Home-Institution Bias. An Investigation Into Foreign Origin AMC Exits From India.

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Motivation

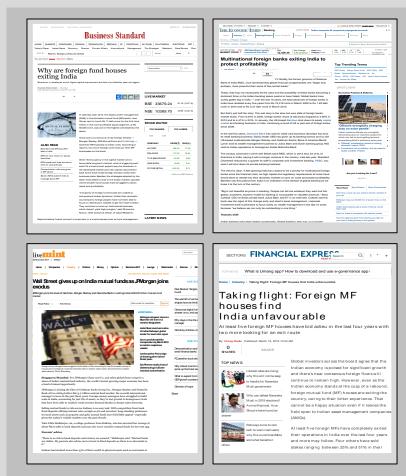*Table: Mergers, acquisitions & exits (2000-2016)*

Financial press coverage limited to product market and resource based explanations.

Target firm			Acquirer	
Effective Date	AMC Name	Ownership	AMC Name	Ownership
Jun 19, 2003	Zurich India	Foreign	HDFC	Joint Venture
Apr 30, 2004	PNB	Indian	Principal Pnb	Joint Venture
May 14, 2004	SUN F&C India	Joint Venture	Principal Pnb	Joint Venture
July 5, 2004	IL&FS	Indian	UTI	Indian
Sep 24, 2005	Alliance Capital India	Foreign	Aditya Birla Sun Life	Joint Venture
Oct 14, 2005	GIC	Indian	Canara Robeco	Joint Venture
May 31, 2008	Standard Chartered	Foreign	IDFC	Joint Venture
Nov 10, 2008	ABN AMRO Asia	Foreign	Fortis Investment	Indian
Feb 16, 2010	DBS Cholamandalam	Indian	L&T Investment	Indian
Oct 22, 2010	Fortis Investment	Indian	BNP Paribas India	Foreign
Jan 17, 2011	Shinsei	Foreign	Daiwa India	Foreign
Aug 18, 2011	AEGON Pvt Ltd	Foreign		
Aug 22, 2011	Benchmark	Foreign	Goldman Sachs	Foreign
Nov 24, 2012	FIL Fund	Foreign	L&T Investment	Indian
Nov 16, 2013	Daiwa	Foreign	SBI Funds	Joint Venture
Jun 28, 2014	Morgan Stanley	Foreign	HDFC	Joint Venture
Oct 11, 2014	ING Investment India	Foreign	Aditya Birla Sun Life	Joint Venture
Jan 31, 2015	Pine Bridge	Foreign	Kotak Mahindra	Indian
Mar 8, 2016	Deutsche	Foreign	DHFL Pramerica	Joint Venture
Nov 5, 2016	Goldman Sachs India	Foreign	Reliance Nippon Life	Joint Venture
Nov 26, 2016	JPMorgan India	Foreign	Edelweiss	Indian

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(1)

Literature

Study objective

- Investigate if a probable investor bias against foreign origin AMCs has contributed to the recent mass exit of foreign AMC from the Indian mutual fund market.

● Home bias *(Poterba, 1991)*

● Home-institution bias *(Mcqueen and Stenkrona, 2012)*

- Determining investor bias in mutual fund market
  Christoffersen, Musto and Wermers (2014)

- Fund flow and determinants of fund flow
  Barber, Huang and Odean (2016)

- Fund flow-performance relationship
  Ferreira et al. (2012)

- Fund flow-performance relationship & fund category comparison
  Berggrun and Lizarzaburu (2015), Mazur, et al. (2017)

- Fund flow-performance convexity and fund risk positioning
  Sirri and Tuffano (1998), Ferreira et al. (2012)

Research gap

- Home institution bias literature

  - Emerging market evidence

  - Data sample
    - Sixteen year sample of open ended diversified equity funds (against one time pension fund enrollment scheme)

  - Methodology
    - Panel data regression with fixed effects and standard error correction for clustering (cross sectional regression)

  - Contrarian evidence

  - Home institution bias across performance quintiles

- Indian mutual fund literature

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Data

Table: Summary statistics

Data Source

- ACE Mutual Fund
- 2000-2016

Study sample: 187 primary schemes of mutual funds

- open ended
- actively managed
- Diversified
- domestic equity

Filters:

- quarterly flow data greater than 150% or less than -75%.
- average AUM less than INR 15 crores for the study period.

