.

Institutions typically use a two-step process

- First run portfolio choice models to determine strategy allocations
- Then, if allocation is to be externally managed, choose among asset manager funds

Performance assessment criteria

- Maximize net alpha relative to a strategy-level benchmark and subject to an acceptable tracking error

Asset class	Gross returns: Strategy benchmarking					Net returns		
			Tracking					
	$\hat{\alpha}$	$t(\hat{\alpha})$	error	$\hat{\beta}$	R^2	$\hat{\alpha}$	$t(\hat{\alpha})$	IR
All	0.96	3.67	5.92%	0.88	75.7%	0.49	1.87	0.08
U.S. public equity	0.39	0.97	6.25%	0.98	89.8%	−0.10	−0.25	−0.02
Global public equity	0.58	1.26	6.02%	0.96	90.3%	0.00	0.01	0.00
U.S. fixed income	1.36	6.59	2.93%	0.84	73.5%	1.07	5.19	0.36
Global fixed income	1.29	3.15	4.92%	0.95	69.2%	0.97	2.37	0.20
Asset blends	1.37	1.42	6.67%	0.51	39.0%	1.00	1.03	0.15
Hedge funds	1.60	2.55	7.38%	0.41	23.2%	0.69	1.10	0.09
Public equity and fixed income	0.86	3.35	5.62%	0.94	82.3%	0.42	1.63	0.07

- Positive gross alpha (96 basis points) and net alpha (49 basis points)
- Tracking errors in line with Del Guercio and Tkac's (2002) estimates for pensions

Average returns and Sharpe ratios

Asset class	Asset managers			Asset-class benchmark			Strategy benchmark		
	Average return	SD	Sharpe ratio	Average return	SD	Sharpe ratio	Average return	SD	Sharpe ratio
U.S. public equity	4.46	16.69	0.14	3.62	16.68	0.09	4.23	16.54	0.12
Global public equity	4.01	16.87	0.11	2.31	15.57	0.01	3.67	17.30	0.09
U.S. fixed income	7.10	3.90	1.26	6.36	3.61	1.16	6.83	4.22	1.10
Global fixed income	7.03	4.85	1.00	6.65	8.58	0.52	6.02	4.61	0.83
Asset blends	3.77	6.72	0.24	4.44	11.07	0.21	5.76	7.20	0.50
Hedge funds	2.72	3.53	0.16	2.54	3.50	0.11	4.32	6.63	0.32
1-month T-bill				2.17	0.63				
All	4.93	9.51	0.29	3.74	9.12	0.17	4.74	9.56	0.27
All except asset blends and hedge funds	5.23	10.33	0.30	3.95	9.64	0.18	4.83	10.36	0.26

Sample selection:

| Asset class | | Gross returns | | | | Net returns | | |
	$\hat{\alpha}$	$t(\hat{\alpha})$	Tracking error	$\hat{\beta}$	R^2	$\hat{\alpha}$	$t(\hat{\alpha})$	IR
Public equity and fixed income	0.86	3.35	5.62%	0.94	82.3%	0.42	1.63	0.07
Less than one year backfill	0.82	2.95	5.70%	0.87	77.2%	0.35	1.26	0.06
Only post-2006 data	0.87	2.41	5.84%	0.88	73.6%	0.39	1.08	0.07
Coverage $\geq$ 85%	1.22	3.76	5.43%	0.91	78.3%	0.69	2.13	0.13

Benchmarking:

- Instead of using selections by manager or consultant, we use modal benchmark for the strategy

  - However, this does not rule out gerrymandering

- Under gerrymandering, asset manager incentives would be to choose lower risk benchmarks to make performance look better

  - But strategy-level betas are below one and R^2s are high

- Asset managers advertise themselves as providing multidimensional risk exposures—"smart betas" or "tactical betas"—for their clients
- Consider an investor who can trade factors F_t^1, F_t^2,..., F_t^n
- Run a constrained least squares regression:

$$r_{it} = b_1 F_t^1 + b_2 F_t^2 + \cdots + b_n F_t^n + e_{it}$$

$$\text{s.t. } \sum b_i = 1, \ b_i \geq 0$$

  - Recovers the long-only portfolio that best mimics each fund
  - Compute returns on the style portfolio *out-of-sample*
  - Compare fund returns against those of the style portfolio, $r_{it} - r_{it}^{style}$