	Dependent variable	Performance measure			Control variables			
	Flow t	Alpha t-1	Excess Annual Ret t-1	Excess Quarterly Ret t-1	Risk t-1	Fund size t-1	AMC size t-1	Age t-1
Panel A: Foreign								
N	1250	940	1175	1250	1250	1250	1250	1250
Min.	-74%	-9%	-81%	-24%	5%	2	5	1.1
Median	-3%	3%	14%	1%	18%	6	10.1	4.3
Mean	-1%	3%	17%	1%	22%	5.9	10	4.2
Max.	149%	17%	166%	22%	58%	9.4	12.3	5.6
Std. Dev.	17%	4%	32%	4%	9%	1.6	1.2	0.9
Panel B: Domestic								
N	4793	3775	4543	4793	4793	4793	4793	4793
Min.	-64%	-39%	-85%	-60%	1%	-0.4	3.2	0.7
Median	-2%	2%	12%	0%	19%	6	10.2	4.5
Mean	1%	2%	18%	1%	22%	6	10.1	4.3
Max.	150%	19%	188%	56%	89%	9.8	12.5	5.9
Std. Dev.	16%	4%	33%	5%	10%	1.5	1.5	0.9

(4)

Research gap

Contribution

Dependent variable

○ Fund flow

$$Flow_{i,t} = \frac{AUM_{i,t} - (1 + R_{i,t}) * AUM_{i,t}}{AUM_{i,t-1}}$$

Explanatory variables

○ Fund return ($Perf_{i,t}$)

   i.   Carhart 4 factor alpha

   ii.   Excess return quarterly

   iii. Excess return annual

$$R_{i,t} = \frac{NAV_{i,t}}{NAV_{i,t-1}} - 1$$

○ Fund risk

○ Fund size

○ Fund age

○ AMC size

● Methodology

Panel data regression with fund and time fixed effects (Hausman test) and standard errors adjusted for clustering for funds .

● Fund flow performance relationship

$$Flow_{i,t} = \beta_1 Perf_{i,t-1} + \beta_2 Controls_{i,t-1} + Fixed\ Effects + \epsilon_{i,t} \quad (1)$$

● Fund category comparison and fund flow-performance relationship

$$Flow_{i,t} = \beta_1 Perf_{i,t-1} + \beta_2 Controls_{i,t-1} + \beta_3 Dm_i * Perf_{i,t-1} + \beta_4 Dm_i * Controls_{i,t-1} + Fixed\ Effects + \epsilon_{i,t} \quad (2)$$

A bias against a category of mutual funds will adversely affect the fund flow-performance relationship for that category vis-a-vis other categories of funds.

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Home-Institution Bias

Table: Regression results

- Panel regression of quarterly fund flow on lagged fund performance measures, lagged control variables.

- Regression 4,5 & 6 include interaction term with covariates & *indicator variable Dm*.

- Dm_i takes the value 1 if fund 'i' is of a foreign origin AMC.

- The p-values are provided in the brackets.

	Rgrsn. 1 qrtr ex. ret.	Rgrsn. 2 annual ex. ret.	Rgrsn. 3 carhart alpha	Rgrsn. 4 qrtr ex. ret.	Rgrsn. 5 annual ex. ret.	Rgrsn. 6 carhart alpha
Perf.	0.69	0.38	0.67	0.68	0.37	0.67
	(0.00 ***)	(0.00 ***)	(0.00 ***)	(0.00 ***)	(0.00 ***)	(0.00 ***)
Risk	-0.05	0.02	0.04	-0.02	0.04	0.05
	(0.54)	(0.74)	(0.56)	(0.80)	(0.60)	(0.52)
Fund size	-0.03	-0.03	-0.03	-0.04	-0.04	-0.03
	(0.00 ***)	(0.00 ***)	(0.00 ***)	(0.00 ***)	(0.00 ***)	(0.00 ***)
AMC size	0.01	0.01	0.00	0.01	0.02	0.01
	(0.55)	(0.23)	(0.90)	(0.25)	(0.06)	(0.48)
Fund age	0.02	0.04	0.04	0.01	0.03	0.01
	(0.06)	(0.00 ***)	(0.20)	(0.55)	(0.03)	(0.77)
Dm*Perf.				0.04	0.00	0.04
				(0.77)	(0.90)	(0.80)
Dm*Risk				-0.13	-0.10	-0.03
				(0.03)	(0.07)	(0.69)
Dm*FundSize				0.02	0.02	0.00
				(0.05)	(0.11)	(0.78)
Dm*AMCsize				-0.04	-0.05	-0.04
				(0.05)	(0.02)	(0.05)
Dm*FundAge				0.06	0.07	0.15
				(0.01 **)	(0.01 **)	(0.00 ***)
N	6043	5718	4715	6043	5718	4715
R-Squared	0.061	0.099	0.038	0.070	0.107	0.049

Significance code: 0.001< (***) < (**) < 0.01 < (*) < 0.05

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Robustness (Home-institution bias)

Table: Regression results

- The sample for this analysis excludes joint ventures between domestic and foreign origin AMCs.

- The p-values are provided in the brackets.