Smart beta: Weights

Table 7 Panel A

Factors	All	U.S. Eq	Global Eq	U.S. FI	Global FI
Asset-class benchmark	16.9				
Russell 3000		9.8			
MSCI World			19.2		
Barclays Capital U.S. Aggregate				25.0	
Barclays Capital Global Aggregate					26.1
U.S. public equity					
S&P 500/Citigroup Value	9.7	27.9	3.6	0.6	0.7
S&P 500/Citigroup Growth	8.9	22.9	7.7	0.5	0.6
S&P 400 Midcap	3.4	10.5	1.8	0.5	0.3
S&P Small Cap	5.5	14.6	3.2	0.9	1.6
Global equity					
S&P Europe BMI	9.3	1.8	32.0	0.6	1.2
MSCI Emerging Market	6.4	3.5	18.1	1.1	1.4
Global public equity					
U.S. 3 Month T-Bill	8.3	0.5	0.7	6.7	14.2
Barclays Capital US Int. Govt	4.0	0.2	0.3	11.6	5.7
Barclays Capital US Long Govt	4.5	0.6	1.8	8.4	11.8
Barclays Capital US Corp. IG	7.3	0.2	1.0	22.2	9.3
Barclays Capital US MBS	4.4	0.3	0.8	14.5	2.8
...					
Total	100.0	100.0	100.0	100.0	100.0

Asset class	Gross returns				Net returns		
			Tracking				
	$\hat{\alpha}$	$t(\hat{\alpha})$	error	R^2	$\hat{\alpha}$	$t(\hat{\alpha})$	IR
All	−0.17	−0.47	5.87%	82.9%	−0.63	−1.76	−0.11
U.S. public equity	−0.46	−1.02	5.70%	90.1%	−0.95	−2.11	−0.17
Global public equity	−0.93	−1.28	7.16%	85.9%	−1.51	−2.07	−0.21
U.S. fixed income	0.48	1.25	3.02%	70.6%	0.19	0.50	0.06
Global fixed income	0.73	1.09	4.99%	60.4%	0.41	0.62	0.08
Asset blends	0.19	0.38	4.23%	78.9%	−0.19	−0.38	−0.04
Hedge funds	−0.20	−0.26	7.60%	21.1%	−1.11	−1.38	−0.15

- Style portfolios explain how asset managers achieve the positive net alpha

Do investors pay for smart betas or alphas?

Are institutions willing to pay for successful smart beta strategies?

- Asset managers could also charge for the "unexplained" part of performance
- Or fees could be unrelated to performance altogether

Our test

- Regress fees on two return components:
  1. Return on style portfolio
  2. Residual return
- Use (asset class × month) fixed effects to identify the relation from within month/within asset class variation in performance

Dependent variable:	Fees						
Sample set:	All asset manager fund-month observations						
In asset class:		Public equity		Fixed income		Asset	Hedge
	All	U.S.	Global	U.S.	Global	Blends	Funds
Style portfolio	5.35	10.28	5.02	1.06	2.51	2.08	2.61
	(5.57)	(4.18)	(3.62)	(0.68)	(1.22)	(1.13)	(2.01)
Residual return	2.00	1.34	1.17	2.98	2.93	−0.02	5.83
	(3.43)	(1.12)	(2.53)	(2.40)	(2.38)	(−0.01)	(2.62)
Month-asset class FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	738,004	238,716	207,665	107,395	80,289	41,673	62,266
Adjusted R^2	0.1%	0.3%	0.1%	0.0%	0.1%	0.0%	0.1%

- Our performance results:
    1. Asset managers earn substantial alphas relative to strategy benchmarks
    2. These alphas reflect returns on tactical factor loadings

- Revealed-preference argument: institutional investors use asset managers → they must see some value

- What would institutional investors do if left on their own?
    1. If they could trade tactical factors on their own (at a reasonable cost), asset managers do not add value
    2. If they would just hold the market, asset managers add value

- Self-constructed portfolios
  - Collect factor ETF and institutional mutual fund data for the same factors as in the Sharpe analysis
  - Use asset class weights from Consultant data
  - Construct mean-variance optimal portfolios within asset class

- Compare performance
  - What cost would make institutions indifferent between delegating and managing in-house?

Asset manager funds vs. replicating portfolio

Panel A: Sharpe ratios and indifference costs of replicating portfolios

	Average return	SD	Sharpe ratio	Indifference cost (bps)
Asset managers				
Gross return	5.02%	9.78%	0.292	
Net return	4.55%	9.78%	0.243	
Replicating portfolio, gross return				
MV analysis with diagonal covariance matrix	6.07%	10.85%	0.359	73.1
MV analysis with short-sale constraints	5.81%	10.99%	0.331	43.3

Panel B: Cost of the replicating portfolio (bps)

Vehicle	Fee
Institutional mutual funds	
Quartile 1	65.1
Median	86.5
Quartile 3	109.6
End-of-sample ETFs	26.4

Conclusions

1. Delegated institutional assets represent 29% of worldwide investable assets
2. Institutions pay $172 billion in aggregate fees annually
3. Delegated institutional capital predominantly actively managed
4. Aggregate gross alpha over the market: 119 basis points
   - Everyone else's returns are 49 basis points below the market per year—$432 billion
5. From an institution's point of view, asset manager outperform strategy benchmarks by 96 basis points
6. Sharpe (1992) model shows that outperformance due to factor loadings
7. During the sample period, institutions appeared close to indifferent between delegating and managing in-house
8. Now, low cost, liquid ETFs likely erode the comparative advantage of asset managers