	Regression 1 quarterly excess return	Regression 2 annual excess return	Regression 3 Carhart 4 factor alpha
Perf.	0.438 (0.01**)	0.312 (0.00 ***)	0.39 (0.01 **)
Risk	0.042 (0.58)	0.08 (0.30)	0.061 (0.47)
Fund size	-0.025 (0.02)	-0.021 (0.04)	-0.007 (0.63)
AMC size	0.002 (0.81)	0.014 (0.09)	0.008 (0.31)
Fund age	-0.002 (0.88)	0.015 (0.42)	-0.06 (0.24)
Dm*Perf.	0.208 (0.25)	-0.001 (0.98)	0.265 (0.17)
Dm*Risk	-0.15 (0.03)	-0.141 (0.04)	-0.03 (0.70)
Dm*Fundsize	0.005 (0.68)	0.001 (0.97)	-0.022 (0.22)
Dm*AMCsize	-0.043 (0.04 *)	-0.052 (0.01 **)	-0.054 (0.01 **)
Dm*FundAge	0.061 (0.01 **)	0.077 (0.01 **)	0.195 (0.00 ***)
N	3073	2885	2347
R-Squared	0.053	0.078	0.036

Significance code: 0.001< (***) < (**) < 0.01 < (*) < 0.05

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Flow-performance convexity

Fractional fund performance ranks of annual excess return, decomposed into three piecewise performance variables

- $\text{Low}_{i,t} = \min(0.2, \text{Rank}_{i,t})$

- $\text{Mid}_{i,t} = \min(0.6, \text{Rank}_{i,t} - \text{Low}_{i,t})$

- $\text{High}_{i,t} = \text{Rank}_{i,t} - \text{Low}_{i,t} - \text{Mid}_{i,t}$

- Test for fund flow-performance relationship convexity

$$Flow_{i,t} = \beta_1 Perf_{i,t-1} + \boxed{\beta_2 Perf_{i,t-1}^2} + \beta_3 Controls_{i,t-1} + Fixed\ Effects + \epsilon_{i,t}$$

$$(3)$$

$$Flow_{i,t} = \boxed{\beta_1 Low_{i,t-1}} + \boxed{\beta_2 Mid_{i,t-1}} + \boxed{\beta_3 High_{i,t-1}} + \beta_4 Controls_{i,t-1} + Fixed\ Effects + \epsilon_{i,t}$$

$$(4)$$

- Fund category comparison and fund flow-performance relationship across performance quintiles

$$Flow_{i,t} = \beta_1 Low_{i,t-1} + \beta_2 Mid_{i,t-1} + \beta_3 High_{i,t-1} + \beta_4 Controls_{i,t-1} + \boxed{\beta_5 Dm_i Low_{i,t-1}} + \boxed{\beta_6 Dm_i Mid_{i,t-1}} + \boxed{\beta_7 Dm_i High_{i,t-1}} + \beta_8 Dm_i Controls_{i,t-1} + Fixed\ Effects + \epsilon_{i,t}$$

$$(5)$$

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Flow-performance convexity

Table: Regression results

- Regression 1 and Regression 2 are test for non-linearity in fund flow-performance relationship.

- Regression 3 is quarterly fund flow on lagged piecewise fund excess annual return, lagged control variables and the interaction term.

	Regression 1	Regression 2	Regression 3
Perf.	0.437 (0.00 ***)		
Perf.^2	-0.066 (0.05 *)		
Low		-0.047 (0.38)	-0.102 (0.06)
Mid		0.111 (0.00 ***)	0.112 (0.00 ***)
High		0.629 (0.00 ***)	0.71 (0.00 ***)
Risk	0.077 (0.29)	0.069 (0.29)	0.08 (0.22)
Fund size	-0.034 (0.00 ***)	-0.035 (0.00 ***)	-0.04 (0.00 ***)
AMC size	0.013 (0.23)	0.011 (0.34)	0.019 (0.10)
Fund age	0.041 (0.00 ***)	0.042 (0.00 ***)	0.029 (0.02 *)
Dm*Low			0.33 (0.05)
Dm*Mid			-0.014 (0.68)
Dm*High			-0.426 (0.01 **)
Dm*Risk			-0.063 (0.203)
Dm*Fund size			0.024 (0.04 *)
Dm*AMC size			-0.046 (0.02 *)
Dm*Fund Age			0.062 (0.01 **)
N	5718	5718	5718
R-Square	0.101	0.117	0.128
Wald test: High = Low (p-value)			0.00 ***

Significance code: 0.001< (***) < (**) < 0.01 < (*) < 0.05

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Summary

With a sample of open ended, actively managed, diversified, domestic equity mutual funds, and using panel data regression methodology, this study..

- demonstrates that past performance is a very strong motivator for the Indian mutual fund investor's buy-sell decision.

- fails to demonstrate that on an average the country of origin of the fund house adversely affects the fund flow-performance relationship for that category of funds vis-a-vis the other funds.

- demonstrates that fund flow-age relationship is significantly different for foreign origin funds vis-a-vis the domestic funds for the top quintile performing fund for excess annual return.

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Comments/

Questions

THANK YOU

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